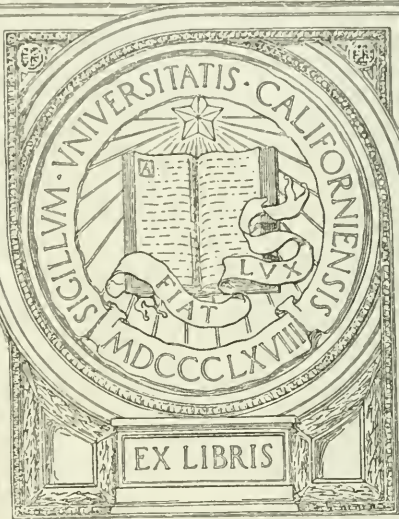


INTRODUCTION TO THE  
SCIENCE OF LANGUAGE

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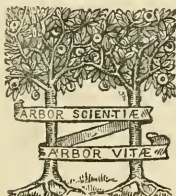
BY

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IN TWO VOLUMES.

VOL. I.



LONDON :

C. KEGAN PAUL & CO., 1, PATERNOSTER SQUARE.

1880.

“ Ille demum foret nobilissima grammaticæ species, si quis in linguis tam eruditis quam vulgaribus eximie doctus, de variis linguarum proprietatibus tractaret ; in quibus quæque excellat, in quibus deficiat ostendens.”—BACON (“ De Aug. Scient.,” vi. 1).

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## PREFACE.

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BUT few words of Preface are needed for a work which will sufficiently explain itself. It is an attempt to give a systematic account of the Science of Language, its nature, its progress and its aims, which shall be at the same time as thorough and exhaustive as our present knowledge and materials allow. How far the attempt has been successful is for the reader to judge; the author cannot do more than his best. The method and theories which underlie the work have been set forth in my "Principles of Comparative Philology," where I have criticized certain of the current assumptions of scientific philology, and endeavoured to show their inadequacy or positive error. It is gratifying to find that my views and conclusions have been accepted by leading authorities on the subject, and I shall, therefore, make no apology for tacitly assuming them in the present work. So far as the latter is concerned, however, it matters little whether they are right or wrong; an Introduction necessarily has mainly to deal with the statement and arrangement of ascertained facts. The theories the facts are called upon to support are of secondary importance.

It may be objected that I have handled some parts of the subject at disproportionate length. But it has

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seemed to me that an Introduction should give a survey of the whole field to be explored, and not neglect any portion of it for the sake of literary unity or easy reading. There is certain work which must be done once for all, if the ground is to be cleared for future research and progress, and if well done need not be done again. The historical retrospect in the first chapter is indispensable for a right understanding of the "Science of Language;" but in writing it I have tried not to forget that brevity is a virtue as well as completeness. It is the fault of the subject-matter if the chapter seems unduly long.

Exception may perhaps be taken to the use I have made of the languages and condition of modern savage tribes to illustrate those of primitive man. It is quite true that in many cases savage tribes are examples of degeneracy from a higher and less savage state; the Arctic Highlanders of Ross and Parry, for instance, have retrograded in social habits, and the disuse of boats and harpoons, from the Eskimaux of the south; and if we pass from savage to more civilized races there is distinct evidence in the language of the Polynesians that they have lapsed from a superior level of civilization. It is also quite true that, however degraded a tribe or race may now be, it is necessarily much in advance of palæolithic man when he first began to create a language for himself, and to discover the use of fire. Nevertheless, it is in modern savages and, to a less degree, in young children, that we have to look for the best representatives we can find of primæval man; and so long as we remember that they are but imperfect representatives we shall not go far wrong in our scientific inferences. As

Professor Max Müller has said :<sup>1</sup> "The idea that, in order to understand what the so-called civilized people may have been before they reached their higher enlightenment, we ought to study savage tribes, such as we find them still at the present day, is perfectly just. It is the lesson which geology has taught us, applied to the stratification of the human race."

In the matter of language, however, we are less likely to make mistakes in arguing from the modern savage to the first men than in other departments of anthropology. Here we can better distinguish between old and new, can trace the gradual growth of ideas and forms, and determine where articulate language passes into those inarticulate efforts to speak out of which it originally arose. In fact, a chief part of the services rendered to glottology by the study and observation of savage and barbarous idioms consists in the verification they afford of the results of our analysis of cultivated and historical languages. If, for example, this leads us to the conclusion that grammatical simplicity is the last point reached in the evolution of language, we must go to savage dialects for confirmation before we can accept the conclusion as proven. Moreover, there is much of the primitive machinery of speech which has been lost in the languages of the civilized nations of the world, but preserved in the more conservative idioms of savage tribes—for savages, it must be remembered, are the most conservative of human beings ; while were we to confine our attention to the groups of tongues spoken by civilized races we should

<sup>1</sup> "Lectures on the Origin and Growth of Religion," p. 65.

form but a very partial and erroneous view of language and its structure, since the conceptions upon which the grammars of the several families of speech are based are as various as the families of speech themselves. Nor must we forget the lesson of etymology, that the poverty of ideas with which even our own Aryan (or rather præ-Aryan) ancestors started was as great as that of the lowest savages of to-day.

My best thanks are due to Professor Mahaffy for his kindness in looking over the sheets of the present work during its passage through the press, and to Mr. Henry Sweet for performing the same kind offices towards the fourth chapter. Mr. Sweet's name will guarantee the freedom of the chapter from phonetic heresies. I have also to tender my thanks to Professor Rolleston for the help he has given me in the preparation of the diagrams which accompany the work, while I hardly know how to express my gratitude sufficiently to Mr. W. G. Hird, of Bradford, who has taken upon himself the onerous task of providing an index to the two volumes. How onerous such a labour is can be realized only by those who have already undergone it.

A. H. SAYCE.

QUEEN'S COLLEGE, OXFORD,  
*November, 1879.*

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## CHAPTER I.

### THEORIES OF LANGUAGE.

“ If we preserve in our histories of the world the names of those who are said to have discovered the physical elements—the names of Thales, and Anaximenes, and Empedocles—we ought not to forget the names of the discoverers of the elements of language—the founders of one of the most useful and most successful branches of philosophy—the first grammarians.”—MAX MÜLLER.

“ SPEECH is silvern, silence is golden,” is the well-known saying of a modern prophet, wearied with the idle utterances of a transition age, and forgetful that the *prophet*, or *προφήτης*, is himself but the “ spokesman ” of another, and that the era which changed the Hebrew seer into the *Nabi*, or “ proclaimer,” brought with it also the beginning of culture and civilization, and the consciousness of a high religious destiny. Far truer was the instinct of the old poet of the Rig-Veda, the most ancient monument of our Aryan literature, written, it may be, fifteen centuries before the birth of Christ, when he calls “ the Word ” one of the highest goddesses “ which rushes onward like the wind, which bursts through heaven and earth, and, awe-inspiring to each one that it loves, makes him a Brahman, a poet, and a sage.” The haphazard etymology which saw in the *μέγροτες ἄνθρωποι* of Homer “ articulate-speaking

men," must indeed be given up, but we may still picture to ourselves the "winged words" which seemed inspired with the life and divinity of Hermès, or the sacred Muses from whom the Greek singer drew all his genius and power. Language is at once the bond and the creation of society, the symbol and token of the boundary between man and brute.

We must be careful to remember that language includes any kind of instrumentality whereby we communicate our thoughts and feelings to others, and therefore that the deaf-mute who can converse only with the fingers or the lips is as truly gifted with the power of speech as the man who can articulate his words. The latter has a more perfect instrument at his command, but that is all. Indeed, it is quite possible to conceive of a community in which all communications were carried on with the hands alone; to this day savage tribes make a large use of gestures, and we are told that the Grebos of Africa ordinarily indicate the persons and tenses of the verb by this means only. Wherever there is the power of making our thoughts intelligible to another, or even simply the possibility of this power, as in the case of the infant, there we have language, although for ordinary purposes the term may be restricted to spoken or articulate speech. It is in this sense that language will be understood in the following pages.

Now one of the earliest subjects of reflection was the language in which that reflection clothed itself. The power of words was clear even to the barbarian, and yet at the same time it was equally clear that he himself exercised a certain power over them. Wonder, it has

been said, is the mother of science, and out of the wonder excited by the great mystery of language came speculations on its nature and its origin.' What, it was asked, are those modulations of the voice, those emissions of the breath, which inform others of what is passing in our innermost souls, and without which the most rudimentary form of society would be impossible? Perhaps it was in Babylonia that the first attempt was made to answer the question. Here there was a great mixture of races and languages, and here it was accordingly that the scene of the confusion of tongues was laid. The Tower of Babel, the great temple of the Seven Lights of Borsippa, whose remains we may still see in the ruins of the Birs-i-Nimrúd, was, it was believed, the cause and origin of the diversity of human speech. Men endeavoured to make themselves equal to the gods, and to storm heaven like the giants of Greek mythology, but the winds frustrated their attempts, and heaven itself confounded their speech. Such was the native legend, fragments of which have been brought from the Assyrian library of Assur-bani-pal, or Sardanapalus, and which cannot fail to bring to our minds the familiar history of Genesis.

Now the same library that has given us these fragments has also given us the first beginnings of what we may call comparative philology. The science, the art, and the literature of Babylonia had been the work of an early people who spoke an agglutinative language, and from them it had all been borrowed and perhaps improved upon by the later Semitic settlers in the country. Their language, which for the want of a better name we

will call Accadian, had ceased to be spoken before the seventeenth century B.C., but not before the civilization and culture it enshrined had been adopted by a new race, who had to study and learn the dead tongue in which they were preserved, as the scholars of the Middle Ages had to study and learn Latin. Hence came the need of dictionaries, grammars, and reading-books; and the clay tablets of Nineveh accordingly present us not only with interlinear and parallel Assyrian translations of Accadian texts, arranged upon the Hamiltonian method, but also with syllabaries and lexicons, with phrase-books and grammars of the two languages. It is the first attempt ever made to draw up a grammar, and the comparative form the attempt has assumed shows how impossible was even the suggestion of such a thing without the comparison of more than one form of speech. The vocabularies are compiled sometimes on a classificatory principle, sometimes on an alphabetic one, sometimes on the principle of grouping a number of derivations around their common root; and the latter principle enunciates at once the primary doctrine and object of comparative philology—the analysis of language into its simplest elements. With the discovery of roots we may date the possibility and the beginning of linguistic science.

Next in order of time to the grammarians of Babylonia and Assyria came the grammarians of India, whose labours again were called forth by the comparison of different forms of speech. The sacred language of the Veda had already become antiquated and obscure, while the rise and spread of Buddhism had raised more than

one popular dialect to the rank of a literary language, and obliged the educated Hindu not only to study his own speech in its earlier and later forms, but to compare it with other more or less related idioms as well. Since Indian philology, however, is intimately connected with the history of the modern science of Language, it will be more convenient to consider it further on.

The problems of language were naturally among the first to present themselves to the activity of the Greek mind. Already the instinct of their wonderful speech, itself the fitting creation and reflex of the national character, had found in the word λόγος an expression of the close relationship that exists between reasoned thought and the words in which it clothes itself; and the question which Greek philosophy sought to answer was the nature of this relationship, and of the language wherein it is embodied. Do words exist, it was asked, *by nature* (φύσει) or *by convention* (θέσει); do the sounds which we utter exactly and necessarily represent things as they are in themselves, or are they merely the arbitrary marks and symbols conventionally assigned to the objects we observe and the conceptions we form? This was the question that the greatest of the Greek thinkers attempted to solve; and the controversy it called forth divided Greek philosophy into two camps, and lies at the bottom of all its contributions to linguistic science. It is true that the question was really a philosophic one, and that the advocates of free-will on the one side, and of necessity on the other, naturally saw in speech either the creation and plaything of the human will, or else a power over which man has as little control as over the forces of nature. Important as were the results

of this controversy, not only to the philosophy of language, but yet more to the formation of grammar, it was impossible for a *science* of language to arise out of it : its results were logical rather than linguistic, for science requires the patient *à posteriori* method of induction, not the *à priori* method of immature philosophizing, however brilliantly handled. The Greeks had, indeed, grasped a truth which has too often been forgotten in modern times, the truth that language is but the outward embodiment and crystallization of thought ; but they overlooked the fact that to discover its nature and its laws we must observe and classify its external phænomena, and not until we have ascertained by this means the conditions under which thought externalizes itself in language, can we get back to that thought itself.

Greek researches into language fall into three chief periods, the period of the præ-Sokratic philosophy, when language in general was the subject of inquiry, the period of the Sophists, when the categories of universal grammar were being distinguished and worked out, and the period of Alexandrine criticism, when the rules of Greek grammar in particular were elaborated. Herakleitus and Demokritus are the representatives of the first period : the one the advocate of the innate and necessary connection between words and the objects they denote, the other of the absolute power possessed by man to invent or change his speech. The dispute, however, was soon shifted from words as they are to words as they once were ; since on the one hand it was manifest that the union assumed to exist between words and objects could no longer be pointed out in the majority of instances,



and on the other hand that numerous words are merely the later corruptions of earlier forms, so that the invention of even a single word must be pushed back to an age far beyond the oldest experience. Hence grew up the so-called science of *etymology*, a science whose name, it must be confessed, fully justified one of its leading principles which resulted in the derivation of *lucus a non lucendo*, "because the sun does *not* shine therein." Ἐτυμο-λογία was "the science of the truth," the ascertainment of the true origin of words; but in Greek hands its truer designation would have been the "science of falsehood" and guess-work. Its follies have been enshrined in ponderous works like the "Etymologicum Magnum" or the "Onomastikon" of Pollux; and its curious illustrations of the absurdities into which a clever and active intellect will fall when deprived of the guidance of the scientific method of comparison, are scattered broadcast through the writings of Greek thinkers. Two of its rules, for instance, both founded on the assumption of the "natural" origin of words, lay down that the word undergoes the same modifications as the thing it denotes, and that objects may be named from their contraries (κατ' ἀντίφρασιν); and hence it was easy to derive φιλητής, "a thief," from ὑφέλεσθαι, "to steal," by "depriving" the latter word of its first syllable, and to see in *cælum*, "heaven," *cælatum*, "covered," "because it is open," or in *fædus*, "covenant," *fædus*, "hateful," "because there is nothing hateful in it."<sup>1</sup> After this we need not smile at Plato's derivation of θεοί, "gods," from θέειν, "to run," because the

<sup>1</sup> See Jolly (translation of Whitney), "Die Sprachwissenschaft," p. 640.

stars were first worshipped, or Aristotle's assumption that objects are easy of digestion when they are "light" in weight. Dr. Jolly has pointed out that the fact that *ἐτυμός* is Ionic indicates the origin of the pseudo-science in the Ionic schools of philosophy; it is therefore a remarkable illustration of the "self-sufficient" nature of Greek thought and of Greek contempt for the "barbarian," that the dialects of Asia Minor, though so closely akin to Greek, should have been utterly disregarded, and the investigations into language consequently left to the vagaries of the fancy without the light of comparison to guide them to the truth. Plato in the "Kratylus" is almost the only Greek who has noticed the resemblance of one of these "barbarous" dialects to his own, and he has only noticed it to draw a wrong conclusion from the fact. Many Greek words, he maintains, were borrowed from abroad; and by way of examples he quotes *κύων* (the Sanskrit *'swan*, the Latin *canis*, and our *hound*), *ἕδωρ* (the Sanskrit *udam*, the Latin *unda*, and our *water*), and *πῦρ* (the Latin *pruna*, the Umbrian *pir*, and our *fire*), as being identical with the names of the same objects in Phrygian. The very fact, however, that Plato has noticed this resemblance shows that the stimulating influence of contact with Persia was still felt, even in the domain of language, when the Greeks found themselves in the presence of an allied and similar civilization, with all its contrasts to their own, and when men like Themistokles found it politic to acquire a fluent knowledge of the Persian tongue. It was not until the Empire of Alexander had overthrown that of Cyrus and Darius and impressed upon the Greek a sovereign contempt for the Asiatic, and an equal belief

in his own innate superiority, that any regard for the jargons of the "barbarians" became altogether out of the question. It was then that the masterpieces of early Greek literature came to be the sole objects of study and investigation, and philological research took the form of that one-sided, and therefore erroneous, exposition of the grammar of a single language, which has been the bane of classical philology down to our own time.

The linguistic labours of the age of the Sophists were occasioned by the needs of oratory. When rhetoric became a profitable and all-powerful pursuit, and the end of education was held to be the ability to hold one's own, whether right or wrong, and confute one's neighbour, words necessarily came to be regarded as more valuable than things, and the main care and attention of the sophist were bestowed upon the form of his sentences and the style of his argument. Just as language had been approached in the preceding period from a purely metaphysical point of view, and was to be approached in the succeeding period from a logical point of view, so now it was looked at from the side of rhetoric. It was not *etymology*, a knowledge of the "truth," that was wanted, but a knowledge of the composition of sentences and of the way in which they could best be arranged for the purposes of persuasion. The first outlines of European grammar accordingly go back to this Sophistic age. We find Protagoras criticizing the opening verse of the Iliad, because *μῆνις*, "wrath," is used as a feminine, contrary to the sense of the word, or distinguishing the three genders and busying himself with the discovery of the verbal moods, while the lectures of Prodikus were occupied with

the analysis and definition of synonyms. Some idea may be formed of the grammatical zeal of the Sophists from the "Clouds" of Aristophanes,<sup>1</sup> where he ridicules the pedantry that would force the artificial rules of grammar upon the usage of living speech.

Plato and Aristotle, the products of the impulse given to thought by that greatest of the Sophists, Sokrates, form the connecting link between the Sophistic and the Alexandrine periods, and renew in the shape required by the progress of philosophy the old contest regarding the nature of language between the followers of Herakleitus and those of Demokritus. In philology as elsewhere, the idealism of Plato stands opposed to the practical realism of his pupil Aristotle. Plato paints language as it ought to be ; Aristotle reasons upon it as it is. But in both cases it was not language in general, but the Greek language in particular, that was meant ; and owing to this short-sightedness of view and disregard of the comparative method, the theories of each, however suggestive and stimulating, are yet devoid of scientific value and mainly interesting to the historian alone. The problem of Plato's "Kratylus" is the natural fittingness of words, which finally resolves itself into the question how it happens that a word is understood by the hearer in the same sense as it is intended by the speaker. No answer is given to the question ; but the dialogue gives occasion for a complete review of the linguistic opinions prevalent at the time, and the conclusion put into the mouth of Sokrates is that while in actual (Greek) speech no natural and innate connection can be traced between words and

<sup>1</sup> 660-690.

things, it were much to be wished that an ideal speech could be created in which this natural connection would exist. In this wish, as Dr. Jolly remarks, Plato shows himself the forerunner of Leibnitz and Bishop Wilkins, the one with his "Lingua characteristica universalis," and the other with his "Essay towards a real Character and a Philosophical Language."

Aristotle, as might be expected, will have nothing to do with the theory of the natural origin of speech. He declares himself unequivocally on the side of its opponents, and lays down that language originates through the agreement and convention of men (*συνθήκη*). Words, he holds, have no meaning in themselves; this is put into them by those who utter them, and they then become so many symbols of the objects signified (*ὅταν γίνεται σύμβολον*). "For the sentence (*λόγος*), when heard, makes one's meaning intelligible, not necessarily but accidentally, since it consists of words, and each word is a symbol."<sup>1</sup> At the same time Aristotle makes no clear distinction between thought and language; *concept* and *word* are with him interchangeable terms; and his famous ten categories into which all objects can be classed are as much grammatical as logical, or perhaps more rightly a mixture of both. In his hands the rhetorical gives way to the logical treatment of language, and the sentence is analyzed in the interests of formal logic. As Kant and Hegel observed long ago, the logical system of Aristotle is purely empirical; it is based on the grammar of a single language, and is nothing but an analysis

<sup>1</sup> See the quotations in Steinthal: "Geschichte der Sprachwissenschaft bei den Griechen und Römern" (1863), pp. 181 sq.

of the mode in which the framers of that language unconsciously thought. To understand and criticize it properly we must bear this fact in mind, and remember that the system cannot be corrected or replaced until comparative philology has taught us to distinguish between the universal and the particular in the grammar of Greek and Aryan. Whatever injury, however, logic may have suffered from having been thus built up upon the idiosyncrasies of the Greek sentence, Greek grammar gained an equivalent advantage. Besides the *ὄνομα* or "noun," and the *ῥῆμα* or "verb," Aristotle now added to it the *σύνδεσμος* or "particle," and introduced the term *πτῶσις* or "case," to denote any kind of flexion whatsoever. He also divided nouns into simple and compound, invented for the neuter another name (*τὸ μεταξύ*) than that given by Protagoras, and starting from the termination of the nominative singular endeavoured to ascertain the rules for denoting a difference of gender.

The work begun by Aristotle was continued by the Stoics, who perfected his grammatical system just as they had perfected his logical system. They separated the *ἄρθρον* or "article" from the particles, and determined a fifth part of speech, the *παινδέκτης* or "adverb," they confined the *πτῶσις* or "case" to the flexions of the noun, and distinguished the four principal cases by names, the Latin translations or mistranslations of which are now so familiar to us; they divided the verb into its tenses, moods, and classes, and in the person of Chrysippus, the adherent of the Stoic school (B.C. 280-206), separated nouns into *appellativa* and *propria*. But, like Aristotle, they assumed the same laws for both thought and language, and were



thus led into difficulties and fallacies which the slightest acquaintance with another language might have prevented. Thus the logical copula was confounded with the substantive verb by which it was expressed in Greece, and false arguments were framed and supported on this assumption. Their opponents, the Epicureans, contented themselves with inquiries into the origin of speech, which had to be explained, like everything else, in accordance with the theory of atoms. The large part, however, played by the action of society in their system gave their theorizing upon the subject an accidental aspect of truth which at first sight is somewhat surprising; and even the well-known lines of Horace (Sat. I. 3. 99, *sq.*) contain a more correct representation of the primitive condition of man and the evolution of language than the speculations current upon the matter up to the last few years. Language, it was held, existed φύσει, not θέσει; but the nature which originated speech was not external nature, but the nature of man. The different sounds and utterances whereby the same object is denoted in different languages are due to the varying circumstances in which the speakers find themselves, and are as much determined by their climate and social condition, their constitution and physique, as the lowing of the ox or the bleating of the lamb. Men, indeed, create speech, not however deliberately and with intention (ἐπιστημόνως), but instinctively through the impulse of their nature (φυσικῶς κινούμενοι).<sup>1</sup> We may perhaps trace in these expressions the germs of the theory of the onomatopœic origin of language.

While the Epicureans were speculating on the origin

<sup>1</sup> Proclus, p. 9.

of speech, the grammarians of Alexandria were busying themselves with the elaboration of what the French would call a *grammaire raisonnée*. "Alexandria," says Dr. Jolly, "was the birthplace of classical philology, a study which has directly raised itself upon the ruins of the old Hellenic culture and spiritual originality." The intense mental activity and productiveness of Athens had made way for the frigid pedantry and artificial mannerisms of commentators and court-poets; the free national life and small rival states of Greece had been replaced by a semi-oriental despotism and a cosmopolitan centralization; and unable themselves to emulate the great creations of the classic age, the literary coterie of the Alexandrine Museum could do no more than admire and edit them. The very dialect in which the Attic tragedians and historians had composed and written had become strange and foreign, while the language of the Homeric Poems, which it must be remembered were to the Greeks what the Bible is to us, seemed as obscure and obsolete to the Alexandrine, as the tongue of Layamon or Piers Plowman does to the ordinary Englishman. If we add to this the existence of numerous and discordant copies of Homer, we have abundant reason for the growth of that large army of commentators, grammarians, and lexicographers which characterized the schools of Alexandria and laid the foundations of literary criticism. A minute investigation of the grammatical facts of the Greek language was rendered necessary, and a comparison of the older and later forms of the language as well as of its dialects grounded this investigation upon a comparatively secure basis. The metaphysical turn, however, given to the

first linguistic inquiries still overshadowed the whole study, and the absurd and misleading "science of etymology" remained to the last the evil genius of Greek philology. The old dispute as to the origin of words now assumed a new form, mainly through the influence of the Stoic and Epicurean systems of philosophy, and the schools of Alexandria were divided into the two contending factions of Analogists and Anomalists. The first, among whom was counted the famous Homeric critic Aristarchus, found in language a strict law of analogy between concept and word, which was wholly denied by the others. It was round this question that Greek philology ranged itself from the third century B.C. to the first century A.D., and out of the controversy it occasioned was formed that Greek grammar which created the scholars of the last four hundred years, and is still so widely taught in our own country. Thus Aristarchus, for instance, in his anxiety to smooth away every irregularity and remove all exceptions to the rules he had formulated, determined that the genitive and dative of Ζεύς should no longer be Διός or Ζήνοϛ, but Ζεός, and Ζεί, and the endeavours of his opponents to upset this piece of pedantry led to the discovery of other similar exceptions to the general rule, and to the complete settlement of this portion of the grammar. Krates of Mallos, the head of the Pergamenian school, stands forward as the chief rival of Aristarchus on the opposite side. In his hands "anomaly" was made the leading principle of language, and general rules of any sort flatly denied, except in so far as they were consecrated by custom. The purism of his opponents, who wished to correct everything which

contravened the grammatical laws they had laid down, was thus met by an unqualified defence of the rights of usage—"quem penes arbitrium est et jus et norma loquendi." Our own schoolmasters who have introduced an *l* into *could* (*coud*), the past tense of *can*, because *should* from *shall* has one, or have prefixed a *w* to *whole*, the twin-brother of *hale* (Greek *καλός*), because of the analogy of *wheel* and *which*, are the fitting successors of the Alexandrine Analogists, and it was unfortunate for both that they had no Aristophanes to transfer them to cloudland, and ridicule them in the light of common sense.

Krates, however, has better claims upon our attention than as leader of the Anomalists. To him we owe the first formal Greek grammar and collection of the grammatical facts obtained by the labours of the Alexandrine critics. That a formal grammar, which implies an enunciation of general rules as well as of the exceptions to them, should have been the work of an Anomalist rather than of an Analogist, may at first sight seem surprising; but we must recollect that the Anomalist did not deny the existence of general rules altogether, but only their universal and unqualified applicability; while the Analogist who sought to produce an artificial uniformity in language instead of accepting the facts of speech as they are, was totally unfitted for composing a practical grammar.<sup>1</sup>

The immediate cause, however, of the grammar in

<sup>1</sup> Anomalist as he was, moreover, Krates was not blind to the defects of language as it was commonly used, and it would appear that the ninth book of his Satires was devoted to the reform of orthography.

question was really the tardy comparison of Greek with a foreign tongue, the Latin, and the need of a Greek grammar felt by the citizens of Rome. Appius Claudius Cæcus (censor in B.C. 312) had already written upon grammar,<sup>1</sup> and Spurius Carvilius, a writing-master (B.C. 234), had regulated the Latin alphabet, substituting the indispensable *g* for the useless *s*, and when Krates came to Rome in 159 B.C., as the Ambassador of Attalus, the King of Pergamos, he found a ready audience for his ἀκροάσεις, or "lectures" upon the study of Greek. Almost all that the Romans knew of literary culture and civilization came from the Greeks; their native literature was coarse and insignificant, and their language uncultivated and inflexible. Education at Rome, therefore, meant education upon Greek models and in the Greek language. Boys learned Greek before they learned Latin, and the Greek words with which the plays of Plautus are strewn, as well as their Alexandrine origin, show pretty plainly that a familiarity with the language of Greece was not confined to the literary *salon* of a Scipio, or the houses of a wealthy aristocracy. Livius Andronicus, the father of Latin literature, was a Greek professor (272 B.C.), and his translation of the "Odyssey" into Latin was doubtless for the use of his pupils;<sup>2</sup> the first history of Rome,

<sup>1</sup> He introduced the practice of writing *r* between two vowels instead of *s*, and banished the use of *z* "because its pronunciation resembles the sound that passes through the teeth of a dying man" (Pomp. Dig. i. 2, 2, 36, Mart. Cap. i. 3, § 261, ed. Kopp). Panætius had read his poetical "Maxims," or "Sententiæ," which Cicero calls "Pythagorean" (Tusc. iv. 2, 4).

<sup>2</sup> Max Müller: "Lectures on the Science of Language" (eighth edition, 1875), p. 111.

that of Fabius Pictor (in 200 B.C.), was written in Greek; and even a popular tribune like Tiberius Gracchus published the Greek speech he had made at Rhodes. In fact, a knowledge of Greek was necessary not only for acquiring the barest amount of culture and education, but even for a proper acquaintance with the Latin language itself. Partly through its stiff and cumbrous immobility, partly through the want of originality in its speakers, Latin literature and Latin oratory were alike impossible without the genial and fructifying influence of the Greek. With Greek teachers and Greek models, a native literature came into existence, and the language was artificially trained to become a suitable instrument for communication between the more polished nations of the ancient world and their Roman masters. It is true that classical Latin was really more or less of a hothouse exotic, interesting therefore rather to the student of literature than to the student of linguistic science; but the attempt to rear and nurture it, to keep it unpolluted by the spoken dialects of Rome or the provinces, and to confine it within the rules and metres of a foreign rhythm made it the seedplot of grammatical questions and philological investigations. The study of grammar was of practical importance to the practical Roman; he applied himself to it with all the energy of his nature, and treated the whole subject in a practical rather than a philosophical way. Julius Cæsar, the type and impersonation of the Roman spirit, found time to compose a work, "De Analogiâ," and invent the term *ablative*, amid the distractions of political life, and even Cato with all his dogged conservatism, learnt Greek in his old age in order

that he might be able to teach it to his son. The zeal with which the deepest problems of grammar were discussed seems strange to us of to-day, but upon the settlement of these problems depended the possibility of making Latin the vehicle of law and oratory, and preventing the Roman world from becoming Greek.

The first school grammar ever written in Europe was the Greek grammar of Dionysius Thrax, a pupil of Aristarchus, which he published at Rome in the time of Pompey. The grammar is still in existence,<sup>1</sup> and its opening sentence, in which grammar is defined as "a practical acquaintance" with the language of literary men, and divided into six parts—accentuation and phonology, explanation of figurative expressions, definition, etymology, general rules of flexion, and critical canons<sup>2</sup>—has formed the starting-point of the innumerable school-grammars which have since seen the light. It has also been the cause of much of that absurd etymologizing which the Romans received from the Greeks and handed on to the lexicographers of modern Europe. Not content with transcribing the grotesque etymologies of their Greek teachers, the Latin writers strove to emulate them by still more grotesque etymologies of their own. Lucius Ælius Stilo, of

<sup>1</sup> It is given in Bekker's "Anecdota," pp. 629-643. Its authenticity is satisfactorily defended by Lersch, "Sprachphilosophie der Alten," ii. pp. 64-103.

<sup>2</sup> Γραμματική ἐστὶν ἐμπειρία τῶν παρὰ ποιηταῖς τε καὶ συγγραφεῦσιν ὡς ἐπὶ τὸ πολὺ λεγομένων. Μέρη δὲ αὐτῆς εἰσὶν ἕξ· πρῶτον ἀνάγνωσις ἐντριβὴς κατὰ προσφῶδιαν, δεῦτερον ἐξήγησις κατὰ τοὺς ἐνυπάρχοντας ποιητικούς τρόπους, τρίτον γλωσσῶν τε καὶ ἱστοριῶν πρόχειρος ἀπόδοσις, τέταρτον ἐτυμολογίας εὑρεσις, πέμπτον ἀναλογίας ἐκλογισμὸς, ἕκτον κρίσις ποιημάτων, ὃ δὴ κάλλιστόν ἐστι πάντων τῶν ἐν τῇ τέχνῃ.



Lanuvium, about 100 B.C. first gave a course of lectures on Latin literature and rhetoric, and one of his pupils, Marcus Terentius Varro, wrote five books, "De Linguâ Latinâ," which he dedicated to his friend Cicero. The "science" of Latin etymology was now founded, and a fruitful field opened to future explorers. Every word had to be provided with a derivation, and on the received principles of etymology this was no difficult task. By the law of *antiphrasis*, *bellum* is made the neuter of *bellus*, "because there is *nothing* beautiful in war;" and *parcus* is so named because the niggard "spares (*parcere*) nobody." It has been left to the vagaries of a later day to excel the Romans in this part of their labours. The lawyers tell us that *parliament* is derived from *parler*, "to speak," *mentem*, "one's mind;" Junius<sup>1</sup> that the

<sup>1</sup> A good idea of the character of his etymologizing may be gathered from the following quotation:—" *Vestis* nomen factum est per syncopen ex composito *perestis*, et mutato *r* in *s* (ut sæpe factum est), *pesestis* sive *pesestas*, a verbo *per-edo*, *per-es*, *per-est*; quo significatur, quidquid *peredit* et plane consumit et *perdit* materiam quamque, unde facta est, ut lues illa epidemica pestis appellationem obtinuerat." Elsewhere he asserts that *sin* is derived from *σίνειν*, while *so* is merely *σω* reversed. But Junius is quite equalled by Scaliger, Voss, Wachter, and other philologists of the same school. Thus Scaliger says ("De Caus." c. 35):—" *Ordinis* nomen Græcum est. Dicebant militibus tribuni—" *Hactenus* tibi licet; hic consistes: eò progredi, huc revertere; ὄρον ἔω, inde *ordo*;" and again ("De Caus." c. 28) that *quatuor* is *κατετρα*, i.e. *και τετρα* (the aspirate being dropped as among the Æolians), because when the Latins had counted "unum, alterum, tria; pro quarto dixere et alterum." Scaliger, again, agrees with Voss in deriving "*opacus* ex *Ope*, hoc est, *terrâ*; nam umbræ et frigoris captandi causa in subterraneos se specus abdebant," and *pomum* from *πῶμα*, because most fruits quench the thirst. Voss identifies the Latin *rus* with the Greek ἄρουρα, "præciso *a*," and declares: "ab ἔπω, qua notat *operor*, venit Latinum *opus*." Perhaps the



*soul* is "the well of life" from the Greek ζῆω, "to live," and the Teutonic *wala*, "well," while *merry* comes from μωρίξεν, because the ancients anointed themselves at feasts; and a book entitled "Ereuna," published as late as the year of grace 1875, would raise the envy of a Latin etymologist. When we find Jupiter (Diespiter) gravely derived in it from the "Celtic" *oyo-meir*, "infinite," and *peitir*, "a thunderbolt;" *Nemesis* discovered to be the "Celtic" *neam-aire*, "pitiless," and *manna man-neam*, "food of heaven"—we may trace the last results of that unhappy disease of "popular etymologizing" which it is the work of comparative philology to cure.<sup>1</sup>

various etymologies proposed for the word *cause* by Perottus will give the best illustration of what once passed for "a true account of the origin of words." It is either (1) from *chaos*, as being the first cause of things, or (2) from καῖσις, because heat "kindles and inflames us" to action, or (3) "a cavendo," because a cause forewarns ("cavet") us that something should or should not be done, or, finally (4), "a casu, quia causa accidit." To these Voss adds a fresh possibility, that *causa* comes from "caiso," that is, "quærere seu petere." Perottus, again, derives "*locusta ex locus et ustus*, quod tactu multa urat, morsu vero omnia erodat." We cannot but be struck by the ingenuity of these old scholars. Wachter, however, offers us equally absurd etymologies in the field of modern High German. Thus he brings *kämpfen* (from *campus*) from *kam*, "the fist," *cat* from *ge-wachten*, the French *guêter* (!), and agrees with Clauberg in making *neigen* the source of *nacht*.

<sup>1</sup> Where there is so much to choose from it is difficult to select; but perhaps the richest morsels of the book are the reference of the Latin suffix *-or* in words like *sonorous*, as well as the final syllable of Hebrew words like *tabor*, to the "Celtic" *mhor*, "great," and the derivation of the Egyptian Rameses from the "Celtic" *raromeireas*, "gasconading." The author, however, cannot claim to be *facile princeps* of the year in the matter of bad etymologizing. A certain Mr. Boulton has printed two papers, read before the Literary and Philosophical Society of Liverpool, in which, among other novel statements, he informs us that *city* is derived from the

The introduction of Greek grammar into Rome, however, was attended by another evil than the propagation of a false system of etymology. The technical terms of Greek grammar were in many cases misunderstood, and, accordingly, mistranslated. Thus, in the province of phonology, the mutes were divided into the  $\psi\iota\lambda\acute{\alpha}$  ( $k, t, p$ ), and their corresponding "rough" or aspirated sounds ( $\delta\alpha\sigma\acute{\epsilon}\alpha$ ), the soft  $g, d,$  and  $b$  being placed between the  $\psi\iota\lambda\acute{\alpha}$  and  $\delta\alpha\sigma\acute{\epsilon}\alpha$ , and consequently named  $\mu\acute{\epsilon}\sigma\alpha$ , or "middle." The Romans rendered  $\mu\acute{\epsilon}\sigma\alpha$  by *mediæ*, and  $\delta\alpha\sigma\acute{\epsilon}\alpha$  by *aspiratæ*, but  $\psi\iota\lambda\acute{\alpha}$  they mistranslated *tenuis*, and the mistranslation still causes confusion in modern treatises on pronunciation. Similarly, *genitivus*, the "genitive" or case of "origin," is a blundering misrepresentation of the Greek  $\gamma\epsilon\iota\upsilon\kappa\acute{\eta}$ , or case of "the genus," a wholly different conception; and *accusativus*, "the accusative," or case "of accusing," perpetuates the mistake which saw in the Greek  $\alpha\iota\tau\iota\alpha\tau\iota\kappa\acute{\eta}$  a derivative from  $\alpha\iota\tau\iota\acute{\alpha}\sigma\mu\alpha\iota$ , to "blame," instead of  $\alpha\iota\tau\iota\acute{\alpha}$ , "an object;" while the Greek  $\acute{\alpha}\pi\alpha\rho\acute{\epsilon}\mu\phi\alpha\tau\omicron\varsigma$  signifies "without a secondary meaning" of tense or person, and not "the indefinite" or "indetermining" as the Latin *infinitivus* would imply. We still suffer from the errors made in transferring to Rome the grammatical terminology of Alexandria.

The Romans continued to take an interest in questions of grammar and of etymology down to the last. It is true that they confined their inquiries to their own and "Celtic" *sigh-tigh* or "peace-house;" *count* from *co-meas*, "united assessment," *alderman* from *all-dor-meann*, "chief of the great door," and *custom* from *cus-do-meas*, "rent of assessment." It is needless to observe that "Celtic" with both writers means the decayed forms of an Irish dictionary.

the Greek language; the descent they claimed from Æneas and the Trojans inspired them with no desire to investigate the dialects of Asia, and even the Etruscan language and literature which lingered on almost to the Christian era at their own doors, were left unregarded by the leading philologists of Rome. In language, as in everything else, the provincial had to adapt himself to the prejudices of his conqueror. Never before or since has the principle of centralization been carried out with greater logical precision. Even Cæsar who found time to discuss grammatical questions in the midst of his campaigns in Gaul, never troubled himself to examine the language of his Gallic adversaries, or to compare the grammatical forms they used with those of Latin.

Passing by the Emperor Claudius, who endeavoured to reform the Roman alphabet, and actually introduced three new letters, we come to Apollonius Dyskolus and his son Herodian, two eminent Alexandrine grammarians of the second century. We possess part of the "Syntax" of the former, who specially devoted himself to this branch of the subject, and expressed himself so briefly and technically (like the grammarians of ancient India) as to gain the name of Dyskolos, "the Difficult." His son Herodian continued the labours of his father, and in the works of these Græco-Roman grammarians we see the long controversy between the Analogists and the Anomalists finally settled. Analogy is recognized as the principle that underlies language; but in actual speech exceptions occur to every rule, and break through the hard-and-fast lines of artificial pedantry. The Greek and Latin school-grammars of our boyhood are the heritage

that has come down to us from this old dispute and its final settlement. Dr. Jolly remarks with justice<sup>1</sup> that the radical fault of these grammatical labours was the confusion between thinking and speaking, between logic and grammar—a confusion which intruded the empirical terminology of formal logic into grammar, and was only dissipated when an investigation of the languages of the East introduced the comparative method into the treatment of speech, and showed that to interpret aright the phænomena of Greek and Latin we must study them in the light of other tongues.

The tradition handed down by Herodian was taken up by Ælius Donatus in the fourth century, and Priscian in the sixth; the former the author of the Latin grammar which dominated the schools of the Middle Ages; the latter of eighteen books on grammar, the most extensive work of the kind we have received from classical antiquity. Priscian flourished at Constantinople during the short revival of the Roman Empire and glory that marked the reign of Justinian; and one of the most noticeable things in his writings is his comparison of Latin with Greek, especially the Æolic dialect. In this he followed Tyrannio or Diokles, the manumitted slave of Cicero's wife and the author of a treatise "On the Derivation of the Latin Language from the Greek." Donatus and Priscian were the philological lights of Europe for more than a thousand years, and such lights were little better than darkness. Once, and once only, was an attempt made to break down their monopoly and to introduce oriental learning into Western education.

<sup>1</sup> "Whitney's Sprachwissenschaft," p. 66o.

Pope Clement V., at the Council of Vienne in 1311, exhorted the four great Universities of Europe—Paris, Bologna, Salamanca, and Oxford—to establish two Chairs of Hebrew, two of Arabic, and two of Chaldee, in order that their students might be able to dispute successfully with Jews and Mohammedans. About the same time Dante, in his treatise “*De Vulgari Eloquentiâ*,” compared the dialects of Italy, and selected one which he calls “*Illustrious, Cardinal and Courtly*,” spoken wherever education and refinement were to be found, and sprung from the brilliant Sicilian court of Frederick II.<sup>1</sup>—a dialect destined to become the language of the “*Divina Commedia*” and the nursing-mother of the languages and literatures of modern Europe. But elsewhere the “*Doctrinale puerorum*” of the priest Alexander de Villa Dei, or Villedieu, of Paris, written in leonine verses, was the sole grammar taught and learnt; and the Latin dictionary of Giovanni de Balbis, of Genoa, was the only guide to Latin literature. No wonder that Roger Bacon, in his “*Opus Majus*,”<sup>2</sup> has to lay down that Greek, Hebrew, and Latin are three separate and independent languages, which must be learned and treated separately and independently, and that “those words only which are derived from Greek and Hebrew ought to be interpreted by those tongues, since those which are purely Latin cannot be explained except by Latin words.” “*For,*” he goes on

<sup>1</sup> “*De Vulg. El.*” I. xii. p. 46, cxvi. (ed. Fraticelli, 1833).

<sup>2</sup> Ed. Jebb (1733), pp. 44-56. We may notice that Bacon in this part of his book (p. 44) draws attention to the existence of the French (“*Gallicorum*”), Picard, Norman, and Burgundian dialects in France, which differ from one another in many idioms and uses of words.

to say, "Latin pure and simple is quite different from every other language, and therefore cannot be interpreted from any other." The most approved scholars and etymologists of his day amused themselves by deriving *amen* from the Latin *a*, "without," and the Greek *mene* (? μένω), "defect," *parasceue* (*parasceve*) from the Latin *parare* and *cæna*, and *cælum* from the hybrid *case-helios*, or "house of the sun" (!), much in the same way that Jacobus de Voragine, the genial author of the "Legenda Aurea,"<sup>1</sup> derives Clemens from "cleos, quod est gloria, et mens, quasi gloriosa mens;" and says of the name Cæcilia, "quasi *cæli lilia*, vel *cæcis via*, vel a *cælo* et *lya*: vel Cæcilia quasi *cæcitate carens*; vel dicitur a *cælo* et *leos* quod est populus."

But even the older Humanists were not much better. They knelt before the spirit of classical antiquity with a worship at once child-like and unreasoning. Their object was to write and speak Latin correctly—that is to say, in accordance with the usage of certain literary men of Rome, not to discover the grounds on which this usage rested. Switheim declares that it matters as little to know why this or that verb governs a case, as it does to know why *bin*, the Latin *sum*, "governs the nominative, *ich, ego*." "We can say that the verb governs the nominative, because it was once so agreed among the grammarians of antiquity that the verb should govern the nominative *ante se*. If it had been agreed among the ancients that the object of the verb should be in the accusative, the verb would govern the accusative." The grammatical term "to govern" was, by the way, a legacy

<sup>1</sup> Edited by Graesse (1850).

bequeathed by the schoolmen ; and a very mischievous legacy it was. Priscian does not yet know it, though it is found in Consentius. Unreasoning and unreasonable, however, as the Humanists were in their treatment of grammar, they were outdone by the orthodox who found in the "errors" of the Vulgate—such as *Da mihi bibere*—direct proofs of Divine inspiration, and the power of the Holy Spirit to override the usual rules of grammar. Johannes de Gallandia, for instance, states boldly :—“ *Pagina divina non vult se subdere legi Grammatices, nec vult illius arte regi.*” So, again, Smaragdus writes in reference to the rule laid down by Donatus, that *scalæ, scopæ, quadrigæ* must be used in the plural : “ We shall not follow him because we know that the Holy Spirit has always (namely, in the Vulgate) employed these words in the singular.”<sup>1</sup>

We have seen that a knowledge of more than one language is an indispensable preliminary to the formation of a grammar of either ; we have seen also that it was among the Semites of Babylonia and Assyria that the earliest grammatical essays were first made. The impulse given to grammatical studies by these attempts did not survive the fall of Babylon ; and though the Jewish schools in Babylonia and elsewhere were forced to accompany the extinct Hebrew of their sacred books with glosses and commentaries in Aramaic, they produced nothing that can be called with any truth a grammatical work. It was not until the foundation of the School of Edessa, in the sixth century, that the traditions of the

<sup>1</sup> See Thurot : “ *Extraits de divers Manuscrits latins pour servir à l'histoire des Doctrines grammaticales au Moyen Age* ” (1869).



scribes of Assur-bani-pal were taken up by their successors in Mesopotamia. The study of Greek for ecclesiastical purposes among the Syrian Christians led to the compilation of a Syriac grammar; and Jacob of Edessa (A.D. 650-700) succeeded in elaborating one which served as a model for all succeeding works. His whole grammar, however, was based on that of the Greeks, and his terminology was either borrowed directly from the Greek, or formed after the analogy of his Greek originals. Jacob, to whom the systematization of the Syriac vowel-points is to be ascribed, was followed by Elias of Nisibis (eleventh century), and John Barzugi (thirteenth century), who, says M. Renan, "may be regarded as the author of the first complete grammar of the Syriac language."<sup>1</sup> The Arabs were not slow to imitate the example of their Syrian neighbours. The preservation of the text of the Korân turned their attention to philological studies at an early period; and we may assign the real foundation of Arabic grammar to the end of the seventh century, when Abul-Aswed (who died 688 A.D.) introduced the diacritical points and vowel-signs, and wrote some treatises on several questions of grammar. His labours were continued in the schools of Basra and Kufa, and Sibawaih (770), the oldest grammarian whose works have come down to us, shows us Arabic grammar almost complete. His successors, as M. Renan remarks, did little more than fill out the details of his teaching; and in the fifteenth century, Suyuthi knows of no less than 2,500 grammarians who had made a name in Arabic literature.

<sup>1</sup> "Histoire des Langues sémitiques," p. 272.



With Syriac and Arabic grammars thus formed, and the doctrine of trilateral roots enunciated, all that was wanting was to work out a comparative grammar of the Semitic dialects. Just as the grammarians of Greece and Rome had perceived the connection that existed between the two languages, and in their haphazard and arbitrary fashion had endeavoured to trace the origin of Latin words to Greek sources, so the relationship between the Semitic idioms could not but be detected as soon as serious labours were commenced upon them; and the closeness of this relationship prevented the errors and absurdities into which the classical grammarians were betrayed by their ignorance of other tongues. To the Jews belongs the merit of first formulating what we may term a comparative grammar. The Saboreans and Masoretes in the sixth century did for the Old Testament what the Alexandrine Greeks had done for Homer, the Arabs for the Korân, and the Hindus for the Veda; and in the tenth century a Hebrew grammar was founded under Arabic influence, and with it a comparative grammar of the Semitic languages. The Jews, who had warmly received Mohammedan culture, and even become intermediaries between their Arabic masters and the "infidel" philosophy of Greece, were necessarily bilingual; and the first fruits of this necessity were the grammatical works of the Gaon, Saadia-el-Fayyumi (who died 942). After Saadia came Menahem-ben-Seruk of Tortosa (960), and Dunash-ben-Librât of Fez (970), who composed the first works on Hebrew lexicography, and of whom the latter declares that he "compares the relation of Arabic and Hebrew, counts all the genuine words of Arabic which

are found in Hebrew, and points out that Hebrew is pure Arabic." About the same time Judah Khayyug of Fez gave an exhaustive account of defective roots and the permutation of servile letters, while Jonah ben Gannach of Cordova (in Arabic Abul Walid Mervan-ibn-Janah), in the eleventh century, completed the grammatical labours of his predecessors.

With the decline of Arabic supremacy and the introduction of Neo-Hebrew arose a new school of Hebrew philology, of which the Kimchi of Narbonne (A.D. 1200) are the leading representatives. This school was less comparative than the foregoing, and the rabbinical spirit that prevailed in it, though conducing to minute accuracy, was not favourable to philological progress. It was, however, the instructor of the Christian scholars of the Renaissance, whose zeal for knowledge and learning brought the study of Hebrew and its cognate languages within the circle of European thought. The Reformation, breaking as it did with the mediæval Church, and making its appeal to the Scriptures themselves, made a knowledge of the original language of the Old Testament indispensable. Christian scholars like Reuchlin, the two Buxtorfs, Richard Simon, Ludolf, Schultens, or our own Castell and Pococke, devoted themselves to a study of Semitic philology with the same energy and success as men like the Stephenses, the Scaligers, and the Vosses to a study of classical philology. Lexicons and grammars were compiled, texts were critically examined and edited, and a comparative dictionary of the Semitic languages was brought out. It was inevitable that men who were at once masters of Hebrew and Greek should discover re-

semblances and coincidences between the two languages. Hebrew grammar was cast into a classical mould, and Latin and Greek words were derived from Hebrew roots. Hebrew, it was argued, was the sacred language which had been spoken by Adam and the patriarchs, since the names of our first parents and their offspring are of Hebrew origin; and it was therefore clear that Hebrew must have been the primæval speech used before the confusion of tongues at Babel, the primitive source from which the manifold dialects of the world have been derived. A new etymological system accordingly sprang up, quite as grotesque in its rules and its results as the old etymological system of Greece and Rome; and dictionaries of Latin and English appeared in which every word was provided with its Hebrew original.<sup>1</sup> Since Hebrew is written from right to left, it was assumed that a Hebrew root could be read the reverse way if a satisfactory etymology was not otherwise forthcoming; and as the profane languages might be expected to retain some reminiscences of their sacred mother, a similar procedure was adopted to connect words in English and the classical tongues with one another, and so *stum* was proved to come from the Latin *mustum*, and the Latin *forma* from the Greek *μορφή*. It was not the only instance in which theological prepossessions have injured the cause of philology.

With Herder and Lessing, however, a new era of thought and philosophy began. The mechanical explanation of the world was superseded by a psychological one; the idea of development took the place of the idea

<sup>1</sup> Thus Voss derives *νεός* from the Hebrew particle *nâ*, "now."

of contract and convention. Herder devoted a special treatise to the "Ideal of Speech,"<sup>1</sup> and a prize offered by the Berlin Academy for the best essay on "the Ideal of a Perfect Language," was won by Jenisch in 1796. The work of Jenisch bore the ambitious title, "A philosophico-critical Comparison and Estimate of Fourteen of the Ancient and Modern Languages of Europe, viz., Greek, Latin, Italian, Spanish, Portuguese, French, English, German, Dutch, Danish, Swedish, Polish, Russian, Lithuanian." But Jenisch was still under the dominion of the assumption which made the Roman jurist discover his *jus gentium* in those points in which the laws of different nations agreed; he finds the ideal of a perfect language in the fourteen languages of his title, all deviations from their grammar being characterized as "less perfect formations." Richness in the vocabulary, expressiveness, clearness, and euphony are the four marks of superiority. The value of Jenisch's lucubrations, however, may be judged from his statement that the Greek case-endings were probably modelled after those of Hebrew. It needed the genius of Herder to recognize that the language of a people is but the expression of its spiritual life, and to lay down in his "Ideen" (1785) that "in each language the understanding and character of its speakers reflects itself." A step forward was made by Mahn in his "Representation of Lexicography from every Point of View," published in 1817. In this (p. 264) he divides the history of speech into three periods corresponding with the periods in the life of the individual—

<sup>1</sup> See second edition of first collection of "Fragmente zur deutschen Literatur" (1768).

childhood, youth, and age—severally distinguished by memory, imagination, and intellect. The first period is that in which language was formed, the second that in which it was perfected, the third that in which it was made logical.

If language is logical it is evident that the categories of grammar ought to correspond with the categories of logic, and attempts were accordingly made to sketch the outlines of a universal grammar. In 1801 Vater brought out his "Versuch einer allgemeinen Sprachlehre," with an introduction on the nature and origin of speech, and an appendix on the adaptation of the rules of universal grammar to those of the grammars of individual tongues. But Vater chose "the high *priori* road;" he assumed that the first men spoke in accordance with the forms of logic, and instead of tracing the history of grammar in the records of living speech, made that alone normal and correct which seemed to himself to be so. This work of Vater's was followed, three years later, by a translation of De Sacy's "Axioms of Universal Philology," and in 1805 by a "Lehrbuch allgemeiner Grammatik." Comparative grammar is defined as a setting side by side of the forms of different languages for the sake of reaching that which is "common" to them; but this definition is only scientific in appearance; what is "common" turns out to be not the original forms of a parent-speech, but the forms which a philosopher of the eighteenth century believed to lie at the bottom of "universal grammar."

This idea of a universal grammar was due partly to the influence of an age which believed the ultimate analyses of logic to represent the thoughts of primitive

man, partly to the unmethodical comparison of a variety of languages, some ancient, some modern, and some as unrelated to one another as Greek and Hebrew. But it was also in some measure the result of a revived study of the old Greek theories about language. Our countryman James Harris led the way with his "Hermes, or a Philosophical Enquiry concerning Universal Grammar" (1765). The work was an important one, for it not only stimulated an interest in linguistic studies, but also recalled attention to the labours of those who had built up the framework of our school grammars. Harris was succeeded by Horne Tooke, whose "Diversions of Purley," however imperfect and erroneous from the point of view of modern scientific philology, threw a charm over what had hitherto seemed repulsive inquiries into the words and forms of speech, and laid down the axiom that we must first investigate the older forms of a language before we can determine the origin and nature of their later equivalents. But Horne Tooke's work was composed in the interests of a philosophical theory, and its keynote is struck in the assertion that *truth* is that which a man *troweth*. Things are but the reflection of words, and words are what men deliberately make them. Grammar is no organic growth, but the mechanical invention of mankind. And just as the first men framed it in ignorance and imperfection, so the philosophers of the eighteenth century could reframe it according to the requirements of formal logic. It was the old mistake of the Greek Analogists over again, only with the difference that they thought of the grammar of a single language alone, whereas the more ambitious

philologists of the "Aufklärung" aimed at producing a grammar which would be applicable to all tongues.

The French Encyclopædia was the manifesto of the "Aufklärung," and the Encyclopædia devoted six of its volumes to grammar and literature. Grammar is divided into general and particular, and while general grammar is defined as "la science raisonnée des principes immuables et généraux de la parole prononcée ou écrite dans toutes les langues," particular grammar is defined as "the art of applying to the immutable and general principles of the word whether pronounced or written the arbitrary and customary usages (*institutions*) of a special language." In accordance with the lines thus traced out, Gottfried Hermann, in 1801, published his work, "De emendendâ ratione Græcæ Grammaticæ," and G. M. Roth brought out his "Antihermes, or Philosophical Researches into the pure apprehension of Human Speech and Universal Philology" in 1795, and his "Outlines of pure Universal Philology for the use of Academies and advanced classes in the Gymnasia" in 1815. As yet neither families of speech nor the morphology of language were even dreamt of; and the "principles" derived from the school grammars of Greece and Rome, supplemented by the categories of modern philosophical systems, were supposed to apply to all languages alike. It was reserved for A. F. Bernhardi, the pupil of F. A. Wolf and Fichte, the friend of Tieck and Schlegel, to approach towards a truer conception of the nature and relationship of speech in his "Sprachlehre," which he dedicated to his master Wolf. The first part of this work appeared at Berlin in 1801, under the title



of "Reine Sprachlehre," the second part, "Angewandte Sprachlehre," being published in 1803, and the third part, "Anfangsgründe der Sprachwissenschaft," in 1805. Bernhardi first caught sight of the fact that whereas, from a purely scientific point of view, the grammar of every language follows its own independent and peculiar line, for practical purposes we must dwell mainly upon those particulars in which it agrees with the grammars of other tongues.<sup>1</sup> According to Haym his book was "the first entrance of the spirit of the romantic movement into the sphere of real science." Language is defined "as an allegory of the understanding, which expresses and represents itself, according to its inherent nature, through this externalization." Hence a connection is sought between the sound and the thing signified; the initial liquid of *light*, for instance, indicates the sense of the word, whether used as a substantive or as an adjective. In the second part of his work Bernhardi discusses the relation of language to poetry on the one side, and to science on the other, and, as might have been expected from his definition of it as an allegory, regards it as being in its very essence the lyrical utterance of the primitive poet.<sup>2</sup>

Meanwhile the etymologists went on with their work of random guessing, with little heed to the labours of continental scholars upon a philosophy of grammar. In

<sup>1</sup> See Pott: "W. von Humboldt's Verschiedenheit des menschlichen Sprachbaues" (1876), I. p. cciv.

<sup>2</sup> On this book of Bernhardi's was founded Reinbeck's "Handbuch der Sprachwissenschaft, mit besonderer Hinsicht auf die Deutsche Sprache" (1815)—intended for school use.



this country Dr. Murray's "History of the European Languages" was posthumously published in 1823, in which he holds that all the manifold languages of the world are derived from a single primeval one which consisted of a few monosyllables, AG or WAG being the first articulate sound. To this primeval language the Teutonic, and not the Hebrew, "comes nearest;" and it is only fair to say that the relationship of Sanskrit and Persian to the Aryan dialects of Europe is recognized, and a full account given of the ancient Indian speech. In an appendix Dr. Murray also pointed out what we should now term the Aryan affinities of the Scythian words preserved by the classical authors. But his principles of etymology were the same as those of the Greeks; similarity of sound was sufficient to prove identity of origin. And every word, from whatever quarter it may be gathered, is forced to become a proof or an example of the descent of language from his nine monosyllabic interjections. A volume, published in 1800 by W. Whiter, under the ambitious title of "Etymologicum Magnum, or Universal Etymological Dictionary," is not content even with the limits prescribed to himself by Dr. Murray. English, Greek, Latin, French, Irish, Welsh, Slavonic, Hebrew, Arabic, Gipsy, Coptic, and many more, are all mixed up together with the most impartial prodigality. The character of the work may be judged of by the assertion of the writer, "that from a hord of vagrant Gipsies once issued that band of sturdy robbers—the companions of Romulus and Remus;" this being based on the fact that the Gipsies "are in their own language called Romans, or Romani." After this we need not be sur-

prised at being told that the English *give* and *shaft*, the Hebrew *gabbe* (*sic*), the Chaldee *gavar*, the French *javau*, the German *garbe*, and the Latin *sparum*, have all one and the same origin ; or that *sepulcrum* is derived from the Hebrew *kabar*, "to bury," and the Celtic *pen* from the Hebrew *phânâh*, "to incline."

What has been termed the discovery of Sanskrit by Western scholars put an end to all this fanciful playing with words and created the science of language. The native grammarians of India had at an early period analyzed both the phonetic sounds and the vocabulary of Sanskrit with astonishing precision, and drawn up a far more scientific system of grammar than the philologists of Alexandria or Rome had been able to attain. The Devanâgari alphabet is a splendid monument of phonological accuracy, and long before the time of Saadia and Khayyug, the Hindu "Vaiyâkaranas," or grammarians, had not only discovered that roots are the ultimate elements of language, but had traced all the words of Sanskrit to a limited number of roots. Their grammatical system and nomenclature rest upon a firm foundation of inductive reasoning, and though based on the phenomena of a single language, show a scientific insight into the nature of speech which has never been surpassed.

It is possible that the democratic movement of Buddhism which broke down caste and raised the inferior dialects and languages of India to the same level as the sacred Sanskrit of the Veda, had much to do with the extraordinary success of the Hindu grammarians. The immediate object of their investigation was the language of the Rig-Veda, which had become obscure

and partly obsolete through the changes wrought by time upon the spoken tongue. The Rig-Veda, pre-eminently called "*the Veda*," is a collection of hymns and poems of various dates, some of which go back to the earliest days of the Aryan invasion of north-western India; the whole collection, however, may be roughly ascribed to at least the fourteenth or fifteenth century B.C. In course of time it came to assume a sacred character, and the theory of inspiration invented to support this goes much beyond the most extreme theory of verbal inspiration ever held in the Jewish or the Christian Church. The Rig-Veda was divided into ten *mandalas* or books, each *mandala* being assigned to some old family; and out of these were formed three new Vedas—the Yajur, the Sâma, and the Âtharva. The Yajur and the Sâma may be described as prayer-books compiled from the Rig for the use of the choristers and the ministers of the priests, and contain little besides what is found in the earliest and most sacred Veda. Along with the latter they sometimes go under the name of the Trayî or "Triad," a name which implies that the Âtharva-Veda was not yet in existence when it was given. In fact, the Âtharva may be described as a collection of poems mixed up with popular sayings, medical advice, magical formulæ, and the like. It was assigned to the Brahman or fourth class of priests, who superintended the ritual, just as the Sâma-Veda was assigned to the choristers, the Yajur-Veda to the acolytes, to whom the manual work involved in a sacrifice was delegated, and the Rig-Veda to the Hotri, or priest proper, who had to recite portions of it, whence its name of Rig, or "Praise."

The period that must have elapsed before the hymns of the Rig could have been collected together, invested with a sacred character, and elaborated into a ritual, must have been considerable; but not until this was done, and the three supplementary Vedas composed, was the whole Veda or depository of sacred "knowledge" complete. At a later date came the Brâhmanas, or commentaries on the Veda, the object of which was to explain obscure passages in the old hymns, and the erroneous and absurd explanations sometimes offered show pretty plainly how much both the language and the ideas of the people had changed. The sacredness of the Veda was reflected upon the Brâhmanas themselves, and a time came when they too began to be regarded as divine, and to be superseded by the Sûtras, the "strings" or manuals of the grammarians. The diffuse style of the Brâhmanas made way for the scientific brevity of the Sûtras, and Hindu literature entered upon its Alexandrine stage. Even the grammar of the Brâhmanas became archaic; and accordingly, though the Veda was the primary object of the grammarians' labours, the Brâhmanas also had a share in their regard. The Sûtras endeavour to explain the Veda and all connected with it—a principal part of their work being naturally an explanation of the Vedic language and grammar. But, before this could be effected, an accurate register of the facts was required, and the Masoretes of India accordingly divided and counted, not only the verses and words, but even the syllables of the Rig-Veda. According to 'Saunaka, the teacher of Kâtyâyana, the 1,028 hymns of the Rig-Veda contain 10,616 (or 10,622) verses, 153,825 words (*padas*), and 432,000 syllables,

eleven of the hymns being of later date than the rest ; and since the number of syllables and words given by 'Saunaka is the number found in our present texts, it is clear that the Rig-Veda has been handed down, from the sixth century B.C. to our own day, with the most perfect precision. This is the more astonishing at first sight, from its being handed down orally alone ; but the labours of 'Saunaka and his brother scholars had much to do with the result. The numbering of the syllables of the Veda led to the formation of the so-called Pada-text, in which the single words are divided one from another, instead of being run together in accordance with the laws of Sandhi. These laws require that the final letter of a word should be modified by the initial letter of the word that follows, the consequence being that two separate syllables (as in *tad 'srutwâ*, "having heard that") are made to coalesce into one (*tachchrutwâ*). To resolve these amalgamated syllables was to discover the phonetic rules and principles which regulated the pronunciation of Sanskrit, and to lay the foundation of a scientific phonology.

But a more important work remained behind. Kautsa, a grammarian of the fifth or sixth century B.C., tells us that the language of the Rig-Veda had by that time become so obsolete as to be understood with difficulty, and yet the exact recital of the hymns had come to be regarded as indispensable for the performance of religious service. The Prâti'sâkhyas, the oldest production of the grammatical school, show a surprising acquaintance with the physiological facts of phonetic utterance, and far surpass the most advanced labours of the Greeks in the

same direction. The Nighantavas, a little later, contain a list of rare Vedic words, and perhaps started the controversy which broke out shortly afterwards among the grammarians as to the origin of the nouns. 'Sâkatâyana and his followers, the Nairuktas, or Etymologists, maintained that they were all derived from verbs; while his opponents, Gârgya and others, called the Vaiyâkaranas or Analyzers, sought to show that some at least had a different origin. In the end, however, the party of 'Sâkatâyana proved victorious, and the result was not only the formation of the Sanskrit dictionary, but, what was far more important, the clear enunciation of the doctrine of roots. In the hands of Yâska and Pânini the doctrine became fruitful in consequences; the classical language of India was thoroughly analyzed, and the essential part of each word marked off from its formative suffixes. In short, a scientific grammar was created. The *Nirukta*, or "Etymology," of Yâska is a model of method and conciseness, though it is thrown into the shade by the grammar of Pânini. This was the crowning work of the Hindu grammarians, and, composed as it was in the fourth century B.C., may well excite our astonishment and admiration. In eight books, and about 4,000 short rules, it sums up the principles of Sanskrit phonology, the declension of the noun and the conjugation of the verb (which agree in the main with those worked out by the Greek grammarians), the nature of the adverbs and other particles, the rules of syntax, which are interspersed among the various divisions of the accidence, the etymology of words, with an exhaustive list of "primary" and "secondary" formative suffixes, and a minute analysis

of composition which has been the basis of modern attempts to deal with this intricate subject. As an appendix to his Grammar, Pânini also compiled a list of roots (*dhâtus*, or "elements"), amounting in all to about 1,700.

The brevity and compactness of the work was much aided by the algebraic system of symbols by which the various terms of grammar were expressed. Thus, in Pânini, a verbal termination is denoted by *l*, the endings of the primary tenses by *lt*, those of the secondary tenses by *ln*, the special tenses and moods being pointed out by an inserted vowel, as *lât* for the present, *lot* for the imperative, and so on. The mathematical character of this device shows the precision with which the several rules of grammar had been ascertained and laid down, as well as the instinctive recognition that there was a science of grammar as well as a science of mathematics. It only remained for a later generation of Western scholars to demonstrate that such was really the case.

It may seem strange that this later generation was so long in coming. Already, at the end of the sixteenth century, an Italian, Filippo Sassetti, during a five years' residence in India, had made himself acquainted with Sanskrit, and drew attention to the likeness between the Sanskrit numerals and other words and corresponding words in his native language.<sup>1</sup> Another Italian, Roberto de Nobili, who went to India in 1606 as a missionary, actually transformed himself into a Brahman, in order to win over the Hindus; and after acquiring a knowledge not only of Tamil and Telugu, but also of Sanskrit,

<sup>1</sup> "Lettere," p. 415 *sq.* (Florence, 1855.)



“showed himself in public, dressed in the proper garb of the Brahmans, wearing their cord and their frontal mark, observing their diet, and submitting even to the complicated rules of caste.”<sup>1</sup> One of his converts—so at least Professor Max Müller thinks—composed the curious Ezur, or fourth Veda, which professes to be a lost Veda that he came to preach, and “contains a wild mixture of Hindu and Christian doctrine.” Fifty years after De Nobili a German missionary, named Heinrich Roth, was able to dispute in Sanskrit with the Brahmans, and in 1740 a Frenchman, Père Pons, sent home a comprehensive and fairly accurate report upon Sanskrit literature. It was not till 1790, however, that the first Sanskrit grammar was published in Europe, at Rome, by two German friars, Hanxleden and Paulinus a Sancto Bartholomeo, whose real name was Philipp Wesdin. Some years before (in 1767) the Frenchmen Cœurdoux and Barthélemy had written from Pondicherry to the Academy to express their opinion that a relationship existed between the vocabularies of Sanskrit, Greek, and Latin, and to prove that this relationship could not be accounted for by the hypothesis of borrowing. Their letter, however, though read in 1768, was not printed until 1808, after the death of Anquetil-Duperron, and at the end of one of his *Mémoires*. Meanwhile English and German scholars had entered the field, and the opinion expressed by the French missionaries had become a belief of the learned world.

In 1784 the Asiatic Society was founded at Calcutta, and its first members did their utmost to extend a know-

<sup>1</sup> Max Müller : “Lectures,” p. 155.



ledge of the Sanskrit language and literature. Halhed, in the preface to his "Grammar of Bengali," published in 1778, had noticed the "similitude of Sanskrit words with those of Persian and Arabic, and even of Latin and Greek;" and Sir William Jones,<sup>1</sup> addressing the Asiatic Society at Calcutta in 1786, states that "no philologer could examine the Sanskrit, Greek, and Latin, without believing them to have sprung from some common source which, perhaps, no longer exists. There is a similar reason," he goes on to say, "though not quite so forcible, for supposing that both the Gothic and Celtic had the same origin with the Sanskrit. The old Persian may be added to the same family."

Here, then, was the great discovery made. It required a man like Sir William Jones, who united the tastes of the poet and *littérateur* with those of the linguistic scholar to overcome the prejudices of a classical education, and to admit that the languages of Greece and Rome had the same origin as the languages of the despised Hindu. It required still greater insight and sobriety to trace them all from a common source, rather than to magnify the newly acquired Oriental speech by making it the parent of the languages of the West; and though we may now smile at his attempt to explain classical mythology by comparing its personages with Indian deities with similarly sounding names, Sir William Jones deserves to be remembered as the pioneer of comparative philology. He stands out in honourable contrast to Dugald Stewart, the Scotch philosopher of common sense, who, in absolute

<sup>1</sup> "Works, with Life," by Lord Teignmouth (1807), iii. p. 34.

ignorance of even a single Sanskrit character, undertook the task of proving that Sanskrit and Sanskrit literature were alike the inventions of the Brahmans, and that they were forged after the model of Greek and Latin in order to deceive European scholars. It was not the first time that philosophy and common sense have found themselves opposed to unwelcome knowledge.

Lord Monboddo, Stewart's fellow-countryman, showed himself a sounder critic and a more unprejudiced inquirer.<sup>1</sup> His friend, Wilkins, the translator of the "Bhagavadgīta" and "Hitopade'sa," and author of a Sanskrit grammar, proved to his satisfaction that Sanskrit was "a richer and in every respect a finer language than even the Greek of Homer," and that the likeness between Sanskrit on the one side, and Greek and Latin on the other, demonstrated the descent of all three from some common primæval tongue. The Scotch judge accordingly found a niche for the new discovery in his theory which derived mankind from two tailless apes, and the languages of the world from the Osirian language of Egypt. Sanskrit, it was plain, had been introduced into India by Osiris, just as Greek had been brought into the Peloponnesus by the Pelasgians. Not only the numerals, "the use of which must have been coeval with civil society," or the words of common life, but even the grammatical forms of a verb like *asmi*, "I am," are produced in evidence of the relationship of the classical languages of Europe and of India. As early as 1795 Lord Monboddo was not far from the discovery of that Indo-

<sup>1</sup> The second edition of his work on Language, in six vols., "with large additions and corrections," was published in 1774.

European family of speech which has been the starting-point and foundation of the science of language.

Both Sir William Jones and Lord Monboddo, however, did no more than draw aside the curtain for a moment and reveal the new world that lay behind. It was reserved for Germany to accomplish what England had begun. The genius of Leibniz had already prepared the way by overthrowing the belief that Hebrew was the original language from which all others are to be traced, and by setting missionaries and others to work in compiling vocabularies, grammars, and phrase-books of the manifold dialects of the world. Thus, in thanking Witsen, the Burgomaster of Amsterdam, for a translation of the Lord's Prayer into Hottentot, he writes: "Remember, I implore you, and remind your Muscovite friends, to make researches in order to procure specimens of the Scythian languages, the Samoyedes, Siberians, Bashkirs, Kalmuks, Tungusians, and others;" and his sound scientific instinct makes him ask (in his "Dissertation on the Origin of Nations," 1710): "Why begin with the unknown instead of the known? It stands to reason that we ought to begin with studying the modern languages which are within our reach, in order to compare them with one another, to discover their differences and affinities, and then to proceed to those which have preceded them in former ages, in order to show their filiation and their origin, and then to ascend, step by step, to the most ancient tongues."<sup>1</sup> He found an illustrious convert in Catherine of Russia, who once shut herself up for nearly

<sup>1</sup> Quoted by Max Müller: "Lectures," i. p. 150.

a year in order to work at her "Comparative Dictionary of Languages," and the "Catalogo delle Lingue conosciute e notizia della loro affinitá e diversitá" (1784) of the Spanish Jesuit missionary, Don Lorenzo Hervás and the "Mithridates" of Adelung and Vater are, as Professor Max Müller has observed, plainly due to his influence. The efforts of Leibniz were seconded in another direction by those of Herder, to whom we may trace the conception of a comparative treatment of literature and a recognition of the merits of literary remains beyond those of Greece and Rome. Herder, as has already been remarked, made the rise of an historical science possible by substituting the idea of development for that of uniform sequence in history, and his treatise on the "Origin of Speech," crowned by the Berlin Academy in 1772, dissipated for ever the theory that language was a miraculous gift and not the slowly evolved creation of the human mind. The German mind was already prepared to seize and unfold the consequences which resulted from the discovery of Sanskrit. It was a poet, Friedrich Schlegel, however, and not a philologist, who first laid down the great fact that the languages of India, Persia, Greece, Italy, Germany, and Slavonia form but one family, daughters of the same mother, and heirs of the same wealth of words and flections. Schlegel learnt Sanskrit while in England during the peace of Amiens (1801-1802), and to his work on "The Language and Wisdom of the Indians," published in 1808, may be traced the foundation of the science of language. All that was now required was some master-scholar who should continue the work begun by Schlegel,

and establish on a deep and firm basis the edifice that he had reared. This master-scholar was found in Francis Bopp.

Bopp, the true founder of comparative philology, made himself acquainted with Sanskrit during a visit to England and the India House library, and in 1816 appeared his famous work, "Das Conjugationssystem," published at Frankfurt, in which a minute and scientific comparison was instituted between the grammatical systems of Sanskrit, Greek, Latin, Persian, and German. It was not until 1833, however, that the first volume of his "Comparative Grammar of Sanskrit, Zend, Greek, Latin, Lithuanian, Slavonic, Gothic, and German" came out, though several minor productions on Comparative Philology had appeared meanwhile, and not until 1852 was the final volume of the Grammar completed. Bopp was the author of the method which must be followed by every student who pretends to a scientific treatment of language; and though there is naturally much in his work that has since needed revision, the main results at which he arrived will always remain among the fundamental truths of linguistic science. His Sanskrit grammars were published in 1827, 1832, and 1834, and his "Vergleichendes Accentuations-System," published in 1854, not only pointed out the striking analogy between the accentuation of Greek and Sanskrit, but also laid the basis of all future inquiries into the subject. But even Homer nods at times; and as if to warn us against following too implicitly any leader, however illustrious, Bopp sought to include the Polynesian dialects in his Indo-European family, and thereby violated the very method

that he had himself inaugurated.<sup>1</sup> His attempt to connect the language of Georgia with the same family was not more fortunate;<sup>2</sup> and though Georgian is undoubtedly inflectional in character, its flections are now known not to be those of the Aryan group, nor its structure and roots those which distinguish an Aryan tongue. Even the errors of a great mind are instructive, and serve to illustrate the soundness of the method which they violate.

Bopp's work was confined to the more strictly scientific and inductive side of comparative philology, to the comparison of words and forms, and the conclusions we may infer therefrom: the metaphysical side of the science of language found an able expositor in Wilhelm von Humboldt. Starting with the new method of Bopp, Humboldt revised the old endeavours to found a philosophy of speech, and extended the results obtained by Bopp to all the manifold languages of the world. In a number of publications, more especially the introduction to his great work on the Kawi language of Java, which came out after his death in 1836,<sup>3</sup> he dealt with the various problems raised by the science and philosophy of language, and not only sketched the general outlines of a true philosophy of speech, but also threw out suggestions which have since borne abundant fruit in the hands of other scholars. Humboldt's work was followed up by Steinthal, whose journal, the "Zeitschrift

<sup>1</sup> "Ueber die Verwandtschaft der malayisch-polynesischen Sprachen mit den indisch-europäischen" (1841).

<sup>2</sup> "Die kaukasischen Glieder des indo-europäischen Sprachstammes," 1847.

<sup>3</sup> See the Edition of Pott, published in two volumes in 1876.

für Völkerpsychologie und Sprachwissenschaft,"<sup>1</sup> conducted with the help of Lazarus, has proved a treasury of suggestive thought to a whole generation of linguistic scholars. Bopp, on the other hand, was followed by Pott, whose vast knowledge and genial insight are probably unequalled among the students of language. His "Ety-mologische Forschungen," in spite of its size and want of an adequate index, is a mine of philological wealth, and his works on the "Language of the Gipsies" (1846), on "Proper Names" (1856), and on the "Quinary and Vigesimal Systems of Numeration" (1847), have largely helped the progress of linguistic science. In the "Anti-Kaulen," or "Mythical Representations of the Origin of Peoples and Languages" (1865), and "The Inequality of the Races of Men" (1856), where a great display of anthropological knowledge is made, Pott did good service in checking the unifying haste of a young science.

While Humboldt and Pott were laying broad and deep the foundations of the new science of language, Jacob Grimm was applying the method of Bopp in another and more special direction. Instead of endeavouring to grasp the whole vast range of languages, or even those of the Aryan group alone, he devoted himself to the minute and scientific study of one branch of them only, and his "Deutsche Grammatik" (1819-1837) ushered in a new epoch in the history of comparative philology. Benfey, indeed, still carried on with a master's power the labours begun by Bopp and Pott, but he too had by degrees to adapt himself to the spirit of the time, and the fame he has acquired as a Sanskrit scholar

<sup>1</sup> Beginning in 1859.



far outshines that acquired by his brilliant but ineffectual attempt to reduce the Aryan and Semitic families of speech to a single stem, or by his "History of the study of Language and of Oriental Philology in Germany, since the beginning of the sixteenth century" (1869). The time was come for a microscopic rather than a telescopic view of language and languages; the broad outlines of linguistic science had been sketched by its first founders, and what was now wanted was to fill up the details, to apply the general principles of the science to special cases, and, by a close and accurate study of particular languages and dialects, either to confirm or to overthrow the conclusions at which they had arrived. No single man can know thoroughly more than a few languages at the most; for the rest he must be content to trust to the report of others; and however great may be his genius, however wide-reaching his vision, unless the materials he uses have already been sifted and arranged in the light of the comparative method, his most important inferences are likely to be vitiated. Hence the value of the work begun by Grimm, and of the direction in which he turned the course of scientific philology. Erasmus Rask, the Dane, followed up the example thus set with an investigation of the northern languages of Europe, and his researches into the language of the Zend-Avesta, the first ever undertaken by an European scholar, formed the scaffold upon which Eugène Burnouf erected the colossal structure of Zend philology. Burnouf did for Zend and Achæmænian Persian what Grimm had done for the Teutonic languages; his work has been continued by Lassen, Haug,



Spiegel, Justi, and others. Meanwhile the Romance languages were taken in hand by Diez, whose "Comparative Grammar" (1836), and "Comparative Dictionary" (1853),<sup>1</sup> are masterpieces of method and insight. Indeed, they may be said to have created Romance philology altogether. The philology of the Keltic dialects was set on a scientific footing by our own countryman, Prichard, and above all by Zeuss and Stokes, while Miklosich and Schleicher did the same for the Slavonic tongues. Along with his special labours in Slavonic, Schleicher carried on the tradition of a wider and more general treatment of the whole Indo-European family itself, and his "Compendium of Comparative Grammar" (1861-2), in which he endeavoured to restore the grammar of the parent Aryan speech, will ever remain a monument of learning and genius. Schleicher also came forward as the representative of the view which includes the science of language among the physical sciences, and his works, whatever may be thought of the theory that underlies them, have done much to further the progress of linguistic study.

Grimm and his school acted wisely and scientifically in beginning with the modern languages whose phonology and pronunciation, the skeleton of all real linguistic science, can be fully known, and whose idioms, the life-blood, as it were, of language, are still living and familiar. But language, like all things else connected with man and his mind, is a self-developing organism, and as such must be studied historically. Consequently,

<sup>1</sup> A new edition has just been brought out (1878), with a valuable appendix, by Scheler.

though the student of language must start with the modern and living languages of the world, the older languages which lie behind them are of infinite importance, and to neglect them would be as fatal as for the geologist to neglect the older strata of the earth. The relics of ancient speech, preserved in the monuments of Egypt or Assyria, or in the records of Greece and Rome, are as precious as the fossils which enable the palæontologist to trace the history of life upon the globe, and the geologist to explain the origin and structure of the existing rocks. The same method and minute investigation, accordingly, which had effected so much for the Romance and Teutonic dialects, were applied to the study of the classical languages, and, in the hands of G. Curtius and his school, Greek and Latin philology has been revived and illuminated, and made to yield stores of precious facts to the comparative philologist. The old-fashioned scholarship has become a thing of the past; the various dialects of Italy and Greece have been restored to their true place, and the death-blow given to the system which derived Latin from Greek, or attempted to explain the grammars of the two classical languages by confounding the laws and phænomena peculiar to each. The labours of Lobeck, of Gottfried Hermann, of Passow, of Döderlein, and above all of Philipp Buttmann, whose intuition frequently made him anticipate the conclusions of later discovery, had furnished Curtius with the basis on which the new superstructure might be built, while Corssen, his fellow-labourer in the field of Latin research, found that here also his predecessors had gathered in an almost equal harvest of materials. Com-

parative philology has made it possible for the scientific method to be learnt as well from the study of the classical tongues as from the study of chemistry or geology.

The results acquired in the realm of the Aryan or Indo-European languages served as a starting-point for the investigation of other families of speech. For a long time comparative philology remained practically synonymous with the comparative treatment of the Aryan languages only. But its method was equally applicable to the examination of all other languages throughout the world, and the general laws of language discovered by men like Bopp and Grimm might be expected to hold good of all languages and dialects whatsoever. Furnished with the new scientific method and the principles upon which it was based, scholars next attacked those Semitic languages whose inflectional structure seemed to bring them into such close contact with the languages of the Aryan group. A new era was inaugurated in their study by the labours of Gesenius, Ewald, and Olshausen ; and Renan even attempted a "*Histoire générale et système comparé des langues sémitiques.*" But Renan's work remains a splendid fragment ; the first part, the "*Histoire Générale,*" has passed through several editions ; but the "*Système comparé*" has never appeared. It was soon found that the comparative study of the Aryan languages would not give the key to all the problems of speech ; that in fact the Aryan group was an exceptional one, and the laws determined from it, so far from being of universal validity, did not apply even to the dialects of the Semitic family. The endeavour to reduce the Semitic radicals to monosyllabic biliterals, under the belief that Aryan philology

necessitated the existence of monosyllabic roots in all languages, introduced nothing but confusion into the study of the Semitic tongues; and the theory of pronominal suffixes, which seemed to be supported by the phænomena of Aryan speech, has been equally a loss rather than a gain for them. It is at last becoming recognized, however, that each group of languages, as well as each language in the several groups, has its own linguistic laws peculiar to itself, and to apply these to other groups and languages in which they have not been proved to exist, is to do violence to the comparative method itself. The Aryan languages are the languages of a civilized race; the parent-speech to which we may inductively trace them back was spoken by men who stood on a relatively high level of culture, and was as fully developed, as inflectional, in short, as Sanskrit or Latin themselves. Such a speech can tell us far less of the early condition of language than the Bushman dialects of our own day, and to make the conclusions derived from the examination of it of universal validity, or so many revelations of the primitive state of speech, would be a serious error.

The exceptional character of the Aryan group of languages has been made apparent by the application of the method learnt from its investigation to other groups of tongues. The four most important groups which have yet been examined, are the Malay-Polynesian, as explored by W. von Humboldt, Buschmann, Von der Gabelentz, and Friedrich Müller; the Bâ-ntu of Southern Africa, the scientific investigation of which is due to Bleek; the Athapasian and Sonorian of North America, of which Buschmann has been the Bopp; and, above all, the Ural-Altaiç,

otherwise called the Ugro-Altaic, or Turanian, which is now, owing to a variety of circumstances, receiving a special attention. The work begun by Castrèn, Schott, Böhlingk, and Max Müller, has been continued by Boller, Budenz, Donner, Hunfálvy, Ahlqvist, Thomsen, Ujfalvy, Schiefner, and others ; and so far, at all events, as the Finnic group is concerned, "Turanian" philology is almost as far advanced as Aryan philology itself. But the limits of the Ural-Altaic family as a whole are still not quite settled ; while Dr. Edkins would connect Chinese with Mongol roots, others question the affinity of Mongol itself to the Tatar-Finnic languages, and Weske has even gone so far as to class the Finnic dialects among the inflectional tongues, and to hint at their connection with the languages of the Aryan family. But this is to follow in Bopp's footsteps only when he endeavoured to trace the dialects of Polynesia and Europe to a common source.

The creation of a science of language has brought with it the creation of a science of comparative mythology and a science of comparative religion. Language is at once the expression and the creator of thought, and the history of language is consequently the history of human thought. Now mythology is a record of the way in which primitive man endeavoured to explain the phænomena of nature and his relation to the world, just as religion—that is, religion as crystallized in dogmas and systems—is a record of man's attempt to represent his feelings and belief in relation to a higher power. The record can only be interpreted by the science of language ; it is only when we come to understand the meaning of the language of

mythology that we understand the meaning of mythology itself. Just as it was Sanskrit which laid the foundation of comparative philology, so, too, it was the hymns of the Rig-Veda, the oldest monument of Sanskrit literature, which laid the foundation of comparative mythology. The familiar forms and names of Greek myth met the scholar again in the Vedic poems ; but their faces were no longer concealed by the veil of forgetfulness. The poets of the Rig-Veda were still conscious of the true nature and origin of Zeus (*Dyaus*) the "bright" sky, or Erinnys (*Saranyu*) "the dawn," and the old stories of the sun-god and the powers of day are lighted up with renewed life and significancy when we track them back to their ancient home in the East. Not less important for the comparative study of religion have been the inquiries into the development of Brahmanism and its struggles with the teaching of Buddha, necessitated by the examination of the classical language and literature of India—inquiries which could be carried on in the dispassionate spirit of the scholar and without reference to the religious convictions of the Western world. The settlement of the exact meaning of a single word like *nirvāna* opens a fresh chapter in the comparative history of religion. It is not the least of Professor Max Müller's services that he has made both these new sciences household words and invested them with a charm which has secured to them the attention they deserve.

In England the scientific study of language has taken a special direction in accordance with the practical character of the nation. Men like A. J. Ellis, Bell, and Sweet, have followed up the path first indicated by Grimm and

Lepsius, and devoted themselves to an exhaustive investigation and analysis of articulate sounds. Aided by Helmholtz in Germany, and Prince Lucien Bonaparte in London, they have determined the physical laws of utterance, have classified the most minute varieties of sounds, and pointed out the supreme importance, for phonological purposes, of living dialects. Etymology has to a great extent become a purely physical science: the connection and derivation of words must be traced out in obedience to the physiological laws of speech, and were it not that a sound or group of sounds cannot become a word until a meaning has been put into it, etymology might be described as merely a branch of physiology. But phonology, the science of sounds, is not synonymous with the science of language; it is but a department, a subdivision, of the master science, and deals only with the external, the mechanical, the physical side of speech. The relations of grammar and the inner signification of words and sentences are what constitute the real essence of language, and in so far as these belong to thought and not to the mere vocal organs of the body, the science of language, like the other sciences which have to do with the mind, must be described as a historical and not as a physical science. There has been a tendency among some philologists to push phonology beyond its proper sphere and make it co-extensive with comparative philology: it is this inclination which has lain at the root of the attempt to include the science of language among the physical sciences; but phonology is concerned only with the outward framework of speech, not with its inward essence. This framework, however, it is, by means of which we are



able to investigate language, and the very fact of its being subject to physical laws which admit of no contravention, gives the modern science of language its scientific certainty, and constitutes the difference between it and the old punning etymology in which, as Voltaire said, the consonants counted for nothing and the vowels for very little. Before a single derivation can be admitted it must be shown to be in accordance with the ascertained phonological laws of the languages we are studying; before it can be justified it must satisfy the requirements of sense and history. The outward form is the key to the inward fact which it embodies; we can get at the original force and meaning of grammatical relations and derivative words only by interrogating the phonetic utterances by which they are expressed. The science of phonology is the entrance to the science of language, but we must not forget that it is but the outer vestibule, not the inner shrine itself.

It has been necessary to state thus in detail the distinction between phonology and the science of language as a whole, because a good many of the theories that have been propounded in the name of the science rest upon an unconscious confusion of the two. The outward and the inward have not always been kept apart, and nothing has been commoner than to argue that a change in the pronunciation of a word or suffix has been the *cause* of a change in its meaning. It has even been thought that the phænomena of inflection might all be accounted for by the action of phonetic decay in stripping off the final parts of compound words, and so disguising their primitive form (but not sense),

and that when the comparative philologist has traced a word back to its source in accordance with phonological laws he has done all that is required of him. Even Plato and Aristotle had a higher conception of the study of language than this. No doubt the fact that a scientific treatment of language rests primarily upon phonology has had much to do with this one-sided view of speech, but the resemblance of the method of comparative philology to the method employed by the physical sciences has also been a cause of it. Comparative philology has been regarded as a physical science, language held to be a concrete organism, independent of human volition and with a growth analogous to that of the plant or the animal, and the laws of language explained without reference to the facts of psychology. The two Schlegels are the first who may be accounted responsible for this mode of dealing with language. Friedrich Schlegel divided languages into the flectionless, the agglutinative, and the inflectional, and treated the roots of languages as so many seeds, which grew up and developed like the acorn into the oak. A. W. Schlegel<sup>1</sup> calls the flectional languages "organic, because they contain a living principle of growth and development, and alone have, if I may so express myself, an abundant and luxurious vegetation." In fact, speech was regarded by them as something that exists separately and independently, and the flections of the verb and noun believed to have sprouted out of the root like so many leaves and branches.

<sup>1</sup> "Observations sur la langue et la littérature provençales," p. 14.

Schlegel's mysticism, as Steinthal terms it, was exposed by Bopp, who threw the languages of the world into three groups: (1) those which, like the Chinese, are "without a grammar;" (2) those which, like the agglutinative and Aryan tongues, start with monosyllabic roots, and, by the help of composition, end with a grammar; and (3), lastly, the Semitic group, which expresses the relations of grammar by internal change. Bopp here commits at least three errors: (1) Chinese is as fully organized, as much possesses a grammar, as English or Latin; (2) the roots neither of the Aryan nor of the agglutinative languages can be proved to be monosyllabic, while the Aryan languages, at all events, sometimes use internal vowel-change to denote grammatical differences; and (3) to imply that the relations of grammar have been called into existence in the Aryan family by the passage of composition (or agglutination) into flexion is to ascribe the origin of the relations conceived to exist between the several parts of our thought to the outward accidents of phonetic decay. Bopp naturally looked upon the laws of Aryan philology as holding good for all other branches of human speech; for him the parent Aryan language was the primitive language of mankind, and the verbal and pronominal roots discovered by the Sanskrit grammarians were assumed to have constituted a language, and, in fact, to have been the original language of the human race. Agglutination was but an earlier stage of inflection, and, in fact, was merely the form in which the unorganized primitive speech came to possess a grammar by compounding its roots together. No wonder, therefore, that

roots were confounded with words ; that Chinese should be described as consisting of "bare roots ;" and that the possibility should be admitted of deriving all languages from a single source. Hence the endeavour to find a place for the Polynesian and Caucasian dialects in the Aryan family, and the stress laid upon the external rather than the internal side of speech. Structure, morphology, comparative syntax—these are ideas which have been left to Bopp's successors to work out. With him language is still an organism, flowing from one source and passing through a series of necessary changes ; it is, therefore, not so much a social product as a subject of physical inquiry. This view of language was assailed by Pott. He justly urges that we can only speak of language as an organism metaphorically, and that there is no inner necessity in language to develop like the seed into the tree, or the chrysalis into the butterfly, than there is in thought itself. The roots of language have no existence apart from the mind ; before they can become words they must be clothed, now with this form, now with that, according to their relation with other words. Language, in fact, is the expression of thought ; it cannot be examined except in connection with thought and the history of the human mind. The science of language, accordingly, is one of the historical or social sciences, and phonology is but the key whereby we read the enigmas of the thought within. Languages will differ according to the different ways in which men have conceived the world and their relation to it. Pott, therefore, is an advocate of the original diversity of languages, and, as might be expected, endeavours to found

a science of sematology, or of the signification of words, by the side of the science of phonology.

Pott had been preceded in his general conception of speech by Wilhelm von Humboldt ; indeed, his advance upon Bopp was due in some measure to Humboldt's previous labours. For Pott, it must be remembered, was pre-eminently a phonologist, and to him we owe the extension of the results obtained by Grimm in the Teutonic languages to the whole body of Indo-European tongues. Humboldt, like all other great masters, rather suggested than worked out ; and recent researches have shown that the facts to which he attached his philosophical system, such as the nature of the Kawi language of Java, are not always to be trusted. He laid down that each single language is the individual expression of the character of a nation, though language, taken generally, "is an organic whole," from which the individual languages of the world radiate as from a centre. The nearer each language approaches the ideal of language, the more, that is to say, it is free from peculiarities of thought and expression, the less is it imperfect and, in the bad sense of the term, individual. And since a language is the outward expression of the mind and history of a nation, the nation whose language is the most perfect has approached the most nearly to a perfect culture and civilization. Language is at once the most exquisite work of art and the most marvellous creation of science that the spirit and intellect of a people can produce, and its character, as tested by the standard which linguistic science has to establish, is a sure and certain clue to the stage of art and science attained by its speakers. At the same time, Humboldt

emphatically declares that language is not a product (*ἔργον*), but an activity (*ἐνέργεια*); in other words, that language and speaking are the same. But while maintaining that language is the creative organ of thought, Humboldt also maintained that it constitutes an independent world of thought, thus confusing the two senses of the word language—the one in which language is made identical with the act of speaking, the other in which it represents the whole body of significant sounds we utter. Humboldt had been educated under the influences of the Kantian philosophy, and in his theory of language we may discover a reflection of Kant's dualism in the opposition he finds in speech between the general and the individual, between language as an organic whole, and individual languages which refuse to answer to the ideal definition of speech.

Steinthal<sup>1</sup> has subjected Humboldt's statements to a very thorough-going criticism, and has exposed their manifold inconsistencies as well as the dualism which underlies them all. Humboldt's philosophy of language erred by following the *à priori* rather than the *à posteriori* method; the facts discovered by comparative philology were used by him as illustrations of his conclusions rather than as the premisses upon which those conclusions were built. Nevertheless, in spite of his *à priori* metaphysical method—in spite of his laying down what language ought to be instead of what it is, Humboldt's genius scattered

<sup>1</sup> "Charakteristik der hauptsächlichsten Typen des Sprachbaues," pp. 20-75. Steinthal's criticism is criticized in turn by Pott in his edition of Humboldt's essay, "Ueber die Verschiedenheiten des menschlichen Sprachbaues" (1876).

ideas and suggestions through his work which have proved abundantly fruitful in the hands of later scholars. But the value of these ideas was due to the far-sightedness of his genius, not to his collection of facts, and he was accordingly unable to harmonize and classify them, or to erect upon them a sound theory of speech. Humboldt's great work consisted in teaching that language is the expression of national thought, that it must be treated as an organic whole ; that, in short, its science is a historical and not a physical one.

The work thus begun by Humboldt was taken up by Heyse in his "System der Sprachwissenschaft."<sup>1</sup> Heyse approached language from the point of view of the Hegelian philosophy, but he strives to prevent the *à priori* method from overriding the *à posteriori*. His view of language professes to base itself on the results of comparative philology, although the endeavour to force them into an Hegelian mould is clearly traceable. It really rests, however, upon an *à priori* conception of the origin of speech, which is neither borne out by linguistic facts nor easily realizable. Language, he holds, is spiritualized sound : the world is a great vibratory organ, in which all objects when touched emit a note, and so, too, the human spirit, when affected by feeling or reason, emitted certain sounds peculiar to itself, which we call roots. Speech was as much a necessity to man as ringing is to a piece of brass when struck. It is, in fact, the music of the soul, and its development gauges the spiritual development of its speakers. This development of speech is, therefore, a wholly internal one, depen-

<sup>1</sup> Edited by Steinthal (1856).



dent not upon the outward phonology, but upon the common spirit of man that has created it. The outward sound is but the garment created by thought wherein to clothe itself, but the garment is always suitable to the thought it clothes. Since thought "must" develop, language also "must" do the same, and language, like thought, can develop only in a particular way. This evolution necessarily depends upon the existence of minds in which thought has become self-conscious, reflective: "the speaking of children and of the great mass of mankind is a lifelong, unconscious activity—a mere natural activity of conscious thought." Such a theory of language is plainly mystical. On the one hand, the natural sounds uttered by a man under strong excitement do not constitute language, but rather a barren list of interjections; on the other hand, to speak of the soul, or mind, being affected like ordinary objects of the sense, and accordingly emitting sounds, is sheer mythology. Moreover, the evolution of speech, of which Heyse speaks, is not a *necessary* one: there is no necessity "in the very essence of human speech" that the various forms of language—*isolating, agglutinative, inflectional*—should have come into existence. Language originated in the very prosaic and unphilosophical need of intercommunication, without which no community was possible, and so long as this need could be supplied, the nature and perfecting of the means was not even considered. The linguistic garment of thought, it is true, generally (though by no means always) fits the thought it clothes fairly well, but only because the garment itself is to a great ex-

tent identical with the thought which it envelopes. To deny that language properly so called exists for children and uneducated persons, as Heyse finds himself forced to do, is to deny that it was framed by primitive man, which is, indeed, a *reductio ad absurdum*. Heyse's chief merit lies in emphasizing the fact that language is not the work of the individual, but of the whole community, and of a community, too, which consists of reasonable, thinking beings.

Steinthal is the modern representative of the school of W. von Humboldt. Language, he holds, is an activity, an ἐνέργεια, everlastingly "becoming." It has "broken forth" necessarily from the human mind when the conditions for its production were present, and in order, therefore, to discover the origin and nature of language, we must know the mental condition which preceded its creation. It originated through the unconscious action of psychological laws, without being willed into existence. The same instinctive laws still operate when a child is learning to speak: the learning is not a conscious effort, and in the very act of learning speech is being created anew. But these laws will only operate in a community, the first condition for the "birth" of language being that men should be united together in a common society. Hence the need of a psychological ethnology which should deal with the psychological phænomena, not of the individual, but of the race. This alone will enable us to penetrate to that "inner form of language" which Humboldt failed to recognize, but which constitutes language in a far more real sense than phonology can ever do. This inner form of language is neither

more nor less than "apperception," or a perception of the relations between allied apprehensions, and is also described by Lazarus as a "condensation of thought."

Steinthal's writings have proved as suggestive to other scholars as those of Humboldt, but their effect is marred by a want of clearness, as well as by an exaggerated use of the *à priori* method. In opposing the tendency to make phonology synonymous with the science of language, Steinthal goes much too far on the opposite side. Instead of using psychology to control the conclusions of comparative philology, he deduces philological conclusions from assumed psychological facts. Not psychology, but comparative philology, can lead us to the first beginnings of language, and raise the veil that covers its origin. The error, however, which lies at the bottom of Steinthal's reasonings is, as in the case of Heyse, the ambiguous use of the term language. Speaking, but not language, may be described as an activity. So, too, the faculty of speech may be said to be instinctive, which language certainly cannot be. To assert that a child learns to speak without conscious effort depends again upon an ambiguous use of the word conscious: as a matter of fact the child learns to speak in much the same way as the adult learns a foreign language. Nor is it more than a questionable metaphor to speak of language as "breaking forth" or being "born." Primitive man framed his earliest speech with labour and difficulty; no doubt certain mental and physical conditions were pre-supposed by the process, but no amount of psychological, even when conjoined with physiological, study will tell us what these were: in order to discover them we must

question the records of speech itself. Steinthal has been misled, like his predecessors, by a false conception of the roots of language : he has pictured them to himself as so many mental germs thrown off spontaneously by the mind, and forthwith forming a language ; and since these germs have a verbal signification in the Aryan family of speech, he has further identified them with the concepts of the mind. But roots are not words, and words are not concepts.

Opposed to Steinthal is the school which groups the science of language with the physical sciences, and of which Schleicher, with his modern follower, Hovelacque, may be considered the representative. It may be traced back to Bopp and Grimm, the one with his microscopic analysis of the suffixes and belief in the mechanical origin of inflection out of a previous composition of independent words, and the other with his engrossing regard for phonology and adherence to Bopp's theory of a primitive language of roots. Jacob Grimm's views may be best gathered from his treatise "*Ueber den Ursprung der Sprache*" (1851).<sup>1</sup> In this he begins by comparing the science of language with the investigation of natural history, the attempt to discover the origin of speech being analogous to that of discovering the laws of the production of animals or the growth of plants. Like Goethe, Grimm inclines to believe that mankind started from several separate pairs : at all events, the distinction of gender in the noun implies the influence of the female sex. Language has passed through three different stages, the last being the analytic, the middle the inflectional, and the earliest that of the de-

<sup>1</sup> Translated into French by F. de Wegmann (1859).

termination and composition of monosyllabic roots. It is a purely human work, "emanating immediately from human thought," and, as such, the key to all human history. The first words, which are identified with Aryan roots, were invented by a sort of "wonderful instinct." The several vowels and consonants have each a particular force and significancy, *l*, for instance, expressing softness, *r* roughness, and in settling what vowel or consonant should be taken to denote some special verbal idea, the "inventor" of speech had for the most part to consult his own "arbitrary choice." Language, in short, is a human invention, determined by the natural significance of different articulate sounds; its growth means the composition and decay of these various sounds. In order to discover what it is, we have only to investigate the history of this composition and decay—that is, the nature and history of phonology. It is no wonder, therefore, that Grimm started by comparing the comparative philologist to the student of natural history, and imagined that the phænomena of all human speech could be learned from the examination of the Aryan family. It is needless to point out the unverified assumption which underlies the notion that each articulate sound has a particular significancy, or the inconsistency of this view with the admission of human volition in the first invention of verbs. Grimm's attempt to discover the origin of language was a failure; it amounted to stating that roots have a particular meaning because that meaning is "natural" to them, and where this tautological explanation seemed insufficient, to introducing human caprice. But human caprice in the case

of the origin of language stands on the same footing as the old theory of a social contract. It was all very well for one primæval man to determine that a particular sound should represent a particular verbal notion, but how was he to communicate the fact to his neighbours?

Grimm, however, merely prepared the way for Schleicher. In the three works in which he most clearly sets forth his views on the nature and origin of language,<sup>1</sup> Schleicher affirms that language is a natural organism possessed of a separate existence, and as little subject to the will of the individual as the power of changing its song to the will of the nightingale. The growth and decay of language is in accordance with fixed immutable laws. Its existence as an organism is due to its being the audible manifestation or symptom of certain material relations in the constitution of the brain and vocal organs, and is consequently determined solely by those external conditions of climate, food, inherited instincts, and the like, which influence our nervous and muscular system. History and the science of language have nothing to do with one another. Like the phænomena of chemistry or physiology, the phænomena of language must be regarded as so many material facts which can only be the subject-matter of a physical science. The science of language, in short, is neither more nor less than phonology; the signification of words is either incapable of scientific

<sup>1</sup> "Die Darwinische Theorie und die Sprachwissenschaft," 1863 (translated into French in the first part of the "Collection Philologique," 1868, and into English by Bickers, 1869); "Ueber die Bedeutung der Sprache für die Naturgeschichte des Menschen" (1865), and "Die Deutsche Sprache" (second edition, 1869).

treatment, or else, like their pronunciation, a mere result of determinable nervous action. The language we speak is conditioned by our bodily organization and antecedents. An European can only become a real master of Chinese by ceasing to be an European and becoming, mentally and physically, a Chinaman. Language, being in no way subject to human volition, follows its own necessary laws of growth and development. The inflectional tongues have grown out of the agglutinative, the agglutinative out of the isolating, and the isolating are to be identified with that primæval language of roots which is reached by analysis in the Aryan group. The acquisition of this root-language created man; the primates, who were less favoured by circumstances than their brethren, and consequently did not develop speech, fell back into the condition of anthropoid apes. Hence the importance of the science of language for the Darwinian theory. Not only do we see language developing by slow degrees from the simple to the complex by the aid of natural selection, but it is through language alone that man is separated from the brute; so that before the beginning of language—a beginning which linguistic science can demonstrate with certainty—man was in no way distinguishable from the other primates. Language thus becomes the most important, it may be said the sole, test of race and lineage. The Ethiopian can change his skin sooner than his mother-tongue. The languages of the world cannot be carried back to a single source. There are at least as many original languages as existing families of speech. The resemblances detected between them are due to geographical position; the nearer they



were to one another at the outset, the more the speakers were subjected to the same external influences, the greater will be their similarity. A time comes when the creation of languages ceases, and is replaced by the entrance of a race into history. It is before this period, therefore, that the external influences, the geographical conditions, will have to act.

Schleicher's views, it will be seen, are based on the false assumption that language is an actual entity existing apart from the minds and the mouths of its speakers. In the course of his argument he found himself forced to adopt a position somewhat inconsistent with this assumption. If language is a symptom of the brain and vocal organs, it can hardly be described as an independent organism. In so far as phonology is concerned,—that part of language, namely, which depends on the vocal organs,—the physiological laws which determine it can be ascertained in the same way and with the same certainty as the other laws of physiology; but mere phonetic sounds do not become language until they embody a signification; and though it may be quite true that every act of thought is preceded by a change in the molecules of the brain, yet this change is altogether unknown to us, and our only way of discovering the laws and principles of language is by questioning language itself, not by investigating the alterations undergone by the material of the brain. The morphologic facts of language—must be studied in the same way as the facts of sociology, of psychology, or of any other science that has to do with the mind. The science of language, taken as a whole, cannot be counted among the physical sciences.

To identify it with phonology is to identify the whole with its part. Unless we treat language historically, its study becomes little more than a dry enumeration of the several languages of the globe and their distinctive peculiarities. Not being an independent entity, it cannot follow necessary laws of its own. The laws of its life and growth are really the laws which govern the action of society in a particular direction. To speak of the impossibility of thoroughly mastering a foreign language is absurd. The same difficulty a member of one community finds in transforming himself into a member of another community recurs in the case of language, but the fact that an English child born in India will speak Hindustani as his native tongue, is sufficient to show that the power of speaking a special language does not depend on a special organization and ancestry. Language is the creation of society. An individual speaks a certain language because he belongs to a certain society. As we shall see hereafter, language is no test of race, only of social contact. As for the primæval root-language, we have no proof that it ever existed, and to confound it with a modern isolating language is simply erroneous. Equally unproved is the belief that isolating dialects develop into agglutinative, and agglutinative into inflectional. At all events, the continued existence of isolating tongues like the Chinese, or of agglutinative tongues like the Magyar and Turkish, shows that the development is not a *necessary* one. Not less difficult to prove is the fancy that there are two periods in the life of speech—one in which men are giving themselves up to the production of language, the other when they are creating history. There is merely an ana-

logy between the action of natural selection in language and natural selection in the organic world. The science of language can tell us nothing of the descent of man. Man, it is true, is man in virtue of language; but, on the other hand, he must have been man to create language.

Bréal, the leading French philologist, gave at one time a qualified approval to the essential part of Schleicher's theories, and their chief advocate at present is another French scholar, Abel Hovelacque. He has availed himself of Broca's investigations, according to which the organ of language must be placed in the left (more rarely the right) cerebral hemisphere in the posterior half of the third frontal convolution. Hovelacque's work on the science of language<sup>1</sup> exhibits the defects of Schleicher's theory of language, as it contains little more than a catalogue of the various families of speech with their distinguishing characteristics. The physical theory of language allows for little more than what may be called a natural history treatment of it; the action of emphasis and analogy, of phonetic decay and dialectic growth, and all the other questions involved in a morphologic and historical treatment of speech are necessarily ignored. Faidherbe, another French follower of Schleicher, endeavours to bridge over the gulf between man and the ape by pointing on the one side to the inarticulate clicks of the Bushman, and on the other to the six different sounds uttered by the *cebus azaræ* of Paraguay when excited, which arouse corresponding emotions

<sup>1</sup> Translated into English by Keane for the "Library of Contemporary Science" (1877).

in other members of the same species.<sup>1</sup> Bleek<sup>2</sup> with Häckel's help had already traced the utterances of speech to the cries of the anthropoid apes, and laid down that articulate language is distinguished from inarticulate by being broken up and mobilized. The germ of the suggestion was given by Steinthal, who first pointed out that language approaches its ideal the more analytic it is; sounds, like ideas, become articulate when they cease to be indefinite and indistinct. Bleek holds that the imitation of instinctive sounds made by others to express certain emotions first reminded the earliest men of the same feelings in themselves which had prompted them to the same kinds of utterance, and so led them to compare and distinguish the feeling and its vocal sign, the outward utterance and the inward signification. Language is thus of interjectional origin, helped by the imitative instinct, and language in the course of its development created and moulded thought.

Like Bréal, Max Müller inclines to regard the science of language as a physical rather than as a historical one, and would compare it with geology so far as its method is concerned. He, too, holds that language is the creator of conceptual thought; without the word, without the bond or memorandum which is to keep our individual impressions together, a general idea, and consequently reasoned thought, would have been impossible. Apart from inherited instincts, the deaf-mute, like the

<sup>1</sup> "Essai sur la Langue Poul" in the "Revue de Linguistique" (Jan. et Avr. 1875).

<sup>2</sup> "Ursprung der Sprache," with a preface by Häckel. Translated by T. Davidson (1869).

infant, has only the capability for thought so long as he is unprovided with a language of some sort. No theory, whether onomatopœic or interjectional or otherwise, which has attempted to explain the origin of language has succeeded in its task ; for language is environed on all sides by the barrier of roots, and in roots alone we must seek its origin. How these roots may themselves have originated we do not know ; probably onomatopœia and the reflex action of sounds excited by a common action had much to do with it ; but the science of human speech is concerned only with the question of the origin of language, not with that of the origin of roots. The roots, however, once constituted a real language which may be compared with the Chinese of today, and which in certain instances passed through an agglutinative into an inflectional stage of development. The roots were, for the most part, not monosyllabic ; whether there was one common stock of roots at the beginning, or an indefinite number of stocks, we have no means of determining. What we know is that dialects precede languages, that out of the many comes the one, and that in the drifting desert of human speech, only three or four families, like the Aryan, the Semitic, or the Ugro-Altaiic, have been able to establish themselves. At the bottom of Max Müller's theory of language seems to lie the philosophic postulate that the universal precedes the particular ; the roots of language are so many "phonetic types," so many universals, out of which the manifold forms and words of living speech have been developed. They constitute the background of those concepts whereon the structure of thought has been

reared. With the mythopœic epoch of speech all was changed. Then the particular came to precede and create the universal, and out of individual words which had lost their original meaning were built up the myths of Greece and Rome. In each case the process was an unconscious one ; the will of the single man can no more change the tendencies and growth of language than it can change the force of the winds. Max Müller thus stands midway between Schleicher and Steinthal.

Side by side with the school of Schleicher there has sprung from the doctrines of Bopp what may be termed the common-sense school of philologists. As perhaps is natural, it is mainly in practical America and England that the school has found its adherents, among whom Whitney may be considered its most prominent representative. He states the theories (as opposed to the method and philological facts) of Bopp in their clearest and most extreme form, and does not shrink from carrying them out to their logical conclusions. Thus it is affirmed that the first men spoke in monosyllabic roots, which by means of composition passed into an agglutinative form of speech, and that again, in a similar way, into inflection. All flection may be analyzed into a preceding agglutination, and all agglutination into a preceding juxtaposition of roots, the latter being both predicative and pronominal. Whitney holds that language is an institution like government, and that it is absolutely dependent on the human will, determined only by the necessities of society. The phonetic forms and meanings of words are assigned to them by the conscious or unconscious action of a community. Language is, in all strictness, a human inven-

tion, in which onomatopœia probably played a large part. Its science consequently will be a historical one. Thought is prior to language; language therefore did not create thought, nor can it be treated as a separate organism existing apart from its speakers. The origin of language is explained very simply by the need of intercommunication between those who first used it, and since it is always the expression and sign of thought, we may call them, with perfect accuracy, its inventors. Just as thought which is universal precedes language, so a single parent-speech precedes dialects.

Whitney's views, however, require too many still unproved assumptions to be received as ascertained truths; the existence of a parent-speech, for instance, being as hypothetical as the transition of one form of speech into another. Too little regard also is paid to the physiological side of language, that side which connects it with the physical sciences; while too much influence is assigned to the human will in its formation. It cannot with any real strictness be termed an institution, because an institution has often been founded or changed by an individual, and over language the individual has no such power. Whitney attributes too much design, too much volition, to the formation of speech; the need of intercommunication alone will not explain its origin, since we may ask, How did this need arise, and how were the means of supplying it communicated? However much language may now be defined as the expression of thought, it was not so at first, when conceptual thought was made possible only by the help of language; and even now language is rather the embodiment, however imperfect, than the



sign of thought. The stress, moreover, laid upon the element of volition in the production of speech is inconsistent with the idea that mere juxtaposition and phonetic decay could have effected that change in the way of viewing things and their relations which is involved in the transition from one form of speech to the other.

The problem of the origin of language was taken up from a wholly different point of view by Lazarus Geiger.<sup>1</sup> He traced it to the instinct of imitation so deeply implanted in the nature of man. The expression of feeling, of pain and pleasure, of anger and love was indicated partly by corresponding cries, partly by the muscular movements of the face, which might or might not accompany them. The imitation of these movements on the part of a second person caused a particular gesture and the cry that accompanied it to be associated with the idea of passion, pleasure, or pain that had given rise to it. Gradually the gesture was merged in the cry, and the cry was changed into a root or word. Each root was, therefore, at the outset, an embodiment and symbol of an action. Hence it is that the roots to which language can be traced back are all verbal, all expressive of movement and action. Since the publication of Geiger's book, the whole subject of the "Expression of the Emotions in Men and Animals" has been elaborately worked out by Mr. Darwin in a special work, while Benfey has independently pointed out how large an influence the physical accessories of speech must have originally had in putting

<sup>1</sup> "Ursprung und Entwicklung der menschlichen Sprache und Vernunft" (1869).

sense and significancy into the sounds associated with them.<sup>1</sup> Looks, gestures, and the modulation of the voice are common to man and the lower animals, but whereas the import of looks and the modulation of the voice agrees all over the world, that of gestures does so only in part. How, then, could gestures have the same unambiguous meaning for others which Geiger's theory would demand? The answer is given by Ludwig Noiré, who takes up and completes the theory of his master. The weak point in the latter is that it makes language, which is essentially a social product, the creation of the individual. Noiré, in a volume at once singularly lucid and suggestive,<sup>2</sup> successfully meets the difficulty. He recalls the rhythmical cries or sounds which a body of men will make when engaged in a common work, and which seem the product of a common impulse. We are all familiar with the cries of sailors when hauling a rope or pulling the oar; with the shout of the Eastern vintagers as they beat time in the wine-press; or with the yell of savages when they attack a foe. In such cries and shouts as these Noiré would discover the beginnings of speech. They seemed called forth by the work in which men

<sup>1</sup> See also Benfey's article, "Einige Worte über den Ursprung der Sprache," in the "Nachrichten von der k. Gesellschaft der Wissensch. zu Göttingen," Jan. 30, 1878. Benfey here points out that just as we share a capacity of walking with the lower animals, so also do we share with them a capacity for communicating with one another by the help of a language of some sort. And he remarks pertinently that it was not harder for the first men to understand the meaning of what was said to them than it is for domestic animals nowadays to learn the meaning of the words and phrases we use in speaking to them or giving them orders.

<sup>2</sup> "Der Ursprung der Sprache" (1877).

were engaged for a common purpose, and so became to them the expression and symbol of it. Once established as intelligible symbols, they constituted those roots which are at once the earliest form of language and the germs out of which all future language has grown. Hence it is that roots denote actions and not objects; hence, too, the fact that the sense of sight must be regarded as the first stepping-stone to speech. Like Geiger, Noiré is a philosopher rather than a philologist, and his explanation of Aryan roots and their connection with one another frequently contravenes the laws of scientific etymology. Nor can his identification of roots and words be admitted, or the actual existence at any time of the hypothetical roots of the Aryan tongues. But his theory doubtless explains the origin of much that is in speech, though it does not explain everything. Onomatopœia is not excluded from sharing in the creation of language, nor can we refuse to recognize the interjectional source of certain roots and words. But even if it will not solve the whole problem, Noiré's theory clears up the origin of that part of speech which has hitherto appeared hardest to explain. Like the song of the birds, the language of man, too, is instinctive and necessary, called forth by a sense of life and energy, by a common participation in a common work.

Outside the school of Bopp stands a group of scholars of whom the best known are Scherer, Westphal, and Ludwig. They agree in rejecting Bopp's analysis of Aryan grammar and his derivation of flexion from a previous agglutination. Grammatical analysis has doubtless been pushed much too far both by Bopp and by his pupils,

and the protest raised against it, although needlessly indiscriminating, has done considerable good. Westphal has recourse to the old trappings of pre-scientific philology, pleonastic letters, apocope, and so forth, and lays down common "logical categories" of flexion for both the Aryan and the Semitic families.<sup>1</sup> He defines language as "the embodiment of the content of the human consciousness," and holds that its object is to reduce the individualism of nature to a unity of conception. What is given as separate and individual is unified by thought and language, and the development of language is in accordance with this process of unification. The process, or "movement," of consciousness finds its expression in the corresponding movement of speech; just as thought sums up the individual parts of any perception under a single concept, so language sums up the individual parts of phonetic utterance under the sentence. The result of this movement is the evolution of the verb and the completion of organized speech. Sound and concept are brought together by the common element of "movement," a curious return to the *κίνησις* of Aristotle. It is evident, however, that Westphal rather restates the phenomena of language in metaphysical language than really explains them, while his entire rejection of Bopp's method and results makes criticism difficult.

Ludwig, like Westphal, rejects the current theory of flexion, but substitutes for it another which can not only be supported by facts, but is also not inconsistent with the method founded by Bopp. Flexion, he believes, is

<sup>1</sup> See his "Vergleichende Grammatik der indo-germanischen Sprachen" (1873), I. Appendix, pp. 56-98.

the result not of agglutination, but of adaptation, certain unmeaning terminations of existing words being selected to express new grammatical relations when they first dawned upon the mind.<sup>1</sup> Ludwig's view seems to have met with partial acceptance among some of the younger French philologists, and it is supported by Bergaigne's researches into the nature of the case-suffixes.<sup>2</sup> The analysis of the latter has always been a stumbling-block in the way of the current theory; Bergaigne has made it clear that they were either the terminations of abstract nouns or else suffixes which have been adapted in different words to the expression of very different meanings. On the other hand, Ludwig's theory fails when applied to the verb, and we still need an explanation of the manner in which the same select number of meaningless terminations came to be attached to so large a variety of words. But the advocates of the agglutination hypothesis have the same difficulty to contend against when they deal with the stem-suffixes.

In pursuance of Bopp's method, but independently of the distinctive theories of his school, Waitz, the anthropologist, has propounded a new theory of language.<sup>3</sup> As we do not think in words, but in sentences, and as language is the expression and embodiment of thought, it is clear that the unit of language must be the sentence and not the word. The words which compose a sentence are related to one another in the same way as the several elements of an idea, or of an action as reproduced in

<sup>1</sup> "Agglutination oder Adaptation" (1873).

<sup>2</sup> "Mémoires de la Société de Linguistique de Paris," ii. 5.

<sup>3</sup> "Anthropologie der Naturvölker," i. p. 272.

thought, and can only be decomposed and separated by conscious analysis. Consequently the incorporating languages of America, in which an individual action is represented by a single sentence pronounced as one word, are a survival of the primitive condition of language everywhere. It is only gradually that the different parts of speech are distinguished in the sentence, and words formed by breaking up its co-ordinated elements into separate and independent wholes. Originally words could as little be used alone and without relation as our own suffixes *ly* or *ness*. The agglutinative tongues in which the subordinate parts of a sentence are brought into duly dependent relation to the principal concept are more highly advanced than the inflectional, the "fundamental idea of which is that the principal and the subordinate elements of thought (*Vorstellung*) remain independent and separate, and never coalesce into a single word." This principle of flexion, however, can never be logically carried out, since the relations of the central idea expressed by the suffixes are themselves a kind of subordinate conception; if *amatis* is right where the personal pronoun is treated as a suffix, then *amator bonus*, where the attribute *bonus* is regarded as a subordinate, and therefore separate, conception, must be wrong. An isolating language like the Chinese stands on the highest level of development, since here the sentence has been thoroughly analyzed and each member of it rendered clear and distinct; their relations to one another being determined by position alone. Chinese therefore has given concrete expression in language to the philosophic analysis of ideas. Waitz's view would



harmonize with the antiquity and civilization of Chinese much better than the ordinary one, as well as with its resemblance to English and other modern analytical languages ; and it is to be noticed that Steinthal, when speaking of Chinese, describes it as a language in which the real words are the sentences or groups of subordinated vocables. Waitz's theory of speech is the theory of an anthropologist who, as the student of the master-science, is better able to decide upon the origin of language than the comparative philologist with whom the existence of language has to be assumed. No science can of itself discover the genesis of its subject-matter. Friedrich Müller attaches himself to Waitz when he says :<sup>1</sup> " We disagree with Schleicher and his school in this one point, that the individual independent word is not the unity for us that it is for him, but rather the sentence—the shortest expression of thought." As he goes on to observe, only the context—that is, the whole sentence—can determine whether *musas*, for example, is to be taken as the accusative plural of a noun or, like *amas*, the second person singular of a verb.

Philological opinion is therefore seen to be still divided upon certain points. But such division of opinion is a healthy sign of life and progress in the new science. It is only by the conflict and discussion of theories that truth can finally be reached, and the many controversies excited by the science of language show how broadly and deeply the foundations of the science are being laid. On the phonological side the progress has been greatest and most certain; morphology and the investigation of roots

<sup>1</sup> " Grundriss der Sprachwissenschaft," I. i. p. 49 (1876).



still lag behind ; comparative syntax is but beginning to be handled ; and sematology, the science of meanings, has hardly been touched. But the method inaugurated by Bopp remains unshaken, the main conclusions he arrived at hold their ground, and the existence of the Aryan family of speech, with all its consequences, is one of the facts permanently acquired for science. True, there are many questions still to be settled. It is still disputed whether the science of language is a historical or a physical one ; whether language is an independent organism obeying fixed and necessary laws of its own or an "institution" controlable by the will of man ; whether phonology is to exclude all other departments of the science when the nature of the latter is discussed ; whether roots ever constituted a real language or are merely the ultimate elements into which words may be decomposed ; whether the flectional stage of language springs from the agglutinative, and this again from the isolating ; whether the languages of the world are the selected residuum of infinite attempts at speech or have flowed from one or two common sources ; whether dialects precede languages or languages dialects ; whether conceptual thought has created language or language has created conceptual thought ; whether, finally, the word or the sentence is the true unit of speech. But with all this diversity of opinion there is a yet greater unanimity. There is no scientific philologist who doubts the indispensable value of phonology and the absolute strictness of its laws ; who questions the axiom that roots are the ultimate elements of articulate speech, the barrier between man and brute, and that no etymology is

worth anything which does not repose upon them ; who would compare the words of one family of speech with the words of another in the easy-going fashion of a præ-scientific age ; or who would shut his eyes to the light already shed on the history of the human mind and the riddle of mythology by the study of the records of speech. Language is the reflexion of the thoughts and beliefs of communities from their earliest days ; and by tracing its changes and its fortunes, by discovering the origin and history of words and their meanings, we can read those thoughts and beliefs with greater certainty and minuteness than had they been traced by the pen of the historian, or even if

“*Supera bellum Thebanum et funera Troiæ  
... alias alii quoque res cecinere poetæ.*”

## CHAPTER II.

### THE NATURE AND SCIENCE OF LANGUAGE.

“It is a law universally illustrated by organizations of every kind, that, in proportion as there is to be efficiency, there must be specialization, both of structure and function—specialization which, of necessity, implies accompanying limitation.”—HERBERT SPENCER.

THE review given in the preceding chapter of the opinions held by others on language and its science or philosophy will have prepared the way for an independent inquiry into the nature and objects of linguistic science. Before, however, we can discuss the limits and character of the science we must have a clear idea of the subject-matter with which it deals. Most of us, no doubt, have a rough-and-ready definition to give of language; but science requires something more than rough-and-ready definitions, and the discordant views as to the scope and meaning of the science of language which have come before us in the foregoing pages are plain evidence that an accurate definition of language is not so easy as would at first sight appear.

Provisionally, however, we may define language as *consisting of certain modulations of the voice, variously combined and arranged, which serve as symbols for the thoughts or feelings we wish to express*. The sounds that we utter must have a *meaning* before they can become language, otherwise they will be mere cries or gibberish, less worthy

of the name of language than even the howling of the dog upon the prairie or the wild song of the forest-bird. Language is the outward expression and embodiment of thought—the garment, so to speak, with which the mind clothes itself when it would reveal itself to another or even, it may be, to itself. The words of a foreign tongue form a language only for those who understand what they signify : for those who do not they are but empty sounds, the idle murmur of a “barbarous” jargon. “The language of birds” was discovered to the Eastern sage alone: to all others the notes of the nightingale and the thrush were as the plashing of the waterfall and the drowsy humming of the bees. “Lessons in running brooks” may indeed be read by the mind, but it is the mind itself that puts them there, and only in so far as it creates a meaning for them does it create also the language in which they speak.

It is evident that our thoughts could be represented by other symbols than sounds. The first and most familiar instance that rises to our minds is writing, though writing symbolizes thoughts only indirectly, its immediate office being to symbolize sounds. There is a written language because there is previously a spoken language, and those who learn foreign tongues know well how detrimental the power of reading a language is when we wish to speak it: the language of the eye has to be translated into the language of the ear. Language can only be symbolized directly to the eye by hieroglyphics ; but if our communication with one another depended upon hieroglyphic writing it would never be very extensive or progressive. To say nothing of its requiring

time, writing materials, and skill in drawing, hieroglyphic writing can indicate objects alone with that clearness and certainty which language demands. It is hardly possible to represent in this way abstract ideas, verbs, or adjectives, so that what is denoted shall be recognized by another without previous instruction. Apart from these drawbacks, however, picture-writing has this advantage over spoken language, that its symbols are not mere arbitrary signs like sounds, but intelligible all the world over; and even the degenerated picture-writing of China, by preserving everywhere the same character for the same idea, has kept up a unity and spread a culture throughout the empire which would otherwise have been impossible among a people divided into many and diverse dialects.

Another means of symbolizing thought is "mathematical language," which represents the calculations of the mathematician by written symbols such as 1, 2, 3,  $x$ ,  $y$ ,  $z$ . But such symbols are of late invention, and could not well be applied to express the daily concerns of life. Quite different is gesture-language, whereby our thoughts and emotions are represented by movements of the hands and other parts of the body. Most of our common needs could be expressed in this way, though gestures would be quite inadequate to represent the wants of a civilized community. Only such ideas as "I am hungry," "let me drink," "it is pleasant," could be denoted by them. But, like picture-writing, gestures possess the great advantage of standing for the same ideas everywhere and among all men. The expression of pain or surprise, the threatening shake of the hand, the pointing of the finger, have the same message for the Negro as for the European. The

traveller in a strange and unknown region is thrown back upon the language of gesture. Burton,<sup>1</sup> perhaps, exaggerates when he says that the Arapahos of North America, "who possess a scanty vocabulary, can hardly converse with one another in the dark," and another reason may be given for this preference for the light ; but the importance of gesture-language where other means of communication are wanting is too evident to need examples. Thus Fisher<sup>2</sup> tells us that the Comanches and neighbouring tribes have "a language of signs, by which all Indians and traders can understand one another ; and they always make these signs when communicating among themselves." To the same effect James<sup>3</sup> writes of the Kiawa-Kashaia Indians : "These nations, although constantly associating together and united under the influence of the Bear-Tooth, are yet totally ignorant of each other's language, insomuch that it was no uncommon occurrence to see two individuals of different nations sitting upon the ground, and conversing freely by means of the language of signs. In the art of thus conveying their ideas they were thorough adepts ; and their manual display was only interrupted at remote intervals by a smile, or by the auxiliary of an articulated word of the language of the Crow Indians, which to a very limited extent passes current among them." Gesture-language is instinctive—the heritage, it may be, of the days before man acquired articulate language, or differed thus far from the brute beast : certain ideas call forth certain corresponding ges-

<sup>1</sup> "City of the Saints," p. 151.

<sup>2</sup> "Trans. Eth. Soc." (1869), i. p. 283.

<sup>3</sup> "Expedition to the Rocky Mountains," iii. p. 52.

tures, and we are not obliged to learn what gestures stand for particular ideas. Hence it is that even now spoken language is so largely accompanied by gesture. An excited speaker is likely to make much use of his hands; and we can often tell what a person is saying to us, though we do not hear him distinctly, by watching the play of his features. We know from the appearance of his face whether he is asking a question, whether he is angry, or whether he is dispirited. With the cultivation of articulate speech and confidence in the use of it, men become more phlegmatic in speaking, less inclined to have recourse to subsidiary helps. It is the awkward country girl whose "manners" have "not that repose which stamps the caste of Vere de Vere." The preacher who addresses an audience of barristers does well to dispense with the gesticulation which is necessary to the mob-orator. According to M. Antoine d'Abbadie, an Abyssinian Galla marks the punctuation of his speech by the help of a leathern whip, a slight stroke denoting a comma, a harder one a semi-colon, a still harder one a full stop, while a note of admiration is represented by a furious cut through the air.<sup>1</sup> Even in this country, we have not to go far to find gesture-language employed in default of spoken language. Where the new system of observing the movements of the lips has not been introduced, the deaf and dumb can communicate with the outer world only by the help of gestures, though the gesture-language of the deaf and dumb, like phonetic writing, implies a previous spoken language. It is, therefore, to the instinctive gesture-lan-

<sup>1</sup> Sayce : "Principles of Comparative Philology" (second edition), p. 26.



guage of the North American Indians what our system of writing is to hieroglyphics.

It will be noticed that under the general term of "gesture-language" we have included not only gesticulation, but also that play of feature and modulation of the voice which outlast gesticulation among a civilized people. Gesticulation can hardly form a universal language in the same way that play of feature and modulation of the voice can. Only in part have such gestures the same meaning for all men, and so serve to bridge over the gulf that divides articulate from inarticulate speech. Like play of feature and modulation of the voice, they are common to men and animals; but, unlike the latter, they are capable of receiving an arbitrary and conventional meaning. Helvétius, following in the track of Anaxagoras, asserted that we have become men through the possession of hands; had our arms terminated in a horse's hoof, for instance, we should have been like the beasts that perish, wanderers and defenceless.<sup>1</sup> Indeed, it is quite conceivable that our forefathers would have remained contented with a gesture-language, had not the hands been wanted for other purposes. Food could not be prepared without them, whereas it was not until the desire of food was satisfied that the mouth was put to another use than that of asking for it.

Still the arbitrary element in gesture-language is very small compared with what it is in spoken language. Here beyond a few interjections, or possibly a few onoma-

<sup>1</sup> "De l'Esprit," i. p. 2. Aristotle attacks Anaxagoras for holding *διὰ τὸ χεῖρας ἔχειν, φρονιμώτατον εἶναι τῶν ζώων τὸν ἄνθρωπον* ("De Part. Animal.," iv. 10).<sub>1</sub>

topœic sounds, the whole body of symbols that stand for thought is purely conventional. The same combination of sounds may be used to denote very different ideas. There is no necessary connection between an idea and a word that represents it. It is as arbitrary as our making the sign 1 symbolize the idea of unity or the sign = the idea of equivalence. However well we may be acquainted with our own language, a foreign one will be wholly unintelligible to us until we have learnt it. Even natural sounds strike the ear of different individuals and nations in a totally different way. Exactly the same sound was intended to be reproduced in the "*bilbit* amphora" of Nævius,<sup>1</sup> the "*glut glut* murmurat unda sonans" of the Latin Anthology<sup>2</sup> and the *puls* of Varro; nay, as Dr. Farrar points out, even in the  $\nu\acute{o}\gamma\xi$  and the  $\beta\lambda\acute{o}\psi$  of the Greeks. The Persian *bulbul* has but little resemblance to the *jugjug* of Gascoigne, or the *whitwhit* of other writers; and yet all are attempts at imitating the note of the nightingale. The first word uttered by the children on whom Psammitikhos is said to have tried his famous experiment seemed to their keepers to be  $\beta\acute{\epsilon}\nu[\alpha\varsigma]$ , whereas we read in the great Papyrus Ebers, the standard work on Egyptian medicine compiled in the sixteenth century B.C., that if "a child on the day of birth . . . says *ni*, it will live; if it says *ba*, it will die." And only the last of these infantile cries bears any likeness to what we are told are the primitive and original utterances of childhood, *ma*, *pa*, and *ta*—utterances, by the way, which are only in part possible to the Mohawks and Hurons, who possess no labials.<sup>3</sup> So

<sup>1</sup> "Festus," p. 28.

<sup>2</sup> II. 405, ed. Burm.

<sup>3</sup> Max Müller: "Lectures," ii. p. 179 (8th edition).

arbitrary and conventional must be the meanings we associate with the sounds of articulate speech, and so impossible is it to discover in them any signs of universal currency. There is no reason in the nature of things why the word *book* should represent what we mean when we look at the present volume; it might just as well be denoted by *koob*, or *biblion*, or *liber*; and if we chose we might always so denote it.

But although we might choose to do so, unless we could get other people to do the same, we should find ourselves unintelligible to our neighbours, and talking gibberish instead of a language. For the essential thing about a language is that it should be *an instrument for the communication of our thoughts to others*. There is no good in having symbols for our thoughts unless we wish our thoughts to become known to those about us. He who has no thoughts to communicate, no wants to be supplied, has no need of a language. But such a being, to use the words of Aristotle, is ἢ θηρίον ἢ θεός, "either a beast or a god;" or as we might, perhaps, render it in modern phraseology, either a hermit or an angel. The voiceless Yogi of India, or the Bernardine nun of southern France, is but as a dumb animal, or the hapless deaf-mute who has never been trained. The records of speech themselves testify to our instinctive recognition of the fact. The name *Slave*, for instance, by which so large a body of our Aryan kinsfolk have called themselves, means "the speaker," in opposition to the "dumb" and unintelligible German; just as in Isaiah (xxxiii. 19), the Assyrians are a people "of a stammering tongue, that one cannot understand." *Man*, indeed, comes from the

root *man*, "to think;" but it is thinking for others, for the sake of embodying the thought in spoken utterance. The same root has produced *μάντις*, the "seer;" *Μέντωρ* and *Minerva*, whose counsels are for others, not for themselves; *μνύω*, to "point out," and *monco*, to "advise;" *μνήμη*, "recollection," and *memini*, to "remember," and *mentio*, "the bringing to mind" by mentioning in speech. Even in the Semitic idioms, *zâcâr*, "a man," seems connected with *zâcâr*, "to remember," just as the Latin *mas* is with *μνήμη* and *memini*. Language, in short, is the prerogative of man, distinguishing him from the brute beast, because it is the basis and bond of society. Man is "a social animal" in virtue of language; society could not exist without language any more than language could without society. The two are correlative terms, though it is for the sake of society that language has been formed. It is a social product, springing up with the first community, developing with the increasing needs of culture and civilization, and disappearing when the individual Robinson Crusoe is cast back on the island of primitive isolation.

But though it is a social product, it may also with strict truth be spoken of as growing up. A society never met together to *make* a language. To imagine this would be to revive the theories of the last century, which referred all society and government to a contract entered into by our remote forefathers. We do not call the present volume a *book* because we have made a formal agreement with our neighbours to do so, but because if we called it *biblion* or *liber* we should not be understood by the majority of them. The language which we speak is

the heritage which has come down to us from the past, like the laws by which we are governed, or the habits and customs to which we conform. We represent our idea of a printed work by the word book, because we have been taught to do so by others, and those who taught us had been taught by others, and those again by others. But this process of teaching and learning implies a very slow and gradual change in the language that is being handed down. New words come into use as new objects and ideas have to be named, old words are forgotten, the pronunciation gets altered, and other changes hereafter to be described take place. And so, without any deliberate intention on the part of any individual or individuals, the whole character of a language comes in course of time to be transformed. Now and then, it is true, we can trace the invention of a wholly new word to an individual, like *gas* to the Dutch chemist van Helmont, or *od* force to Baron von Reichenbach ; and still oftener of a new derivative like *liberalize*, introduced by the Marquis of Lansdowne, *fatherland* by Isaac Disraeli, *incuriosité* by Montaigne, *urbanité* by Balzac, or *bienfaisance* by the Abbé de Saint Pierre. But such words must be accepted by society, be ratified by the tacit agreement of the whole community, before they can become a part of living speech. Though *gas* has made its way into common use, *blas*, which van Helmont proposed at the same time to describe that property of the heavenly bodies whereby they regulate the changes of time, failed to commend itself to the general sense of the community, and so passed out of sight ;<sup>1</sup> and such was also the fate of Balzac's *sériosité*, of Malherbe's

<sup>1</sup> Whitney : " Life and Growth of Language," p. 120.

*dévouloir*, and of Burke's *literator*. In spite of his 262 works, and the grammars and vocabularies written to explain the jargon employed in them, Caramuel, a famous Spanish bishop of the seventeenth century, was unable to bequeath to posterity a single one of his numerous coinages. The "Cabalistic Grammar," published at Brussels in 1642, and the "Audacious Grammar," printed at Frankfurt twelve years later, remained unread and unknown, a monument of "cabalistic" dreams and "audacious" folly.<sup>1</sup> A paternal government may compel the acceptance of a foreign speech, in place of the familiar mother-tongue, like the rulers of Japan, who were said, a short time ago, to be meditating the substitution of English for the native language under pain of death. But even a government of this kind cannot invent a new grammar and a new dictionary; it can only borrow from others: and if we are to judge from the experiences of certain Oxford colleges where French was similarly enforced in the days of the Plantagenets, and Latin in those of the Commonwealth, the attempt, though backed by all the powers of State and Church, is likely to end in failure. Language must be the unconscious creation of the whole society, and the changes it undergoes must be equally that society's unconscious work.

Now the sum of knowledge possessed by a society increases the longer the society exists and the more civilized it becomes. This increase of knowledge is reflected in the language; and hence languages grow fuller and richer—more developed, as it is termed—the longer they last. The further back we can trace a language, the poorer it

<sup>1</sup> See I. Disraeli: "Curiosities of Literature," vol. iii. pp. 79, 80.



is seen to be. Not only are words, or rather derivatives and compounds, wanting, but the words that exist embody but a few out of the many meanings which afterwards cluster around them. The dictionary of the Anglo-Saxon, of the *Ormulum*, or even of Chaucer, is scant and meagre compared with that at the disposal of a modern English writer. The dialects of savages, which most resemble what all languages originally were, have few words, because they have few ideas to express, and such ideas as are expressed are wonderfully simple. Thus, the Tasmanians, when they wanted to denote what we mean by "tall" and "round," had to say "long legs" and "like a ball" or the "moon" or some other round object, eking out their scanty vocabulary by the help of gesture.<sup>1</sup> So, too, the New Caledonians cannot be brought to understand such ideas as those conveyed by *yesterday* and *to-morrow*, and the jungle Veddahs of Ceylon are unable to remember even the names they give to their wives, unless the latter be present.<sup>2</sup> After this, it is not surprising that, like the Dammaras of South Africa, they are unable to count, and, consequently, have no numerals in their language. According to Mr. Galton,<sup>3</sup> indeed, the Dammaras are able to count as far as three, though he adds that they discover the loss of an ox, "not by the number of the herd being diminished, but by the absence of a face that they know." If two sticks of tobacco are

<sup>1</sup> Milligan : "Vocabulary of the Dialects of some of the Aboriginal Tribes of Tasmania," p. 34.

<sup>2</sup> See Mr. Hartshorne's Paper read before the British Association (1875).

<sup>3</sup> "Tropical South Africa," p. 132.



“the rate of exchange for one sheep, it would sorely puzzle a Dammara to take two sheep and give him four sticks.” “Once,” he goes on to say, “while I watched a Dammara floundering hopelessly in a calculation on one side of me, I observed Dinah, my spaniel, equally embarrassed on the other. She was overlooking half-a-dozen of her new-born puppies, which had been removed two or three times from her; and her anxiety was excessive, as she tried to find out if they were all present, or if any were still missing. She kept puzzling and running her eyes over them, backwards and forwards, but could not satisfy herself. She evidently had a vague notion of counting, but the figure was too large for her brain. Taking the two as they stood, dog and Dammara, the comparison reflected no great honour on the man.”

The number of abstracts possessed by a language is a good gauge of its development. It is difficult for us to realize the mental struggles and the ages of previous preparation required for the discovery of those ideas which now seem to us so familiar. The day on which, according to the ancient legend, Pythagoras struck out the idea of the *world*, and named it *κόσμος*, summed up all the labours of Eastern philosophy and Greek thought before which the law and order of the universe at last lay revealed. It is to Anaxagoras, to Herakleitus, to Xenophanes that we owe those ideas of mind, of motion, of existence which form the groundwork of modern science. Nay, our own generation has witnessed the creation of more than one great abstract idea, henceforth to be the common property of mankind, through the word by which it is expressed. To have won for the race a single idea like that of *natural*

*selection* is a higher glory than the conquests of a Cæsar. Man's first work, according to the old Hebrew writer, was to give names to "every living creature;" and the Assyrian story of the Creation, with the profound conviction that chaos is there where language is not, begins its record with the words :

"At that time the heaven on high was unnamed ;  
In the earth below no name had been recorded :  
And chaos unopened was their sire."

The words by which we express such abstract and spiritual ideas as those of *spirit*, of *virtue*, or of *intellect* are all, when examined, found to have a purely sensuous origin. The *spirit* was but "the breath," *virtue* "the quality of a man," *intellect* "a choosing between." We can only rise from the known to the unknown, from that which we perceive to that which is invisible. As the developing mind starts from the objects of sense, and passes over the bridge of analogy to objects of thought and reason, so, too, language, at the outset, had words only for the visible and the sensuous ; and not until it called in the aid of metaphor could it express the higher imaginations of the soul. If we look closely into language, we may see how strewn it is with worn-out and forgotten metaphors. "They are," as Carlyle has said, "its muscles and tissues and living integuments," the aids whereby language can communicate something more than the things which we see and feel. Even among ourselves, there are few who can afford to dispense with the assistance of concrete illustration and metaphor when dealing with abstract subjects. They throw a halo of light around the impalpable objects of

philosophic reasoning, and enable us to picture them before our minds. It is this picture-language, as we may call it, which gives so much of its charm to poetry, which made verse the first embodiment of literature, and lends to savage speech its poetical garb. The creations of mythology are in the main its work; and even modern science does not despise a "nature" which clothes itself with the attributes of humanity and of sex. It was the power possessed by language of rising from the concrete to the abstract that made the earliest hieroglyphic systems of writing possible, and which to this day enables the Chinaman to adapt his mode of writing to the introduction of new ideas. Like the Chinese lexicon, the multitudinous wealth of language can be traced back to a few and simple elements.

If we watch the first attempts of children to speak, we find that their wants and wishes are conveyed in a very small number of sounds, and that often a single word is made to express what we should represent by several. Now children, in spite of their inherited instinct of speech, are the best example we can have of the way in which the first men acquired their language, remembering only that the child nowadays has a complete language already framed for him, whereas the first men had to frame theirs for themselves. What the individual child now learns in a few years has been the laborious production of many a century and many a generation. But the child has still to learn it like his forefathers before him, and in learning it he may modify its sounds, its forms, or the meaning of its words, and so take part in bringing about what we call the growth of speech.

But it is not only by watching children that we can gain some idea of the way in which languages originally grew up. When we try to acquire a foreign tongue, not from books, but from conversation, we first pick up a few sentences and words, and then, by the help of these, endeavour to make our thoughts and wishes intelligible to others. But since the sentences and words we know are but few, we have to look about us for the simplest mode of expressing ourselves, and are obliged to make our expressions stand for many different ideas. Even then, however, our vocabulary is imperfect, and we often find ourselves wholly at a loss for any word by which to convey our meaning. Gestures are the only resource left to us, and it is by their help that we supplement our deficient knowledge of the spoken language. Indeed, the first words and sentences learnt at all may have been acquired by the same means. Travellers have drawn up vocabularies and phrase-books of the idioms of unknown tribes by pointing to objects or making use of gesticulations, and then observing what articulate sounds were associated with these movements by the persons addressed. It is a good example of the way in which gestures precede spoken language, and lead on to the latter. The same gestures are for the most part understood in the same sense among all the manifold races of men; a shake of the head signifies "no," a pointing of the finger symbolizes "locality." Gestures bridge over the gulf which separates inarticulate from articulate speech, and they are still a means of communication for the deaf-mute. But we must distinguish between gestures and that instinctive play of feature which Mr.

Darwin has treated of in his work on the "Expression of the Emotions." Gestures, in the proper sense of the term, are only partly the same for all races of men; no doubt the instinctive element preponderates in them, but we have to allow also for a certain element of conventionality. There is not the same physiological reason why a shake of the head should denote a negative as there is why a particular expression of the face should indicate pleasure, or pain, or surprise, or why a feeling of shame should bring a blush to the cheek. When we are told that the Veddahs of Ceylon are never seen to laugh, we at once infer that they have no sense of humour and no power of merriment. Gestures are rather a sign for the intellect than for the emotion, and since the same feeling must express itself similarly in the case of every one while the same thought need not, it is evident that that which expresses thought admits the element of conventionality more than that which expresses feeling. Pain must always be pain, and affect the nerves and muscles in the same way; what is thought of, on the contrary, may be conceived very differently, and represented in an equally varying manner. Hence it is that we share the play of feature with the brutes, whereas gestures—embodying as they do a rational rather than an emotional element—are for the most part peculiar to man. Man is man in virtue of language, and it was gestures that first made language possible.

But gestures alone are often but a poor resource for either the child or the traveller. They fail to express the meaning intended. Let us suppose a child, for example, to have been scratched by a cat, or frightened

by a herd of cows. It can represent the pain it has suffered, or the terror it has experienced by gestures, but if it be unacquainted with the names of cat and cow, it can only point out those animals by imitating the sounds they utter; and *mioow* and *moo-moo* become the nursery names for "cat" and "cow." And what still goes on in the nursery was a general procedure in the childhood of mankind. The domestic cat was introduced into Egypt from Nubia in the time of the eleventh or twelfth dynasty, and the Egyptians forthwith called it the *miau*, a name which it still bears in China. Indeed, the French and German equivalents of "puss," *mimi* and *mitz*, have the same origin as the *mioow* of the nursery or of Egypt, though German could not refrain from borrowing the unmelodious ending of *katz*. Dr. Comrie states<sup>1</sup> that the natives of the north-east coast of Papua call the dog a "bow-wow," and when first shown an iron axe named it *din-din*, from the sound which it seemed to make.<sup>2</sup> This imitation of natural sounds goes by the long and barbarous name of *Onomatopœia*, and though an attempt has been made to substitute "Imson" (*imitatio son-i*) for "onomatopœic word," it has failed.<sup>3</sup> Now if we are to infer anything from the habits of the nursery, and of those savage tribes which best represent the infancy

<sup>1</sup> "Journal of the Anthropological Institute," vi. 2 (Oct., 1876), p. 119.

<sup>2</sup> A "pig" is called *poro-poro*, and the act of "eating" *nam-nam*. We must remember, however, that just as a nurse will speak to a child in nursery-language, so a savage on being asked the name of an object may have recourse to onomatopœia, instead of giving the real native word.

<sup>3</sup> Plato termed it ἀπεικασμα ("Krat.," 402 D, 420 C.).



of mankind, onomatopœia must have played a large part in the formation of language. Its advocates have done much harm to what Professor Max Müller has happily termed "The Bow-wow Theory," by endeavouring to trace back words as we now find them to an onomatopœic origin; but this does not prove that the theory when scientifically applied is false. It is true that there are few words like *mioow* which can be immediately referred to an <sup>x</sup>onomatopœic source; it is true also that articulate language begins with roots, from which its scientific student must derive its words; but it is equally true that a large proportion of these roots—or rather of what these roots presuppose—was formed by the help of onomatopœia. It is not only objects like a dog or an iron axe that the Papuans met by Dr. Comrie named from the sounds they made upon his ear; an action like that of "eating" was equally called *nam-nam* from the noise produced by the process. We who speak a highly developed language, the worn-out *débris* of which are more than sufficient for the creation of new words and forms, can hardly realize the influence of onomatopœia upon rude and uncivilized jargons. Of course it is not necessary that the imitation of natural sounds should be an exact one; indeed, that it never can be: all that is wanted is that the imitation should be recognizable by those addressed. The same natural sound, consequently, may strike the ear of different persons very differently, and so be represented in articulate speech in a strangely varying manner. Thus, as has been noted before, *bilbit*, *glut-glut*, and *puls*, are all attempts to represent the same sound. Just as colours strike differently upon the eyes



of different men, so also do sounds upon their ears, and the poverty of primitive languages in terms to denote the colours is parallel to the imperfection with which they represented natural sounds.<sup>1</sup>

Besides gestures and <sup>v</sup>onomatopœia, there is a third way in which we can make ourselves intelligible without knowing the articulate language of those to whom we are speaking. This is by making use of interjectional cries. Like the play of feature, interjectional cries are the same for all men; we all make much the same kind of exclamation when hurt, or angry, or surprised. They express our emotions, not our ideas; and since the main object of language is to express ideas, interjectional cries can have had but a small share in its formation. Here and there we can point to a few roots, like *agh* (*ach*) in Aryan, which seem to have this derivation; but before the root *agh* could become a root in the linguistic sense of the word, and give rise to a number of derivatives, it was needful for it to cease to be an interjection; that is to say, it had to express an idea, and not an emotion. Many of our modern interjections, like *alas*, *lo*, are words that once possessed a full conceptual meaning, but have lost their original signification, and been degraded to the level of mere emotional cries. So hard is it for language to admit anything which was not from the first significant in

<sup>1</sup> On the whole subject of the onomatopœic origin of words, see (but with caution) Wedgwood's introduction to his "Dictionary of English Etymology" (first edition, 1859), and Farrar: "Chapters on Language," and "Origin of Language" (1860), ch. iv. Compare Buschmann in the "Abhandlungen der k. Akademie der Wissenschaft zu Berlin" (1852).

thought. Interjections remind us of the animal side of our nature, and they have forced their way into language only because that animal side must be represented to the mind. But in thus forcing their way they have ceased to be the simple utterances of pleasure and pain, and become expressive of conceivable states of feeling. Only in so far as the first men approached the brutes more nearly than we do, were interjectional cries likely to help them in building up the structure of speech. We may, however, include under the head of interjections those instinctive cries uttered by men when engaged in a common work, to which Professor Noiré would trace all roots whatsoever.<sup>1</sup> The sense of life and power that makes the child shout or the bird sing, and is the ultimate motive of human speech, causes us to beat time by the help of rhythmical utterances. And though the utterance be but a monotonous sing-song, it becomes a symbol and sign of the action it accompanies to all those who have taken part in it, and in course of time may pass into a word. How many of the roots of languages were formed in this way it is impossible to say, but when we consider that there is no modern word which we can derive from such cries as the sailor makes when he hauls a rope, or the groom when he cleans a horse, it does not seem likely that they can have been very numerous. Still they were probably more numerous than the roots formed from other interjectional cries.

The origin of language, then, is to be sought in *gestures*, *onomatopœia*, and to a limited extent *interjectional cries*.

<sup>1</sup> See page 82.

Like the rope-bridges of the Himalayas or the Andes, they formed the first rude means of communication between man and man. Onomatopœic words and interjections came to be metaphorically applied to denote other ideas than those for which they properly stood, while the relations of grammar were pointed out by the help of gesticulation. Thus, by imitating the gurgling of water and pointing to the mouth, a man could signify what we express by the sentence, "I wish to drink," or, "I am thirsty;" and by uttering a cry of pain and pointing to a knife, he could show that he had been cut by it. In course of time a collection of words would be formed, each of which represented what we now call a sentence. For a sentence, it must be remembered, is the name given by the grammarian to what the logician would call a proposition or a judgment, and though a judgment may be analyzed into subject and object and connecting copula (or mental act of comparison), we cannot, if we wish to be intelligible, separate its elements one from the other. The whole sentence, the whole *Λόγος*, as the Greeks would have termed it, is the only possible unit of thought; subject and object are as much correlated as the positive and negative poles of the magnet.

Language, then, we may lay down, begins with sentences, not with single words. The latter exist only for the lexicographer, and even the lexicographer has to turn them into sentences by affixing a definition if he would render them intelligible. We are accustomed to see sentences divided into their individual words in writing, and so we come to fancy that this is right and natural. But the very accent which we lay upon our

words ought to show us how far this is from the truth. The accent of a word varies according to its place in a sentence ; for purposes of accentuation, we regard not the individual words, but the whole sentence which they compose. And this outward fact of accentuation is but an indication of the inward fact of signification. All language must be significant ; but until the whole sentence is uttered, until the whole thought which lies behind it is expressed, this cannot be the case. The expression of the thought may be faulty and imperfect, but unless the thought be sufficiently expressed to be intelligible to another, it has not yet embodied itself in the form of language. The Greek *Λόγος* was not the individual word, which, apart from its relation to other parts of the sentence, has no meaning in itself, but the complete act of reasoning, which on the inward side is called a judgment, and on the outward side a sentence or proposition. The single word is to the sentence what syllables and letters are to the single word. We may break up a word into the several sounds of which it is composed, but this is the work of the phonologist, not of the speaker. So, too, we may break up a sentence like "Don't do that" into the four words *Do-not-do-that*, but this, again, is the conscious procedure of the grammarian. Sentences may be of any length ; they may consist of a single syllable, like *go!* or *yes*, or they may have to be expressed by a large number of separate "words" ; what is essential is that they should be significant to another, should adequately convey to his mind the whole thought that is intended to be expressed. Unless the sounds we utter are combined into a sentence, they have no more

meaning than the cries of the jackal or the yelping of the cur ; and until they have a meaning, and so represent our thought, they do not constitute language. The sentence, in short, is the only unit which language can know, and the ultimate starting-point of all our linguistic inquiries.

It is not necessary that the sentence should be divided into its component words in writing any more than it actually is in speech. The French *je le vois* is as much a single, undivided group of sounds as the Basque *dakust* or the Latin *amatur*. In the polysynthetic languages of America, in which the separate words of a sentence are cut down to their bare stems and fused into a single whole, the sentence can as little be split up into its elements as an ordinary compound in Greek or German. The ancient Hindu grammarians, with that wonderful insight into language which has made their labours the basis of modern scientific philology, treated the several words of a sentence just as we treat syllables and letters. A number of single words are run into one, the sounds at the end of each word being modified to suit those that follow, in accordance with the so-called rules of Sandhi, and the whole group of words is then written without division. Thus the word *trinairguṇatwamâpannairbadhyante* must be analyzed into *trinais*, "with grass blades" (an instrumental pl.), *guṇatwam*, "a rope's state" (acc. sing.), *â-pannais*, "having attained" (part. pass. of the compound verb *â-pad*, agreeing with *trinais*), and *badhyante*, "they are bound" (3rd pl. pres. pass. of the verb *bandh*). In fact, a little attention will convince every one that even in our own language not only does

the accent of a word depend upon its place in the sentence, but that the sound with which it terminates equally depends upon the sound which follows. We pronounce "of" in one way when it stands by itself in the dictionary, in another way when it precedes "the" or "that."

If the sentence is the unit of significant speech, it is evident that all individual words must once have been sentences; that is to say, when first used they must each have implied or represented a sentence. And this is borne out by an examination of the records of speech. We shall see hereafter that words may be divided into conceptual or presentative, and pronominal or representative, and that wherever we can trace back the latter to their source, we find them to have been originally presentative. Thus words like "and" or "because" are now purely symbolic and representative; there was a time, however, when they denoted the very definite ideas of "a going further,"<sup>1</sup> and "by the cause."<sup>2</sup> Now, if we look carefully into the nature and essence of these presentative words, it becomes clear that they were at the outset so many shorthand notes or summaries of various sentences. Take, for example, the word *memorandum*. Before it can form a part of language, *memorandum* must be significant. This can come about only in two ways. Either we must accompany the utterance of the word *memorandum* with gestures which imply "This is a

<sup>1</sup> Latin *et*, Greek *ἔτι*, Zend *aiti*, Sanskrit *ati*, are referred by Weber ("Indische Studien," ii. p. 406) to the root *at*, "to go."

<sup>2</sup> As in Chaucer: "Knight's Tale," 2488:—"But by the cause that they sholde ryse."

memorandum," or "Write a memorandum," or something similar, or else we must express the meaning of these gestures by equivalent words. That is to say, the isolated word *memorandum* must be incorporated into a sentence by being brought into relation with other words, before it can become part and parcel of living speech. Taken by itself, it belongs to the dictionary-maker only, and even he has to add a definition, that is to say, to make it the subject of a sentence, if his dictionary is to be something more than a mere catalogue of unmeaning sounds. Before a definition is supplied by the lexicographer or the reader, a word is not yet a word ; it has no meaning.

The student of language, then, cannot deal with words apart from sentences. The significant word—that combination of sounds which represents a thought—is really a crystallized sentence, a kind of shorthand note in which a proposition has been summed up. Each advance in philosophy and science is marked by the acquisition of a new idea or fact, the result of a long train of previous observations and reasonings : and the more complex the idea or the fact, the more numerous will be the reasonings, the sentences or judgments, which underlie it. What a multitude of judgments, which when expressed in language we call sentences, are implied by the two simple words *humanity* and *gravitation* ! It is a truism in psychology that the terms of a proposition, when closely interrogated, turn out to be nothing but abbreviated judgments. The ordinary theory of modern comparative philologists traces all languages back to a certain number of abstract roots, each of which was a sort of sentence in embryo, and though this theory is scarcely tenable in the



form in which it is usually presented, it is yet certain that there was a time in the history of speech when the articulate or semi-articulate sounds uttered by primitive man were made the significant representatives of thought by the gestures with which they were accompanied. And this complex of sound and gesture—a complex in which, it must be remembered, the sound had no meaning apart from the gesture—was the earliest sentence. The isolating languages of Further India still express a new concept by the juxtaposition of two words which denote that it is the species of a higher genus. Thus, in Taic or Siamese *kin* is to “eat,” but when *nam*, “water,” is added, *kin-nam* means “to drink;” *mi* is “rich,” *mi din*, *mi nán*, “earthy,” and “watery,” that is to say, “rich (in) earth” and “water.”<sup>1</sup>

These examples from the far East show us the way in which our words first came into existence. They have grown out of sentences by a process of comparison and determination. Two or more sentence-words, referring to the same object or idea viewed under different relations to the speaker, might be set over against one another, and the phonetic part in which they agreed taken to denote the object or idea considered by itself. Thus in Semitic *kátal* is “he killed,” *kotél*, “killing,” *k'tol*, “to kill” and “kill,” *kâtúl*, “killed,” and *katl*, *kítl*, or *kutl*, “a killing,” where the difference of signification is marked by a difference of vowel,

<sup>1</sup> See “A Comparative Vocabulary of the Barma, Malayu, and Thai Languages,” published at Serampore in 1810. A Siamese compound like *lík-mái*, “fruit,” literally “son of wood,” is an exact equivalent of the Hebrew “son of Belial” for “sinner,” or “master of hair” for “hairy.”

and co-existing forms of this kind, when compared with each other, would determine that the three consonants *k-t-l* had the general sense of "killing." But an inflectional language does not permit us to watch the word-making process so clearly as do those savage jargons in which a couple of sounds like the Grebo *ni ne* signify "I do it" or "you do it," according to the context and the gestures of the speaker. Here by degrees, with the growth of consciousness and the analysis of thought, the external gesture is replaced by some portion of the uttered sounds which agrees in a number of different instances, and in this way the words by which the relations of grammar are expressed come into being. A similar process has been at work in producing those analogical terminations whereby our Indo-European languages adapt a word to express a new grammatical relation. Thus, in English, the Greek termination *ize* (or *-ise*) has been abstracted from the words to which it properly belonged by comparing them together, and has been instinctively, as it were, invested with a particular meaning, so that we can now turn any word we like, whether of Greek origin or not, into a transitive verb by attaching to it this suffix. In *humanize*, for instance, it is added to an adjective of Latin origin, in *jeopardize* to a Romanic compound. When once a sentence-word had been broken up into single words by comparing it with other sentence-words relating to the same subject, it was easy to extend the operation to other sentence-words, which were accordingly broken up and analyzed without being compared with related sentences. The phonetic expression of the verbal copula by which the subject and object were con-

nected together, was the last result of this analytic process; it was long left to be supplied by the mind, the simple juxtaposition of subject and object being considered sufficient to suggest the mental act by which they were compared or contrasted, and to this day many languages, those of Polynesia, for example, still remain without a verb. Thus, in Dayak *kutoh ka-halap-arut-m*, "thy boat is very beautiful," is literally "very its-beauty thy-boat," *andi-m handak imukul-ku*, "thy brother will be struck by me," means properly, "thy-brother my striking-being," while to express "he has a white jacket on," the Dayak must say, *ia ba-klambi ba-puti*, "he with-jacket with-white."<sup>1</sup>

As we shall see hereafter, all the facts at our disposal tend to show that the roots of speech, or at all events the earliest sentence-words out of which the later languages of mankind have sprung, were polysyllabic, and other facts go equally towards proving that the terminations of these primitive roots or sentence-words displayed a wearisome monotony of agreement. Survivals, as Mr. Tylor has happily termed them, are among the most valuable means we have of arguing back to an earlier state of things, and we can only treat as a survival the habit of a child whom I know, who in her first essays at speech affixed a final *ö* to almost all her words, saying for instance, *come-ö* and *dog-ö* for "come" and "dog." The older a speech is, the more it has suffered from the wasting and wearing effects of time, and a language like the Chinese, which stands out as some weather-beaten

<sup>1</sup> Steinthal: "Charakteristik der hauptsächlichsten Typen des Sprachbaues," pp. 165, 171, 173.

granite peak among the languages of a later day, has so concealed all traces of the originally pluriliteral character of its vocabulary, that it is only within the last few years that Sinologues, like Dr. Edkins and M. de Rosny, have detected it. So, we may infer, will it also be found with all the other languages of the world; the first utterances of mankind were polysyllabic, though not perhaps of such monstrous length as the sentence-words of Eskimaux or Algonquin. In the friction and comparison of these utterances similar terminations came in some instances to be set apart to denote the relations of grammar; in other instances the grammatical relations which lay implicit in the sentence-word were made explicit by its being set over against another sentence-word similarly employed elsewhere; and so it came in course of time to be what the Chinese would call an "empty word" with no presentative meaning of its own. Thus, on the one side, as M. Bergaigne has shown, the old adjectival suffix *bha* (*bhi*) in our own family of speech has become the sign of the dative and genitive cases (Latin *ti-bi*, dat., Old Slavonic *te-be*, gen.) just as the adjectival termination *sya* or *tya* (as in *δημόσιος*, "belonging to the people") has become the sign of the genitive (*ἰππο[σ]ῶ*); while, on the other side, the Chinese *tsŷ h'ai*, "to be hurt," is literally "eat hurt," and *tshyeu thyan*, "autumn," "harvest-heaven." The Chinese word can still be used indifferently as a noun, a verb, an adverb or the sign of a case much like such English words as *silver* and *picture*, and its place in the sentence alone determines in what sense it shall be construed. This is an excellent illustration of the early days of speech, when

the sentence-words contained within themselves all the several parts of speech at once—all that was needed for a complete sentence ; and it was only by bringing them into contact and contrast with other sentence-words, that they came to be restricted in their meaning and use, and to be reduced into mere “ words.” Language never forgot the mode in which it had framed its first vocabulary, and the Greek and Roman, as much as the Red Indian of America, in framing their compounds instinctively stripped off the so-called inflections, and reduced the word they placed first to its simple stem. That part alone of the word which remained unchanged and unchangeable, could be made use of when the word was to be treated as simply a word and nothing more. The North American languages reflect more faithfully than the languages of the Old World the primitive condition of speech, and the North American languages can possess from six to eight thousand different verbal forms or sentences without having abstracted from them a single *word* which will express the sense of the verb out of all relation to anything else.<sup>1</sup> Thus, the Cherokee has thirteen verbs to denote particular kinds of “ washing,” such as “ washing the head,” or “ the hands,” or “ myself,” and each of these verbs has a multitude of forms, but no isolated word to denote “ washing ” in general has as yet been extracted from them.<sup>2</sup> The difficulty has often been noticed of getting a savage or barbarian to give the name of an object without incorporating it into a sentence

<sup>1</sup> See Du Ponceau : “ Langues d’Amérique,” pp. 120, 200, 234, 236, 237.

<sup>2</sup> Pickering : “ Indian Languages,” p. 26.

or bringing it into relation with something else. Thus, a Kurd who supplied Dr. Sandwith with a vocabulary of the Zaza dialect, was so little able to conceive of words like "head," "father," "hair," except as related to himself or some one else, that he had to combine them with a personal pronoun, saying *sèrè-min*, "my head," *piè-min*, "my father," *porè-min*, "my hair." The Hoopah and Navaho vocabularies, published by Schoolcraft,<sup>1</sup> similarly prefix the possessive pronoun *h'*, *hut* to all their words, as *hotsintah*, *hut-tah*, "forehead," *huanah*, *hunnah*, "eye," *hoithlani*, *hutcon*, "arm;" and Dr. Latham points out the same fact in Wallace's vocabularies from the river Uapes, where *eri-bida*, *eri-numa* in Uainambeu, *tcho-kercu*, *tcho-ia* in Juri, and *no-dusia*, *no-nunia* in Barrè, literally "my head," "my mouth," are given as the equivalents of simple "head" and "mouth." He also states that he has noticed the same peculiarity among the English Gipsies.<sup>2</sup> The making of words as distinct from sentences was a long and laborious process, and there are many languages like those of North America in which the process has hardly yet begun. A dictionary is the result of reflection, and ages must elapse before a language can enter upon its reflective stage. Our children still learn the languages they speak by first acquiring the knowledge of certain phrases and sentences, and then gradually analyzing them into words, and the adult who wishes to gain a successful acquaintance with another tongue must pursue

<sup>1</sup> Part iii. (1853), pp. 420-445.

<sup>2</sup> See Latham in the "Proceedings of the Philological Society," vol. vi. (1852-3), p. 85; and in the "Transactions of the Philological Society" for 1856, pp. 40, 41.

the same plan. What Steinthal says of the Chinese, that its "smallest real whole is a sentence, or at least a sentence-relation,"<sup>1</sup> is true of other languages as well, and the words of which a sentence is composed have no actual existence apart from that sentence, except for the phonologist and the lexicographer. Until the whole sentence is completed the individual words of which it consists have no more signification than the syllables *ful* and *ness* or *cy* and *ly* which occur so plentifully in English. The first condition of language is that it should be significant, and words are only significant when they stand in relation to one another. The *logos*, the true word, said Aristotle, was the cause of knowledge; the individual words of which it was composed were but symbols and tokens of the impressions of sense.

Now, if language be the embodiment of thought, and if thought can only express itself under the form of the complete sentence, it is plain that we must look to the sentence for a true classification of languages. The sentence expresses the way in which we think, and the different forms assumed by the sentence—that is to say, the different modes in which the relations of subject, object, and verb are denoted will constitute the only sound basis for classifying speech. The particular relation between the several ideas summed up in a judgment or sentence agrees with the manner in which we regard the objects about which we think and speak. If, for instance, we have no clear idea of any distinction between ourselves and the objects around us, in talking about them any reference to ourselves will be left out of

<sup>1</sup> "Charakteristik," &c., p. 113.



sight. Instead of saying, “*I am running*,” where the speaker distinguishes himself from the act in which he is engaged, we should say like the Romans *curro*, where the personal pronoun has no separate and independent mark of its own. Different races of men do not think in the same way; and, consequently, the forms taken by the sentence in different languages are not the same. Thus in the so-called isolating languages, the separate terms or ideas which make up the sentence are not subordinated to each other, and fused into a single whole, but every word remains a separate and distinct sentence. The Chinaman has to say, “*thyan-hi len tsyan-sai-lei*”—literally, “heaven-air cold begin-rise-come,”—if he wants to state that “the weather began to be cold;” and the Burman’s way of expressing “we are going,” is by saying, “*ñā dō dhwā kra dhañ*”—“I multitude go multitude which.” In cases such as these, the ideas are each set down independently, instead of being subordinated one to another, and the words which embody them are accordingly contrasted with each other like so many independent sentences. On the other hand, in the agglutinative languages, the ideas which make up the sentence, though still kept distinct and independent, are no longer set over against one another, but brought into mutual relation and harmony, and regarded as of equal force and meaning. The root or stem still stands out clearly and separately, and the suffixes of relation are marked with equal distinctness. But for all that, the inward fact of the incipient subordination which exists between them is denoted by the outward fact of vocalic harmony, whereby the vowels of both stem and suffix have to belong to the

same class. The Turkish sign of the infinitive, *mak*, has to become *mek* after a root like *sev*, "love," though both root and suffix still retain their own individuality; and while *at-lar* is "horses," *ev-ler* is "houses." The grammatical relations expressed in the Aryan class of languages by case-endings and person-endings, or by prefixed pronouns and prepositions, have to be represented, as a general rule, by postfixes, since in no other way can sufficient emphasis be laid upon them, and the danger avoided of their being swallowed up in the verb or noun. Our "I love," or "the man," look but little different in writing from the Turkish *sev-r-im*, or the Basque *gizoná*, *gizonák*; the case is quite altered, however, when we try to pronounce these words, the accent falling on the verb in our "I love," but allowing the distinction between verb and pronoun to be clearly felt in the Turkish *sevrim*. It is among the inhabitants of mountainous and cold regions in the Aryan and Semitic families of speech—among Albanians, Bulgarians, Scandinavians, and Aramæans—that the definite article is postfixed instead of being prefixed; and we can see at once what an emphasis and distinctness would be given to it by such a position. Only where foreign influences have been at work do the agglutinative languages change the order of the words in the sentence and, as in the case of the Hungarian definite article *a*, *az*, prefix the words expressive of the grammatical relations, instead of postfixing them. Still further, to mark out the several parts or terms of the sentence, the objective pronoun may be inserted between the subjective pronoun and the verbal root or stem; and so we may have a sentence-word like the

French *je vous donne*, as in the Basque *samastet* (from *eman*, "to give"), or the converse arrangement of the terms, as in *n-aza-su-n*, "that you may have me" ("me-have-you-may"). The incorporating languages, as they are called, are the oldest examples of the agglutinative class, for they go back to the time when the speaker had not yet begun to analyze his sentences, and when he could not say simply, "I give," without finishing the sentence with the objective pronoun. Hence it is that in Basque we must say *dituste beren liburnac*, "they have them their books," instead of simply "they have their books;" and in Accadian, the language of primitive Chaldea, "I built a house" would be *ê mu-n-rû*,<sup>1</sup> literally "house I-it-built."

Very distinct from these incorporating tongues are the polysynthetic or incapsulating dialects of America, in which the words that make up a sentence are stripped of their grammatical terminations, and then fused into a single word of monstrous length and appearance. Thus the Algonquin would say, *wut-ap-pé-sit-tuk-quš-sun-noo-weht-unĕ-quoh*, if he wished to express the sentence "he, falling on his knees, worshipped him;" and this cumbrous compound denotes exactly what we split up into seven words. These polysynthetic languages are an interesting survival of the early condition of language everywhere, and are but a fresh proof that America is in truth "the *new* world." Primitive forms of speech that have elsewhere perished long ago still survive there,

<sup>1</sup> This order of the pronouns was a later innovation in the language, and seems due to Semitic influence. In the older period of the speech the form was *rû-n-mu* or *rû-mu-n*.

like the armadillo, to bear record of a bygone past. The conception of the sentence that underlies the polysynthetic dialects is the precise converse of that which underlies the isolating or the agglutinative groups. The several ideas into which the sentence may be analyzed, instead of being made equal or independent, are combined like a piece of mosaic into a single whole. The sentence has not passed beyond its primitive form, or rather that primitive form has been retained in spite of the growth and development of the languages to which it belongs. It is possible that the Eskimaux may be the descendants of the savage races who inhabited the caves of southern France, when the rivers were stiff with ice for half the year, and the reindeer roamed freely through the woods and meers; at all events, among the icebergs and dark winters of the North, they have preserved their old habits of thought, their old mode of viewing the world about them, almost unchanged. And yet our own class of speech, that class to which we give the name inflectional, and which we sometimes think is the crown and standard of all other kinds of language, is not so far removed in usage from the Eskimaux or the Algonquin as are the isolating dialects of China and the agglutinative jargons of Mongol and Turk. In the inflectional group the words or suffixes which denote grammatical relations are subordinated to the words which express objects or actions—that is to say, to nouns and verbs. The termination of the Latin *currit* has lost all distinct and independent meaning of its own; apart from the verbal stem to which it is subordinated, it is a mere *flatus vocis*, a mere empty sound. In flexion proper, which we may see best ex-

emplified in the Semitic tongues, the relations of grammar are denoted by internal vowel change—*adamu*, “man,” for instance, being nominative, *adami* genitive, and *adama* accusative. It was only afterwards, and by the force of analogy, that first unmeaning suffixes and then agglutinated words which were gradually assimilated to them, came to take the place of internal vowel change. What we may term the inflectional instinct sought to express the various relations of the sentence, as they successively rose to consciousness, out of the original sentence-word itself. When separate words like *wards* or *ly* (*like*) were afterwards employed for the same purpose, they first had to lose their own individuality, to become empty words, representative and not presentative, and as such to be engrafted upon the old stems. The Greek  $\phi\eta\mu\acute{\iota}$ , or the Sanskrit *ad-mi*, “I eat,” are single wholes; the first personal pronoun *ma*, weakened to *mi*, has lost all life of its own, and its sole right to existence lies in its absorption into the stems  $\phi\eta\text{-}$  and *ad-*. But an inflectional language cannot carry out its fundamental principle with logical completeness. All the subordinate relations of a sentence cannot be brought into the same close connection with the principal idea as in  $\phi\eta\mu\acute{\iota}$  and *admi*. Sentences like “I speak” or “I eat” may be comprehended under a single word; but there are many sentences where this is impossible, and where the attempt to express in language the relation between the principal and the subordinate, between the subject and the attribute, has to be given up. In the Latin *poeta bonus*, for example, the subject and the attribute appear as separate words; and there is nothing in the flexion attached to

each to show that they stand in any relation whatsoever one to the other. So far as the form goes there is nothing to tell us whether the two words mean "a good poet" or "the poet is good." The fundamental principle of flexion has been violated, and the language is on the high road to that more developed condition in which, as in Chinese, the two ideas are set plainly and distinctly one against the other, and the mind is left to supply the relation between them. This impossibility of carrying out thoroughly the principle of flexion brings about an analytic tendency in all inflectional forms of speech. The longer an inflectional language lives the more analytic it becomes. The Englishman says "I will go," and the Frenchman *le monde*, where the Latin was contented with *ibo* and *mundus*. One by one the grammatical relations implied in an inflectional compound are brought out, as it were, into full relief, and provided with special forms in which to be expressed; but the change that has taken place is but an apparent one, the inflectional spirit of the language still remains; and though we write "he runs," "I will go," we pronounce as if they were single words. The pronoun and the verb, taken apart and by themselves, convey no meaning to our minds; we have to combine them before they become significant, and (the order of the words excepted) there is but slight difference between an English sentence like "never to be sufficiently relied upon," and the Tamil *sārndāyḱku*, "to thee that hast approached," to be analyzed into *sār*, "approach," *d* sign of the past, *āy*, "thee," and *ku*, "to."

Each of the leading classes of speech naturally com-



prises various species or subdivisions. Thus the isolating Chinese differs from the isolating dialects of Further India, in that the Chinese mode of expressing the relations of the sentence by position is replaced in these by the use of words like *prū*, "do;" *khã*, "suffer;" *khōñ*, "possession;" *mha*, "from." So, again, in the agglutinative class, the Bâ-ntu languages of Southern Africa prefix the same substantive, worn down, it may be, to a mere unmeaning symbol, to each of the words in a sentence which have to be brought into relation with each other; *o-ka-ti k-etu o-ka-ua*, for instance, being "our fine stick," or literally, "stick ours fine." The Malayo-Polynesian dialects have not yet attained to the conception of the verb; thus *yaku imukul olo* ("I smitten people") is "I am smitten by the people;" *ingara-ku ia tatau* ("my-thought he rich") "I thought he is rich;" *ia baklambi baputi* ("he with-jacket with-white") "he has a white jacket on." Basque grammarians generally hold that the Basque has but two verbs, "to be" and "to have," while, on the other hand, there are many languages which lack precisely these two.

But in all these sub-classes, just as in the main classes of speech, it is the different conception of the sentence and the form it takes which characterize the whole language. However much alike may have been the circumstances by which the first communities of men were surrounded, they yet viewed the world without them and their own relation to it with different eyes. The idea they formed of the sentence and its parts was not the same everywhere. When with the growth of consciousness came also the formal expression in utter-



ance of the relations of the several parts of the sentence, it was inevitable that this expression should clothe itself in essentially various forms. And the psychological peculiarity which originated each of these forms—a peculiarity itself the result of previous experiences and tendencies—became continually more definite, more confirmed, more unalterable. The logician may reduce all forms of the affirmative proposition or judgment to the single "A is B," but the grammarian knows that this is like the *jus gentium* of the Romans, a mere abstraction from a limited number of observed instances. It may be the right form for the sentence to take in the manifold languages of the world, but as a matter of fact it has never been taken in any one of them. The form of the sentence as shaped by the primitive language-builders of each human community has imprinted itself indelibly upon the linguistic consciousness of their successors. Racial type and characteristics will change as soon as the conception of the sentence. Many of the agglutinative languages have approached so nearly to the phenomena of inflection, as to make it difficult to determine why they should not be classed with the inflectional tongues; and yet for all that they remain agglutinative, and have remained so as far back as we can trace them. Our own language is agglutinative, and even isolating in many respects, while the French *je vous donne* seems a clear instance of incorporation. The Chinese, on the other hand, shows much that is agglutinative, much even that resembles inflection, and it is only the polysynthetic languages of America that remain true to their stereotyped primæval character. Nevertheless, in spite of all

this apparent confusion and overlapping, this borrowing, as it were, of characteristics from other families of speech, the great types of language stand out each of them visibly and distinctly. Their broad characteristics can be clearly sketched, their essential diversity easily felt. It is only when we come to map out the boundaries between them, to determine where isolation ends and agglutination begins, that we find ourselves at fault. Here as elsewhere in nature there is no sharply-defined line of division to be drawn; species passes gradually and insensibly into species, class into class. But in spite of this, species and classes really exist, each with its own type and characteristics, each founded upon its own conception of the sentence and its parts. When we remember that the sentence, and not the isolated word, is the starting-point of philology—when we make it what the logician would term the *fundamentum divisionis* for our classification of speech—there is no longer any difficulty in distinguishing between the several families of speech, and assigning to each its character and place. The Finnic idioms have become so nearly inflectional as to have led a recent scholar to suggest their relationship to our Aryan group; nevertheless, they have never cleared the magical frontier between flexion and agglutination, hard as it may be to define, since to pass from agglutination to inflection is to revolutionize the whole system of thought and language and the basis on which it rests, and to break with the past psychological history and tendencies of a speech. There are South American butterflies whose colours have come to resemble so closely those of the plants on which they are found as

to be indistinguishable from them ; for all that, the butterfly still remains a butterfly, and the plant a plant.

Such, then, is language in its origin and its nature. It is significant sound, the outward embodiment and expression, however imperfect, of thought. Before sound can become significant it must express the whole thought or judgment ; that is, it must take the form of a sentence. Historically, the sentence and not the word comes first. The sentence consists of two factors, one the external sound, the other the internal thought, and neither of these factors can be disregarded by a true science of language.

Now, science is accurate knowledge. The statement may seem a truism, but it is a truism which has sometimes been forgotten. For that which is accurate is only that which can be defined and limited, that of which all the boundaries, as it were, are distinctly mapped out and known. But the boundaries of knowledge can only be discovered by the help of comparison. It is, in fact, the comparative method that constitutes the very life of inductive science ; it is the application of the comparative method to any subject which brings that subject within the domain of scientific knowledge. Our knowledge that night and day follow one another alternately, or that if we put our hands into the fire they will be burnt, is not yet scientific. In order to know anything scientifically we must be able to compare it with something else, and so determine its size, or weight, or character. Our feelings may tell us that the atmosphere is hot or cold, but we have no scientific knowledge of either fact until we can measure one degree of heat or cold against another by

means of the thermometer. As soon as we know the exact amount and character of each degree of heat or cold, we have laid the foundations of a science of thermology. It is just the same in the case of language. Here, too, as soon as we can compare languages and the elements of languages together, and so measure and determine their character, we shall have the beginning of a science of language. But the comparison must be made by the aid of a common standard. The old attempts to compare Latin with Greek, or both with Hebrew, were failures because the test applied was a capricious one, depending on the subjective fancies and prejudices of the inquirer. We cannot compare two things together without having a third term—a common standard by which to measure them. We must not have one rule and measure for one set of words or languages and another rule and measure for another set. The comparative method we employ must be alike in all cases.

Language is a social product, at once the creation and the creator of society. It is independent of the caprice of the single individual, and the Emperor Tiberius could no more change a Latin word<sup>1</sup> than the slavish obedience of a Benedictine monastery could turn *sumpsimus* into *mumpsimus*. Unless the community as a body agree to accept the new word or form, Cæsar himself is powerless to introduce it. The changes undergone by language are brought about by the action of circum-

<sup>1</sup> Suetonius: "De illustr. Gramm.," 22. "M. Pomponius Marcellus . . . . quum ex oratione Tiberium reprehendisset, affirmante Ateio Capitone, 'et esse illud Latinum, et, si non esset, futurum certe jam inde;' 'Mentitur,' inquit, 'Capito. Tu enim, Cæsar, civitatem dare potes hominibus, verbo non potes.'"

stances over which the individual has no control. They are circumstances which affect the whole community, not the individual member of it. The primary condition of speech that it should be significant requires that it should be stamped and recognized by the common consciousness. Now, the circumstances that affect a whole community will always act in the same way should the conditions remain the same. Individual caprice is rendered impossible, and the forms assumed by language will be found referable to general laws. We have to deal, not with the infinite complexity of individual motives and caprice, but with the consentient action of many minds swayed by the same feelings, surrounded by the same atmosphere. The joint action of a multitude eliminates the accidental differences of individual character ; all that is left is just that in which all agree, the result of the influences of which all alike are sensible. The circumstances that determine the common nature of a society determine also its common utterance, and this common utterance we call its language. It embodies all the past life and history of the community that speaks it ; each phase in the development of its speakers is reflected in it as in a mirror, and its worn-out words and forms are so many crystallized embodiments of dead and bygone thought, so many fossil relics, as it were, of the past strata of social growth. The facts of language—its sentences and its words—are the result of the action of general laws and conditions ; by comparing and classifying them we can discover what these general laws are, and how they act. A knowledge of these laws and their action constitutes glottology or the science

of language; the use of the comparative method by which they are discovered constitutes comparative philology.

Comparative philology, therefore, furnishes the materials whereby the science of language investigates such questions as the origin of speech, the nature of roots, or the meaning of flexion. It may be said to comprise both comparative and historical grammar, comparative grammar being primarily occupied in comparing the grammatical forms and syntax of different languages of the same group; historical grammar in tracing the history of the forms and syntax of a single language. The two studies, however, necessarily overlap, comparative grammar requiring a knowledge of the individual languages compared at the successive periods of their history, or restoring the older forms of the individual languages by means of comparison, and historical grammar calling in the aid of the allied dialects to supply the deficiencies of the literary or monumental record. Quite apart from either is philology proper in the old sense of the word, which busied itself solely with literary languages and the literature they enshrine. The business of philology is to compare author with author, style with style, to determine the employment of words and phrases in the writers it investigates and pronounce upon their correctness, to emend the readings of MSS. and imitate the idiosyncrasies of particular writers. From the old-fashioned classical philology to the so-called philosophy of speech there is a wide leap, but both have been equally transformed by the new comparative method. The philosophy of speech in the hands



of men like Harris or Stoddart<sup>1</sup> endeavoured to attack the problems of language by "the high *priori* road," and by unverified and unverifiable reasoning from the phenomena of modern dialects to discover the origin of speech and the relation between grammar and logic. The philosophy of speech under the guidance of comparative philology has become the science of language, which may be said to comprehend both. The questions which the *à priori* method failed to resolve are now yielding their answers to *à posteriori* research, and the results already obtained have overthrown the unsubstantial speculations of the last century. The science of language has been variously termed "La Linguistique,"<sup>2</sup> "Linguistic Science," Glottic,<sup>3</sup> and Glottology,<sup>4</sup> and it stands in the same relation to comparative philology that physiology stands to comparative anatomy.

Now, the ultimate facts with which comparative philology has to deal are sentences and the words that have been evolved out of them. These words and sentences must be real and not imaginary—that is, they must either belong to some living speech, or be preserved in a written record, or else be restored by a sound comparison of existing words which presuppose some common ancestor. Where such real and well-attested words are not to be had, no conclusions can be drawn. Unless inscribed monuments are hereafter brought to light or comparison with the Malayan dialects results in the recovery of a

<sup>1</sup> Sir John Stoddart: "Universal Grammar, or the Pure Science of Language," 2nd edition, 1852.

<sup>2</sup> By French writers.

<sup>3</sup> As by Schleicher.

<sup>4</sup> As by Ascoli.



common parent-speech, the condition of the Polynesian languages 1,000 years ago must remain unknown. Much no doubt may be effected by comparing the scattered relics of these languages together, by showing that a sibilant, for instance, has been preserved in Samoan which has become a simple aspirate elsewhere, or that a guttural is retained between two vowels in Maori which has been dropped in most of the other Polynesian settlements ; but to assert that some thousand years back they resembled another language to which they bear little similarity at present, would be to argue without data, and to violate the fundamental principles of comparative philology.

The object of the science of language is threefold :—

(1). It compares and classifies sentences, grammatical relations and words.

(2). It compares and classifies languages and dialects.

(3). By means of this comparison and classification it discovers the laws which govern language in general and certain languages and dialects in particular.

Thus by comparing the languages of the Aryan family we discover the phonetic law that an English *th* must always represent *t* in Sanskrit, Greek, and Latin, unless the action of other determinate laws interfere, and by comparing different groups of languages together, we find that the dual number everywhere preceded the plural. There are still many tongues in which the plural is formed by reduplication, tongues, that is, where duality, the repetition of the idea, is or has been the only conception of plurality yet reached ; and others in which the number “three” is denoted by words like *prica*,

“many” (in the dialect of the Puris of South America,) expressive of vague indefiniteness, and an inability to form a clear idea of anything beyond “two.” Indeed, in our own Aryan family of speech there was a time when *one*, and *two*, or that which was “divided” (*δύω, δίς, διὰ, &c.*) from one, were the only numerals known, and it required a fresh effort of thought to attain and conceive of a new numeral, which was accordingly named *tri, tres, three*, or that which is “beyond” (*trans, through, Sansk., tar-â-mi, “I pass beyond”*).

The laws of speech may be either primary or empirical. Empirical laws are those generalizations made from the survey of a limited number of phænomena, the reason of which we do not know. All we know is that given one particular fact, another particular fact follows, or that wherever we meet with a particular class of phænomena the same generalization is sure to hold good. Thus in astronomy, Kepler’s discovery that the planets move in an ellipse may be termed an empirical law, and the same may be said of the phonetic law mentioned above which obliges us to compare an English *t/h* with the Greek and Latin *t*. Primary laws are those higher and more comprehensive laws or generalizations which embrace the empirical laws and give the reason of them. Such a primary law is gravitation, such, too, probably is the law of natural selection. In the science of language examples of these primary laws would be the law that all language is based on roots, or the law of economy in the use of speech. The determination of the primary laws of language leads us very nearly into the charmed land of metaphysic; as the physicist with his doctrine of force

is transported out of the region of pure experiment and observation, and brought face to face with metaphysical problems, so is the scientific student of language with his doctrine of roots. Hence that part of the science of language which stands in the most direct relation with the old philosophy of speech, which would investigate such subjects as the origin of gender and case, or determine the priority of thought or language, has sometimes been called linguistic metaphysics.

When once the laws of language have been laid down we are able to apply them to our facts (that is, words and sentences), to whatever period these belong. The science of language, like all other sciences, rests upon the postulate of uniformity. So long as the conditions remain the same, the laws of the science will act with undeviating regularity. It does not matter whether the words we are dealing with are still living and spoken, or have been dead and obsolete for thousands of years; if we can show that they fall under the action of a particular law, we can apply that law to them in either case with equal certainty. When once we have ascertained that an English *d* represents a Sanskrit *t*, only those Sanskrit words which contain a *t* must be compared with English words of Teutonic origin which have a *d* in the corresponding place, whatever their antiquity may be. A knowledge that an English *d* answers to a Sanskrit and Latin *t*, and an English *h* to a Sanskrit and Latin *c* (*k* or *'s*) shows that the English *hundred* has the same origin as the Latin *centum*, and the Sanskrit *'satam*, and that, consequently, our linguistic ancestors were able to count as far as one hundred before they sepa-

rated from each other, the one to conquer India, the other to occupy Europe. Words, in fact, are like the fossils of the rocks; they embody the thought and knowledge of the society that first coined and used them, and if we can find out their primitive meaning by the aid of the comparative method, we shall know the character of the society that produced them, and the degree of civilization it had attained. The palæontologist can reconstruct the animal life of the past ages of the globe with no greater ease than the comparative philologist can reconstruct the life of bygone and forgotten communities. If the fragment of a fossil bone can tell us the history of an extinct world, so, too, can the fragment of a word reveal to us the struggles of ancient societies, and ideas and beliefs that have long since perished.

But the laws of a science must be verified before they can be accepted as such. However brilliant or ingenious a hypothesis may be, it remains a hypothesis, more or less probable, until it has been verified by experiment and observation. It is to history, to psychology, and to physiology that the science of language has to look for the verification of its laws. In the phonograph of König, or the phonograph of Edison, we can discover the very forms assumed by the waves of air set in motion by each sound we utter; and the first lessons of psychology confirm the conclusion of glottology, that the concrete precedes the abstract. Sometimes it is not so much the law, the generalization itself, that can best be verified; but the application of it to the phænomena of speech. Thus, a sound application of the laws of language makes it clear that the words pos-

essed in common by Spanish and Arabic are not due to a common ancestry, but to contact between the two tongues, and the history of the Moorish conquest of Spain confirms the conclusion.

But we may ask, What is meant precisely by that comparison of words and sentences on which the laws of language are said to rest? A word, a sentence, a grammatical form, consists of two elements, one, the articulate utterance, the other, the signification or thought which the utterance symbolizes. Sound and sense are the two factors which make up speech, and it is, therefore, in respect of both sound and sense that our comparisons have to be made. Comparative philology divides itself into phonology and sematology, to which, perhaps, we may also add morphology. Phonology is the science of sounds, sematology the science of meanings, and morphology the science of grammatical forms. But inasmuch as grammatical forms are but a combination of the relations of the sentence (or rather of the meaning those relations convey to the mind) and of the phonetic sounds by which they are expressed, morphology may be strictly included partly under phonology, partly under sematology. We must never forget that the study of sounds is intended to be the vestibule through which we approach the thought within. The phonological investigations we carry on, the phonological laws we formulate, are the outworks by which we may storm the fortress of the inward signification. They enable us to trace to a common source words that have flowed through diverse regions, or to discover the origin of some strangely-changed form of grammar, but the value they

possess is the value that belonged to the magic ring of the Nibelungs : it gives access to the treasure, but is not the treasure itself. Phonology is not commensurate with comparative philology, as seems sometimes to be thought. It forms but one side of the science, the instrument by which we discover the true force and meaning of sentences and words.

As the instrument of linguistic science, however, phonology is of the highest importance. In fact the modern science of language is wholly based upon it, and that which distinguishes comparative philology from the abortive attempts of former centuries is its scientific investigation into the laws of articulate utterance and of phonetic change. Here, and almost here only, we can as yet trace the nature and working of the laws of speech. It is only because we know that an English *h* and *d* must answer to a Sanskrit *h̄* ('*s*') and *t* that we are able to assert that the primitive Aryan community had attained the conception of "one hundred." Sematology is still in a far more backward state ; its laws are still a subject of investigation, and the differences of opinion that exist as to some of the great questions of linguistic science show only too plainly how much in this department of it still remains to be done. But the relative position of phonology and sematology is, after all, but natural. Phonology deals with the outward and physical, that which can be weighed and measured, and imitated by mechanical contrivances ; sematology belongs to the inward and the spiritual—to that realm of thought, in short, which can only be examined in so far as it makes itself accessible to the inspection of the

senses, and submits itself to the action of physical laws. Thought seems infinite, manifold, and free, determining and determined by itself. Like the wind, it "bloweth where it listeth;" we hear "the sound thereof, but cannot tell whence it cometh and whither it goeth." All the capriciousness and complex mobility of the individual appears to belong to it; we may formulate the laws of thinking, but not of the forms which that thinking takes. The vocal organs, on the other hand, through which thought becomes realized in speech, are subject to all the conditions of the material world. The utterance of each articulate sound and its relations to another are conditioned and defined by the physical constitution of man, by the circumstances in which he finds himself, and by measurable laws of sound. The outward form of language, the flesh-garment, as it were, in which thought clothes itself, falls entirely into the domain of physiology and acoustics. Here we can observe and experimentalize, can weigh and measure, can even reproduce artificially for ourselves. Every consonant and vowel can be accurately determined, the machinery and effort needed to produce them precisely known, the variations they are capable of exactly ascertained. But when we turn to the informing thought, to that inner essence which gives life and reality to each modulation of articulate sound, all appears different. What wonder that the science of significations should be so far behind the science of sounds?

Let us not forget, however, that thought, in so far as it finds its expression in language, is not so infinitely free and capricious as we might at first sight suppose. The



very fact of its finding expression in language, that is, of being embodied in articulate sounds, implies restraint and submission to conditions. Thought is thus, as it were, arrested and crystallized; it is only gradually and in consequence of ascertainable causes that the signification attached to a particular sound or group of sounds comes to be changed. That these sounds should symbolize certain ideas is, after all, a matter of convention; it follows from the tacit agreement, not indeed of isolated individuals, but of individuals as forming a society. Changes, therefore, in the signification of words and sentences can only result from causes which affect the whole society, and as such causes necessarily work slowly and by degrees, significant change can accordingly be brought under the action of general laws. But these laws can only be established by the help of phonology: until we know what words and forms the laws of phonology will allow us to compare together and refer to a common origin, we cannot begin to discuss the genesis and history of the significations they bear. No doubt structure, that is, the conception of the sentence formed by a language, and the order in which the several parts of a sentence are arranged, is a very important element in the classification of languages; still it is only one element, and unless phonology prove that the roots and derivatives of two idioms are related, no amount of structural similarity will justify us in deriving them from the same stock.

Phonology, then, is the key and mainstay of modern linguistic science; it guarantees the correctness of the results already obtained, and is the indispensable preliminary to future researches. As will be shown in a later

chapter, our knowledge of sounds and their laws is now tolerably complete. So, too, is the application of this knowledge to certain groups of language. The phonological laws of the Aryan family, for instance, are pretty well ascertained; we know what sounds in one member of the family answer to other sounds in another member, and what particular changes of sound are permissible within each of the several members themselves. It follows from the physical formation of the organs of speech that the various sounds capable of being articulated are limited in number. Prince Lucien Bonaparte has enumerated as many as 385, though some of these are not to be met with in any known language or dialect.<sup>1</sup> The number of different sounds occurring in any single language is not large among European languages; for instance, Modern Greek, Spanish, and Illyrian have but five vowel-sounds, while Gaelic, which has the largest number, possesses twenty-one, Portuguese and English following next with nineteen a-piece. So far as consonantal sounds are concerned the number tends to diminish with the culture and age of a language, and the evidence of facts is against identifying the hypothetical alphabet to which the sounds of the various Aryan dialects can be reduced with the actual alphabet of the parent Aryan speech. The physical formation of our vocal organs, due to climate, food, habit, and inherited aptitudes, obliges us to pronounce in a particular way. There are sounds, for instance, which birds and animals can make, but we cannot; while nothing is

<sup>1</sup> In A. J. Ellis: "Early English Pronunciation," pp. 1293-1307, 1352-1357.

harder than to catch and reproduce the exact pronunciation of a foreign tongue. The Polynesian turns David into *Raviri*, Samuel into *Hemara*, London into *Ranana*, and Frederick into *Waratariki*, and the word *steel* has been adopted in the Sandwich Islands in the shape of *tila*. It has been said that a foreigner can never speak another language so perfectly as to conceal all traces of his origin, and though this is going too far, it is quite certain that there are languages the pronunciation of which can never be thoroughly acquired after the age when growth has ended and the organs of speech have ceased to be plastic. There are numerous sounds which particular races or individuals are unable to imitate successfully; and those who have watched the attempt of children to learn their mother-tongue know how slowly some special sound is often acquired, and how in some cases it is never acquired at all. The sound which one person will pronounce as *r* will be pronounced *l* by another. Thus, the Chinese change every *l* into *r*, and the nearest approach they can make to the pronunciation of *Christ* is *Ki-li-sse-t(ǐ)*. The Japanese, on the other hand, cannot manage *l*, and in their mouths accordingly *idolatry* becomes *idoratry*. The native children of Bengal, quick as they are in other respects, seldom pronounce rightly those English words which begin with a sibilant and a mute when a consonant precedes them, *ten stamps*, for instance, being made into *ten-y-stamps*, and *this string* into *this-y-string*. The same sound which is pronounced without difficulty in certain combinations may be a hopeless puzzle in others, and the English tourist who mispronounces *Boulogne* and *Cologne*, will yet ask for an *onion*

and talk of a *barrier*. No individual, it would seem, pronounces all his sounds exactly like his neighbours, and even the same individual will vary his pronunciation of the same word in the course of a few seconds. Variations of pronunciation, in fact, are like the variations we observe in plants and animals, and if any variation becomes marked and is rendered popular and general from some cause or other, it brings about an alteration in the form of words. Such alterations resemble new species in natural history, and we may compare the different species of pigeons or dogs with the differences of pronunciations given by different dialects to what was originally the same sound. Changes in the pronunciation of words are constantly going on, causing a language to alter its form and appearance or to branch out into dialects. As these changes are determined by circumstances and physical necessities, and not by the arbitrary will of the individual, the laws they follow can be discovered and laid down. The laws once known, we can tell what words and sounds in different dialects, or in the different periods of the same dialect, may be compared together and referred to a common source, supposing, that is, that the significations they bear allow us to ascribe the identity of their phonetic elements to anything more than coincidence. The laws of phonology enable us to assert that the Greek *καλός*, and the English *hale* or (*w*)*hole*, may be traced back to a common origin so far as their outward crust and garment—the phonetic sounds of which they are composed—is concerned; it then remains for sematology to decide whether the ideas of “beauty” and “soundness” can be connected together. Distinctions between sounds

must be studied in spoken languages, and we must not forget that it is always very difficult to discover what was the *exact* sound attached to a word no longer spoken, but preserved only in the custody of writing.

Different tribes and races vary much as to the sounds which they find it easy or hard to pronounce and imitate. A sound which has been changed into a certain other sound in one language, may have been preserved or changed into quite a different sound in another language. In our Aryan group the palatals were originally gutturals; in Malayan, on the contrary, dentals. Because our Teutonic forefathers turned *k* into *h*, we must not conclude that such a change was possible all over the world, and that wherever we come across an *h* we are at liberty to assume an earlier *k*. Indeed, there is clear evidence that in some languages *h* may become *k*. The phonetic laws which hold good of one group of languages, or of one member of a group, do not necessarily hold good of another.

In comparing languages we have first to compare their grammars, not their vocabularies. The reason of this is obvious. It is in the sentence, not in the isolated word, that languages agree or differ, and grammar deals with the relations that the several parts of the sentence bear to one another. Single words may accidentally resemble each other in both sound and sense, and yet belong to languages which have nothing in common. In the Quichua, or dialect of the Incas, three words—*inti*, "sun;" *munay*, "love;" and *xeypul*, "great"—resemble the Sanskrit *indra*, *manyu*, and *vipula*,<sup>1</sup> but this is the

<sup>1</sup> Humboldt's "Travels," Engl. Tr., i. p. 322.

only likeness that can be detected between the two tongues. So, too, the Mandshu *shun*, "the sun," coincides in sound and meaning with the English word, like the Mandshu *senji* and Latin *sanguis*, "blood," or the North American Indian *potómac* and the Greek *πόταμος*, "river." Such accidental coincidences turn up all the world over. The number of articulate sounds used in actual speech is, after all, not so very large, nor also the number of different ideas needed by primitive man; and when we bear in mind the probable onomatopœic origin of the greater part of our vocabulary, it is not wonderful that these coincidences should occur. Indeed, the wonder would be if they did not. But a coincidence of this sort is one of the surest evidences we can have that the words which seem to resemble one another have no connection whatsoever. As Professor Max Müller has said, "sound etymology has nothing to do with sound." Language is continually changing; and as the phonetic and significant changes in it are occasioned by outward conditions and circumstances which vary from age to age and from country to country, they must necessarily take a different direction in the mouths of different speakers. The very fact that the English *call* and the Greek *καλέω* have almost every letter in common, ought to have raised a presumption against their identity, even before the law was known that an English *c* answers to a Greek *γ*, and a Greek *κ* to an English *h*, and that, consequently, the true Greek representative of *call* is *γῆρύω*, and the true English representative of *καλέω* is *hail*.

But if we are not to compare words of the same sound and sense together, how, it may be asked, are we to ascertain

the relationship of two or more languages, and discover what sounds correspond to each other in them? Our only guide is grammar. If we find that two languages express the relations of grammar in the same way, and by the help of the same machinery, we may conclude that the two languages come from a common source, and, therefore, possess a common stock of words. Under grammar will also be included structure—that is to say, the order and position of the parts of the sentence, as well as the conception of the sentence itself. Grammar and structure, therefore, are the clue by which comparative philology must be guided in its researches. It was the neglect of such a clue that caused Latin and Greek to be compared with Hebrew, and made the etymological dictionaries of the last century a rubbish heap of wasted labour. Those languages only which agree in their way of viewing the relations of thought can be grouped together. When once agreement in grammar and structure has determined the probable connection of two tongues, the aid of phonology may be called in to complete and verify the inquiry. Where the grammars are really connected, we may feel quite certain that there will be a community of roots. Where, on the contrary, there is no connection between the grammars, a community of roots must be due to accident. What proved the existence of an Aryan family of speech, and thereby founded comparative philology, was not the resemblances between individual words, striking as these were, but the exact correspondence between the grammatical forms of the several members of the family. The lists of words drawn up by Sir W. Jones, by Adelung, or by Vater, remain mere literary curio-



sities. The comparative philology of Aryan speech was really created by the comparative grammar of Bopp. When once the grammatical relationship of the Indo-European languages had been established, there was a solid basis for phonology to work upon, and it was not long before Grimm discovered the laws which regulate their interchanges of sound.

But in comparing grammar and structure, we must be careful to exclude the accidental, or rather the phænomena due to the peculiar circumstances in which an individual tongue has been placed. We ought to be able to trace the history and development of each special language as far back as possible, ascertaining its oldest forms and noting the successive changes they have undergone. For this purpose it is necessary that the language should be a literary one, and that the various phases of its growth should have been preserved on monuments or in books. Where this is not the case, we have to fall back upon a simple comparison of existing dialects, and endeavour to restore from these the common forms to which their variant derivatives seem to point. The greater the number of dialects the more satisfactory will be the results of our comparison; accidental resemblances will be better eliminated, and intermediate forms are more likely to be preserved. Where the dialects to be compared are few, we have to contend against one of two difficulties—either the differences between them are so slight—as in the case of the Semitic languages—that the parent-speech from which they branched off must be too recent to throw any light on its earlier history and relationships; or else the differences

are so great, the time during which they have been separated so considerable, that the links have been lost by which we may connect them together and reduce them to a single origin.

Phonology requires a knowledge of the past history and development of the languages it deals with even more than the study of grammar. In the comparison of words we may lay down the general rule that roots and not derivatives should be compared together. We should trace the history of the words we examine as far back as may be, should reduce them to their simplest forms, and strip off the accretions that have grown round them like the lichen round the stone. Words derived from the same radical will often assume different forms in different languages, or even in the same dialect; while words derived from different radicals will, on the other hand, assume the same form in different languages, or even in the same one. *Captive* and *caitiff* have the same origin in the Latin *captivus*; *sound* may be either the Latin *sonus* or *subundare*, or the Anglo-Saxon *sund*, "hale," or *sund* from *swimman*. The American *potómac*, quoted above, is a compound, while the Greek *πόταμος* comes from the root *πο-*, which we find in *πίω* and *πότος*, in the Sanskrit *pânam*, "a drink," and our own *potion*. The lexicographers who have declared *monkey* to be a corruption of *mannikin* were little aware that the word is really the Italian *monichio*, the derivative of *monna*, and that *monna*, again, is a contraction of *madonna*, *mca domina*. Before we know the history of a word, we must not venture to compare it with another, though it may happen that the history will be learnt through the process of comparison itself. Thus

we know that the Gothic *fimf*, "five," has lost two gutturals, as well as a final labial, from the analogy of the Latin *quinque* (for *quinquem*), the Sanskrit *pañchan* and the Lithuanian *penki*, and we can thus trace it back to the period when the Aryans of Europe and of Asia were still undivided. But at this point our materials fail us. We may feel pretty sure that *quemquem*, the original Aryan word for "five," is a simple root, and that its numerical meaning is a derived one; we may even hazard the guess that it has been formed by reduplication, but beyond this a sound method of etymology cannot go. To connect it with the Semitic *khâmésh*, as Ewald has done, is to violate the rules of comparative philology. We know the history neither of *khâmésh* nor of *quemquem*.

In comparing words together, it is safest to begin with two classes of words, those which, like the numerals, have acquired a fixed and arbitrary meaning, and terms of relationship and every day use. In the case of the former, the signification, once fixed, remains unaltered, however much the phonetic crust of the word may change, while new names are less likely to come into vogue; in the case of the latter, the very frequency of their use tends to keep them in existence. If a few families here and there adopt new modes of expression, still it may be expected that the larger part of the community will be more conservative. Hence, when we find two languages agreeing in their numerals and words expressive of common objects and ideas, we may infer that they are related to one another. The pronouns are not so sure a criterion, as they have generally been worn down by constant use

to monosyllabic forms, while their antiquity prevents us from discovering their true history and origin. Like the names of "father" and "mother," moreover, the first and second personal pronouns show a tendency to be represented in most languages by the simplest and earliest sounds uttered by the child.

The laws of phonology must be established by as large a number of instances as possible. In no other way can the chances of accident or mistake be avoided. A law, in fact, must hold good of all the phænomena that are summed up under it, and the more numerous the phænomena, the wider and more firmly established will the law be. Grimm's laws of the interchanges of sound in the Aryan family of speech depend on the observation and comparison of a very large number of words. As soon as it was found that English words which contained a *th* answered in signification and general form to Latin and Greek words which had a *t* in the same place, it was possible to formulate the law: English *th* = Latin and Greek *t*; all that remained was to verify the law by fresh instances, and in this way to strengthen the proof of the connection of the two languages. If it could be shown that real exceptions to the law occur which are not due to the interference of other laws, the law would have to be given up, however numerous might be the apparent instances on which it rested. The progress of comparative philology is continually strengthening its phonological laws and adding to their number.

The intimate connection of sound and sense must never be lost sight of in etymological research. They are as it were the outer and inner sides of the same object.

Where the significations are unrelated, we cannot connect two words which agree in phonetic sound any more than we can connect two words of the same signification but different sound. In our own group of tongues the two separate roots *dhā* "to suck," and *dhā* "to place," for example, are identical in sound ; and if we turn to languages like Chinese or Ancient Egyptian, we shall find numberless cases in which the same word, so far as pronunciation is concerned, has a variety of unallied meanings like our English *box* or *scale*. Of course, it is not necessary that the signification of the words we compare should be exactly the same ; the signification of words changes as much as their outward phonetic form ; but we must be able to show that one meaning is derived from the other, or from a common parentage, just as we show that one sound is derived from another or from a common source.

For the purposes of phonology more especially, the study of living spoken dialects is indispensable. No doubt the historical character of glottology requires us to investigate the records of extinct languages with as much care as the facts of living ones, and it is only by learning what a language once was that we can properly know what it is now. Nevertheless, it is only in the modern languages that we can discover the nature and laws of pronunciation ; it is only here, moreover, that we are brought face to face with the problems and realities of speech. The biologist, it is true, cannot dispense with the aid of comparative anatomy, but his primary object is the study of the living organism. What has been termed "antiquarian philology" has sometimes stood in

the way of scientific progress ; sounds have been confounded with letters, and words instead of sentences have been made the units of speech. Antiquarian philology, furthermore, still has the shadow of classical scholasticism hanging over it ; it will need a long education before the world is disabused of the idea that superiority in literature means superiority in language, and that a scientific study of language is identical with the old-fashioned "philology" of the classical scholar. Before the forms of an extinct speech can be made available for scientific investigation, they must be revived by the translation of their written symbols into phonetic sounds, and how hard such a task is need not be pointed out. If we wish to work back to the former pronunciation of a language we must start from its modern and actual pronunciation, and in spite of all that we can do, in spite of slow and patient induction and a careful weighing of the facts, our conclusions will be at the best imperfect and approximative. The older and more scanty the remains of a language, the more defective and uncertain will be our restoration of its pronunciation. In the larger number of cases we have to be content with merely approximative results. What Mr. Ellis and Mr. Sweet have done for the pronunciation of early English, is due to the abundance of the data and the unbroken tradition which they embody ; to restore the pronunciation of Latin is a work of greater difficulty, to restore that of ancient Greek of greater difficulty still. In short, the records of dead speech must be interpreted by the facts of living language, just as the conditions which brought about the deposition of the rocks can only be explained by the

forces still at work upon the surface of the globe. Here as elsewhere in science, we must proceed from the known to the unknown. The laws of consonantal change laid down for Latin and Greek, for Sanskrit and Zend, for Keltic and Old High German, receive their verification and explanation from the Romance dialects of modern Europe; while it is in the study of savage idioms, in the languages of Bushmen and of Kafirs, of North American Indians and of Papuans, that some of the most precious facts of linguistic science have been obtained. An extinct literary language, indeed, is by its very nature less serviceable to the comparative philologist than the artless jargons of barbarous tribes. It is artificial rather than natural, and the product of individual idiosyncrasies rather than of the whole community. The further removed it is from the fresh current of living speech, the less capable it becomes of strictly scientific treatment. The individual element, with all its arbitrary capriciousness, has entered too largely into it. The grammatical forms invented and enforced by ignorant grammarians, the words coined after false analogy by the Homeric rhapsodists and their successors, or the stilted phrases and inverted expressions employed by a particular writer and his imitators, all belong to the domain of the "philologist" rather than to that of the scientific student of language. He has nothing to do with textual criticism or the study of style, much less with the successful reproduction of the idiosyncrasies of classical authors.

Philology in the narrower sense of the term has to prepare materials for comparative philology in so far as the latter is concerned with literary languages or dialects. In



its turn it is guided in its researches and kept within the limits of scientific accuracy by comparative philology which tests and rectifies its conclusions, and prevents for the future attempts like that of Buttmann to derive ἄφριος from ἄφθριος or that of K. O. Müller to extract πελασγός from πελασγός. The particular can only be understood in the light of the universal, and as long as we are dealing with one language only our comparisons must be limited to that language alone at different stages of its growth, and will consequently sometimes lead us astray. Error can only be avoided by making our field of comparison as wide as possible, and so bringing our theory to the test of the greatest possible number of facts. It is evident from this, however, that the comparative philologist will have a special and minute acquaintance with but a few out of the many facts which come before his view. The memory even of a Mezzofanti is limited, and the ordinary student of language must be content to derive from others a large proportion of the materials on which he works. Caution in the choice and use of his authorities is here absolutely requisite, and it ought to be the business of the specialists in each language to see that the facts presented to him are thoroughly accurate and exact. Their work is the foundation upon which the structure of comparative philology has to be built.

But the comparative philologist cannot dispense with a specialist's knowledge of at least two languages. In no other way can he have that intimate acquaintance with the inner life of speech requisite for his studies, or possess the necessary instinct for selecting the right authorities to whom to trust when dealing with tongues

with which he is unacquainted. The more languages he knows thus thoroughly the better, especially if these belong to different classes of speech. Unless the Aryan scholar is acquainted with a Semitic language, his theory of flexion is likely to be one-sided and faulty, and unless he have a further knowledge of some agglutinative dialect, his views on the relation between flexion and agglutination must be received with a certain amount of distrust. Grammars and dictionaries will not give us that grasp upon the inner structure and spirit of a dialect which is all-important in determining some of the chief problems of speech. They present us only with the external facts of a language : before we can *think* in it, before we can place ourselves in the mental attitude of its framers and speakers, we must be saturated with it, as it were, and have that knowledge of it which can only come from daily and constant use.

At the same time, it must not be forgotten that the comparative philologist should not introduce the frame of mind of the specialist into his comparative inquiries. The specialist who takes up comparative philology as a subsidiary pursuit is likely to spoil it in the taking. The minor details of his special subject, whether it be Greek or Sanskrit or Hebrew, will assume an unreal importance in his eyes, and the main phænomena to which his attention ought to be directed will be correspondingly dwarfed. Bopp was the father of comparative philology simply because he was not a specialist in any one of the Aryan languages ; had he been a Sanskritist, and nothing else, he would doubtless have produced an excellent Sanskrit grammar, but not the

famous text-book of scientific philology. The errors into which he fell have since been corrected by the special students of the various languages he handled so freely: the knowledge he acquired of them was sufficient for the great purpose he had in view, and an exhaustive study of any one of them would merely have consumed the time and energy which were needed for his other work.

We can now see clearly what is the object and scope of the science of language. It has to do with language in all its forms as the significant utterance of society. Where utterance ceases to be significant, the science of language also ceases to investigate it. Beyond the barrier of roots it is unable to pass; other sciences—ethnology, psychology, physiology—must be called in if we wish to know what lies beyond that barrier, what, in short, were the inarticulate utterances and gestures which gave rise to articulate speech. Glottology has to investigate the origin of language so far as it is really language, but no further. By the use of the comparative method, words, forms, sentences, dialects, and languages are classified and traced back to their most primitive form, and the laws which govern their development and relationships determined and explained. In this work of comparison, phonology and sematology ought to go hand in hand, since language consists in the intimate union of sound and thought; but inasmuch as the facts and laws of phonology can be more readily discovered and tested than those of sematology, it is necessary that our linguistic researches should have their starting-point on the phonological side. Inasmuch as language is the

reflection of the thought of a community, the history of words and forms, as determined by the application of the laws of glottology, will be also the mental and spiritual history of the community that used them. Like the geologist, therefore, who can reconstruct the material history of the earth and restore the various forms of life that have successively peopled it, the scientific student of language can read the past history of human society in the fossil-records of speech. By tracing the Greek  $\delta\eta\mu\omicron\varsigma$  to the root  $\delta\alpha$ , "to divide," he can show that private property in Attica originated in that allotment of land by the commune which still prevails among the Slavs, while not only the existence but even the mode of life and intellectual horizon of the primitive Aryans has been revealed by comparative philology with more certainty and minuteness than could have been done by any chronicle, however perfect. But perhaps the most important of the results obtained by the application of the comparative method to language, has been the light thrown upon the origin and nature of mythology and the history of religion. Two new sciences, those of comparative mythology and comparative religion, have grown up under the shelter of glottology, and form subordinate sciences dependent upon it. In the more immediately practical sphere of education, again, the science of language has lightened the labours of the learner by explaining the reason of the rule while it insists upon the reversal of the old unscientific mode of teaching languages by beginning with the dead ones, and points out that the method of science and of nature alike is to proceed from the known to the unknown. By breaking

down the prejudices that have so long maintained our present cumbrous and inaccurate spelling, it is preparing the way for a reform in that direction, with its consequent saving of time and labour, while the construction of an universal language is the aim towards which its students ultimately look.

But meanwhile, though much has been accomplished, much more still remains to be done. Comparative philology and the science of language are not yet a century old, and the problems of speech that still await solution are many and important. The previous chapter will have shown how various are the opinions still held as to the nature of language and its science, while the belief that the exceptional—we might almost say abnormal—Aryan family of speech is the type and rule of all others still unconsciously influences a large amount of philological reasoning. Is the science of language a physical or a historical one? Did roots constitute a spoken language or are they phonetic types which never entered into actual speech? Have isolating languages become agglutinative and agglutinative languages inflectional? Do dialects precede the common language or does the common language precede dialects? Have the languages of the world been all derived from one or two primitive centres or do they point to an infinite diversity of origin? Such are some of the questions which still await an answer, and the answer requires more investigation, more patient observation and induction, and, above all, more labourers in the field of research.

### CHAPTER III.

#### THE THREE CAUSES OF CHANGE IN LANGUAGE.

“ Πάντα ῥεῖ.”—HERAKLEITUS.

SCIENCES may be classed as historical or physical according as they deal with the mind of man or with external nature. The forces and materials of nature remain always the same: oxygen and hydrogen, for instance, are in no way different to-day from what they were a million of ages ago, and, combined in the same proportions, would always have produced water. Man and his intellectual creations, on the other hand, have a history; that is, the same causes do not always act in the same way, nor do the causes themselves always remain the same. The sum of the forces set in motion by the human will goes on increasing in an accelerated ratio: each new generation is influenced and moulded by the one that preceded it, and that influence becomes itself a fresh factor in the sum of the forces and causes at work. In place of the simpler processes of nature, with their unvarying uniformity of action, we have an infinitely complicated *development*, each stage of which is the immediate growth of the previous one, and is in turn the origin and germ of all

that are to follow. Unlike the forces and phænomena of nature, thought is infinitely progressive, for

“through the ages one increasing purpose runs,  
And the thoughts of men are widened with the process of the suns.”

Wherever we have to deal with the products of human thought, there we have a constant ever-varying evolution, conditioned, it is true, by the uniform laws of outward nature, but continually modifying and adapting them. It is through the conditions thus imposed on the development of thought that we can discover the direction it has taken, and our inquiry thus becomes in great measure a historical one. We have to see under what conditions, in what external shape, as it were, the development of thought has displayed itself at each particular stage of its progress.

Like sociology, or comparative law, the science of language is concerned with a product of the human intelligence, and must consequently be included among the historical sciences. Language, we have seen, is significant sound; sound without significance is not yet language. As it is the inward sense and meaning, therefore, which constitute the essence of language, the primary object of comparative philology ought to be to discover the nature, origin, and history of the signification we breathe into our words and sentences. This can only be done, however, by finding out the conditions under which this signification is put into them, and by questioning the external side of language, those articulate sounds, namely, whereby we communicate our meaning to another. Now the external side of language is purely physiological and governed accordingly by purely physical laws. Phonology, in short, is as much a physical science as sematology is a historical one; and if we claim



for the science of language in general the rank of a historical science, it is only because the meaning, rather than the sound, is the essence of speech, and phonology the handmaid and instrument rather than the equivalent of glottology. The method pursued by the science of language is the method of physical science; and this, combined with the fact that the laws of sound are also physical—the same conditions producing the same sounds in all periods of human history,—has occasioned the belief that the science of language is a physical science. But such a view results in identifying phonology and glottology, in making a subordinate science equivalent to the higher one, and in ignoring all those questions as to the nature and origin of language which are of supreme importance to the philosophy of speech. If we treat glottology as a physical science we must content ourselves with an exposition of the laws of sound and a mere description of the languages of the world and their classification, so far as it is founded on phonology alone. It is evident that such a classification must be superficial and incomplete; the relationship of languages is primarily based on grammar and structure rather than on a community of roots, and even roots must agree in sense as well as in sound before they can be admitted in proof of linguistic kinship. The intimate and inseparable connection between the inward and the outward, between sense and sound, in articulate speech, is a symbol of the connection between the historical and the physical methods of investigating it; but inasmuch as the sense is more important than the sound, so, too, the historical side of linguistic science is more important than its physical side.

Language and languages are in a constant state of change: nowhere, indeed, can the maxim of Herakleitus, πάντα ῥεῖ, be better illustrated. This perpetual flux and change is necessitated by the very fact that language is a product and creation of the human mind. Thought is ever shifting, moving, developing, and so, too, is the language in which it seeks to embody itself. But language is not only changing on this its inner side, it changes also on its outward, its phonetic side. The physiological organs of speech may be affected by an alteration in climate, food, or other physical conditions: they are certain to be affected by the psychological desire to save trouble or to add emphasis in speaking.

The three great causes of change in language may be briefly described as (1) imitation or analogy, (2) a wish to be clear and emphatic, and (3) laziness. Indeed, if we choose to go deep enough we might reduce all three causes to the general one of laziness, since it is easier to imitate than to say something new, while clearness in expression not only saves our neighbour trouble, but also preserves us from unnecessary repetition. Nothing is gained, however, by too wide a generalization; and it is, therefore, better to keep the three causes of linguistic change distinct and separate.

Imitation has played a far more important part in the history of speech than is ordinarily admitted. Imitation is the primary instinct of the infant and the savage, and, under the name of fashion, is a ruling power among civilized men. The great imitative powers of barbarous tribes have often been remarked upon by travellers; and a marvellous facility in mimicry and imitation seems to

exist in proportion to the scanty development of the reasoning faculties. In this respect, at all events, the savage has not much ground for boasting of his superiority to the ape. Among the less cultivated races, indeed, the passion for imitation frequently passes into a morbid mania, and strange stories are related concerning it. Thus Dr. R. Maak, in his "Journey to the Amur," states that "it is not unusual for the Maniagri to suffer from a nervous malady of the most peculiar kind, with which we had already been made acquainted by the descriptions of several travellers.<sup>1</sup> This malady is met with, for the most part, amongst the wild people of Siberia, as well as amongst the Russians settled there. In the district of the Yakutes, where this affliction very frequently occurs, those affected by it, both Russians and Yakutes, are known by the name of *Emiura*; but here the same malady is called by the Maniagri *Olon*, and by the Argurian Cossacks *Olgandschi*. The attacks of the malady which I am now mentioning consist in this, that a man suffering from it will, if under the influence of terror or consternation, unconsciously, and often without the slightest sense of shame, imitate everything that passes before him." So, too, Mr. Jagor, in his "Travels in the Philippines,"<sup>2</sup> tells us that the malady in question is well known in those islands under the name of *Mali-mali*, and in Java under that of *Sakit-latar*; and goes on to relate how his "companions availed themselves of the diseased condition of a poor old woman who met us in the highway, to practise some rough jokes upon her.

<sup>1</sup> Compare A. Erman: "Journey round the Earth through North Asia," iii. § 1, p. 191.

<sup>2</sup> P. 159.

The old woman imitated every motion as if impelled by an irresistible impulse, and expressed at the same time the most extreme indignation against those who abused her infirmity." The description reminds us of the feats of our own "electro-biologists."

It is to the desire of imitation that we owe our first knowledge of our mother-tongue. The child tries to imitate those about him, and as the faculties of imitation and memory are the only ones yet developed in him his efforts are usually successful. The distance at which we stand from the infantile state, and the development of our reasoning powers, are measured by the prominence given to individuality and our power of taking the initiative. The community in which each man acts like his neighbour is not yet a civilized community; Athens is typical of all that is highest in human culture, and Athens was emphatically the State in which individuality had the freest play. It is well for the child who has to learn the language of his parents that he is rather a member of an uncivilized community than of Periklean Athens.

The love of imitation is the instrument whereby one language is able to influence another. Sometimes we find a community giving up its own tongue altogether, and adopting that of his neighbours. Such has been the case with the Kelts of Cornwall, with the Wends of Prussia, or with the Huns of Bulgaria. The Negroes of Haiti speak French, the Lapps Finnish, while according to Humboldt and Bonpland,<sup>1</sup> "a million of the aborigines of America have exchanged their native for a European language." Social contact and not identity of race occa-

<sup>1</sup> v. p. 774.

sions a similarity of language, since language is the medium of communication between the members of the same community, not between the scattered branches of the same race. No doubt where the languages are essentially distinct, based on radically different conceptions of the sentence and its parts, even the desire of imitation will be often not strong enough to cause the one language to be borrowed by the speakers of the other. Here and there we come across children who have a difficulty in imitating the pronunciation or use of the words they hear, and such a difficulty is a main cause of the origination of dialects ; but it is among the speakers of agglutinative or polysynthetic tongues when brought into contact with an inflectional language that the difficulty is best exemplified. The Negro of the United States still speaks a jargon which can be called English only by courtesy, and Humboldt states <sup>1</sup> that " nothing can exceed the difficulty experienced by the (South American) Indians in learning Spanish," although they " manifest quickness of intellect" in other respects, and " the missionaries assert that their embarrassment is neither the effect of timidity nor of natural stupidity, but that it arises from the impediments they meet with in the structure of a language so different from their native tongue." Potent as imitation is, it yet has a limit, and this limit is reached wherever the element of conscious intelligence intervenes. The savage, like the child, finds it hard to mimic the products of civilized man, in so far as these embody the application of the reasoning faculties, and the mode of thought elaborated through long ages by a cultivated race necessarily forms

<sup>1</sup> " Travels," Engl. Tr., i. p. 310.

a stumbling-block to the Negro or the South American Chayma. The Ethics of Aristotle could not have been written in a Semitic language, and a Negro Goethe is a somewhat incongruous conception. Wherever the distance between the two languages or the two levels of culture is great enough, the attempt to imitate is either given up altogether or else becomes a failure. The modes of thought of the borrower are read into the language he borrows. The Chinaman endeavoured to assimilate English, and the result was the Pigeon-English of Canton, a jargon in which we have a framework of English reared upon Chinese grammar and Chinese pronunciation. The difficulty of reproducing a cultivated language of foreign origin, or a language based upon a wholly alien conception of things and their relations, may be illustrated by the difficulty of translating accurately books written in another tongue. However closely related two languages may be, the various shades of meaning they attach to corresponding words or idioms will necessarily differ, and the more cultivated the style of a writer, the more impossible will it be to represent it exactly in a translation.

Where a language is not borrowed bodily, or at any rate engrafted upon the old modes of thinking and expression, it may yet exercise a greater or less influence upon a neighbouring language. Words, sounds, idioms, suffixes, and even grammatical forms may be and constantly are borrowed from one dialect by another; and it is not too much to say that a thoroughly pure and unmixed language does not exist among the civilized races of mankind. Our own English is a superstructure of Norman-French and Latin upon a foundation of

Anglo-Saxon, and nine-tenths of the Hindi language is Sanskrit. No people can have neighbours close to them without receiving something from them in the shape of inventions, products, or social institutions; and these almost inevitably are adopted under foreign names. Thus the French have taken *meeting* and *comfortable* from us, and we have received *naïve* and *éclat* in return from them. Such loan-words are of great use in tracing the history and distribution of civilization, as well as the geographical and social relationships of the past. *Boomerang* proves our intercourse with the natives of Australia, from whom we have derived both the idea and the name of the weapon; *peew*, the Dutch *puyde*, *puye*, "a pulpit" or "reading-desk," from the Latin *podium*, reveals the close connection that existed between the Churches of England and Holland in the seventeenth century, while words like *maize*, *hammock*, *canoe*, and *tobacco*, derived as they are from Haytian through the medium of Spanish, show as plainly as ordinary history that the Spaniards must have been the discoverers of America and the introducers of its products into the West. By similar reasoning we infer that the Baltic provinces must have been inhabited by a Teutonic population at the time when the Romans received amber from them under the name of *glæsum* (our *glass*), and Professor Thomsen has proved that the Finns must have bordered on Scandinavians and Teutons some two thousand or more years ago from the number of words borrowed by Finnish from their languages.

Sounds, again, may be borrowed from one language by another, or native sounds modified through the influence



of a foreign tongue. The easier of the Hottentot clicks have been borrowed by the Kafirs, and the Souletin dialect of Basque has admitted the French vowel *u*. Idioms, too, may pass readily from one tongue to another. Words like *avenir* and *contrée* in French, are the result of an attempt to express German idioms in the Romance of the conquered provincials, *avenir* or *ad venire* being a literal translation of the German *zu-kunft*, and *contrée* for *contrata* (*terra*), a curious representative of the German *gegen*, "country," as derived from *gegen*, "against." The great extension of the English plural in *-s*, confined as it was in Anglo-Saxon to a comparatively few words, seems due to Norman-French influence, and the use of the genitive and dative of the personal pronouns in English "of me," "to me," in the place of the Anglo-Saxon *min* and *me*, is modelled after a French pattern. Bulgarian and Roumanian seem to have caught the infection of Albanian usage in which the definite article is attached to the end of the word, as in the Roumanian *domnu-l*, "the lord," and Persian has even adopted the Semitic order of words so repugnant to the general structure of the Aryan group, in saying *dăst-ŷ-'Umăr*, for "Omar's hand." For instances of borrowed suffixes, we have only to point to our English *-ise* and *-ist* from the Greek *-ισ-ω* and *-ιστ-ης*, which tend to supersede the old corresponding suffixes of the language, and the French participial termination is imitated in the letter of Gawin Douglas to Richard II. (1385), where we find such phrases as "Zour honourable lettres contenant," and "brekand the trewis."

The borrowing of grammatical forms is of much rarer occurrence, inasmuch as grammar is the essence and life

blood of language, and to borrow the forms of grammar, therefore, is to intermingle the psychological histories of two separate tongues. It is a metamorphosis of the whole inherited mode of thinking and of viewing the relations of things to ourselves and one another, and to mix two grammars together is like mixing two different and incompatible modes of thought. A supposed instance of a mixed grammar (that is, of a mixed language) generally turns out to have another explanation. Thus it has been believed that the modern Aryan languages of India have substituted agglutinated postfixes for flection, and so have adopted the grammatical machinery of their Dravidian neighbours. Thus in Gujerati, *dêv-mã* means "in the god," like the Hindustani *ãdhe-mê*, "in the blind," and in Nepalese *mãnis-visê* is "in man," *mã* or *mê* being a contraction of the Sanskrit *madhyê* (= *madhya-i*), "in the middle," and *visê* of *visayê*, "in the thing." What has really happened in these cases, however, is this. The first noun instead of being provided with the locative suffix (-i) is compounded with another noun which still retains the suffix, and the locative signification accordingly resides not in the second member of the compound, but in its worn-away flection. Here, then, there is no example of grammatical confusion. There are other instances of "mixed grammar," however, which cannot be so easily disposed of, and it would really seem that in rare cases there actually has been an interchange of grammatical forms between two unallied languages. Thus in Assamese, which appears to be at bottom an Aryan language, the plural affix (*bilak*) is inserted between the noun and the case-ending, so that from

*manuh-bilak*, "men," we get the genitive *manuh-bilak-or*, the dative *manuh-bilak-oloi*, the accusative *manuh-bilak-ok*, the locative *manuh-bilak-ot*, and the ablative *manuh-bilak-e*, where the postpositions are all of them said to be of non-Aryan origin. The language of Harar, in Northern Africa, again, though apparently belonging to the Semitic family of speech, makes use of postpositions, and reverses the Semitic order of words when employing the genitive; while, according to Schott, the Persian affix of the dative and accusative was originally a Turanian postposition. Cases like these must, of course, be carefully distinguished from those in which we are dealing with an artificial language and not with the spoken language of the people. A curious language of this kind, the Pehlevi, was formed in the courts of the Sassanian princes of Persia, in which the elements of Aryan and Semitic grammar were mixed together in a strange fashion, but such a language did not penetrate beyond the limits of the learned class. Of the same nature are such affected plurals as *termini* and *fungi* from *terminus* and *fungus* in English, or the genitive and dative *Christi* and *Christo* in theological German. They would not be understood beyond the boundaries of a narrow circle.<sup>1</sup>

The most usual way in which the grammar of one

<sup>1</sup> So in Japan the learned class has introduced the Chinese characters under the name of *Koyé* or *Won*, and with them the Chinese pronunciation and order of words. In *Koyé* (that is to say in Chinese) the particles come first, then the verb, and, lastly, the case. The reverse is the case in Japanese, or when the characters are read as *Yomi*, that is, as ideographs standing for Japanese words. Thus, the *Koyé* "*sed non videbo hodie illum*" would have to be read in *Yomi*, "*illum videbo hodie non sed.*"

language is influenced by that of another is by the adaptation of existing words and forms to express new grammatical ideas and relations imported from abroad. Thus the Assyrians became familiarized with the distinction between present and past time through their acquaintance with the extinct Accadian of ancient Chaldea, and they accordingly set apart certain separate phonetic forms, which had previously existed side by side without any difference of meaning, to express the present and the past tense.<sup>1</sup> So Spiegel<sup>2</sup> believes that he has discovered the influence of Semitic grammar in the Zend use of the feminine to denote a neuter or abstract, and of the dual to denote a pair. The invariable rule of the ancient Maya of placing the adjective after its substantive, is sometimes violated in the modern language through the influence of Castilian,<sup>3</sup> and the Ragusan custom of using the Illyrian *svoj*, "his own," in the place of *njegòv*, "his," is referred by Brugman to the influence of Italian and German.<sup>4</sup>

But the principle of imitation comes chiefly into play in the sphere of language in changing the form and meaning of words so as to bring them into agreement with the form and meaning of other words. When the true history and significance of certain forms have been forgotten by

<sup>1</sup> Sayce : "Journal R. A. S." x. 2 (1878).

<sup>2</sup> "Arische Studien," i. 2, pp. 45-61.

<sup>3</sup> De Charencey in the "Revue de Linguistique" (1873), i. 1, p. 57.

<sup>4</sup> "Ein Problem der Homerischen Textkritik" (1876), p. 95. Pott ("Wilhelm v. Humboldt ueber die Verschiedenheit des menschlichen Sprachbaues," i. p. 15) suggests that the change of the Latin demonstrative into the article of the Romance languages was due to Teutonic influences.

those who use them, other words with a totally different history and significance are very likely to be assimilated to them. When language has once created a particular mould it is very liable to run all manner of words into it. This is what is meant by the action of *false analogy* in speech. Words, forms, and significations which ought to have been kept apart are erroneously made like one another; the instinct of imitation and the desire to save trouble combine to exclude the irregular from language, and to force all exceptions under a uniform rule. The modern Greek declines innumerable words which formerly belonged to different declensions after the type of *ταμίᾱς*, turning *βασιλέας*, *ἀνδρας*, and the like, into nominatives singular, and in the English which is unchecked by a literary tradition *I comed* is already more common than *I came*. Analogy is constantly at work throughout the whole domain of language—in pronunciation, in formal grammar, in syntax, and in sematology—building up and reconstructing what phonetic decay and change of meaning have tended to pull down. English is rapidly forcing all exceptional cases under the rule that throws the accent back as much as possible; *balcóny* has become *bálcony*, and Milton's line "O argument blasphemous, false and proud," would no longer scan. There is good reason to believe that the vocabulary of the primitive Aryan was for the most part, if not entirely, accented on the last syllable; the course of centuries has been continually thrusting the accent back as much as possible, and Latin and the Æolic dialects of Greece which illustrate this tendency, only show their want of conservatism and relative decay. Though the old accent of pitch

has become an accent of stress in most of the modern European tongues, the same process is still going on ; and while Polish still accents its words on the penultima, the accentuation of Bohemian is upon the first syllable. The same fact reappears in the Semitic family of speech, where it can be shown that the penultima primarily received the accent, and that the accentuation of the modern Arabic which agrees with that of English is a later innovation.<sup>1</sup> Greek words like  $\phi\acute{\upsilon}\omega$ ,  $\theta\acute{\upsilon}\omega$ , and  $\tau\acute{\iota}\omega$ , where the length of the vowel compensated for the loss of an iota ( $*\phi\upsilon\acute{\iota}\omega$ ), were brought under the general rule of the language which made one vowel before another short,<sup>2</sup> and when Horace addresses the fountain of Bandusia as "splendidior *vītro*," the quantity assigned to *vītro*, a contracted form of *vīstrum* for *vid-trum* (from the root *vid*, "to see"), arises from the mistaken notion that because a naturally short vowel could be lengthened before a mute followed by a liquid every vowel in such a position might be treated as indifferently long or short. So, again, the termination of the Latin nominative plural in *-es* was properly short, as may be seen from a comparison with the Greek ; but the long vowel resulting from the combination of this termination with the final vowel of stems in *-i* (such as *nubi-es*) was extended to other cases, and the nominative plural of consonantal stems like *voc* (*vox*) was accordingly regarded as ending in a long syllable.

Apart from accent or quantity, however, the pronun-

<sup>1</sup> Sayce: "Lectures upon the Assyrian Grammar and Syllabary," pp. 61, 62, "Journal R.A.S.," x. 2, pp. 251, 252 (1878).

<sup>2</sup> E.g.  $\theta\acute{\upsilon}\omega$  in Od. 260, Theok. iv. 21 ; Aristophanes and the Attic poets preserve the long vowel.

ciation of words is largely affected by the influence of analogy. Our English preference for diphthongal sounds is changing *either* and *neither* into *aither* and *naither*, in spite of the fact that the only other word in the language by which such a pronunciation could be supported is the misspelt *height* from *high*. The Frenchman "gallicizes" the words he borrows or the proper names he uses just as the Englishman "anglicizes" his; it is easier for the one to say *Londres* and *Biarri'* than *London* and *Biarritz*, and for the other *Paris* and *Marsaels* than *Pari'* and *Marseies*. Up to the last Charles James Fox called Bordeaux wine "Bordox," maintaining that it had been domesticated in England, and ought accordingly to follow English customs. The action of analogy throws much light on Grimm's laws respecting the shifting of sounds in the various branches of the Aryan family, which will be specially treated in the next chapter. When once a particular variety of pronunciation has come into vogue it absorbs and kills all deviating modes of pronunciation as surely as the cardoon in Central America has killed the native plants in its neighbourhood. We are all creatures of fashion, and the instinct of imitation is at work from the moment we first cease to be *infants*,—"speechless" embryos of humanity.

In the matter of grammar, a familiar instance of the way in which analogy can change the current forms of speech is afforded by the extension of the English perfect in *-ed*, the last relic of the affixed *dide*, the reduplicated past tense of *do*. The Latin *amamini* is the plural masculine of the old middle participle which we find in the Sansk. *bharamānas*, the Greek *τυπτόμενοι*, and the Latin



*alumnus* (*alomenus* from *al-o*) or *Vertumnus*, the “changing” year. But when it had firmly established itself as a substitute for the second person plural of the present of the middle-passive voice, with *estis* understood, its true origin and meaning came to be forgotten, and as *amamini* was conjugated with *amamur* and *amantur*, so the anomalous *amemini* was conjugated with *amemur* and *amentur*, and *amabamini* with *amabamur* and *amabantur*. The coexistence of the older and later forms of the third personal pronoun in Greek, *σφέ* (Sansk. *swa*, Lat. *se*), and *ἑ* caused the one to be employed as a plural and the other as a singular, although the pronoun was originally reflective and of all genders; and the new plural pronoun was then provided with cases as well as with a dual formed on the analogy of those of the first and second pronouns. In the case of the dative alone a difficulty occurred, since here *ἡμῖν* or *ὑμῖν* could not be distinguished in form from *σφί(ν)* still used as singular by Herodotus; but the difficulty was overcome by having recourse to the noun-declension and creating a *σφίσι* as a parallel to *ναῦσι*. The contracted plural accusative *πόλεις* could not be derived from the original *πολιαις* (for *πολιανς*) by any known rule of Greek phonology; it owes its existence to the habit of making the accusative plural like the nominative. The whole of the so-called fifth declension in Latin has grown up from the unconscious blunders of speech. *A* before *m* tended to become *e*, as in *siem* for *siam*, and accordingly by the side of *materiam* was heard *materiem*. The accusative *materiem* was then confounded with accusatives like *nubem*, and so a new nominative came into being, *materies* by the side of *materia*. Meanwhile the vowel of the

accusative case-ending had influenced the vowel of the other case-endings, and changed the old ablative *materiâ* and genitive *materiali* into *materie* and *materiei*. The same process was next extended to the plural, *materiarum*, *materiabus*, and *materias* became *materierum*, *materiebus*, and *materies*, and nothing remained but to assimilate nominative and accusative as in nouns of the third declension whose accusative plural also terminated in *-es*.

Analogy will sometimes alter the whole structural complexion of a language. The Coptic, formerly an affix-language like Old Egyptian or the Semitic tongues, has become a prefix-language, denoting by prefixes the relations of grammar; and this metamorphosis seems due to the influence of the neighbouring Berber and cognate dialects. The tendency must have first shown itself in a few instances, and then by degrees have extended to the whole language. It has been held that the Aryan conjugation with a vowel between the root and the suffix, as in the Sanskrit *bhav-â-mi* or the Latin (*ε*)*s-u-m*, has grown up in the same manner, verbs like the Sanskrit *ad-mi*, "I eat," alone surviving as the remains of a past in which the personal pronoun was attached immediately to the verbal root. This, however, is very doubtful, the latter class of verbs being more probably the result of phonetic decay which has obliterated the connecting vowel, or more correctly the final syllable of the stem.

Syntax has not escaped the all-prevailing action of analogy and imitation. The relics of English flexion are rapidly disappearing under its influence, and the use of the conjunctive *were* will soon be as obsolete as that of *be*. The relative pronoun was originally a demonstrative

like our *that*, which drew attention to the idea contained in the principal clause, but with the extension of its use as a relative its demonstrative signification was lost, and it came to be used in instances where the demonstrative could not be employed.

Examples of the power of analogy in changing and extending the meaning of words are almost needless. The process is going on before our eyes every day. A new object or a new idea is named from its likeness to something with which we are familiar. The Kuriaks call the ox the "Russian elk" (*Ruski olehn*), just as the Romans spoke of the elephant as the *Luca bos*, and we are all familiar with the significant name of the *Sugarloaf* Mountain. There is a long distance from the primary signification of *post* as something "placed" or "fixed" to its signification as the arrival of correspondence, but every stage of the way can be traced and shown to be the work of analogy. The post fixed in the ground became a station, and when such stations were established for the conveyance of messages, news was said to travel "by post." To transfer the name "post" from the machinery whereby the news was carried to the news itself was at once obvious and easy. The *foot* of a mountain is as much a metaphorical expression as the *arm* of the sea or the *arm* of law, and every metaphorical expression is an example of analogy. Three-fourths of our language, indeed, may be said to consist of worn-out metaphors. In no other way can terms be found for the spiritual and the abstract. *Spirit* is itself "the breath," the *abstract* that which is "drawn apart." Our knowledge grows by comparing the unknown with the

known, and the record of that increase of knowledge grows in the same way. Things are named from their qualities, but those qualities have first been observed elsewhere. The *table* like the *stable* originally meant something that "stands," but the idea of standing had been noted long before the first table was invented. The only abstract notion the Tasmanians had attained was that of resemblance. When they wanted to express the conception of roundness they had to say "like the moon" or some other round object, and similarly in the case of other abstract adjectives.

But as in pronunciation and grammar, so too in the matter of signification the analogy may sometimes be a wrong one. The men who coined the term "whale-fishery" were ignorant of the fact that the whale is a mammal, and that its only resemblance to a fish consists in its living in the sea. The name of *guinea-pig*, again, as applied to the small animal imported from Brazil, is singularly inappropriate. At other times the process whereby a new idea or object has been brought into relation with what was already familiar has been fair and legitimate. Thus the sense of the French *canard* as "idle gossip" can be traced back step by step to the primary meaning of the Low-Latin *canardus*. The feminine of *canard* is *cane*, and just as *cane* is the German *kahn*, "a skiff," so *canardus* properly signified "a small boat." Then by the force of analogy the words came to denote "a duck," and as the duck was frequently used to decoy other birds by its cry, *canard* ended in signifying a mere decoy, a mere empty cry calculated to deceive.

Mythology, as we shall see hereafter, is in large measure

based upon the metaphors of speech. The phenomena of nature were explained by likening them to those human actions with which primitive man was acquainted, and when in course of time a higher level of knowledge had been reached, and the original meaning of the traditional epithets had been forgotten, they came to be taken literally and interpreted as referring to beings of a super-human world. The dawn had been likened to a rosy-fingered maiden, the sun to a charioteer, and so the myths of Eôs, the ever-fleeing maiden, and of Phœbus Apollo, the heavenly charioteer, came into existence. Mythology is not so much a disease of language as a misunderstanding of its metaphors and a misconception of the analogical reasoning of our early forefathers.

Exactly the converse of this are those popular etymologies whereby words whose meaning is unknown or forgotten are assimilated to others with which the speakers are familiar. A gardener has been heard to call *asphalt* "ashes-spilt," and thus render an explanation of the word to his own mind, and the modern spelling of the German *siindfluth* is due to the popular belief that the word, really a compound of *sint*, "great," the Anglo-Saxon *sin*, "everlasting," was invented to denote the deluge of Noah, which punished the "sins" of mankind. Luther still writes *sindfluth* (*sindefluth*), and in his translation of the Bible uses it in other passages besides those which relate to the Noachian flood (*e.g.*, Ps. 29, 10, and Sirach 39, 22). Proper names have naturally suffered, especially from the attempt to give a meaning to them. Burgh de Walter has become Bridgewater and Widder Fjord, "the Creek of Wethers," Waterford. The name of Madrid is ex-

plained by a popular legend which makes a boy, pursued by a bear, fly to a tree and cry to his mother "Madre id, Madre id ("Mother, he comes");<sup>1</sup> the Lepontii, we are told by Pliny,<sup>2</sup> received their title from having been the companions of Hercules who were "left behind" (λιπέτες!); and the Kirgises were so named from forty maidens, the mothers of the race, *gyrg* being "forty" in Turkic and *gys* "a maiden."<sup>3</sup> Similarly the modern Greeks have changed the meaningless *Athens* into Ἀθήναι, "the Flowery," while *Krisa* has become Χρυσό, "the Golden."<sup>4</sup> Where all other means failed the name was explained by the clumsy device of turning it into the name of an individual, and so there arose those eponymous heroes like Hellen and Asshur from whom tribes and nations were supposed to have been designated. The same process of etymologizing by the help of false analogy meets us in literature as well as in popular speech. The Homeric Poems are full of instances of the fact. In the *Odyssey* the old epic epithet ἐπιείκωνος, "long lasting" (from ἐπὶ, ἄσι, and τείνω), has come to be derived from ἔτος, which had lost its initial digamma (φετος, Sanskrit *vatsas*), and is accordingly employed in the sense of "lasting all the year," while the Aorist infinitives χραϊσμεῖν and ἰδεῖν were taken to be presents and so provided with the futures χραϊσμήσω and ἰδήσω. Our own absurd mode of spelling presents us with parallel cases. Because *should*, the past tense of *shall*, has an *l*, *could*, the past tense of *can*, is given one; and *further*, the comparative

<sup>1</sup> Hackländer: "Ein Winter in Spanien" (Werke xxii.), ii. 78.

<sup>2</sup> N. H., iii. 20, 24.

<sup>3</sup> Schott: "Abh. der Berlin. Akad." (1865), p. 440.

<sup>4</sup> Deffner: "Neogræca" in Curtius' "Studien," iv. 2, p. 307.

of *forth*, has been written and pronounced *farther* as if derived from *far*.

The desire of clearness and emphasis, the second cause of change in language, is, like analogy, a creative and constructive power, and is often found at work in company with analogy. The object of speech is to communicate our thoughts to one another; where, therefore, our meaning is not clearly grasped, we begin to pronounce our words more distinctly than usual and to lay greater stress upon them. The result of this is a clear enunciation of all the syllables of a word, and sometimes a phonetic addition to the word itself. In this way we may explain the adventitious dental that has attached itself to the end of a word like *sound*, Latin *sonus*, French *son*, or the aspirate which is inserted in the wrong place by persons who are conscious of a difficulty in pronouncing it in the right place. So, again, in talking to a foreigner we instinctively raise the voice and repeat our remarks in a louder tone should he fail to comprehend them. The more readily our thoughts are understood, the less need there is of our dwelling upon the sounds which express them. Hence it is that with the progress of culture and education, and the consequent advance in quickness of perception, our words get worn away and slurred over, and a fragment only of the original word or the original sentence is often sufficient to convey our meaning. English and French are prominent examples of this fact, French cutting off its final consonants, and English softening its harder letters and avoiding the free play of the lips. Classical Italian, nurtured on the pedantic and metrical pronunciation of literary Latin and screened by the moun-



tains of Tuscany, cannot, it has been well said, be spoken rapidly ; but if we go to the Bolognese dialect, where these influences have not been at work, we shall find "A n' vuoi t' m' in parl, S'nor," doing duty for, "I won't have you to speak to me about it, sir."<sup>1</sup> While the educated Frenchman leaves the negative to be supplied by the mind when using *pas*, *point*, or *jamais* by themselves, the uneducated Englishman strengthens his negative by repeating it. Indeed, the repetition of the negative in order to emphasize the negation is a mark of most early languages, and runs parallel with the gesture and gesticulation which characterize the tongues of savages and barbarians. The muscular effort called forth by the latter necessarily extends also to the elocution, and a speaker generally finds that the clearness of his utterances is assisted by the exercise of the muscles of the arms and face.

Emphasis acts upon the outward sounds of a word as well as upon its inner meaning, and like analogy, though by the contrary process of differentiation, tends to build up new grammatical forms. The English *thunder* and *jaundice* go back to an Anglo-Saxon *thunor* and a French *jaunisse*, where the intrusive dental must be referred to the desire of clearness, since it can hardly be said to facilitate the pronunciation. So, too, in *impregnable* and *groom*, the French *imprenable* and Anglo-Saxon *guman*, we have other instances of the same striving after distinct and emphatic utterance, and the extension of the Greek *πόρις* (Sanskrit *puris*) into *πτόρις*, or of *πόλεμος* into *πτόλεμος* must be put down to a similar cause. People who

<sup>1</sup> Burton : "Etruscan Bologna," p. 246.

wish to be very particular in the pronunciation of their words are apt to say *kyind* for *kind*, and the Italian *luogho* has arisen in no other way out of the Latin *locus*. The varying quality of a vowel, or an apparent exception to Grimm's laws of letter-change may be explained by this principle of emphasis. Thus the Greek  $\alpha\acute{\iota}\delta\alpha$ , like the Sanskrit *vêda* or the Gothic *vait*, has a diphthong in the singular, whereas in the dual and plural the vowel is short (*i*). This has resulted from the fact that the primitive Aryan laid the accent on the first syllable of the word in the singular; the less familiar flections of the dual and plural, however, were accented, and so preserved the short vowel of the root from being changed. In the same way the Old High German perfect *laiþ* in the singular observes the rule which makes an Old High German þ answer to an original *d*; in the plural, however, where the corresponding Sanskrit form accents the suffixes and not the root (as in the singular) the rule is violated and we have *lidum*, *liduþ* and *lidun*. So, too, by the side of the Old High German *brôþar* (*bruder*), answering to a primitive *bhrâ'tar*, we find *môdar* (*muther*) and *fadar* (*vater*) answering to a primitive *mâtár* and *pitár* (*pâtár*); while the accent of the Vedic *saptán* and the Greek  $\epsilon\pi\tau\acute{\alpha}$ , "seven," shows why the Old High German *seban* and the Gothic *sibun* have *b* instead of the regular *f*.<sup>1</sup>

Emphasis enriches the vocabulary, first of all by introducing synonyms, and then by making a distinction of meaning between them. To set two synonyms side by side is the best way of giving clearness and intelligibility to our thoughts. Much of the charm of our authorized

<sup>1</sup> Karl Verner in Kuhn's "Zeitschrift," xxiii. (New Series, iii. 2.)

version of the Bible is due to the attempt of the translators to bring out the meaning of a Greek or Hebrew word by using two equivalents, one from a Romanic, the other from a Teutonic source. There comes a time, however, when we begin to contrast and differentiate the two synonyms; and so *love* comes to include much more than its New Testament synonym *charity*, and *pastor*, the synonym of *shepherd*, is confined to ecclesiastical language, while custom only allows us to say "*much obliged*," and "*very grateful*."<sup>1</sup>

Of a similar nature is the process whereby two varying forms of the same word become distinguished in use and signification. Thus the Latin *tepor* and *tempus* both go back to an earlier *tapas*, "heat," but the strengthening of the first syllable of the one, and the change of *s* into *r* in the other, caused them to break apart and in course of time to be employed with a totally different meaning. The difference of sense brought with it a difference of gender, and thus introduced a grammatical change. The analogy of other nouns in final *-or* or *-os* preserved the masculine use of *tepor*, while *tempus* followed the gender of neuters like *genus*. The history of the termination of the nominative singular of Latin comparatives has been much the same. This was indifferently *-ior* or *-ios (-ius)*, like the Greek *-iōv* and the Sanskrit *-yan* from an earlier *-yans*, and in Valerius Antias<sup>2</sup> we find *prior* still used for the neuter in the phrase "senatus-consultum prior," while the title of the fourth book of Cassius He-

<sup>1</sup> For Greek synonyms, see Trench: "Synonyms of the New Testament" (1865).

<sup>2</sup> Apud Priscian. vii. 345.

mina's Annals was, "Bellum Punicum posterior." *Arbor* and *robur* were originally identical, and M. Bréal has shown that this was also the case with *cruor* and *crus*.<sup>1</sup> The two latter words both represent the Sanskrit *kravis* and the Greek *κρέας* in the sense of "bloody flesh" or "bloody limb," and their differentiation was aided by the introduction of a new word, *caro*, in the sense of "flesh." *Caro* originally meant simply "part" or "portion," a sense in which the Umbrian *karu* is still employed in the Engubine Tables,<sup>2</sup> and the Oscan *carneis* in the Tabula Bantina. Roots, too, as well as derivatives, may be differentiated and gradually assume independent meanings. Thus in Greek, if we follow the usual theory, the old root *ar* or *ara* has been split up into three, *ἀρ-*, *ἔρ-*, and *ὀρ-*, in accordance with the threefold representation of the Sanskrit *ā* in European Aryan. Accordingly by the side of *ἀρόω*, the Latin *arare*, the Gothic *arjan* (Old English *ear*), which appropriated to itself the sense of "ploughing," we have also *ἑρέσσω* (*remus*) in the sense of "rowing," and *ὀρ-νυμι* (*orior*) in the sense of "rising" to one's work. This differentiation of the three roots, however, seems to have come about after the separation of the several members of the Aryan group, as we find no trace of it in the Asiatic branch of the family, and it must, therefore, have really taken place in the fully-formed words of the European tongues.<sup>3</sup> Greek with

<sup>1</sup> "Mémoires de la Société de Linguistique de Paris," ii. 5.

<sup>2</sup> V. a 24, *sve mestru karu fratru* = "si major pars fratrum."

<sup>3</sup> On the other hand, the Asiatic members of the family have certainly lost the distinction that existed in the parent speech between the vowels represented in the European members by *ā*, *ē*, and *ō*, so that the differentiation of the root *ar* may have been

its delicate sense of vocalic difference shows a special tendency towards utilizing vowel changes for grammatical purposes. Thus the reduplicated syllables in  $\delta\acute{\iota}\delta\omega\mu\iota$  and  $\delta\acute{\epsilon}\delta\omega\kappa\alpha$  were originally identical, but in course of time, while the sound of  $\acute{i}$  was appropriated to the present tense, the sound of  $e$  came to mark the perfect. In the same way Greek verbs in  $-\alpha\omega$ ,  $-\epsilon\omega$ ,  $-\omicron\omega$  all go back to the form which we have in the Sanskrit  $-aj\acute{a}mi$ , but later usage tended to assign a transitive meaning to the form in  $-\omicron\omega$ , and an intransitive one to that in  $-\epsilon\omega$ , while that in  $-\alpha\omega$  floated between the two. It is probable that the three Semitic case-endings in  $u$ ,  $i$ ,  $a$ , which respectively denoted the nominative, genitive, and accusative, all went back to a primary indeterminate  $-a$ . In the Negro Dinka language certain plurals are formed by lengthening or sharpening the vowel of the singular, like  $r\acute{o}r$ , the plural of  $ror$ , "wood,"  $nim$ , the plural of  $nom$ , "head,"  $l\acute{i}b$ , the plural of  $lyep$ , "tongue," or  $tut$ , the plural of  $tuot$ , "goose;" and since we find that a verb becomes passive by simply lengthening the final  $i$  of the formative elements (as  $ran\ a-t\check{s}\acute{i}\ t\check{s}\acute{o}l$ , "the man has been called," by the side of  $ran\ a-t\check{s}i\ t\check{s}\acute{o}l$ , "the man has called"), it is possible that the vowel change in all these cases is due to differentiation for the sake of clearness and emphasis. Such at least has been the origin of the tones which form so marked a feature in Chinese. Dr. Edkins has shown that the confusion between words of different signification occasioned earlier than the period of Aryan separation. In the Finnic group roots are similarly differentiated by a modification of the vowel,  $kah-isen$ ,  $koh-isen$ , and  $kuh-isen$ , for instance, being "to hit" or "stamp,"  $k\acute{u}h-isen$  and  $k\acute{o}h-isen$ , "to roar,"  $keh-isen$  and  $kih-isen$ , "to boil."

by the loss of various initial and final letters in pronunciation was obviated by the substitution of tones, and the effects of phonetic decay have been thus neutralized by the action of the contrary principle of emphasis.

One of the modes in which this principle comes into play is what Professor Max Müller has called *Dialectic Regeneration*. The words and grammatical forms which have become effete in the literary dialect, are often replaced by others taken up from the fresh fountain of "provincial" speech. There is nothing any longer to attract attention in what has become so prosaic an expression as "the four cardinal points," striking as the phrase once was; but when Carlyle goes to the Scotch and borrows from it the "four airts," we are at once arrested by the unusual character of the word, a special emphasis is laid upon it, and we begin to realize its full meaning. It is in a period of social revolution, like that of the Norman Conquest in England, that *Dialectic Regeneration* is best seen at work on the literary language. As soon as the latter loses the support of the educated classes, it fails to withstand the attack of the less favoured but more deeply rooted dialects which have surrounded it, and, as in the case of literary Anglo-Saxon with its inflections and learned terms, it disappears for ever. The unwritten languages of savages and barbarians are in a continual state of flux and change. Old words and expressions which have ceased to possess the needed amount of clearness and emphasis have to make way for new ones. The slang of the schoolboy, or the cant of thieves and costermongers, exemplifies the same fact. It is not so much the desire of revolting against the proprieties of

a civilized society, or of framing a secret jargon which shall be unintelligible to others, that produces these wild outgrowths of language; it is rather the feeling that the conventional terms have become mere symbols, or, as Hobbes said, the counters of wise men, and that the ideas which are perceived and felt clearly should be expressed with equal clearness and force. Man is not wholly ruled by the wish to save himself trouble and attain his object with the least effort; the healthy love of physical exertion for its own sake is also a powerful motive in human life. It is only with the growth of civilization and thought that the exertion is transferred from the muscles to the brain, that words become so many algebraic signs, and that syntax takes the place of elocution. It has been often noticed that the tendency of the modern languages of Europe is towards a monotonous level of both accent and tone; but it must be remembered that, as long as poetry exists, there will exist also a tendency in the opposite direction, as well as a protest against the reduction of all language into a mere reflection of the dry light of reason. Laziness will not explain everything in speech any more than it will in the ordinary dealings of mankind. As Sievers states:—“We even now often find it stated in works on the science of language, that all phonetic change results from a striving to facilitate the pronunciation and simplify the articulation; or, in other words, that change of sound always consists in a weakening of sound and not in a strengthening of it. We may allow that although many of the phænomena observable in the history of speech can be brought under this rule, the general application of the



statement is absolutely false. . . The idea of facilitating the pronunciation, if it is to be any longer maintained, must be regarded as an essentially relative one. Speaking generally, we must never forget that the different degrees of difficulty in uttering various sounds are in themselves extraordinarily slight, and that real difficulties in forming them are usually experienced only in the case of sounds belonging to a foreign language. . . In short, real difficulties in pronunciation are never specially felt by the members of a community which speaks a given language, and with them only a further development of their language is possible."

This brings us to the third and last cause of change of language, laziness, or, as it has also been termed, the principle of least effort. As the results of laziness show themselves principally in the alterations undergone by the sounds of speech, this cause of change is commonly known under the name of Phonetic Decay.<sup>1</sup> But the meanings of words as well as the expression of grammatical relations are as much subject to decay as the sounds of speech; the outward form of *age* which can be traced back to the Low Latin *ataticum* and the classical *etas*, has suffered no less from the wear and tear of time than its inward signification, which goes back to a root meaning "to go." Like the present strata of the earth which are the *débris* of the earlier rocks, the present strata of language are the worn-out relics of older formations. The power of laziness, more especially in the shape of phonetic decay, is conspicuous in almost every word we utter; it is the first agent of linguistic change

<sup>1</sup> This happy term was the invention of Professor Max Müller.

that strikes the student, and it has accordingly attracted more than its due share of attention. The influence of laziness has been insisted on to the exclusion of the two other equally important causes of change in speech, and the growth of grammatical consciousness, the discovery of new grammatical relations and the development of fresh mental points of view, have even been ascribed to its action. No doubt its influence is great and far-reaching, but we must be on our guard against regarding laziness as sufficient of itself to explain all the phenomena of language. Phonology is rather affected by it than either morphology or sematology. Owing, however, to the large place assigned to it in works on comparative philology, it will not be necessary to dwell upon it here in any great detail. We naturally seek to make ourselves understood by our neighbours with the least possible amount of trouble. Muscular and still more mental fatigue is distasteful to us, and the less we have to exert our vocal organs and powers of thinking when making our meaning clear to another, the better satisfied we are sure to be. Hence it happens that we constantly use words with a very dim appreciation indeed of their full and exact significance. We select that part of the meaning only which for some reason or other has made an impression upon our minds, and very often this part of the meaning is merely subsidiary and accidental to the proper signification of the word. But we are too lazy to realize that proper signification, and so pass words on to others the mere shadow and fragment of their former selves. It may often happen that a sense originally imported into a word by the context in which it accidentally found itself

becomes appropriated to it to the gradual exclusion of its real signification. The word *silly*, for example, which once meant "blessed," like its German cousin *selig*, from being applied euphemistically to half-witted persons, has entirely lost its true meaning. A word like *impertinent* is still in process of being changed. Its positive *pertinent* has hitherto preserved its proper sense, at all events in literature ; but the popular mind has already forgotten the meaning of the negative, and only a short while ago a member of Parliament was called to order for describing a remark as "impertinent." Here the accidental application of a word has caused its primary meaning to fall into neglect. Still more striking is the fate which has befallen words like *transpire* and *eliminate*. The newspapers speak of events "transpiring" in absolute disregard of the fact that events can hardly "breathe through," while *eliminate* has been used not in the sense of removing out of the way but of bringing in.<sup>1</sup> It is so much easier to guess at the meaning of a word from the context in which it occurs than to trace it back to its real signification, and so long as our use of it is intelligible there is little care among ordinary speakers as to whether that use is correct or not.

In this way general terms come to be restricted to individuals, while words which denote the particular are extended to denote the universal. *Deer*, which, like the cognate German *thier* and Latin *fera*, originally signified wild animals of all kinds, is now confined to a particular species ; while, on the other hand, the Latin *emere*, which properly signified "to take" in general, came to

<sup>1</sup> Mill : "System of Logic," ii. p. 240.

be restricted to the special meaning of taking when we "buy." The older significations of words are continually decaying and being supplanted by new ones. Those who use them are too lazy to find out their exact significance.


The principle of laziness is equally active in the province of grammar. Here, too, the relations formerly conceived to exist between the several parts of the sentence may be forgotten altogether or replaced by other relations. The inflections of the Anglo-Saxon noun have been almost all lost, and the datives *him* and *whom* have become objective cases. Prepositions have taken the place of the case-endings, the adjective no longer "agrees" with its noun, but is now conceived of as a simple attribute, while all remembrance of the dative relation has faded out of the expressions "give me a book," "send it away." The subjunctive is fast ceasing to exist, and the modern Englishman troubles himself but little about the difference between *be* and *is* or between *if I was* and *if I were*.

It is in phonology, however, that the principle of laziness is most active. As far back as we can follow the history of language we see the stronger and harder sounds perpetually changing into weaker and easier ones; and so uniform and constant is this tendency that in the absence of counter-indications we are justified in referring most cases of phonetic change with which we may meet to the operation of decay. Mr. Douse<sup>1</sup> has lately made an ingenious but unsuccessful attempt to assign the phænomena of Grimm's law to what he terms

<sup>1</sup> Grimm's "Law: a Study" (1876).

the principle of least effort, by supposing that the different phonetic systems of the several branches of the Indo-European family were evolved out of the *tenuis* or hard consonants, at a time when these branches were still co-existing dialects of a single language, through the influence of "Reflex Dissimilation." Reflex dissimilation is explained to be a more complicated and somewhat varying instance of that simple cross compensation which we see exemplified in the Cockney interchange of *v* and *ʷ*, or the perverse persistency with which the same persons, who leave out the aspirate where it ought to exist, insert it where it ought to be omitted. In both cross compensation and reflex dissimilation, however, we have a compound action of the two antagonistic principles of laziness and emphasis.

The age of a language is marked by the extent to which it has been affected by phonetic decay, and when we find how large its influence has been upon the Old Egyptian and the Accadian of Chaldæa, as they appear in the earliest monuments we possess, we may form some idea of the length of time that must have elapsed since those languages were first being moulded and fixed. At the same time we must not forget that phonetic decay will act more readily upon some classes of languages than upon others. Wherever there is no clear consciousness of the distinction between root and grammatical suffix, as in our own inflectional family of speech, there we may expect a greater and more rapid amount of change than in agglutinative dialects where the relations of grammar are expressed by independent or semi-independent words. But even the latter cannot escape the law of gradual de-



cay. To pass over the incorporating Basque in which words like *dakarkiotezute*, "ye eat it for them," or *detzadan*, "that I should have them," have to be decomposed into *da*, "it" or "him," *ekarri*, "to eat," *ki*, sign of the dative, *o*, "for him," *te*, sign of the plural, *zute*, "ye," and *d*, "him," *ez* (*izan*), "to be" or "have," *za*, sign of the plural, *ta*, "I," and *n*, conjunctive affix, we find Yakute Turkish changing *bin* + *sän* ("I + thou") into *biś*, "we,"<sup>1</sup> while the written Japanese *taka-si* and *taka-ki*, "high," are pronounced *takai*. Chinese itself is not exempt from the universal rule. As Dr. Edkins<sup>2</sup> and M. de Rosny have shown, the modern Mandarin dialect has lost numerous initial and final consonants, and words like *yi*, "one," and *ta*, "great," were once *tit* and *dap*. Along the southern bank of the Yang-tsi-kiang and through Chekiang to Fuh-kien the old initials are still preserved, while in the northern provinces no less than three finals have been lost, and the tones by which Chinese words of similar form are distinguished from one another are so many compensations for the loss of letters. Here again we have the principle of emphasis endeavouring to repair the damage wrought by the principle of decay.

A literary dialect is naturally less subject to the inroads of decay than an unwritten one. The spelling of words reacts upon their pronunciation and preserves it from extensive alteration. There is a wide chasm between that Tuscan Italian which has been preserved from corruption by the genius of Dante and the modern dialect of Bologna or Naples. In the age of Cicero the

<sup>1</sup> Böhrling: "Ueber die Sprache der Jakuten," p. 168.

<sup>2</sup> "Introduction to the Study of the Chinese Characters" (1876).

*cave ne eas* of polite society had become *cauneas* in the language of the people,<sup>1</sup> and how artificial was the attempt of pedants and purists to maintain the older pronunciation, even to the restoration of the final *s* which had already been dropped by Ennius, appeared pretty plainly as soon as the decline of the Roman empire and the extinction of the literary class deprived it of support. Latin at once fell away into the Romance dialects of modern Europe, just as literary Anglo-Saxon with its inflections and its learned vocabulary disappeared before the Norman Conquest. The language of the Assyrian inscriptions remains almost unaltered throughout the long period of nearly 2,000 years, during which we can watch its fortunes ; but this language was the stereotyped one of literature and education, and differed very considerably from the spoken language of the people. The late linguistic character of Hebrew, the extent, that is, to which it has been influenced by phonetic decay as compared with its sister tongues, is an incontrovertible proof of the backward literary condition of its speakers. But even literature and cultivation are unable to preserve a language altogether from decay and change. The pronunciation of the educated slowly changes ; words become clipped and shortened in spite of their spelling, and notwithstanding printers and schoolmasters the spelling in the end has to follow the pronunciation. Mr. Alexander Ellis has shown in his "Early English Pronunciation" how widely our modern pronunciation of English has departed from that of Shakspeare's time, and the spelling of *though*, *through*, and *enough* bears witness

<sup>1</sup> "De Div." ii. 40, 84.



to a period when they ended in a guttural aspirate. Our pronunciation is still undergoing change; the vowels are becoming more and more indistinct and merged in a common obscure *ɛ*; while such contractions as *I'll*, *I'd*, *won't*, and *can't* can hardly be distinguished from Basque forms like those mentioned above. The educated Englishman speaks, as the French say, with his lips closed; he finds that he can be understood without the trouble of opening and rounding them, and his vowels are accordingly formed in the front rather than in the back part of the mouth. No wonder that he has a difficulty with the French *eu*; the effort to pronounce it is too great a strain upon the unexercised muscles of the lips, and so the English gentleman who told the waiter not to let the *feu* go out in his absence found on his return that his friend had been strictly watched and guarded as a dangerous *fou*.

But though a literature and more especially a widely extended literary education form the chief obstacle to the action of phonetic decay, there are other social influences which operate to the same end. Wherever there is a fixed and stable society, cut off from close intercourse with its neighbours and handing down unchanged its customs and institutions, we are likely to find a more or less fixed and stable language. For language is the mirror of the community that uses it, and where the community alters but little the language will alter but little too. It is in this way that we must explain the fact that Lithuanian, though unprotected by a literature and spoken by the least progressive of the European members of the Aryan family, is yet the most conservative of all the Western

languages of our group, or that the Bedouin of Central Arabia is said to speak at the present day a more archaic language than those of Nineveh or Jerusalem 3,000 years ago. Since the institution of an annual fair among the Rocky Mountains the idioms of the eastern and western Eskimaux, who at first were hardly understood by one another, became more and more assimilated ;<sup>1</sup> and the stationary character of Icelandic may be ascribed as much to the isolation of the settled Norse community in the island as to the existence of a literature. Of course, the community must be one which has reached a certain level of culture, and its customs and institutions must imply organization and recognition of fixed principles. Where the customs and institutions are founded on mere unreasoning habit and precedent, we are dealing with a community of barbarians, and consequently with languages or dialects in a perpetual state of flux.

The changes wrought by phonetic decay are sometimes sufficient to alter the whole aspect of a language, and are at once the foundation and the riddle of etymology. Who would recognize in the French *même*, for instance, any derivative from the Latin pronoun *se*? And yet *même* goes back to the Low Latin *scmetipsissimum* through the Old Provençal *smetessme*, the later Provençal *medesme* and the Old French *meïsme*. Words of different origin, like *scale* from the Latin *scala* and the Anglo-Saxon *scalu* and *scealu*, may come to assume the same form ; while words of the same origin, like the French *captif* and *chétif*, from *captivus*, or *noel* and *natal* from *natalis*, may

<sup>1</sup> Gallatin : "Synopsis of the Indian Tribes of North America," in the "Archæologia Americana," ii.

appear under different forms. The processes of assimilation and swarabhakti, of metathesis and epenthesis, to be described in the next chapter, are so many forms under which phonetic decay displays itself. The history of language is the history of the continual weakening of uttered sounds and the gradual lessening of the demands made upon the organs of speech, and attempts like that to reduce the trilateral roots of the Semitic tongues to biliteral ones are contrary to the whole tendency of language. Accent alone is able to hold out against the assaults of phonetic decay; it is only the accented syllable that remains unchanged when all around it is perishing, and, as in the case of *age* from *ætaticum* or *dine* from *desinere*, is often all that is left of the primitive word. It is again the struggle between the principle of emphasis and the principle of laziness, between conservatism and revolution. Only when the accent is shifted to another syllable can phonetic decay gain the victory, and the shifting of the accent is itself the work of the principle of decay.

The principle of laziness has much to do with the creation of dialects. Slight variations of pronunciation and of the usage of words are as inevitable in language as variations of species in zoology, and where there is no correcting standard these variations are perpetuated and intensified. Helped by the two other causes of linguistic change, the dialect of a household becomes in time the dialect of a clan or tribe, and as soon as its characteristics are sufficiently numerous and distinct, the dialect is transformed into a language. An isolated community will by slow degrees form a new language

for itself. Just as the history and character of one society differ from those of another, so too must the dialect or language differ in which the society finds expression. Even where the rapid and intimate intercourse of modern civilization and the safeguard of a common and widely-studied literature stand in the way, as in the case of England and America, dialectical differences and peculiarities will yet spring up. In savage and barbarous communities the growth of innumerable dialects is a matter of necessity. The manifold languages of the Malayan and Polynesian Archipelago can be traced back to a common source, but the natives of two neighbouring islands are often unintelligible to one another; while von der Gabelentz says of the Melanesians, that "every small island has its own language or even several languages."<sup>1</sup> Before the utter extinction of the Tasmanians, with a population of no more than fifty persons there were four dialects, each with a different word for "ear," "eye," "head," and other equally common objects. The language of a shifting unorganized community will reflect the condition of those who speak it, and we are not surprised, therefore, at Captain Gordon's assertion that "some" of the Manipuran dialects "are spoken by no more than thirty

<sup>1</sup> "Die Melanesischen Sprachen" (1873), p. 4. According to Meyer ("Sitzungsberichte d. Oesterr. Akademie," 1874, p. 301), "Riedel has made us acquainted with twenty-three dialects in some parts only of North Celebes, and the number of dialects in the whole island can only be estimated at hundreds . . . . But in New Guinea this dialectical variety is very much greater and more thorough-going, since there the very foundations of a state have not yet begun to be laid."

or forty families, yet (are) so different from the rest as to be unintelligible to the nearest neighbourhood." Humboldt tells us<sup>1</sup> that in South America, together with a great analogy of physical constitution, "a surprising variety of languages is observed among nations of the same origin, and which European travellers scarcely distinguish by their features." Greece, with its small extent of country and still smaller amount of population, was said a few years back to possess no fewer than seventy dialects,<sup>2</sup> and no less than eight principal dialects besides several subordinate ones exist among the modern Basques, whose whole population is under 800,000.<sup>3</sup> Indeed, considering the isolation of the Basques, socially, politically, and linguistically, as well as the narrow tract of country into which they have been compressed, it is remarkable that natives of places not forty miles distant from one another are yet mutually unintelligible.<sup>4</sup> But the natural condition of language is diversity and change, and it is only under the artificial influences of civilization and culture that a language becomes uniform and stationary. As soon as the coercive hand of civilization is removed it breaks out again into a plentiful crop of dialects. Of course, the vicissitudes through which semi-civilized peoples are continually passing

<sup>1</sup> "Travels" (English translation), i. 298.

<sup>2</sup> Gibbon: "Decline and Fall of the Roman Empire" (ed. Milman and Smith), vii. p. 387. Dr. Deffner, however, asserts that there never was a tithe of that number of dialects in the country.

<sup>3</sup> Prince Lucien Bonaparte reckons that there are 660,000 Basques in Spain and 140,000 in France.

<sup>4</sup> Sayce: "Principles of Comparative Philology" (2nd edition), p. 87.

greatly assist the process of change. Conquest and the mixture consequent upon it, famine, disease, and migration, are all powerful aids to dialect-making. The women of a tribe who stay at home, or who have been married out of another tribe, sometimes possess a language different from that of the men; thus, the Carib women in the Antille Isles used a different tongue from that of their husbands, while the Eskimaux women in Greenland turn *k* into *ng* and *t* into *n*.<sup>1</sup> Even religion and superstition play their part in the work; the sacred language of the "medicine-men" in Greenland, for instance, is for the most part an arbitrary perversion of the significations of known words; thus *tak*, "darkness," is used in the sense of "the north," and so gives rise to two new words of this secret speech, *tarsoak*, "earth," and *tarsoarmis*, "roots." The custom of *tapu* among the Pacific Islanders, according to which every word which contains a syllable identical with some part of the name of the reigning chief has to be dropped or changed, is due to the belief that all things belonging to a chief are consecrated and inviolable. Since the reign of Queen Pomare *mi* has been substituted for *po*, "night," in Tahitian, and Hale tells us of this language<sup>2</sup> that its "manner of forming new words seems to be arbitrary. In many cases the substitutes are made by changing or dropping some letter or letters of the original word, as *hopoi* for *hepai*, . . . *au* for *tau*, &c. In other cases the word substituted is one which

<sup>1</sup> The progress of cuneiform research has shown that a similar woman's dialect existed among the Accadians, and "a woman's language" is also said to exist in Bengal.

<sup>2</sup> "United States Exploring Expedition," vii. 290.

had before a meaning nearly related to that of the term disused. . . . In some cases the meaning or origin of the new word is unknown, and it may be a mere invention, as *ofai* for *ohatu* 'stone,' *papai* for *vai*, 'water,' *pohe* for *mate*, 'dead.'" Similar to the Polynesian *tapu* is the Chinese custom of tabooing the elements of the reigning emperor's name, and the *ukuhlonipa*, which forbids the Kafir women to pronounce a word containing a sound like one in the names of their nearest relations. Thus, "Mr. Leslie states that the wives of Panda's sons would never call him (Mr. Leslie) by his Kafir name of u' Lpondo, on account of its partial identity with that of the chief, their father-in-law. In the name of the river Amanzimtoti, 'Sweet Waters,' in like manner, *mtoti* has been substituted for *muandi*, hlonipaed or tabooed on account of its occurring in the name of Tsaka's mother Unandi."<sup>1</sup>

The Abipones of South America similarly alter the names of the friends and relatives of a dead member of the tribe, and the words which entered into the composition of his name are dropped out of use.<sup>2</sup> For a parallel superstition we have only to think of the old European belief in the omen involved in the mere pronunciation of a word, which caused the Greek to speak of his left hand

<sup>1</sup> "Natal Colonist," Sept. 3rd, 1875. Mr. Theal says ("The Cape Monthly Magazine," June, 1877, p. 349): "A woman, who sang the song of 'Tangalimlibo' for me, used the word *angoca*, instead of *amanzi*, for 'water,' because this last contained the syllable *nzi*, which she would not on any account pronounce. She had, therefore, manufactured another word, the meaning of which had to be judged by the context, as, standing alone, it is meaningless." This is a good instance of the way in which a savage dialect may grow up.

<sup>2</sup> Waitz, iii. 477.



as ἀρίστερος, "the better one," and the Roman to change Maleventum into Beneventum. The belief in the power of words, in the *vis verbi* as the Latin termed it, is even now not extinct, and the same feeling which altered the "Cape of Storms" into the "Cape of Good Hope" is still prevalent among us.

The sacred jargon of the Eskimaux sorcerer, which finds its analogue in the slang of the schoolboy, is merely one step lower than the ceremonial dialects which are to be met with all over the world. The *Bhasa Krama* or ceremonial language of Java, for example, like the ceremonial languages of the larger islands of Polynesia, or the ceremonial conjugation of the ancient Azteks, hedges in the upper classes of the community with a veritable *tapu*. So, too, the Japanese when addressing a superior has to speak of himself as *gu-sau*, "a stupid vegetable," or *yátsū-ko* (contracted *yákko*), "house-boy," and of another as *nandzi*, "famous," or *te-máye-san*, "the gentleman at hand," while *o* or *on*, "great," is prefixed to all words which relate to the latter<sup>1</sup> and distinctive verbs and verbal forms employed expressive of courtesy.<sup>2</sup> The Chinaman is equally the slave of an artificial politeness; he is himself "the thief" (*ts'ie*), "the soft-brained" (*iu*), while the person he addresses is "the honourable" (*ling*) or "the noble brother" (*ling hiung*).<sup>3</sup> The Indian *bhavan*, "present," is construed with the third person in order to denote

<sup>1</sup> *Mi* took the place of *o* in old Japanese, hence the title of the *Mi-kado*, or "high Gate" (Grande Porte).

<sup>2</sup> See Hoffmann: "Japanese Grammar," pp. 72 *sq.* and § 111-120.

<sup>3</sup> Endlicher: "Chinesische Grammatik," pp. 258 *sq.*

the second with ambiguous courtesy, and the same reluctance to place oneself on a footing of equality by a blunt "thou" shows itself in the Latin of the Hungarian, who will say "Dominus dignetur commodare mihi librum," meaning the second person.<sup>1</sup> The ceremonial use of the pronouns reaches a still greater extreme in German, where in addition to the various titles with which "His Highly well-born," "His most serene," or "His Transparency" require to be addressed, the second person singular has to be represented sometimes by a masculine *Er* ("he"), sometimes by a feminine *Sie* ("she"), sometimes by a plural *Sie* ("they"). The latter reminds us of the Hebrew "pluralis majestatis," and recalls our own employment of the plural *you* for the singular *thou*. Our usage in this respect was probably influenced by the French use of *vous*, and it is perhaps to the same influence that we may ascribe the Basque use of *Zute*, "you," instead of *Zu*, "thou," which seems of comparatively late introduction. Two Basque dialects, indeed, the Souletin and the east Low Navarese, have even developed a ceremonial conjugation, every person of which, except the second plural, assumes a special form when a superior is addressed. Besides the ceremonial conjugation there is also a feminine one, employed whenever a woman is spoken to. It must be remembered that the Basque verb is an amalgamation of the verbal root with the personal pronouns.

The rapid changes undergone by languages in a natural state can only be appreciated by those who have had experience of a tribe of wandering savages, or who have

<sup>1</sup> Pott : Humboldt's "Verschiedenheit des menschlichen Sprachbaues," i. p. 395.

observed the alterations children would make in the language they learn if left to themselves. According to Waldeck, a dictionary compiled by Jesuit missionaries in Central America became useless within ten years; and Messerschmidt states that the inhabitants of Ostiak villages, only a mile or two apart, are unintelligible to one another.<sup>1</sup> The Hurons, Sagard stated in 1631, spoke such a variety of dialects that not only was the same language hardly to be heard in two adjacent villages, but even in two adjacent houses, and these multitudinous dialects he further described as changing every day. Mr. Trumbull, however, points out that Sagard's account must be received with caution, since he says that the instability of language among the French was almost as great as among the Hurons, and his "very imperfect dictionary of this unstable language, 200 years or more after it was compiled, enabled Duponceau to make himself understood without apparent difficulty by the Wyandots, a remnant of the last nation of the Hurons."<sup>2</sup>

But the following account given by Sir C. Lyell in his "Antiquity of Man,"<sup>3</sup> shows that it is not necessary for a community to be semi-civilized or barbarous in order to prove how rapidly a non-literary language can be transformed. "A German colony in Pennsylvania," he says, "was cut off from frequent communication with Europe for about a quarter of a century, during the wars of the French Revolution, between 1792 and 1815. So marked

<sup>1</sup> Max Müller : "Lectures," i. p. 56.

<sup>2</sup> "On the best Method of Studying the American Languages," p. 11.

<sup>3</sup> P. 152 (4th edition).

had been the effect even of this brief and imperfect isolation, that when Prince Bernhard of Saxe-Weimar travelled among them a few years after the peace, he found the peasants speaking as they had done in Germany in the preceding century, and retaining a dialect which at home had already become obsolete. Even after the renewal of the German emigration from Europe, when I travelled in 1841, among the same people in the retired valleys of the Alleghanies, I found the newspapers full of terms half-English and half-German, and many an Anglo-Saxon word which had assumed a Teutonic dress, as 'fencen,' to fence, instead of umzäunen; 'flauer,' for flour, instead of mehl, and so on." Destroy literature and facility of intercommunication, and the languages of England and America would soon be as different as those of France and Italy.

It is civilization which counteracts the natural tendency to multiply dialects, and which is ever striving to absorb the manifold dialects that exist into a single tongue. All the social conditions of civilized life tend to break down dialects, to assimilate languages, and to create a common medium of intercourse. A common government, a common literature, a common history and a common law, all require a common language. The Macedonian Empire made Greek the language of the East, and Rome effectually stamped out the various idioms of its subjects in the West. It needed an invasion of barbarism and the overthrow of Roman organization and culture to restore the period of linguistic disunion. The Church remained the sole representative of civilization, and consequently the sole possessor of a

common tongue. In fact, wherever civilization has made an advance, the action of the great causes of change in language has received a check. Every conquest over a horde of barbarians, every attempt to found a settled government, to establish a code of laws, to systematize a religion, or to originate a literature, is a step forward in the direction of linguistic unity. The practical aim of the science of language is the formation of a universal speech, and the time may yet come when the dream will be converted into a reality. The inventions of the present century—the steamer, the railway, and the telegraph—are bringing all parts of the world into a closer connection with one another, and abolishing the barriers created by differences of speech. Commerce demands a *lingua franca*, and now that commerce is world-wide its *lingua franca* must be world-wide also.

The language of the chief trading nations must finally prevail in the struggle for existence, and the prophecy has already been hazarded that pigeon-English, or a similar grammarless jargon, will be the future medium of universal intercourse. However this may be, the endeavour to revive the perishing languages of Europe, and to make the limits of speech the limits of nationality, is a reversal of the lesson of history and a return to primitive barbarism. It is but the transient reaction against the Empire of the first Napoleon, based on the false belief that language and race are convertible terms. But the endeavour, however flattering to nations without a history, is doomed to failure. Little by little the weaker languages and dialects of Europe are disappearing before the schoolmaster and the railway, and artificial nurture

can alone protract their lingering existence. Gaelic and Welsh in our own islands, like Breton in France or Lithuanian in Germany and Russia, must share the fate which has already overtaken Cornish and Wendic. The last Wendic speaker, Frau Gülzsin, died on the Island of Rügen as long ago as 1404,<sup>1</sup> while Lithuanian is now used by scarcely a million and a half persons, in spite of the philosopher Immanuel Kant's plea for it as "a still unmixed language of an old people, now isolated and confined within narrow bounds," which would throw light on the history of the past.<sup>2</sup> The tendency of time is to unify and simplify, and exact science even now has but one tongue throughout the world. The attempt of Bishop Wilkins to invent a universal language failed, not because it was premature, but because such a language, like all others, must be a spontaneous growth; a better fortune may await the Pasigraphy of Bachmaier,<sup>3</sup> which attempts to do for the man of literature what the Arabic ciphers have done for the mathematician, since writing differs from language in being a conscious human invention.

The history of the extinction of languages is similar to that of the extinction of dialects. We see the same process at work in both cases, only on a different scale. Where several dialects exist together, the one which belongs to the dominant class will finally prevail over the others. The "Queen's English" is really the court dialect

<sup>1</sup> Andree: "Wendische Wanderstudien" (1874).

<sup>2</sup> Appendix to Mielcke's edition of Ruhig's "Wörterbuch."

<sup>3</sup> "Pasigraphical Dictionary and Grammar" (1871). Galliani's "Dictionnaire télégraphique, économique, et secret" contains 15,576 groups of only three letters, each of which expresses a word or a whole sentence.

of Chaucer's day, which became the dialect of literature and education, and so has succeeded in degrading its sister-dialects into illiterate provincialisms, and in many cases in destroying them altogether. Where the educated and ruling caste is small, the other dialects will continue to flourish among the mass of the people, and on the overthrow of the cultured class will once more assert their own. But in a democratic age like the present, when books and newspapers are multiplied by the printing press, and the whole nation is being leavened by the general spread of education, the dialect of civilization will sooner or later swallow up its less favoured sisters. The remarkable sameness of dialect which prevails among the Arabic-speaking populations of the East may be largely accounted for by the democratic spirit of Mahomedanism which holds all men equal before the supreme Khalif. It is, therefore, of the highest importance to comparative philology that the decaying dialects of our own or other countries should be observed and written down before they have perished. The history of a language can be traced only by a comparison of its dialects, which often preserve words and forms that have become obscure and inexplicable in the standard dialect itself. Where the allied dialects have disappeared, the chasm that divides the language we are studying from those with which it was once connected may be too wide to be easily spanned. For in language, as in everything else, dialect passes gradually and insensibly into dialect, and it is not until we compare the two extremes in the series that we are made aware of the accumulated differences which the transitions have involved.



The progress of civilization, then, implies a continuous diminution of the languages and dialects of the world, and a corresponding extension of a single tongue. Just as we have seen that language advances from complexity to simplicity, so we now see that it advances from multiplicity to unity. The more barbarous a society is, the more numerous will be the languages that it speaks. The further back we go into the past, the greater must be the linguistic anarchy with which we meet. A language begins with dialects, and since language is the product and reflection of the community that uses it, the primæval languages of the world must have been as infinitely numerous as the communities that spoke them. We start with the Babel of confusion, with the houseless savage who did that which was right in his own eyes. Language, it is true, first cemented society together, but it also made each society a body of hostile units. Many as are the existing languages of the earth, they are but the selected relics of an infinitely greater number which have passed away. Here and there we still come across the last waifs of an otherwise extinct family of speech, the last survivors of a group of languages and dialects which has long since been forgotten. The Basque, like the scattered languages of the Caucasus, seems to have no connection with any other known speech; sheltered by the mountain fastnesses of Biscay, it remains to bear witness to the linguistic character of an extinct world. So far as appears at present, the mysterious Etruscan which has left us some 3,000 short inscriptions is another forlorn waif, without kith or kin in the world of known tongues. Perhaps, too, the language of the Lykian in-

scriptions, which still refuses to be "classified" in spite of the efforts that have been made to turn it into an Iranian idiom, is a further example of the same kind. The boulders that have been left on our hilltops do not tell us with more certainty of the icebergs and icefloes which brought them thither, than do these stray languages of the manifold forms of speech of which they are the scanty remnants. Our only wonder should be not that there are any tongues which refuse to be classed with others, but that there are so few which thus maintain an isolated existence.

As we shall see hereafter, families of languages are exceptional in the history of speech. Professor Max Müller very truly says :<sup>1</sup> " Families of languages are very peculiar formations ; they are, and they must be, the exception, not the rule, in the growth of language. There was always the possibility, but there never was, as far as I can judge, any necessity for human speech leaving its primitive stage of wild growth and decay." " If we confine ourselves to the Asiatic continent, with its important peninsula of Europe, we find that in the vast desert of drifting human speech, three, and only three oases have been formed, in which, before the beginning of all history, language became permanent and traditional ; assumed, in fact, a new character—a character totally different from the original character of the floating and constantly varying speech of human beings." And these oases, these families of speech, it is important to remember, are themselves made up of dialects, only dialects with a common grammar and a common stock of roots. We may, if we like, construct a

<sup>1</sup> " Lectures on the Science of Religion," pp. 161, 154.

hypothetical "parent-speech," from which we may derive the several dialects and languages which are the only facts we have to work upon ; but we must not forget that such a parent-speech is purely hypothetical, the product of reflective analysis and logical deduction. Fick's dictionary of the Parent-Aryan is as much the creation of the comparative philologist's closet as Schleicher's "restoration" of its grammatical forms. Because the Sanskrit *panchan* and the Latin *quinque* can both be reduced to the same form *quemquem*, it does not follow that the latter form was ever actually existent. As far back as we can go, we still find ourselves in the presence of allied dialects, never of a single tongue. The east-Aryan primitive *ghard*, "heart," cannot be reduced to the same form as the west-Aryan *kard*, with the same meaning ; the two variant forms of the root testify to a dialectical difference from the outset.<sup>1</sup> Such, too, is the evidence of words like those for "daughter," Greek *θυγάτηρ*, but Sanskrit *duhitâ*, or "door," Greek *θύρα*, Sanskrit *dwâram* (not *dhwâram*), while the demonstrative pronouns appear from the first under two incompatible forms *sa(s)* and *ta(s)*. For the sake of convenience we may assume a parent-speech ; we may even go so far as to picture to ourselves a family of languages like a family in social life, except that it springs not from two ancestors but from one ; but unless we bear in mind that these assumptions are like the assumptions of the geometer, ideal creations, never realized in the actual world, we shall be betrayed into numberless absurdities

<sup>1</sup> Bréal: "La Langue Indo-Européenne," in his "Mélanges de Philologie Comparée" (1878).

and false conclusions. It is to them, indeed, that we owe the belief that the primitive Aryans had but the single vowel *a* in their alphabet besides the three tenues *k*, *t*, *p*, the labials *r*, *m*, *n*, and the sibilant *s*. Even Dr. Murray, with his nine primæval roots *ag*, *bag*, *dwag*, *gwag*, *lag*, *mag*, *nag*, *rag*, and *swag*, did better than this.<sup>1</sup>

Repulsion and division, then, is the natural condition of language. The three causes of change are ever actively at work, and the influence of civilization cannot entirely destroy their power. But with the advance of culture, the dividing barriers are broken down, and to borrow a metaphor from mechanics, the centrifugal is exchanged for the centripetal force. Dialects make way for lan-

<sup>1</sup> "History of the European Languages," pp. 31, 32. The following are the significations assigned to these nine rudiments of speech:—

"I. To strike or move with swift, equable, penetrating or sharp effect was AG ! AG !

If the motion was less sudden, but of the same species, WAG.

If made with force and a great effort, HWAG.

These are varieties of one word, originally used to mark the motion of fire, water, wind, darts.

"II. To strike with a quick, vigorous, impelling force, BAG or BWAG, of which FAG and PAG are softer varieties.

"III. To strike with a harsh, violent, strong blow, DWAG, of which THWAG and TWAG are varieties.

"IV. To move or strike with a quick, tottering, unequal impulse, GWAG or CWAG.

"V. To strike with a pliant slap, LAG and HLAG.

"VI. To press by strong force or impulse so as to condense, bruise, or compel, MAG.

"VII. To strike with a crushing, destroying power, NAG and HNAG.

"VIII. To strike with a strong, rude, sharp, penetrating power, RAG or HRAG.

"IX. To move with a weighty strong impulse, SWAG."

guages, and languages in their turn tend to centralization. Where thought is of more consequence than the vocal symbols in which it is expressed, means will be found for making the symbols uniform and constant. Language begins with multiplicity and disunion, but its end is unity. The theory that would derive the idioms of the world from three or four primæval centres, or even from a single centre, is contrary to the facts. In the very act of being formed a language necessarily splits itself into dialectical variety. The children of to-day resemble those children of humanity, the first framers of articulate speech, and the children of a single household, if left to themselves, would have each his own jargon, his own dialect. So it was, too, with primitive man. Where circumstances were favourable the inhabitants of the same locality, breathing the same air, and enjoying the same food, would maintain a family likeness in the tongues they spoke ; but elsewhere all the causes of change would have had free play, and the languages of mankind would have been as numerous as the songs of birds. With the growth of society, however, language, the great social unifier, became more and more fixed and settled ; though dialects continued to branch off, they each occupied a wider area, belonged to a larger community, and retained their marks of relationship to one another. When the first level of civilization had been reached, the history of language entered upon a new phase. Families of speech became possible, and the same causes that produced permanence and stability in the customs and beliefs of the community produced them also in the dialects that it used. The first step had been made to-

wards counteracting the anarchy of primæval speech and attaining that ideal unity to which language tends. Here and there the race may have deteriorated; the Hottentots, for instance, with their developed dialects, may be the degenerate descendants of more civilized ancestors; but the movement on the whole has been forward and not backward. Science with a myriad voices declares the ascent and not the descent of man. Our civilization, it is true, like the languages that reflect it, is still imperfect, is still far from the goal that it has in view. But we may take heart from what has been achieved, and perhaps even look forward to the day when there shall be not only one hope and one faith, but also one language in which they shall find utterance.

## APPENDIX TO CHAPTER III.

### SPECIMENS OF MIXED JARGONS.

#### *Maltese.*

St. John i. 1-14. (1.) Fil bidu kienet il kelma, u il kelma kienet 'aand Alla, u Alla kien il kelma. (2.) Dina kienet fil bidu 'aand Alla. (3.) Kollosh biha sar; u minn 'aayrha sheyn ma sar, milli sar. (4.) Fiha il ḥayā kienet, u il ḥayā kienet id dawl tal bniedmin. (5.) U id dawl yilma fid dlamiyiet, u id dlamiyiet ma fehmuḥsh. (6.) Kien hemma bniedem mib'aut mn' Alla, li ismu Jwan. (7.) Dana jie b'shiehed biesh yished mid Dawl, biesh il koll yemmnu bih. (8.) Hua ma kiensh id Dawl, izda kien'

biesh yishhed mid Dawl. (9.) Kien Dawl tas sēwa, li yuri lil koll bniedem li yiji fid dinya. (10.) Hu kien fid dinya, u id dinya bih saret, u id dinya ma 'aarfetush. (11.) Jie fiḥ weyju, u niesu ma laq'auhsh. (12.) Izda lil dawk kollha li laq'auh, tahom il yedd illi isiru ulied Alla, lil dawka li yemmnu b' Ismu: (13.) Li le twieldu(sh) mid demm, u la mir rieda tal jisem, lanqas mir rieda tar rajel, izda mn' Alla. (14.) U il kelma saret jisem, u 'aammret fostna (u rayna sebḥu [*or* kburitu], bḥala sebḥ li mnissel-waḥdu mil missier), mimlia bil grazya u bis sēwa.

*Creolese* (or broken Danish), the language of 39,000 negroes in Danish West Indies, possessing no genders or numbers, declension or conjugation. See Klauer-Klattowski, "Deutsche Orthoepie," p. 108, and J. C. Kingos, "Kreool A B C Buk" (*S. Croix*, 1770). The language is really Dutch with Danish words intermixed.

St. John i. 1-14. (1.) In die Begin die Woord ha wees, en die Woord ha wees bie Godt, en Godt ha wees die Woord. (2.) Die selve ha wees bie Godt in die Begin. (3.) Almael gut ka maek door die selve; en sonder die niet een gut ka maek, van almael, wat ka mack. (4.) Die Leven ha wees in hem, en die Leven ha wees die Ligt van die Mensen. (5.) En die Ligt ha skien in die Dysternis, en die Dysternis no ha begriep die. (6.) Die ha hab een mens, Godt ha stier hem, en sie naem ha wees Johannes. (7.) Hem ha kom tot een Getiegnis, dat hem ha sal getieg van die Ligt, dat almael ha sal gloov door hem. (8.) Hem no ha wees die Ligt, maer dat hem ha sal getieg van die Ligt. (9.) Die ha wees die waerag-



tig Ligt, die verligt almael Mensen, die kom na die Weereld. (10.) Hem ha wees in die Weereld, en die Weereld ka maek door hem, en die Weereld no ka ken hem. (11.) Hem ha kom na sie Eigendom, en sie eigen no ha neem hem an. (12.) Maer sooveel ka neem hem an, na sender hem ka giev magt for kom kinders van Godt, die gloov in sie Naem; (13.) Die no bin gebooren van Blut, ook niet van die Wil van Vleis, ook niet van die Wil van man, maer van Godt. (14.) En die Woord ka kom Vleis, en ka woon onder ons, en ons ka kik sie Heerligheid, een Heerligheid, als van die eenig gebooren Soon van die Vaeder, vol van Gnaede en Waerheid.

*Surinam Negro-English* (or rather Negro-English-Dutch), spoken in the Dutch colony of Guiana by at least 100,000 persons, of whom 10,000 are Europeans. See Greenfield, "Defence of the Surinam Negro-English Version," p. 17. It includes Spanish, Portuguese, and French words. Nearly all its words end in a vowel, and it is nearly devoid of grammar. It is called by the Negroes, *Ningre-tongo* or *Bakra*.

St. John i. 1-14: (1.) Na begin da Woord ben de, da Woord ben de nanga Gado, en da Woord ben de Gado srefi. (2.) Da ben de nanga Gado na begin. (3.) Nanga hem allasanni ben kom, en sondro hem no wansanni ben kom, dissi de. (4.) Da Liebi ben de na inni va hem, en da Liebi ben de da kandra va somma. (5.) En da kandra de krieni na dongroe, ma dongroe no ben teki da kandra. (6.) Gado ben senni wan somma, hem neem Johannes; (7.) Da srefiwan ben kom vo wan getingenis, va a getinge vo da kandra, va dem allamal kom briebi nanga hem. (8.) Hem srefi no ben de da kandra, ma a

ben kom va takki vo da kandra. (9.) Datti da reti troe kandra, dissi kieni gi alla somma dissi kom na kondre. (10.) A ben de na kondre, en em srefi ben meki kondre; en kondre no ben sabi hem. (11.) A ben kom na hem Eigendom, en dem somma va hem no ben teki hem. (12.) Ma sa menni va dem dissi ben teki hem, na dem a ben gi trangi, va kom pikien va Gado; dem, dissi briebi na hem neem. (13.) Dissi no komoppo na broedoe, effi na wanni vo skien [nanga broedoe], effi na wanni vo wan man, ma dissi ben kom gebore na Gado. (14.) En da Woord ben kom somma, a ben liebi na wi mindri, en wi ben si hem Glori, wan Grangglori, dissi fitti da wan Pikien va Tatta Gado, foeloe va Gnade en Troefasi.<sup>1</sup>

The broken Negro-Spanish of *Curaçao* which belongs to the Dutch in the Caribbean Sea. See J. J. Putman: "Gemeenzame Zamenspraken" (1853).

Matt. v. 1-12. (1.) Anto ora koe Hezoes a mira toer e hecnde nan, eel a soebi oen seroe; deespuecs eel a sienta i soe desipel nan a bini scka dje. (2.) I eel a koemisa di papia i di sienja nan di ees manera. (3.) Bieenabeentoera ta e pober nan na spiritoe, pasoba reina di Dioos ta di nan. (4.) Bieenabeentoera ta ees nan, koe ta jora, pasoba lo nan bira konsolaa. (5.) Bieenabeentoera pasifiko nan, pasoba lo nan erf tera. (6.) Bieenabeentoera ees nan, koe tien hamber i sedoe di hoestisji, pasoba lo nan no tien hamber i sedoe mas. (7.) Bieenabeentoera ees nan, koe tien mizerikoordia, pasoba lo hecnde tien mizerikoordia koe nan. (8.) Bieenabeentoera

<sup>1</sup> *Cfer.* Wullschlaegel: "Kurzgefasste Neger-Englische Grammatik" (1854), and "Deutsch-Neger-Englisches Wörterbuch, nebst einem Anhang Neger-Englische Sprichwörter enthaltend" (1856).

ees nan, koe ta liempi di koerasoon, pasoba lo nan mira Dioos. (9.) Bienenabeentoera ees nan, koe ta perkoera paas, pasoba lo nan ta jama joe di Dioos. (10.) Bienenabeentoera ees nan, koe ta persigido pa motiboe di hoestisji, pasoba reina di Dioos ta di nan. (11.) Bosonan lo ta bienabeentoerado, koe ta koos nan Zoendra i persigi bosonan, i koe ta koos pa mi kausa nan ganja toer soorto di maloe ariba bosonan. (12.) Legra bosonan i salta di legria, pasoba bosonan rekompeensa ta grandi deen di Ciëloe; pasoba nan a persigi di ees manera e profect nan, koe tabata promee koe bosonan.

*Indo-Portuguese*, spoken in Ceylon and on the Indian coast by the mixed descendants of Dutch and Portuguese, 50,000 of whom are to be found in Ceylon. It omits cases, verbal suffixes, &c., and uses auxiliary particles, being a mixture of Dutch, Portuguese, and Indic.

St. John i. 1-14. (1.) Ne o começo tinha a Palavra, e a Palavra tinha junto de Deos, e a Palavra tinha Deos. (2.) O mesmo tinha ne o começo junto de Deos. (3.) Todas cousas tinha feitas de elle; e sem elle não tinha feita ne huã cousa que tinha feita. (4.) Em elle tinha vida; e a vida tinha o Lume de homens. (5.) E o Lume te luze em escuridade; e a escuridade nunca ja conhece aquel. (6.) Tinha hum homem mandado de Deos, quem seu nome tinha Joaõ. (7.) O mesmo ja vi por hum testemunha, pera da testemunho de o Lume, que todos de elle pode cré. (8.) Elle não tinha o Lume, mas tinha mandado pera da testemunho de o Lume. (9.) Aquel tinha o Lume verdadeiro, que te alumia per cada hum homem quem ta vi ne o mundo. (10.) Elle tinha ne o

mundo, e de elle o mundo tinha formado, e o mundo per elle nunca ja conhece. (11.) Elle ja vi per seu mesmo povo, e seus mesmos nunca ja recebe per elle. (12.) Mas per todos quantos quem ja recebe per elle, per ellotros elle ja da poder pera fica os filhos de Deos, até, per ellotros quem ja cré em seu nome: (13.) Quem tinha nacido, nem de sangue, nem de a vontade de a carne, nem de a vontade de homem, mas de Deos. (14.) E a Palavra tinha feita carne, e ja mora entre nos (e nos ja olha sua gloria, a gloria como de o unigenito de o Pai), enchido de graça e verdade.

It is needless to give a specimen of the Judæo-Spanish of Turkey, which the Turkish Jews regard as their sacred language, since it is merely the old Spanish of three centuries ago, moulded in accordance with Hebrew idiom. Similarly the sacred language of the Polish Jews is old German, mixed with Hebrew words and idioms.

Negro-Portuguese, originally introduced into Surinam by Portuguese Jews, is now spoken only by one tribe of the free Bush Negroes, the Saramaccans, on the Upper Surinam, who call it *Djoc-tongo*, "Jews' language." There are no printed specimens of it.

Negro-French, spoken in Trinidad, San Domingo, Guadaloupe, and Martinique, is explained in the excellent "Theory and Practice of Creole Grammar" of J. J. Thomas (1869), and in a "Catéchisme en la Langue Créole" (1842). Here is a specimen:—

St. John iv. 6. Apouésent, pîts Jacob té nans place là. Jésis, con li té lasse épîs route li, assise bôd pîts la; et côté coté mindi con-ça. (7.) Yôn femme, gens Samarie, vini haler dleau. Jésis die li: Bâ-moèn boèr. (8.) Dis-

cipes li étant té aller nans boûq la gañèn povisions.  
(9.) Alosse, femme Samaritaine la die li : coument fair  
ous, qui yon Juif, ca mander dleau poû boèr nans lamain  
moèn, qui yon femme Samaritaine? pâce Juifs pas ca  
méler épïs gens Samarie.

## CHAPTER IV.

### PHONOLOGY AND SEMATOLOGY.

“Sind doch die Lautgebilde der Vorhang, hinter welchem das Geheimniss der Begriffe steckt, das vom Sprachforscher Aufdeckung erwartet.”—POTT.

THE skeleton of language is formed by those phonetic utterances into which significancy must be breathed before they can become living speech. They are the outward vestment of the thought that lies within, the material in which the mind of man finds its expression. Thought, it is true, may be conveyed through gesture and picture-writing as well as through phonetic utterance, but in phonetic utterance alone does it find a vehicle sufficient and worthy of itself. Like the marble in the hands of the sculptor, however, sound not only embodies meaning; it also limits and defines the expression of that meaning, and confines it within barriers which it may not pass. The language of man is conditioned by his physical structure and organization.

What anatomy is to physiology, that phonology is to the science of language. Comparative philology is based upon phonetic laws; the relation of words, of forms, of dialects, and of languages is determined by the laws which govern their outward shape. Languages are

grouped together because they have a common stock of roots and a common grammar; and the identity of roots and of grammar is on the outward side an identity of phonetic sound. The laws of scientific philology are for the most part the laws which regulate the change of sounds, and these are dependent on the physiological structure of the organs of speech. The priority of sounds, of words, and even of dialects, is frequently to be discovered by an appeal to the formation of the throat and lips. We may lay down the general rule that the harder sound passes into the easier, rather than the easier into the harder; but it lies with phonology and physiology to determine which is really the harder sound. It is phonology which has created the modern science of language, and phonology may therefore be forgiven if it has claimed more than rightfully belongs to it or forgotten that it is but one side and one branch of the master science itself.

The empirical laws of the interchange and equivalence of sounds in a special group of tongues are ascertained by comparative philology; the explanation of these laws, the assignment of their causes, the determination of the order followed by phonetic development or decay, belong to the province of phonology. Phonology touches on the one hand upon physics in so far as it is concerned with the analysis of the sounds of speech, and on the other upon physiology in so far as it studies the nature and operations of the vocal organs themselves. It is, in fact, as much a branch of physiology as it is of the science of language, dealing as it does with a special department of physiology; but it passes beyond the province of phy-



siology when it investigates the nature of the sounds produced by the activity of those organs with which alone physiology is concerned. But whether it touches upon physiology or upon physics, phonology is equally one of the physical sciences, pursuing the same method and busied with the same material. So long as philological research is purely phonological, so long have we to do with a physical science ; it is only when we turn to the other problems of glottology, only when we pass from the outward vesture of speech to the meaning which it clothes, that the science of language becomes a historical one. The inner meaning of speech is the reflection of the human mind, and the development of the human mind must be studied historically. Those, therefore, who refuse to regard glottology as other than a physical science, take as it were but a half-view of it ; they are forced to confine themselves to its outward texture, to be content with a mere description of the different families of speech and their characteristics, like the botanist or the zoologist, and to leave untouched the many questions and problems which a broader view of the science would present to them. It is true that even upon the broader view, the method of the science is as much that of the physical sciences as the method of geology ; it is also true that the doctrine of evolution has introduced what may be termed the historical treatment even into botany and zoology ; but nevertheless linguistic science as a whole must be included among the historical ones, unless we are to narrow its province unduly and identify it with the subordinate science of phonology. The physical science will give us the skeleton of speech,

the dry bones of the anatomist's dissecting-room; for life and thought we must turn to history.

We must not forget, however, that we can understand the past only by the help of the present. An antiquarian study of philology will enable us to trace the history of words and forms, to group languages into families, and to discover the empirical laws of phonetic change; to interpret and verify these laws, to correct our classifications and conclusions, to learn what sounds really are, we must examine the living idioms of the modern world. The method of science is to work back from the known to the unknown, and if we are to study glottology to any purpose and to extend and confirm its generalizations, it must be by first observing and experimenting on actual speech. We must begin by disabusing our minds of the belief that words consist of letters and not of sounds; on the contrary, letters are at best but guides to the sounds they represent, and only the experienced student of actual sounds is in a position to determine their real value. Phonology stands at the threshold of linguistic science, and those alone who have honestly wooed and won her can enter into the shrine within. The physical science leads upward to the historical science; the key to the past is to be found in the present.

Now the first question we have to ask is, What is a sound? The most general answer we can give to this question is that a sound is the impression made upon the organs of hearing by the rapid swinging of an elastic body in an elastic medium, which is usually the air. The vibrations set on foot by this rapid swinging reach the ear under the form of waves, and these may succeed

each other at either irregular or regular intervals. In the first case we have what is called a noise—a source of constant delight to the savage and the infant, but exceedingly painful to the sensitive ear. In the second case musical tones are produced, among which must be counted the utterances of articulate speech. Tones, or rather full tones (as opposed to partial ones), are distinguished from each other by their (1) strength or loudness, their (2) height or pitch, and their (3) quality or *timbre*. The strength depends upon the amplitude of the vibrations produced in the elastic medium, the pitch on the number of the vibrations in any given space of time, or, what amounts to the same thing, on the length of time occupied by each vibration, and the *timbre* (also called “tone”) on the form assumed by the vibrations or waves of sound, that is to say, on the relations of the vibrations one to the other.

There are but few musical instruments that produce a simple tone; in fact, among those usually employed the tuning-fork is almost the only one from which we can hear it. All other musical tones result from a combination of simple, or as they have sometimes been termed, “partial” tones, whose double vibrations or “swing-swangs,” as De Morgan named them, stand to one another in the relation of 1, 2, 3, 4, &c. The Pythagoreans of the fourth century B.C. were already acquainted with the fact that the respective lengths of the fundamental note with its octave, fifth and fourth, must be as one to two, as two to three, and as three to four.<sup>1</sup> This funda-

<sup>1</sup> Helmholtz: “Die Lehre von den Tonempfindungen,” 3rd edition (1870).

mental note, or deepest partial tone, is the starting-point from which we ascend upwards; it forms the standard by which the pitch or ascending scale of sounds is measured, while the remaining partial tones go by the name of the harmonics or upper tones. The partial tones coalesce so closely into a full tone as almost to escape the notice even of the trained ear, but their co-existence may be easily detected by the help of resonatory instruments. The full tones themselves, however, which we shall henceforth call tones or notes,<sup>1</sup> may not be able to make the impression upon the nerves of hearing needful for conveying a sense of sound to the brain within. The tone produced by any number of vibrations less than sixteen a second is wholly inaudible except by the help of the microphone, and even this number of vibrations brings out so deep a pitch as to be scarcely perceptible.<sup>2</sup> "For practical purposes," says Professor Max Müller,<sup>3</sup> "the lowest tone we hear is produced by thirty double vibrations in one second, the highest by 4,000. Between these two lie the usual seven octaves of our musical instruments. It is said to be possible, however, to produce perceptible musical tones through eleven octaves, beginning with sixteen and ending with 38,000 double vibrations in one second, though here the lower notes are mere hums, the upper notes mere clinks." The sense of sound is not stronger

<sup>1</sup> Speaking accurately a musical note is a tone only in so far as its quality or timbre is taken account of.

<sup>2</sup> The fact can easily be tested by Captain Galton's whistle. According to some authorities, however, it requires less than eight and more than 24,000 vibrations per second, to produce no effect upon the auditory nerve.

<sup>3</sup> "Lectures," ii. 8th edition (1875), p. 111.

and more trustworthy than the other senses of sight, of touch, of taste, of smell. On all sides we are strictly limited by the conditions which surround us, and even science, though she may assist the senses by instruments which enlarge and extend their powers, reaches at last a boundary which she cannot pass. The world is a vast sounding-board, even if we know it not; the infinitesimally small and the infinitesimally great alike lie beyond our apprehension. Above and below there is infinity, and "the music of the spheres," of which the old Greek thinkers dreamed, is not, after all, so very far removed from the truth that science has revealed to us. The notes or partial tones that we hear are the purely mechanical product of a definitely determined number of double vibrations, and the variations in pitch we notice between them are due to the length of time occupied by these vibrations. If, for instance, one note takes half the time another does, if the number of oscillations in the second is twice that required by the fundamental note, the interval between the two notes is what is called an octave. If, again, the proportion between the two notes is as three to two, three waves of the one occupying the same time as two waves of the other, the interval between them is a fifth; while a major sixth represents the interval between two notes, which stand to each other as five to three. Consequently, if we divide into two equal parts a tense cord, which, when made to vibrate throughout its whole length, yields its fundamental note, and vibrate either part, we shall hear the octave above that fundamental note. In other words, the number of the vibrations of any two cords having the same degree

of tension is (other things being equal) inversely as their length. In the case of two elastic rods or rigid tongues, the number of vibrations is inversely as the square of the length; hence an elastic rod six inches long will vibrate four times more rapidly than a rod of the same material and equal thickness twelve inches long. The number of vibrations is also dependent on the thickness and tension of the cords or rods, being inversely as the thickness of the cords and directly as the thickness of the rods, and in both cases proportional to the square root of their tension. It must be remembered that membranous tongues like our own *chordæ vocales*, act in accordance with the same general law as tense cords and not as elastic rods.

Every body capable of producing sound has a tone peculiar to itself; a stringed instrument, for instance, and a trombone differ in the tones they give forth, and we may even divide the air into definitely circumscribed portions, or "chambers of resonance," each of which will have its own peculiar tone. The form assumed by the double vibrations, the ultimate causes of sound, determines these differences in the quality of the tones we hear. Sometimes the vibrations will run in zigzag course through the elastic medium; sometimes their shape will be rounded; sometimes, again, it will be angular. The simplest wave of sound, that produced by a tuning-fork, flows in a succession of spiral lines, and the partial tones or harmonics of other instruments may also be assumed to be so many simple waves of sound of the same form. In fact, even if a harmonic may be resolved into a combination of other harmonics or partial tones, and these again

into yet simpler and fainter harmonics, we must come at last to simple notes, corresponding with the note emitted by the tuning-fork and composed of vibrations that have the same spiral shape. It is the varying amalgamation of these simple spirals that occasions the varying forms of the full tones; each full tone (the simple tone alone excepted) being made up of harmonics and consequently of their spirals in different proportions, and in this difference of mixture lies the difference of quality in the tones we hear.

Ohm, Fourier, and others first proved that the simple pendulous oscillation is the only vibration unaccompanied by harmonics, and that all full tones can be decomposed into the simple vibrations of which they consist. Helmholtz has now ascertained the exact form of many of these compound tones, as well as the conditions under which the by-notes or harmonics are present or absent. In the violin, for example, as compared with the guitar or the pianoforte, he finds that the primary note is strong, the partial tones from two to six weak, and those from seven to ten clearer and more distinct.<sup>1</sup> He was first led to detect the variations of form they assume by applying a microscope to the vibrations of different musical instruments, and the fact was further confirmed by the discovery made by himself and Donders that the sounds articulated by the human voice are composed of vibrations which each assume their own special shape. The phonautographs since constructed by Scott and König actually delineate the forms of these waves of sound

<sup>1</sup> Helmholtz: "Die Lehre," &c., p. 143.



either on a plate of sand, or in the flickerings of a gas-flame, or in the movements of a writing pencil, and the microscopic examination of the impressions produced by articulate sounds in the tinfoil of the phonograph shows a series of indentations of various but determinate shapes.

The number of forms which can be assumed by the waves of sound is naturally limited in kind, while various bodies may emit sounds containing the same harmonic or partial tone. The quality or timbre which depends on the relation and strength of these partial tones, and of the composite form assumed by the sum of their vibrations, constitutes what we have called a peculiar tone. This, as we have seen, is a simple one in the case of the tuning-fork, but in other cases it forms part of a full or complex group. We may find an illustration in the characteristic lines of light which we learn from the spectrum analysis are projected by substances; where we are dealing with a simple elementary substance, the line thrown upon the spectrum is correspondingly simple; where, on the other hand, the substance is compound, its spectrum also is compound, reflecting the several chemical elements of which it is made up. The simple spectrum answers to the simple harmonic or partial tone with its varying pitch and invariable form, just as the compound spectrum answers to the full note or peculiar tone with its characteristic quality and diversified grouping of partial tones. Now, if a body which has a certain peculiar tone is struck by a sound which contains a partial tone in any way similar to this peculiar tone, the body in question vibrates in sympathy, and we hear what is known as

a by-note or harmonic. This by-note reacts upon the partial tone which has caused it, strengthening the partial tone and so modifying the quality of the complex sound. If, for instance, we play a note such as C on a violin, the strings of a piano representing C as well as the harmonics allied to it will vibrate in sympathy. Of course the more elastic the body which is struck, the louder and clearer will be the by-note, and of all elastic bodies none are better than those chambers of resonance into which we can divide the air. Such chambers of resonance are afforded by wind instruments of all kinds, whose shape determines the peculiar tone they are to emit. If the instrument is so constructed as to change its shape at will, now round, now straight, now broad, now narrow, the number of different chambers of resonance, and consequently the number of different peculiar tones, may be almost indefinitely increased.

It is this variability of form which makes the human throat such a marvellous instrument for the production of manifold sounds. Like most chambers of resonance, it has the hollow reed-like shape which connects it most readily with the primary source of sound. In analyzing the material of language we must never forget that we have to do with the most perfect wind instrument that exists, a wind instrument, too, of infinite pliability and power of change, and thus in constant and ready sympathy with the harmonics that are struck by the other organs of speech.

We must now pass from the science of acoustics to the science of physiology. We have seen what are the conditions under which musical notes are produced, we have

also seen that among these musical notes the utterances of articulate speech have to be classed ; we have next to examine into the nature and conformation of the physical organs to which these utterances owe their origin. In the first place, the organs of speech may roughly be divided into three groups :—the breathing apparatus, or lungs, the *trachea* or windpipe with larynx and bronchial tubes, and the chamber of resonance or mouth and nose. The lungs provide the material which is worked up into inarticulate noises and articulate sounds by the *trachea* and chamber of resonance. As long as the breath flows out of the throat and mouth quietly and without interruption language of any sort is out of the question. The organs of speech are at rest, and all that can be done is to propel the breath with greater or less violence. We may breathe hard through the mouth, we may even make noises like that of snorting through the nose, but as yet there is nothing which can constitute a starting-point for articulate speech.<sup>1</sup> Mere *breath*, as distinguished from *voice*, only supplies the material out of which words and sentences may afterwards be created. Voice is breath, acted upon and excited into waves of sound by the organs of the throat and mouth ; a larger quantity of air than is needed for simple breathing is rapidly taken into the lungs, and immediately expelled in intermittent gusts, but with varying degrees of force. Almost all the sounds we utter are accompanied by expiration ; only such sounds as an occasionally mispronounced *ja* in Germany

<sup>1</sup> Serpents have no voice in the proper sense of the word, as they have no vocal chords ; the hissing sounds they produce being caused by a mere forcible breathing through a soft glottis.

or our own surprised *Oh!* are produced while the breath is being drawn in. Experiment will at once show how difficult it is to pronounce a sound at the same time that this is being done.

The breath, then, is the passive instrument through which language is formed by the trachea and chamber of resonance. This trachea is a long cartilaginous and elastic pipe ending in the bronchial tubes, through which the air is admitted to the lungs. Its upper part is termed the larynx, consisting of five cartilages and situated in the throat. The lowest of these cartilages is the *cricoid*, which resembles a ring with the broad flat surface turned downwards. Over this comes the *cartilago thyroidea* or Adam's apple, with two wings which partly enclose the *cartilago cricoidea*, and form a link between it and the *os hyoideum*,<sup>1</sup> or bone of the tongue, which has somewhat of the shape of a horseshoe. The space surrounded by these two cartilages may be compared with a hollow reed, out of the back part of which a piece has been cut. From the base of the latter and the upper rim of the *cartilago cricoidea* spring two small pyramidal cartilages, the arytenoids, which resemble the horns of an ox and almost touch one another. Their roots are connected with one another and with the cricoid and thyroid cartilages by the so-called *processus vocales*, which in spite of their name have little to do with the formation of speech. The horns of the arytenoids serve to unite two elastic bands to the opposite surface of the thyroid cartilage. These bands are formed of

<sup>1</sup> That is, "U-shaped bone."

muscle enveloped with mucous membrane, and are the famous *chordæ vocales* upon which as upon the strings of a piano the manifold modulations of human language are played. So long as they remain, the other vocal organs, not excluding the tongue, may be removed without depriving the patient of the faculty of articulate speech.<sup>1</sup> Their length differs in men and women, in children and adults; the average length in men being about one-third greater than in women, and occasioning the different pitch of male and female voices.<sup>2</sup> The two *chordæ vocales* run obliquely across the cavity enclosed between the thyroid cartilage and a small projection on the front part of the arytenoid cartilage, an aperture which is called the glottis, or *glottis vera*. They can be relaxed or contracted at will by the muscles of the cartilages to which they are attached, and a portion of them can even be deadened by pressure from a small protuberance on the under side of the epiglottis. The glottis itself is divided into two parts, one the space between the vocal chords and the lateral thyro-arytenoid and crico-arytenoid cartilages, the other the triangular space between the vocal chords themselves, the latter allowing a passage for breath, the former a passage for voice. Both spaces can of course be narrowed or enlarged by the contraction or relaxation of the vocal chords, and the junction of the latter will close one or both altogether. It is in this

<sup>1</sup> Of course, if an opening is made in the trachea, voice is impossible unless it is closed, and division or injury of the laryngeal nerves will equally destroy voice by paralyzing the muscles of the vocal chords.

<sup>2</sup> In men the average length is about eleven lines.

secret chamber that the phonetic substance of speech is moulded into shape ; the vibrations of the *chordæ vocales* in the breath of the glottis are the ultimate cause of syllables and words.

Above this chamber of the voice the trachea or wind-pipe again widens, and a second chamber is formed by two cavities on either side, called the ventricles of the larynx (the *ventriculi Morgagni*). Each cavity leads, at the back, into a pouch of the mucous membrane called the laryngeal sac and covered with sixty or seventy mucous glands, the secretion from which acts like oil on a piece of machinery by keeping the vocal chords and the surrounding parts in a moist condition. Stretched across the cavities are two thick ligaments, the false vocal chords, like the true *chordæ vocales* below them. They differ from the vocal chords in having no muscle of their own, but like the latter can contract or enlarge at pleasure the false glottis (*glottis spuria*), the space, that is, which is enclosed between them. The false glottis, which, like the false vocal chords, takes no part in the creation of language, is shut by an elastic cartilage, called the *epiglottis*, the lower point of which is attached to the thyroid cartilage immediately above the *chordæ vocales*, while the upper end broadens out like a leaf and falls over the fissure of the false glottis. This corresponds with the entrance of the larynx. The upper surface of the epiglottis is concave, and in swallowing it is allowed to drop upon the larynx. At other times it may be depressed over the false and true vocal chords.

Such is the machinery whereby breath from the lungs is transformed into voice in its passage through the

windpipe; and voice is next taken up by what we have termed the chamber of resonance and modified in various ways. If we may call the glottis the manufactory of voice, we may call the mouth and nose the manufactory of the articulate sounds into which voice is divided. At the back of the epiglottis lies the *pharynx*, leading into the *œsophagus*, and the pharynx is bounded on the side of the mouth by the posterior pillar or *arcus pharyngo-palatinus*, opposite to which is the anterior pillar or *arcus glosso-palatinus*. Between them are the tonsils, and above these again the *uvula*, a sort of pendent valve which hangs downwards from the top of the anterior pillar towards the posterior pillar behind. The uvula is attached to a piece of yielding muscle known as the soft palate or *velum palati*, which with the uvula separates the throat from the entrance to the nostrils. The soft palate can move either backwards or forwards; in pronouncing the guttural (*ng*) for instance, it is pressed forward against the tongue, shutting off the throat; in pronouncing the vowels, on the other hand, it is pressed backward, and so cuts off the flow of breath to the nose. Above the soft palate comes the arch of the hard palate or roof of the mouth, and below this the tongue with its two roots and pointed tip. The teeth that enclose the mouth, along with their alveolars that form the front wall of the hard palate, have much to do with the formation of specific sounds, while it is hardly necessary to refer to the phonological importance of both nose and lips. As is well known, a leading characteristic of cultivated English is the little use it makes of the latter.

It is now time to consider the precise parts played by



these different organs of speech, in producing the various elements of spoken language. We must begin by putting out of sight all inarticulate sounds or noises, such as the clicks of the Bushman or the Hottentot, which have entered into the composition and framework of actual speech. Such inarticulate sounds are but the stepping-stones to real language, the first steps of the ladder, as it were, which were eventually to lead to articulate words. They are the natural cries of man like the natural cries of the animals from which they in no way differ; and just as on the one side the barking of the dog and the mewling of the cat are said to be attempts to imitate the human voice, so on the other hand the inarticulate cries of the *infant* or "non-speaker" are on the same level as the roar of the lion or the shriek of the cockatoo. We are told that the cynocephalic ape of the Upper Senegal, whose form is depicted on the monuments of ancient Egypt, utters clicks which sometimes contain a distinct *d*,<sup>1</sup> and the Bushmen themselves show a true instinct when they make the beasts in their fables talk not only with the clicks of the Bushman dialects, but even in the case of some animals with clicks that do not otherwise occur.<sup>2</sup>

<sup>1</sup> Faidherbe: "Essai sur la Langue Poul," in the "Revue de Linguistique," January and April, 1875.

<sup>2</sup> Bleek: "A brief Account of Bushman Folklore, and other Texts," p. 6. "A most curious feature in Bushman folklore is formed by the speeches of various animals, recited in modes of pronouncing Bushman, said to be peculiar to the animals in whose mouths they are placed. It is a remarkable attempt to imitate the shape or position of the mouth of the kind of animal to be represented. Among the Bushman sounds which are hereby affected, and often entirely commuted, are principally the clicks. These are either converted into other consonants, as into labials (in the lan-

If we watch the first endeavours of children to speak, we may discover inarticulate noises gradually becoming articulate sounds with definite meanings, and we may even trace a recollection of the first efforts of man to create a language for himself in the guttural aspirates heard for instance in some of the Semitic dialects. Indeed, the name given to the hard breathing (*h*) by the Greeks, πνεῦμα δασύ or "rough aspirate," reminds us of the guttural noises, not yet phonetic sounds, made by the child; in forming this sound we jerk out the breath at the same time that we narrow the glottis, adding if we like various degrees of hoarseness by further stopping its free flow. The glottal catch, which is heard in Danish after vowels, and according to Mr. Bell is substituted in the Glasgow pronunciation for "voiceless stops," is really a mere cough. Even the *spiritus lenis* or soft breathing, heard before a vowel, partakes in some measure of the nature of a noise. It is true that the rough breathing cannot be sung while the soft breathing may be; but this is because in the case of the latter the breath is checked near the vocal chords and

guage of the Tortoise), or into palatals and compound dentals and sibilants (as in the language of the Ichneumon), or into clicks otherwise unknown in Bushman (as far as our present experience goes), as in the language of the Jackal, who is introduced as making use of a strange labial click, which bears to the ordinary labial click a relation in sound similar to that which the palatal click bears to the cerebral click. Again, the Moon—and it seems also the Hare and the Anteater—substitute a most unpronounceable click in place of all others, excepting the lip click. Another animal, the Blue Crane, differs in its speech from the ordinary Bushman, mainly by the insertion of a *tt* at the end of the first syllable of almost every word."

can therefore be intoned. Professor Max Müller is doubtless right in holding that all that the Greeks meant by *πιεῦμα ψιλόν* as opposed to *πιεῦμα δασύ* was "a negative definition of another breath which is free from roughness,"<sup>1</sup> just as the *ἔ-psilon* is negatively contrasted with the *ἔτα*. Neither breathing was regarded as constituting as yet a true sound or "voice."

The true sounds of language, however, were distinguished but roughly and imperfectly one from the other. Plato, in his *Kratylus*, divides them into *φωνήεντα* or "vowels," and *ἄφωνα* or "mutes," these last being further subdivided into semi-vowels which are neither vowels nor mutes (*φωνήεντα μὲν οὐ, οὐ μέντοι γε ἄφθογγα*) and *ἄφθογγα* or real mutes. The term *ἄφωνα*, mutes, afterwards came to be restricted in its sense as a simple equivalent of Plato's *ἄφθογγα*, its place being taken by the term *σύμφωνα* or "consonants," letters, that is to say, which must be sounded along with a vowel. These consonants were next classed as *ἡμίφωνα* or semi-vowels (*l, m, n, r, and s*), *ἰγνά* or "liquids" which covered all the semi-vowels with the exception of *s*, and *ἄφωνα* or "mutes." The mutes fall into three classes, the *ψιλά* or "bare" (*k, t, p*), the *δασέα* or "aspirates" (*kh, th, ph*) and the *μέσα* which stood, as it were, "between" them. The Latin translation of the latter term has given us the *mediæ* of modern grammars.

Far more thorough-going and scientific were the phonological labours and classification of the Hindu *prâtiśâkhyas*. Instead of starting from written speech like the Greek grammarians, they had to do with an orally-delivered

<sup>1</sup> "Lectures," ii. p. 141 (8th edition).

literature, and hence while the Greeks never got beyond the belief that the tongue, teeth, and lips were the sole instruments of pronunciation, the Hindus had carefully analyzed the organs of speech some centuries before the Christian era, and composed phonological treatises which may favourably compare with those of our own day. They knew, for example, that in sounding the *tenues*, or hard letters, the glottis is kept open, while in sounding the *mediæ*, or soft ones, it is closed; they knew also that *e* and *o* were diphthongs analyzable into *a+l* and *a+u*; and they explained *k* and *g*, *p* and *b*, as formed by complete contact of the vocal organs. They had noted the *repha* or "Newcastle burr," and had divided the nasals into their several classes. The names they gave to the various sounds, and the groups into which they were classified, were descriptive of their mode of formation, like the names similarly applied by modern phonologists. Thus the guttural sibilant formed near the root of the tongue ( $\chi$ ) was called *Jihvâmûlîya*, "the tongue-root letter," and the labial sibilant ( $\varphi$ ) *Upadhmanîya*, "to be breathed upon." The consonants were classed both according to the place where they were formed, and according to their *prayatna*, or "quality," the mutes and nasals, for instance, being formed by "complete contact" of the vocal organs, the semi-vowels by "slight contact" (*îshat sprishṭa*), the sibilants by "slight opening" (*îshad vivṛita*), and the vowels by complete opening. A controversy even sprung up among the grammarians as to the extent of this opening of the organs. "Some ascribe to the semi-vowels *duḥsprishṭa*, imperfect contact, or *îshadasprishṭa*, slight non-contact, or *îshadvivṛita*, slight opening; to the

sibilants *nemasprishṭa*, half-contact; *i.e.*, greater opening than is required for the semi-vowels, or *vivṛita*, complete opening ; while they require for the vowels either *vivṛita*, complete opening, or *asprishṭa*, non-contact."<sup>1</sup>

Leaving the speculations of the past, let us now pass on to the results which have been obtained by modern research. Thanks to the labours of men like Alexander Ellis, Melville Bell, Helmholtz, Czermak, Brücke, Sweet, and others, the mechanism of speech has been fairly settled ; and though many points are still open to discussion, the main facts have been thoroughly ascertained and adequately explained. We have learnt the real nature and causes of those phonetic elements of speech which the old grammarians first tried to separate and classify ; we have cleared away the confusion from which even the Vedic scholars of India could not wholly escape, and have discovered that in phonology as elsewhere, the convenient systems of practical life do not bear a close scientific investigation. Even the ordinary distinction of vowels and consonants is exposed to more than one objection. It rests not upon the essential character of the sounds themselves, but upon mere differences of function, and its advocates have to invent a series of semi-vowels or semi-consonants, a name which of itself indicates how incomplete and unsatisfactory the distinction must be. The distinction, indeed, has a basis of fact, but the fact is one which has been misapprehended or overlooked.

<sup>1</sup> Max Müller : "A Sanskrit Grammar for Beginners," 2nd edition, p. 23, *note*. See Mr. Ellis's examination of the "Rules of the Indian Phonologists," as given by Whitney ("Atharva-Vêda Prâtiçâkhya), in "Early English Pronunciation," pt. 4, pp. 1336-1338.

Apart from the respiratory organs which supply the fuel, the chief agents in the manufacture of speech are the throat and mouth. The breath, as it makes its way upward, passes the vocal chords, causing these to vibrate; and while the forms taken by the vibrations determine the quality or timbre of the sound to be uttered, the very essence of a vowel, for instance, consisting in the quality of the voice, the number of the vibrations determines its pitch.

In the pitch we have to distinguish between two things, the chest or true notes and the head or falsetto notes, respectively due to the position and action of the vocal chords. In the chest notes the vocal chords are stiffened and laid side by side, so that when the flow of breath comes from the lungs, they are forced aside for a moment, to spring back the next and cause a series of intermittent puffs of breath. In the falsetto notes, on the other hand, the muscles of the vocal chords are not contracted, nor is the glottis wholly closed; hence only the inner membrane of the chords is set in motion by the breath, and instead of actually meeting one another, the chords merely narrow or enlarge the aperture of the glottis.<sup>1</sup>

<sup>1</sup> See Sievers: "Grundzüge d. Lautphysiologie" (1876), p. 19. This explanation of the causes of this difference between the two kinds of voice (true and falsetto) is due to the observations of Garcia. Various theories had previously been put forward to account for it. J. Müller thought that in producing chest notes, the whole breadth of the vocal chords vibrated, only their thin inner margins in producing falsetto notes. Mayo and Magendie held that the falsetto notes are produced by the vibrations of only one-half the length of the vocal chords, when the glottis is partially closed; G. Weber that they are due to the vibration of the chords in segments, separated by nodal points, so that harmonics of the fundamental note



The forms assumed by the vibrations depend, of course, on the anatomical structure of the vocal chords, their greater or less elasticity, and the like. Besides quality and pitch, however, we must also take account of the *intensity* of the sound, this intensity or emphasis arising from the force with which the stream of breath is expelled from the lungs, and the corresponding strain of the muscles of the trachea and vocal chords.

In whispering, the amount of intensity is considerably diminished, though the pitch is quite as distinct as in loud voice. The glottis is not completely closed, but the upward flow of breath is not strong enough to do more than produce a sort of friction, or imperfect vibration in the vocal chords. The latter incline towards each other on the side furthest from the arytenoids, and so give the glottis a triangular shape; the larynx, however, may also assume other forms. Hence it is that we may distinguish three kinds of whispered voice. We may either have a soft whisper, where the whole glottis is narrowed, and the force with which the breath is emitted is very slight; or a medium whisper, where the force is greater, and only that part of the glottis left open which lies between the arytenoids; or a loud whisper, where the force is con-

are formed. Pétrequin and Diday maintained that they are produced by the vibration of the air itself in the glottis, without any movement on the part of the vocal chords, while Wheatstone thought that they are formed by the division of the air in the trachea into harmonic lengths, the tone produced by the vocal chords being thus reciprocated, since, besides vibrating by reciprocation with a sonorous body, the vibrations of which are isochronous with its own, a column of air may also vibrate by reciprocation in its several lengths, the number of its vibrations being in this case a multiple of those of the sonorous body.



siderable, the false vocal chords are in close contact, and the epiglottis bent stiffly downwards, allowing but a very small opening for the escape of the breath. A loud whisper is rare ; a medium whisper the most common. Sighing, it may be added, is produced above the larynx, which takes no part in its production ; when the vocal chords are brought into action, the sigh becomes a groan.

It needs but a short experience to discover the numberless varieties of voice that may exist, and it is not uncommon for a blind man by this means not only to distinguish the age and sex of those he meets, but even to recognize his friends. In fact the human voice, from the deepest male to the highest female voice, has a range of nearly four octaves, the lowest note being E, produced by 80 vibrations per second, and the highest C, produced by 1,024 vibrations per second. But Vierordt has shown that in extreme cases its range is nearly  $5\frac{1}{2}$  octaves, from F (produced by 42 vibrations) to A (produced by 1,708 vibrations). In the same individual it is rare for the range of the voice to be more than two octaves, and in ordinary speech it is generally only half an octave. These different notes are due to changes in the length and tension of the vocal chords and their approximation or separation, the lower notes, for instance, requiring them to be longer, looser, and more widely separated than in the case of the higher notes, and consequently to admit a larger but less rapid current of air. It has been calculated that 240 different states of tension of the vocal chords must be accurately producible at will, in order to cause all the notes and intermediate tones heard in a perfect voice of ordinary range. Madame Mara could effect no

fewer than 2,000 changes. The four chief varieties of the voice—the bass, the tenor, the contralto, and the soprano—are dependent on differences of pitch, that is ultimately on differences in the length of the vocal chords. The bass and the tenor with the intermediate baritone characterize the man, the contralto and soprano with the intermediate mezzo-soprano characterize the woman. The lowest note of the contralto is about an octave higher than the lowest note of the bass, the highest soprano about an octave higher than the highest tenor. Sometimes, however, we find a bass voice singing the higher notes of a tenor, and yet at the same time remaining bass. The reason of this is that the various kinds of voice differ not only in pitch, but also in timbre. This is caused by differences in the vocal organs. The larynx of women is smaller than that of men; the angle formed by it in front is less acute, and the cartilages are softer. The voice of boys is either contralto or soprano, like that of women, though generally different in tone. There is, however, no difference in the larynx of either boys or girls up to the age of puberty, when in the case of boys it rapidly increases in size, and the vocal chords become longer, thicker, and coarser.

The elevation or depression of the larynx exercises a certain modifying influence upon the voice. When the voice is raised from a low to a high pitch, the whole larynx, together with the trachea, is lifted towards the base of the skull. The exact way, however, in which the trachea and the parts above the glottis affect the voice is by no means clear. The thyro-arytenoid muscles, which extend from the arytenoids to the recessed angle of the thyroid cartilage, have much to do with the production of these higher

tones. They narrow the diameter of the larynx just below the vocal chords, and the diminution of the calibre of the wind-tube nearest the chords thus occasioned heightens the pitch. On the other hand, the pitch is made to fall by semitones when the tube is lengthened. In short, the greater the strength of the current of air the higher is the pitch. The depression of the larynx produces the so-called veiled voice (*vox clandestina*), the larynx itself being then covered by the entire pharynx, the root of the tongue approximated to the palate, and the voice being thus made to resound in the upper part of the pharynx under the skull.

The precise nature of ventriloquism is not quite certain. J. Müller states that it may be produced by speaking through an extremely narrow glottis, during a very slow expiration, performed only by the lateral walls of the chest, a deep inspiration having been first taken, so as to cause the protrusion of the abdominal viscera by the descent of the diaphragm. Magendie, however, considers it to be produced in the larynx by variously modifying the voice so as to imitate the changes otherwise effected in it by distance.

The character of the voice is necessarily modified by changes in the structure of the vocal organs, whether due to old age, to weather and climate, to exhaustion, or to disease. In old age the ossification of the cartilages, the diminution of muscular and nervous power, and the degeneration of the larynx, make the voice weak, tremulous, and "piping." In damp chilly weather the voice is often lowered by as much as two or three notes: indeed, nothing affects it more rapidly than a damp and depressing

atmosphere. Exhaustion, again, accounts for the dissonance sometimes perceived in the voice of singers, while inflammation of the lining membrane of the larynx, and other diseases, will impair or wholly destroy the power of utterance. Loss of voice during a bad cold is a familiar instance of the latter fact.

Lisping, stammering, and other kinds of imperfect speech, are mainly due to nervous disease, stammering being usually caused by temporary spasm of the glottis. Too high a palate is another cause of irregular utterance. Dumbness, when not occasioned by deafness, as is generally the case, must be ascribed either to malformation of the vocal organs, or, more commonly, to disease of the nervous centres. Whistling, it must be remembered, results from the vibration caused by the friction of the breath against the edges of the open lips, and is wholly formed in the mouth.

The mouth, or chamber of resonance, is especially important for the creation of articulate speech. On the one side there are a great many sounds which owe to it their origin, on the other side even the sounds which are formed in the throat are necessarily modified in passing through the mouth. While *t*, *p*, or *k* have no existence until the voiced breath has reached the region of the mouth, the vowels which are formed in the throat cannot be heard in their pure and original state, but must pass through a chamber of resonance and so become more or less transformed. The throat, again, may remain passive, but the mouth must always be active. Of course the mouth forms a chamber of resonance not only for the sounds produced by the throat, but also for those produced by

itself ; the larger part of the mouth, for instance, forms a chamber of resonance for the palatal *ch*. We must remember, moreover, that a sound can be more variously changed and modified, the larger and more variable is the part of the mouth which serves as a chamber of resonance, that is to say, the further back the place is in which it is manufactured. The vowels consequently come first in capability of modification, then the gutturals and dentals, and finally the labials. It has often been observed that children when learning to speak are apt to change a guttural into a dental, and say *do* instead of *go*, the guttural being formed further back than the dental, and so undergoing a greater amount of modification in its passage through the mouth.

A vowel is voice freely emitted through the throat and mouth without interruption, and modified only by the different positions assumed by the tongue. The essence of a vowel is the quality or timbre of the voiced breath, and this quality, as we have already seen, is due to the varying forms taken by the vibrating vocal chords when played upon by the breath. Necessarily, however, the quality of the voice as it leaves the throat must be always the same, since the throat is a musical instrument which possesses its own peculiar tone. What, then, is the cause of the differences we notice in the quality of the vowels? Simply the mobility of what we have called the chamber of resonance, the manifold shapes the organs of the mouth are able to assume being so many musical instruments, each with its peculiar tone. The partial tones or harmonics which go to make up the quality of the voiced breath are strengthened by the correspond-

ing peculiar tones of the several shapes assumed by the mouth, while at the same time those harmonics which do not agree with the peculiar tones are dulled or deadened. Hence a vowel is the quality of voiced breath produced by a combination of the forms of the vibrations of the vocal chords with those of the vibrating air in the various shapes taken by the chamber of resonance. The pitch of the vowel depends of course on the number of vibrations during the time of utterance, and may be detected even when the vowel is whispered. Indeed, as Donders and Helmholtz have shown, every vowel has its characteristic pitch, whether it is voiced or whispered. The different vowels can be heard in cases of aphonia, where the vocal chords are more or less paralyzed, while the *vox clandestina* is able to rise or fall. This is explained by the fact that even in whispering a certain friction is exercised on the vocal chords. If, for instance, we whisper the sound of *ii*, and then let the whisper gradually pass into a whistle, we shall always get the same tone, and Professor Max Müller thinks that the indications of musical pitch in the whispered vowels must be treated as "imperfect tones; that is to say, as noises approaching to tones, or as irregular vibrations, nearly, yet not quite, changed into regular or isochronous vibrations."<sup>1</sup>

The number of possible vowel-sounds is almost infinite. The vocal chamber of resonance is almost infinitely variable in the forms it may assume, and it is in these forms, as we have seen, that we must find the origin of the vowels and their *nuances* of sound. In Prince L.-L.

<sup>1</sup> "Lectures," ii. p. 128 (8th edition).

Bonaparte's alphabet, as given in Mr. A. J. Ellis's "Early English Pronunciation," seventy-five vowel-sounds (exclusive of *ʃ* and *ʒ*) are distinguished from one another, ten of which occur in no actual language, and of the remaining sixty-five, fifty occur each in less than nine European dialects. For practical purposes, however, it is necessary to analyze the formation of those vowels only which are heard most usually in spoken language, always remembering that the *nuances* of which these are capable are nearly unlimited, and that the same speaker is constantly varying what he intends and believes to be the same vowel-sound. Speaking generally, we may say that in pronouncing the vowels we invariably raise the tongue towards the palate, but not so as to touch it—as in the case of the consonants—the lips being passive in some instances, and rounded in others. It is needless to note that in phonology, as in all other departments of the science of language, the Italian pronunciation of the vowels must be adopted. Our erroneous pronunciation of the vowel-symbols is not one of the least important reasons for urging a reform of English spelling.

The three fundamental vowels, round which all the others group themselves, are *a*, *i*, and *u*; and though it is not necessary to hold that these were the first vowel-sounds articulated by man, it is necessary to regard them, for analytical purposes, as the primary elements to which the rest may be ultimately referred. According to Winteler, these three vowels must be arranged in a straight line, of which *i* forms one end and *u* the other, *a* standing in the middle.

In forming *a* the tongue is in a more constrained posi-



tion than in the case of any other vowel ; it lies flat and retracted, while the lips are wide open. Helmholtz makes its inherent tone B" flat. Owing to the constrained position of the tongue, this vowel is more liable to be modified than any other ; the "neutral" *a* is scarcely ever heard, produced as it is by the gradual narrowing of the movement of the tongue from the back of the mouth, where the obscure *a* of *father* is heard, to the front of the mouth, where we get the broad *ä* of *pair*. This neutral *a* which may be heard in the Italian *amātā* is not the "natural" sound it is sometimes called ; different parts of the mouth must be modified to create it, occasioning the nasal sound we perceive in moaning if the mouth remains passive, or the shrill *ä* of the new-born child, if the nasal orifice is closed by the elevation of the soft palate.<sup>1</sup> The belief that language was once in a stage in which the neutral *a* was the only vowel known is contradicted by the facts of phonology.

A stronger effort of articulation is required for *i* and *u*. The lips must be slightly opened, the larynx raised, and the tongue pushed upward, so that its front approaches the hard palate, if we want to produce *i*, the natural pitch of which is said to be D<sup>'''</sup>. The movement of the tongue from the back to the front of the mouth, with a gradual narrowing of the air passage, forms both the *i* of *mill*, and the *i* of *meal*.<sup>2</sup> As we shall see, the position of the

<sup>1</sup> Bindseil : "Abhandlungen zur allgemeinen vergleichenden Sprachlehre," p. 212 (1838), quoted by Max Müller : "Lectures," ii. p. 136.

<sup>2</sup> For the difference between these two sounds, see Sweet : "Handbook of Phonetics," § 14, p. 9.

tongue in forming *i* approaches that required for forming the palatals, and thus explains the relationship that exists between them. For *u* the tongue is raised towards the soft palate, the larynx lowered, and the lips rounded; hence the connection between this vowel and the labials. Its connection with the gutturals, as illustrated by the change of *werra* into *guerre*, or *vespa* into *guêpe*, is explained by the position of the tongue, which approaches the soft palate in forming *u*, and touches it in forming *k* or *g*. The rounded shape of the mouth needed by *u*, as compared with its narrow neck-like appearance needed by *i*, strengthens the deep partial tones, and dulls the sharp ones, thus occasioning the converse effect of *i*. In fact, *u* is essentially the vowel of the bass, *i* of the soprano. The inherent tone of *u* is F.

It is obvious that an almost endless series of modifications may be made in the primary vowels by slight changes in the position of the organs by which they are produced. Between *a* and *i* stands *e*; between *i* and *u*, *o*. In pronouncing *e* the tongue is less raised than in pronouncing *i*; for *o*, the back of the tongue is less raised and the lips more widely opened than for *u*. In *o*, however, as in *u*, the lips have to come into play; hence it is that these two sounds are so frequently weakened to *e* and *i*, whereas the converse change never takes place. In *e* and *i* we have a simple and not a double action. According to Helmholtz, the inherent pitch of *o* is B' flat, of *e*, B''' flat or F'.

But *e* and *o* may again undergo considerable change. If while pronouncing close *e* (as in the French *été* or German *see*) we round the lips, the sound is produced

which is represented by *ö* in Middle and Southern German and *eu* in French, the short sound of which may be heard in the German *böcke*. It lies, it will be observed, between *e* and *o*, and its inherent pitch is  $C'''$  sharp. Closely related to this *ö* is the German *ü*, French *u*. This sound is produced by rounding the lips when the organs of speech are in position for pronouncing *i*, which explains the use of *ü* and *i* as rhyming equivalents in German poetry.  $\dot{U}$  consequently lies between *i* and *u*, though, from another point of view, it may be described as standing furthest from *a* in a series of which *ö* forms the centre. The inherent pitch of *ü* is  $G'''$ .

Besides *o*, we have also the sound heard long in words like *bought* or *august*, and short in words like *not* and *august*, formed by slightly depressing the tongue, widening the air-passages, and rounding the lips to a less extent than in the case of *o*.

Other vowel-sounds which may be noticed are the *e* of the French *prêtre*, German *väter*, whose natural pitch is made  $G''$  or  $D'''$ ; the closely related open *e* (*ä*) of the English *pair*, the short *a* of English closed syllables like *hat* or *happy*, the short *e* of the English *men*, and the short *i* of the English *hit*, *pill*. These short vowels are in great measure due to the little use made of the lips in articulation, and the compensatory exercise of the tongue, which characterize modern English. It is small wonder that we experience so much difficulty in pronouncing *ö* and *ü*, when even our *u* is uttered with lips scarcely at all rounded. On the other hand, whenever we find these sounds in a language, we may conclude that we have to do with a speech which gives the lips their full share

in articulation. Sievers would call those vowels *passive* in which all the organs of speech needed for their clear pronunciation are not brought into play, fully pronounced vowels being termed *active*.<sup>1</sup>

The same lazy pronunciation of cultivated English which has almost dispensed with the service of the lips is the cause of the increasing preponderance of the so-called neutral vowel heard in such words as *but, virtue, dove, bird, oven*. Except in affected pronunciation we may detect it in most unaccented syllables, especially if they happen to be final; thus we have *diligence, muttön, against, final, evil, valuable*. So, too, as Professor Max Müller remarks, "*town* sinks to *Paddingtön, ford* to *Oxförd*." He believes it to be pronounced with non-sonant or whispered breath.<sup>2</sup> Mr. A. J. Ellis would make it voice in its least modified form; and Mr. Sweet regards it as a mere voice-glide. The "indistinct" vowel heard in Arabic words by travellers seems to be identical with it. Its existence in a language is a sign of age and decay; meaning has become more important than outward form, and the educated intelligence no longer demands a clear pronunciation in order to understand what is said. The participation of all the organs of speech in the creation of vowel-sounds is, on the contrary, a mark of linguistic freshness and youth. When we find both tongue and lips equally active in the formation of *u* and *i*, we may feel pretty sure that we are in the presence of an uncultivated dialect. Vowels formed by combining the position of the tongue required for *u* with that of the

<sup>1</sup> "Grundzüge d. Lautphysiologie," p. 46 (1876).

<sup>2</sup> "Lectures," ii. p. 133.

lips required for *i* are extremely rare in Aryan speech ; an exceptional instance is to be met with in the Russian *jery* (*y*).

But we must never forget the infinite capability of modification possessed by a vowel. The same vowel-sound of the same word is not only apt to be pronounced differently by two natives of the same country, but even by the speaker himself at different times, particularly if his attention has been directed to his pronunciation of the sound in question. It is true that the shades of difference between the sounds may be so fine as to escape all but the specially trained ear ; but this does not prove them to be any the less real. Putting aside quantity, accent, emphasis, or accidental alteration in the vocal organs, it is difficult to pronounce the same word twice over in exactly the same way, so far, at least, as its vowels are concerned. It is not wonderful, therefore, that it is in their vowels that dialects soonest and most easily alter, and that the vowel-system is the best guide in mapping out the several stages in the history of a language. Of course the character of a vowel-sound is materially affected by its position in a word, or by the consonants with which it is associated ; the pronunciation of the same vowel varies in a closed or an open syllable. Long and short vowels, too, differ not only quantitatively, but qualitatively also. Every vowel has both its own peculiar pitch and a pitch dependent on the length of the vocal chords. The peculiar pitch is the result of the resonance-chamber in which the vowel is formed. The high pitch of *i* is due to the narrow air-passage in the front of the mouth in which it is produced, while the

lowered pitch of *a* and *u* is caused in the one case by the greater size of the resonance-chamber, and in the other by the narrow opening of the lips. The same pitch may be produced by different modifications of the same resonance-chamber. Thus the French *eu* in *fleur*, produced by slightly raising the front part of the tongue and rounding the lips, has the same pitch as the English *e* in *err*, produced without any rounding of the lips at all.

But we have not yet finished with the vowels. The mouth is not the only agent concerned with their production. Brücke<sup>1</sup> asserts that the bones of the skull itself participate in the vibration caused by the utterance of the high-pitched vowels. However this may be, the larynx, the posterior wall of the pharynx, and the *velum pendulum*, or soft palate, with the uvula attaching to it, have all to do with the creation of vowel-sounds. Czermak has proved by experiment that the *velum pendulum* changes its place with each vowel that is uttered, rising successively for the pronunciation of *a*, *e*, *o*, *u*, and *i*. The nasal orifice, too, is closed during the pronunciation of some vowels, and more or less open during that of others. *A* and *e* were the only two vowels which a young man named Leblanc, whose larynx was completely closed, was able to utter; while, on the other hand, experiment has shown that with *i*, *o*, and *u* the passage to the nose is shut, slightly open with *e*, and considerably open with *a*. From this it will be seen that the term "nasal vowel" is a misnomer. Nasal vowels, in fact, are produced by dropping the uvula, and so allowing the air to vibrate freely

<sup>1</sup> "Grundzüge d. Physiologie u. Systematik d. Sprachlaute," p. 16 (1856).

through the cavities which connect the nose with the pharynx. So far from a passage of the air through the nose being necessary, we may even increase the nasal twang by stopping the nostrils. The strength of the nasalization depends on the distance of the *velum pendulum*, or soft palate, from the tongue; and in languages like French, in which much use is made of nasalized vowels, the vowel is frequently followed by a true guttural nasal. It has often been noticed that French, in spite of its strong tendency to nasalize the vowels, has no nasalized *i* or *u*. The cause of this deficiency is very simple. A nasalized vowel requires a free passage for the air from the pharynx to the nose; but this is rendered almost impossible in the formation of *i*, where the tongue is raised so high as to send most of the air through the mouth however much depressed the *velum* may be, as well as in the formation of *u*, where the tongue is pushed backward towards the soft palate itself. A nasal *i*, however, occurs in Portuguese, and probably also in the Sanskrit *simha*, "lion."

Every vowel-sound, then, demands three main conditions for its production—the exspiration of air from the lungs, the vibration of the vocal chords, and the formation of a chamber of resonance by the organs of speech. The three conditions must co-exist if we are to have a simple vowel of definite quality, though the exspiration of air need not last beyond the moment at which the vowel-sound is formed. But the position of the organs of articulation both before and after its formation occasions important differences in the manner in which it is introduced or ceases to be heard. In quick and lively utte-



rance, the energy with which the stream of air is emitted makes it difficult for each expiration to be exactly simultaneous with the corresponding vibration of the vocal chords, while if the expiration is weak, the vocal chords are apt for a moment not to vibrate. In order to give the chords on the one side the resisting power requisite in energetic expiration, and on the other side to make them vibrate without delay in weak expiration, the windpipe must be contracted for a second, thus checking the outflow of breath and causing the chords to vibrate in unison. The sonant breath so produced is the *spiritus lenis* of our old school-grammars, the slight noise produced by the check given in the throat to the uprush of air from the lungs. The noise may easily be detected in whispering, or in the pronunciation of a word like 'ear, when a special effort is made to prevent it from degenerating into year, and the fact that it is a noise will explain the dislike felt by the sensitive Greek to what the grammarians term a *hiatus*. The *spiritus lenis* varies according as it is the result of a compression of the *chordæ vocales* alone, or of the false *chordæ vocales* as well ; but it is doubtful whether we can treat it as a distinct consonant and not rather as the pure tone of the voice. Perhaps it should most strictly be called a glide. It readily passes into the non-sonant aspirate or *spiritus asper*, by allowing the breath to pass through the throat without check or hindrance. The glottis, indeed, is in the latter case slightly narrowed and the larynx stiffened, but the difference between the rough and soft aspirates is that the one is a continuous sound, the other a checked breath. The vocal chords

are brought together while the breath is passing through the throat, and since their movement may be either quick or gradual the hard aspirate or *h* may correspondingly vary in character. As Czermak first pointed out, the more usual hard aspirate is that produced by the gradual compression of the vocal chords when they remain for a moment in a given contracted position.<sup>1</sup>

The same causes which produce the *spiritus lenis* or the *spiritus asper* at the beginning of the vowel-sound produce similar results at its end. It may terminate with a weak breathing, a firm breathing, or a non-sonant aspirate. In the case of a weak breathing the expiration either ceases before the vocal chords have begun to vibrate, thus resulting in a long vowel, or at the very moment at which the windpipe is opened to admit the passage of air, the result being a short vowel. The weak breathing answers to what may be called the neutral vocalic utterance, so rarely heard in language, when the vowel-sound is introduced without either the soft or hard aspirate, the windpipe being merely narrowed sufficiently to set the vocal chords in motion at the same moment that the expiration takes place. The firm breathing corresponds with the *spiritus lenis*, and is due to a sudden check given to the vibrating voice. Examples of it occur in words like *no!* *bah!* uttered abruptly, or where we wish to divide two similar vowels one from the other. The non-sonant aspirate is produced by continuing the expiration for a while after the opening of the windpipe, and may be heard in final vowels which are at once

<sup>1</sup> "Wicner Sitzungsberichte," lii. 2, pp. 623 sq.

short and strongly accented. The non-sonant aspirate is sometimes combined with the firm breathing, especially in Danish, where such words as *ti, nei*, are pronounced with a double expiratory effort, the second consisting of a non-sonant breath of more or less strength, jerked up, as it were, after the vowel.

Now, let us stop for a moment to remind ourselves of the distinction between sonant and non-sonant. Non-sonant or surd sounds (also called "hard" and "breathed") are breath as modified by the organs of speech; sonants, "soft" or "voiced" sounds, are voice similarly modified, voice being breath when played upon by the vibrating *chordæ vocales* in its passage through the partially closed glottis. Voice, therefore, continues to be heard without interruption as long as we have a succession of sonants following one upon the other; the transition or "glide" from one sonant to another consisting simply in the change of position assumed by the organs of speech. In pronouncing the sound *al*, all that happens in passing from *a* to *l* is a transference of the tongue from the position required for forming *a* to the position required for forming *l*; voice continues without interruption. Now it is clear that while voice is passing from *a* to *l*, neither pure *a* nor pure *l* can be sounded, though the time occupied by its passage (that is, by the change in the position of the tongue) is so infinitesimally small that the sound or sounds actually produced cannot be heard, and all we can be conscious of is a modification of *a* at its end or of *l* at its beginning. If we have two successive vowels, each belonging to a different syllable, a separate effort of expiration is needed for both, and the transition-sounds are

apt to escape notice from the weakening of the expiration during the interval between the two efforts ; but if the vowels do not belong to distinct syllables, the result is wholly different. Diphthongs, as we term them, consist in the combination of two simple vowels, usually short, into a single syllable pronounced, therefore, with a single expiratory effort, and with the stronger accent on the first vowel. The sound we hear is produced while the organs of speech are being changed from the position required for the one vowel to the position required for the other. We have only to sing the diphthongs *ai* or *au* on a long note to hear a distinct *i* and *u* at the end of each, and the Sanskrit grammarians discovered more than two thousand years ago that the diphthongs *ê* and *ô* were really combinations of *a + i* and *a + u*. The primary condition of the existence of a diphthong is the rapid transition from one of the component vowels to the other, and this renders the true resolution of a diphthongal sound so extremely difficult except to the specially trained ear. Once acquainted with the two component vowels, we can easily determine the intermediate or transition sounds in which the diphthong really consists ; but written documents rarely do acquaint us accurately with them. Diphthongs whose second element is *e* or *o* have sometimes been termed "imperfect" and considered of younger origin than those whose second element is *i* or *u*, because of their greater fulness of tone and consequent inappropriateness to the unaccented place in the compound ; but such a view does not seem to be correct. It appears certain, however, that languages show a tendency to form diphthongs the longer they live and the greater the

extent to which they have been affected by phonetic decay. English is a prominent example of this tendency; our vowels are all becoming diphthongs; even the first personal pronoun *I* (*ai*) has become one, and already we hear *aither* and *naither* more frequently than *either* (*eether*) and *neither*. The so-called long vowels which occur in such words as *say*, *no*, *he*, are all diphthongal, and some of the local dialects have carried the tendency even further than the literary language.

The existence of triphthongs has been disputed, and no doubt most of the alleged cases, such as *iei* or *ieu* in the Romance idioms, are either dissyllables or consist of a semi-vowel followed by a diphthong. But, as Sievers remarks: <sup>1</sup> "the transition from the first to the second component element of a diphthong may be so prolonged that even the transition sounds themselves may be distinctly heard." As for semi-vowels, they differ from the first element of a diphthong only in having lost the accent and being followed by a strongly accented vowel. Hence they come to assume the function of sonant consonants. Hence, too, the necessity that the vowels in which they originate should possess less fulness of tone than the vowels by which they are immediately followed. We may have *yá* and *wá*, but hardly <sup>a</sup>*i* and <sup>a</sup>*u*. Naturally *i* and *u* most readily pass into semi-vowels, partly from their comparatively weak tone, partly from the compression of the air-passage needed to produce them, partly from the similar position of the organs of speech in forming the spirants *y* and *w*. These spirants,

<sup>1</sup> "Grundzüge der Lautphysiologie," p. 88 (1876).

as we shall see, are not to be confounded with the semi-vowels *y* and *w*.

A vowel, then, is the quality or timbre of voice as modified by the tongue and lips, and consists of the forms assumed by the vibrating air as it passes through the windpipe and vocal chords. But the tongue and lips naturally tend towards the same position whatever be the vowel sounded. A man who has been accustomed to give his tongue a particular position in pronouncing *i* will give it much the same position in pronouncing *e*, for we must never forget that there is an almost infinite number of *i*'s or *e*'s varying with the slight changes of position of the tongue and lips when placed for enunciating those vowels. According to the greater or less use made of the lips in speaking will be the character of all the vowel-sounds of a language. The vowels, consequently, fall into systems, and in investigating the phonology of a dialect, we have to inquire not only what vowels it possesses, but more particularly what system these fall into. The basis of English vowel pronunciation is the passive position of the lips, just as in the Holstein dialect it is the withdrawal and flattening of the tongue. Sievers states, that in speaking the dialect of Lower Hesse the tongue must be relaxed and in a position of the slightest possible tension; while, on the contrary, in the Saxon dialects the whole tongue must be tense, the throat stiffened and the expiration energetic. "Hence the hard, somewhat screaming impression made by this dialect in contrast with the dull, almost heavy and negative character of the Hessian."<sup>1</sup>

<sup>1</sup> Sievers, *loc. cit.* p. 50.

But it is time to turn from the vowels to the consonants, the skeleton, as it were, of articulate utterance. A language could consist wholly of vowels; indeed, a Polynesian dictionary contains numbers of words which have not a single consonant in them, and children frequently mark the differences between words rather by the vowels than by the consonants they contain. The earliest systems of writing other than ideographic are syllabaries and not alphabets, while alphabets like the Sanskrit ascribe an "inherent" vowel to each of their consonants. But though vowels are indispensable to an organized language, it by no means follows that they were equally indispensable to the first attempts at speech. As a matter of fact, a preponderance of vowels such as characterizes the Polynesian dialects is a sign of phonetic decay and linguistic old age. "Consonants," says Professor Max Müller, "are much more apt to be dropped than to sprout up between two vowels." If we had only the Greek *μέμνηρος* or the Latin *memor* before us, we should have no idea that they have lost an initial sibilant; in fact, this only becomes apparent when we compare the Sanskrit *smar*, "to remember." The endeavour sometimes made to reduce the Parent-Aryan alphabet to a small number of simple and easily pronounced consonants, is founded on the fallacy that the results of a phonetic analysis of the words we utter and a reduction of the sounds they contain into their leading types, is identical with the primitive alphabet of the Aryan race. On the contrary, the sounds of a language become more simplified and clearly marked the longer it continues to be spoken, and the primitive Aryan alphabet, instead of



being a simple list of primary sounds, from which all that are harsh or indistinct have been carefully eliminated, must really have resembled the existing alphabets of barbarous or semi-barbarous tribes, and included a large variety of consonants, many of which we should find it extremely difficult to reproduce.

Consonants may be divided, in the first place, into hard and soft, or, as they are more usually termed, surd and sonant. A surd consonant consists of checked breath, a sonant consonant of checked voice. If, in the second place, either breath or voice is completely checked in its passage through the organs of speech, an explosive or momentary (also called a stopped or mute) consonant is heard at the moment the check is removed; if the check is not complete, and the organs of speech only approximate so that the breath cannot escape without friction, a fricative (spirant, "unstopped") or continuous consonant is the result. Where a spirant or fricative is immediately preceded by an explosive, a double sound or affricative is the result (*e. g.* German *pf*, Armenian *t's*); where the spirant follows the explosive we have the aspirated letters, which will be spoken of hereafter. Among the continuous consonants must be ranked the nasals, produced by dropping the uvula and so allowing some of the breath to make its way to the nostrils through the pharynx, and the trills produced by the vibration of the uvula, the lips, or more commonly the tongue. Distinct from the nasals and the trills are the central continuous consonants (*h, ch, j*, English *r, w, wh*, and the sibilants) formed by lifting the centre and point of the tongue to the centre and front of the palate, and the

lateral continuous consonants (*l*, and, according to Bell, English *th*, *f*, *v*), in forming which the breath is allowed to escape along the edges of the tongue. A further cross division will be into liquids, gutturals, dentals, palatals, labio-dentals, and labials, to which may be added the linguals or cacuminals (cerebrals) of Sanskrit.

*The Liquids.*—Among the liquids should properly be reckoned only those kinds of *r* and *l* which stand to the spirant *r* and *l* in the same relation that the vowel *i* stands to the spirant *y*. In forming the vowels, as we have seen, the tongue assumes a dorsal position, that is, some part of its back is raised towards the palate; in forming the liquids, on the other hand, the tongue has either an oral (central) or a lateral position, the liquid *r* requiring the articulation of the centre and tip, the liquid *l* that of the sides. But there are several kinds of *r*, which may be classed as cacuminal, spirant, alveolar or dental, uvular or guttural, and laryngeal. The cacuminal *r* is the purest liquid *r* that we hear, inasmuch as it is wholly untrilled, and is especially common in cultivated English. In order to produce it, the front surface of the tongue is hollowed out into a spoon-like shape and raised towards the hard palate behind the alveolar teeth-roots of the upper jaw, while the edge of the tongue is stiffened and kept free from any sort of vibration. It will be clear from this how closely allied this cacuminal *r* is to the vowels, and we can easily understand the readiness with which it combines with a vowel-sound when we remember that it may be formed in almost any part of the hard palate, while the lips have free play during its creation. Corresponding to the cacuminal *r* is

the spirant (or "buzzed") *r*, which also occurs plentifully in English as in such words as *try* or *dry*. The mouth is completely closed by the tongue when sounding *t* or *d*, and if in passing to the position needed for *r* the tongue is not removed from the palate quickly enough, or the expiration is not sufficiently strong, a slight fricative sound like that of *sh* is produced which results in the spirant *r*. As for the dental or alveolar *r*, all that is requisite to produce it is to raise the front part of the tongue, at the same time slightly arching its extreme edges, and so obtaining a constricted or "squeezed" chamber of resonance between the side of the tongue and the alveolars. This *r* may be untrilled, but in German it is more frequently a trilled one. The trill is caused by the force of the expiration which strikes the thin hollowed edge of the tongue in an outward direction, the tongue the moment after returning to its former position like a piece of india-rubber. If the two edges of the front part of the tongue be pressed against the teeth, the tip of the tongue between them being alone allowed free play, and accordingly vibrating in a very small and narrow space, a sound is heard approaching that of *s* or *sh*. The stronger the uprush of breath and the vibration it occasions, the plainer will be the sibilated sound; indeed, a genuine sibilant can even attach itself to the liquid, as in the Polish *rz*. The uvular or guttural *r* is supposed by Sievers to be a modern substitution for the trilled alveolar *r*. At any rate it is produced by lifting the back of the tongue to the soft palate and forming a deep groove along the middle of it, in which the uvula can vibrate freely. The groove, however, is frequently left wholly or

nearly unformed, the consequence being a very grating character acquired by the *r*, which then passes over into the sonant guttural spirant heard in sounding the modern Greek  $\gamma$ . The laryngeal *r* was first observed and described by Brücke, who makes it arise from sinking the voice so that the vocal chords cease to vibrate audibly, and merely produce intermittent and explosive sounds.

Each kind of *l* is formed in the same way, by raising the tip of the tongue and so closing the orifice of the mouth, at the same time allowing the breath to pass along the two sides of the tongue in successive oscillations produced by the vibrations of the elastic edges of the tongue. We may distinguish the cacuminal *l* in which the tip of the tongue is bent backwards as in the cacuminal *r*; the alveolar *l* with the edge of the tongue laid against the alveolars; the dental or interdental *l* in which the flattened surface of the tongue fills up the space between the two sides of the mouth; and the dorsal *l* (as in the Spanish *llano*) in which the tip of the tongue presses against the lower incisors, while the centre of the tongue is raised towards the alveolars of the upper teeth. The best-known variety of the cacuminal *l* is that of the Welsh *ll* formed by pressing the flattened tip of the tongue against the gums of the upper teeth and allowing the breath to escape on its right side. The same sound is heard in the Icelandic *hl* and *l* before a *t*, and also in Cherokee,<sup>1</sup> though in Icelandic the tongue

<sup>1</sup> Haldeman in the "Proceedings of the American Oriental Society," 1874, p. xlv. According to Professor Rhys the Welsh *ll* has resulted from the meeting of two *l*'s, each sounded independently up to the ninth century. Like the Welsh pronunciation of *ll*, the pronunciation of *ll* may have been originally borrowed from English.

is pressed against both sides of the mouth. A half-sonant, spirant *l* may be heard when the expiration is strong; a surd *l* often occurs at the end of a word or after surd consonants (particularly *t* and *s*). The sound of the *l* may be made clearer or obscurer by raising or depressing the front part of the tongue, and so narrowing or enlarging the space between its edges and the teeth, and since the vowels may be pronounced with the tip of the tongue on the palate, they may readily pass into *l* by simply broadening the surface of the tongue.

We have already seen that the tongue is not the only organ of speech which may be "trilled." In the Arabic *grhain* (ġ), the Northumberland *burr* and the French Provençal *r*, *grasseyé*, the uvula which lies along the back of the tongue towards the teeth is very distinctly made to vibrate. "If," Mr. A. J. Ellis says, "the tongue is more raised and the vibration indistinct or very slight, the result is the English *r* in *more*, *poor*, while a still greater elevation of the tongue produces the *r* heard after palatal vowels, as *hear*, *mere*, *fire*. These trills are so vocal that they form distinct syllables, as *surf*, *serf*, *fur*, *fir*, *virtue*, *honour*, and are with difficulty separable from the vowels." The lips, too, may be trilled, the result being *brh*, a sound constantly heard from children.

*The Nasals.*—The characteristic of a nasal is, as the name declares, the participation of the nose in producing the sound. The breath passes through the nose rather than through the mouth. Sometimes, however, all that happens is the removal of the membrane which separates the nasal orifice from the pharynx; this alone is indispensable to the formation of a nasal letter. Hence its

resemblance to a vowel, the buccal tube being alike silent in both cases. If we try to converse when walking uphill we shall find that the nasals are longest heard. These nasals must be classified as labial, dental, palatal, and guttural, according to the part of the speaking apparatus in which the current of air is checked in its exit, and it will be best to treat them along with the other sounds formed in the same part. It should be noted, however, that the so-called surd nasal which we hear in *hm!* has really, as Sievers remarks, not the slightest similarity to a nasal, but approximates to the aspirates or breathings.

The traditional division of the consonants into labial, dental, palatal, cerebral (cacuminal) and guttural, though not scientifically precise, is yet too familiar to be disregarded, and we shall therefore follow it so far as is possible. We must, however, remember at starting the primary distinction between the two classes of letters, called variously hard and soft, tenues and mediæ, surds and sonants, as well as between those called momentary (explosive) and continuous or checks and fricatives. What this distinction consists in has already been explained.

*The Labials.*—The labials may be subdivided into pure labials, with the formation of which the lips only have to do, and the labio-dentals, in the formation of which the teeth also participate. In pronouncing the surd *p*, the sonant *b*, the nasalized *m*, or the middle German *w*, the lips are either wholly or (as in *w/h*) almost wholly closed. *B* only differs from *p* in being pronounced with voice instead of breath, the voice partly preceding, partly following the check occasioned by the closure of the lips.

As in all sonant letters, the exspiration is less forcible than in the case of surd letters. The labio-dentals *f* and *v* are merely modifications of the rough and soft aspirates by pressing the lower lip against the upper teeth. When the lips are brought together without any interference of the teeth the *spiritus lenis* becomes the German *w* as heard in a word like *Quelle*. Our *wh*, or rather *hw*, and *w* are continuous sounds, the lips being slightly opened, the back of the tongue raised, and the breath passing over its central part.

*The Dentals.*—The articulation needed for the dentals is partly oral, partly alveolar, partly dorsal. The common principle, however, involved in the formation of them all is the same; the tongue must be brought against the teeth. The so-called cerebral or cacuminal dentals of Sanskrit and the Dravidian tongues (*t*, *ḍ*, *ṭh*, *ḍh*) are due to oral articulation, the tongue being made convex and the lower surface raised towards the palate. The English *t* and *ḍ* are also said to be cerebral, though the tip of the tongue is not bent very sharply backwards in forming them. Alveolar articulation is needed for the dentals when they have to be pronounced with the edge of the flattened tongue pressed against the alveolars of the upper teeth, while in dorsal articulation the point of the tongue is simply turned back against the lower teeth, its convex being at the same time lifted to the palate. It is in this way that the Bohemian dorsal *t* is formed. The dorsal dentals may be varied by raising the back of the tongue nearer to the mouth or the throat, the tip either resting behind the lower teeth or being raised to the upper alveolars. Besides the surd dental *t* and sonant dental *ḍ*, we



have also a series of dental spirants which bear the same relation to *t* and *d* that *f* and *v* bear to *p* and *b*. By slightly opening the teeth and stopping the aperture with the extended edges of the tongue we produce the interdental sounds heard in *breath* or *think* and *breathe* or *then*. The first *th* (or *thorn* þ) differs from the second (ð)<sup>1</sup> in being pronounced with the rough breathing instead of the soft breathing. They stand midway between an oral and a dorsal articulation. How readily they may pass into the labio-dentals *f* and *v* is clear at a glance; we have only to raise the lower lip a little and curl back the tongue, and our *th* becomes an *f*. Equally readily, as we shall see, is the passage from them to a sibilant. We seldom meet with an interdental consonant; Sievers, however, states that they exist in Servian and Armenian, where they regularly represent the whole class of dentals.

*The Palatals.*—The palatals come next. They stand between the dentals and gutturals, and are formed by throwing the middle of the tongue, raised as it were into a hump, against that part of the roof of the mouth where the hard palate begins. The sound (*ch*) heard in the English *church* or the Italian *cielo* is now held to be, not a palatal, but a dental (*t* followed by *sh*), and we must go to the Sanskrit (*ch*) as still pronounced to find a type of the whole palatal series. It “is formed most easily,” says Professor Max Müller, “if we place the tongue and

<sup>1</sup> Mr. Sweet has proved that the pronunciation of these two Anglo-Saxon letters was originally the same, but it would be convenient to use them to distinguish the different sounds of the modern English *th*.

teeth in the position for the formation of *sh* in *sharp*, and then stop the breath by complete contact between the tongue and the back of the teeth." It will be seen from this that the true *ch* is not a double letter, a compound of *t* and *sh* or *s*, but a single consonant which ought to be denoted by a single character. The Sanskrit palatal *ch* may have had the same pronunciation as the Armenian *t' sh*,<sup>1</sup> as Sievers thinks, or it may have been equivalent to *ky*. However this may be, it is plain from the great extent of the "chamber of resonance" in which the palatals are formed—the whole of the hard palate being available for the purpose—that a large number of palatal sounds is possible. They may range, in fact, from *ky* to *tsh*. The guttural *k* passes easily enough into the palatalized *ky*, as may be seen from the pronunciation of *kind* and *cow* as *kyind* and *kyow*, not unfrequently heard in English; indeed, all that is requisite for the transition is for the front part of the tongue to assume the position needed for *y*, while the back part is in that needed for *k*. In the northern dialects of Jutland *j* is heard after *k* and *g* when followed by *a*, *e*, *o*, and *ö*. The German "soft" guttural aspirate or palatal spirant in words like *ich*, *licht*, is the result of the *spiritus asper* passing the middle of the tongue when raised against the hard palate, *y* in *you* or *yet* being due to a softening of the breath, the organs of speech remaining unchanged. The palatal sibilants will have to be considered separately.

*The Gutturals.*—Putting aside the cerebrals, which have been treated under the head of the dentals, we now

<sup>1</sup> Hübschmann: "Z. d. D. M. G." xxx. pp. 53, 57.

come to the gutturals, usually an important class of sounds in savage idioms. First of all we have the tenuis *k*, produced by bringing the root of the tongue against the soft palate, together with the deeper *k* heard in the Semitic *koph* or Georgian *q*. Next is the media *g*, to create which breath has to be changed into voice. Then will come the guttural nasal *ng* (as in *sing*), and the continuous *ch* and *g* heard in the German *nach* and *Tage*. The sound heard in *nach* or the Scotch *loch* is formed by raising the tongue against the soft palate or uvula, and so checking the uprush of breath, its sonant representative being the *g* of *Tage*. The result of only slightly checking the uprush of breath in the latter case is the passage of the guttural into a semi-vowel. This sonant *g* is the  $\gamma$  of modern Greek; it sometimes takes the place of the uvular *r*, though this office more properly belongs to the sonant *g* of Armenian pronounced further back in the mouth. The surd *ch* may be similarly modified by a posterior pronunciation, and so become the Armenian *xe*, the Russian *x*, the Polish *ch*, and the deep *ch* of the Swiss.

*The Sibilants.*—The main division of sibilated sounds is into the surd *s* and *sh*, and the sonant *z* and *j*. When the centre and tip of the tongue are raised to the centre and front of the palate, the breath or *spiritus asper* is modified into *s* (as in *sin*), the voice or *spiritus lenis* into *z* (as in *zeal* or *rise*). When the tongue is turned back with its lower surface against the alveolars of the upper teeth, less of the palate being covered than is required for *s* and *z*, breath becomes *sh* (as in *sharp*), voice *j* (as in *azure*, *pleasure*, French *jamais*). The ordinary German *s* is a dorsal one, the current of air being allowed to pass be-

tween the upper alveolars and the lower surface of the uplifted tongue ; in North German dialects, however, we frequently meet with an alveolar *s*, formed in much the same way as the alveolar *r*. The same *s* also occurs in English, as well as a cacuminal *s* distinguished by a more pronounced retraction of the tip of the tongue and narrower space between it and the palate. The palatal 's, found in Russian, for instance, before the weak vowels (*e*, *i*, &c.), only differs from the dorsal *s* in the more retracted position of the tongue. *Sh* (*j*) can be modified in three ways. The channel formed in the tongue when pronouncing *s* may be so diminished as to allow the breath to strike against the lips, or the lips may form with it an approximately rectangular aperture, or, thirdly, the left (or more rarely the right) side of the tongue may be pressed against the palate, causing the breath to strike against the lips, which are generally raised a little on the side. Sievers declares that he has sometimes heard this unilateral *sh* in England. However this may be, all three modifications of *sh* may combine with the dorsal, alveolar, cacuminal, and palatal positions of the tongue to produce the cacuminal *sh* of English (identical, probably, with the Sanskrit 's), the palatal *moüillé*'s and *é* of Polish and Russian, the alveolar *sh* of the North German dialects, and the dorsal *sh* of the Middle and Southern German dialects. It is one of the many evils of our defective and misleading mode of spelling that the surd *sh*, though a single sound, is represented by two letters, and so cannot be distinguished from the aspirated *sh* (as in *gas-hole*), which is really a double sound.

These aspirated sounds consist, as we have seen, of an

explosive followed by a spirant, and they occupied an important place in the older languages of our Aryan family of speech. A large number of roots contain them, and the Brahmans still pronounce each part of the compound sound distinctly, *ph* and *th*, for instance, being pronounced as in our *up-hill* and *ant-hill*. The compound nature of the sound caused sometimes the one element in it, sometimes the other, to fall away. Thus, to a Sanskrit *tubhy(ani)* corresponds a Latin *tibi*, and the Latin *mihī* and Sanskrit *māhyam* presuppose an earlier *mabhyam*, *mabhi*. The Athenian tendency to false aspiration which has produced the initial aspirate of ὑδάρ (Latin *unda, udus*) or ἵππος (Latin *equus*) has also occasionally affected the labial tenuis. φῦσα and its kindred, for instance, answer to the Latin *pustula*, the Lithuanian *pūsti*, "to blow;" ἄφνος is the Sanskrit *apnas*, the Latin *ops*, and κεφαλή is the Sanskrit *kapāla*, the Latin *caput*. A curious metathesis of the aspiration may take place in both Sanskrit and Greek. In Sanskrit a final aspirated media before a following tenuis loses its aspirate, which is transferred to the initial of the root, provided that be *g*, *d*, or *b* (as *bhūt-karoti*, "he who knows acts," for *budh-karoti*); and in Greek we find *ῥίξ* becoming *τριχός*, *τέρεχω* becoming *ῥέξω*.

But it must be remembered that it is only the surd explosives (or tenues) that properly can thus be combined with the rough breathing (*h*). A difficulty occurs in the case of the sonant explosives (or mediæ); and it is a grave question whether we ought to transcribe *gha*, *dha*, and *bha* by the side of *kha*, *tha*, and *pha*. In Greek, at any rate, we have only aspirated tenues, and while τ' followed by an aspirate is written *ϑ*, this is never the case

with  $\delta'$ . At the same time, the existence of aspirated mediæ was recognized by the Prâtiśakhyas by the side of the aspirated tenues, and the accuracy of the Prâtiśakhyas is confirmed by the requirements of etymology.

Closely connected with the sibilants are the palatal and guttural sounds, already noticed, heard in the German *ich*, *tage*, and *acht*. The palatal *ch*, written  $\chi$  by Sievers, *jh* by Sweet, is of two kinds. What Sievers calls  $\chi$ ,<sup>1</sup> heard in the German *ich*, Icelandic *hjarta*, and sometimes in such words as our *hue*, is formed on the hard palate near the soft palate by the front part of the tongue. On the other hand,  $\chi$ ,<sup>2</sup> as in the Dutch *g* before *e* and *i*, is formed in the hollow of the arch. The guttural sonant heard in the North German *tage*, or the modern Greek  $\gamma$ , is formed between the back of the tongue and the middle of the soft palate, the tongue being lifted up towards the front of the mouth. As already remarked, it sometimes represents the uvular *r*; thus, Mr. Sweet says, "when the passage (of the voice) is widened so as to remove all buzzing, the sound of (*gh*)<sup>1</sup> no longer suggests (*kh*)<sup>2</sup> or (*g*), but rather a weak (*r*) sound." Further back in the mouth is formed the Armenian sonant *g*, corresponding to  $\chi$ .<sup>2</sup> The *ch* of *acht*, again, may be divided into two varieties. *Ch*,<sup>1</sup> formed, as stated above, between the back of the tongue and the middle of the soft palate, is the guttural spirant usual in German after *a*, *o*, and *u*, and heard in Scotch *loch*. Further back is formed *ch*,<sup>2</sup> common in Swiss and other South German dialects. We have also *ch*,<sup>2</sup> noted by Mr. Sweet in Scotch after *e* and *i*,

<sup>1</sup> That is, the guttural sonant in question.

<sup>2</sup> As in *nach*.

formed between the back of the tongue and the place where the hard palate begins. It thus comes very near  $\chi$ .<sup>1</sup>

Distinct from the expiratory sounds, whether vowels or consonants, which have now been passed in review, are sounds formed either by inspiration or simply by the air in the mouth itself. Winteler<sup>2</sup> describes certain Swiss dialects which make use of inspiratory sounds to disguise the voice, and the clicks characteristic of the South African languages are examples of sounds produced without either taking in or emitting breath. The Kafirs have borrowed the three easiest clicks (the dental, the cerebral, and the lateral) from their Hottentot neighbours,<sup>3</sup> and there are reasons for thinking that the Hottentots themselves borrowed in turn from the more primitive Bushmen. At all events, the labial and compound dental clicks are wanting in Hottentot, and the Bushman fables put what Dr. Bleek calls "a most unpro-

<sup>1</sup> This is the guttural sonant in question.

<sup>2</sup> "Die Kerenzer Mundart," p. 5.

<sup>3</sup> Bleek : "Comparative Grammar of South African Languages," pp. 12-15. The lateral click is sounded by the Kafirs, as by Europeans, by placing the tongue against the side-teeth, and then withdrawing it, whereas the Nama Hottentots produce it as far back as possible, covering the whole of the palate with the tongue. The palatal click of the Hottentots, which is very difficult to imitate, seems to be found in one or two Kafir words. The clicks, it must be noted, only occur in the Kafir dialects adjoining the Hottentots, and the Kafir clicks "are only found in the place of other consonants, and are used like consonants at the beginning of syllables, whilst in Hottentot a guttural explosive consonant (*k*, *kʰ*, or *g*), the faucal spirant *h* and the nasal *n*, can be immediately preceded by a click, and form together with it the initial element of the syllables."



nounceable click," which does not occur otherwise in any of the dialects, into the mouth of the hare, the anteater, and the moon.<sup>1</sup> These inarticulate clicks, thus adapted to the purposes of articulate speech, bridge over the gulf between the latter and the cries of animals, and we may see in them a survival of those primæval utterances out of which language was born. Traces of what may thus be termed the germs of language on its phonetic side are met with here and there all over the globe. Thus Haldeman describes at least three clicks heard in Texan, Chinook, and other North American languages, *t* in the Anadahhas of Texas, for instance, being followed by "an effect as loud as spitting."<sup>2</sup> According to Klaproth, clicks occur in Circassian; and Bleek states that two clicks are distinguished in the likhe language of Guatemala—one somewhat resembling the Hottentot dental click, and the other the Hottentot palatal combined with some guttural. Mr. Whitmee has heard a click in certain dialects spoken by the Negritos of Melanesia. Clicks are also known among the Gallas; and Miss Lloyd has found a little boy from Lake Ngami using clicks resembling those of Nama Hottentot. Clicks are formed by placing the tongue or lips in the position required by an explosive, and then sucking out the air between the organs thus brought into play, the result being the

<sup>1</sup> See above, p. 243. The compound dental click is produced, according to Wuras, by pressing the air through the upper and lower teeth, which stand slightly apart. Dr. Bleek says that "the Bushman word for 'to sleep' seems to be *lphkoinyel*, beginning with a combination of dental click, aspirated labial and guttural tenuis in which three letters are sounded together."

<sup>2</sup> Ellis: "Early Engl. Pron." p. 1349.

“cluck” or “smack” with which grooms are accustomed to encourage a horse, but in combination with the explosive for which the organs of speech were set. According to Mr. Sweet, the labial click is an ordinary kiss; the dental click, “the interjection of impatience ordinarily written ‘tut.’”<sup>1</sup> In Káfir the clicks are not pure, as in Bushman—that is to say, they are always accompanied by an expiratory consonant, which is formed at the same moment as the click. This affords an additional reason for thinking that the Káfir clicks are not survivals from the original condition of speech, but loans from another people, which have been attached by way of ornament to the existing expiratory sounds of the language. Of the same nature as the clicks are the implosives peculiar to Saxon German, where no distinction is made between *d* and *t*, or *b* and *p*. Similar sounds are heard in Georgian and the Armenian of Tiflis, and they must have characterized ancient Accadian, since no distinction is made in writing between final *d* and *t*, *g* and *k*, or *b* and *p*. These implosives are due to compression of the air between the closed glottis and the organs of speech when in position for an explosive, by forcing the glottis upwards. No sound is emitted until the sound is fully formed, when the final or transition sound is curiously modified.

We have hitherto dealt with the individual sounds in the same fashion as the lexicographer deals with individual words. But just as a word is really but one of the elements of a sentence, and to be thoroughly understood must be treated as such, individual sounds are but the

<sup>1</sup> Professor Mahaffy notices that “old women among us express pity by a regular palatal click.”

elements of which syllables are composed. Whatever may be the nature of a sound when regarded apart and by itself, it is necessarily much modified when combined in actual speech with other sounds. The syllable, and not the single sound, is the starting-point of phonetic utterance.

A syllable must contain either a vowel or a semi-vowel, by which are meant such inspiratory utterances as that heard in the interjection 'm, or the vocalic *r* and *l* of Slavonic and other tongues. One of the first achievements of the phonograph has been to show that an open syllable like *ga* can be pronounced either backwards or forwards indifferently when once the organs of speech are in position; and not only so, but that when the waves of air set in motion by the pronunciation of a word are reversed, the word will be reproduced backwards—*ɔsoshié-shun* (*association*), for instance, becoming *nushéshiosə*.

Mr. Sweet has pointed out that syllables are divided by the stress. Speech has to be carried on by a succession of exspirations or puffs of breath, and naturally the force with which the breath is emitted gradually diminishes during the continuance of the exspiration. Only in special cases—the interjections, for example—the force increases instead of diminishing. When the exspiration is spent, and a new breath is taken, a new syllable begins. Wherever, therefore, the stress is laid we must place the beginning of a new syllable. In “a name” the stress is on the nasal, where accordingly the syllable begins; in “an aim” it is, on the contrary, on the diphthong.

The passage from one sound to another, as has already been noticed, consists of a series of infinitesimal inter-

mediate sounds, corresponding with the series of positions assumed by the vocal organs in passing from one position to another. These intermediate sounds have been conveniently termed "glides" by Mr. Ellis, and they play an important part in the formation of syllables. Glides are of two kinds, as the organs of speech may either be moved from one position to another in the shortest possible time, or be shifted, on the way, towards another position needed for the production of a third sound. Thus, in the syllable *ki* we have the immediate glide required for the transition from *k* to *i*; in the syllable *qui*, the indirect glide from *k* to *i* through the position needed for *u*. A glide may, of course, be described as either initial or final; in *ki*, the glide of *k* being final, that of *i* initial. Some of the so-called consonants and vowels are really glides. The neutral vowel (*ə*) is termed the "voice-glide" by Mr. Sweet, as "produced by emitting voice during the passage to or from a consonant." It may begin a word, as in "against," and in English is very frequently replaced by a liquid, as in the words "little," "possible." It is also found plentifully in the Semitic languages, the Hebrew *sh'wa*, for instance, being simply the neutral vowel or voice-glide. In words like "follow," when pronounced rapidly, we may hear it labialized. A diphthong, again, is a combination of a full vowel with a glide-vowel either before or after it, though the glide-vowels may be prolonged into full vowels without destroying the diphthong, by equalizing the stress upon the two elements of which it is made up. These glide-vowels (like the consonantal glides) are produced by putting the vocal organs into position for pro-

nouncing a particular vowel, but not letting voice sound until this position is being shifted to that required by the full vowel which forms the second part of the compound, and reversing the process when the full vowel forms the first part. Consonantal glides (*y*, *ɔ*, *r*, *l*, *m*, *n*) are illustrated by the sound of *y* in *you*, and of *r* in *here*, and in a common South-country pronunciation of words like *red*.<sup>1</sup> According to Mr. Sweet, the aspirate *h* is a consonant in the glottis, but "a voiceless glide-vowel in the mouth."<sup>2</sup>

At all events it is often difficult to distinguish the rough breathing from the glide which easily develops into it by the help of a little additional stress. This glide may be detected after mediæ, tenues, and *s*, whether initial or final, as in our *cold* (when pronounced emphatically), *pack*, and *big*. The Irish and Danish aspirated consonants are formed by laying a separate stress on the glide apart from the stress laid upon the preceding consonant. The aspirated letters of Greek and Sanskrit, described above, are of course different, as here we have a combination of two independent sounds, though the latter of these (*h*) is in Mr. Sweet's eyes a mere glide-vowel in the mouth.

<sup>1</sup> Sievers holds that our *th* (as in *the*) is sometimes "reduced" to a glide ("Grundzüge," p. 91).

<sup>2</sup> "The Japanese *r*," says Mr. Sweet, "seems to be formed by first bringing the tip of the tongue against the gums without any emission of breath, and then passing on to an untrilled *r*, allowing voiced breath to pass at the moment of removing the tongue." The sound has been mistaken for *r*, *l*, or even *d*, and as it is substituted for all foreign *l*'s and *r*'s, the Japanese tendency to change *l* into *r* has been contrasted with the Chinese tendency to change *r* into *l*. It is possible that the Old Egyptian possessed the same curious sound.

Glides may be absent where two consonants formed in the same part of the vocal organs are united together (e.g. *and, its*), or even where they are formed in different parts. This is especially the case with English. Wherever homorganic sounds are produced, the vocal organs pass at once from the position required for the first to that required for the second, without first falling back into the "position of indifference." Where an explosive is followed by a nasal, a sudden opening of the *velum pendulum* is substituted for the usual "explosion," as first pointed out by Kudelka.

Syllables may differ one from the other in respect of *pitch* or *tone*, of *stress*, and of *quantity*. Pitch or tone is but little noticed by Englishmen, since with us it serves merely a logical or emotional purpose, such as the expression of surprise or the asking of a question, but in some languages, Chinese or Swedish or Lithuanian, for example, every word has its own separate tone, which helps to distinguish it from other words. This, too, was the case in Vedic Sanskrit, and in ancient Greek and Latin, what we call the Greek accents being really the marks of the pitch at which words were pronounced. Pitch or tone depends on the rapidity of the vibrations of sound, and may be either rising, level, or falling. The rising tone is that indicated by the acute accent. Tone may also be compound, marked in Greek by the circumflex. The compound or circumflex is heard when the tone of a vowel is again raised after it has already passed the moment of its greatest intensity, and it may therefore be described as composed of the acute and the grave, or of the rising and the falling. It may be noticed in

Lithuanian as well as in several German dialects, such as the Thuringian, which have a singing character, and when it falls upon a diphthong the second element of the diphthong is distinctly raised in pitch. Naturally it is usually found with diphthongs and long vowels, but short vowels combined with a liquid may also carry the circumflex. In Greek it commonly implies a contraction, the circumflex resulting from the coalescence of a vowel which has the acute accent with one which has the grave.<sup>1</sup>

The Vedic system of accentuation best exhibits the fundamental character of accent of pitch. The *udâtta* or acute denotes the highest pitch reached by the voice in a group of syllables or words. In the syllable immediately preceding the voice naturally sinks to its lowest, thus producing the *anudâtta*, or grave tone. After the *udâtta*, however, the voice falls gradually; consequently the syllable which follows has the *swarita* or circumflex accent, and it is only the next syllable to that which is again *anudâtta*.

But the tone is regulated by three different conditions, which sometimes act antagonistically. It may be either a syllable-tone, determined by the relative force with which the syllables of a word can be uttered, dependent

<sup>1</sup> The compound tone in Swedish, according to Mr. Sweet, "only occurs in words of more than one syllable," and "consists of a falling tone on the first (the accented syllable), followed by a high tone on the next. The high tone seems to be reached by a jump rather than by a glide. The compound is, therefore, a compound rise distributed over two syllables." The other Swedish accent, the simple tone, is the negative of the compound one, and answers to the "glottal catch" or *stød tone* of Danish.



on the nature of the sounds of which they are composed ; or a word-tone, determined in great measure by the meaning, and serving to distinguish words from one another ; or a sentence-tone, mostly determined by logic or the feelings. The Greek accents, like the Vedic ones, were used to denote all three varieties of tone ; while the acute and the circumflex sometimes represent the syllable-accent (as in *δίνα, ἔτυπον*), sometimes the word-accent (as in *νυμφή, νύμφα, ποδῶν*), the grave, as Sievers remarks, "is a concession to the requirements of the sentence-tone." Similarly in Vedic Sanskrit, the *udatta* which ordinarily indicates the word-accent, falling as it does upon the syllable (commonly the flexion) to which the signification caused the attention to be chiefly directed, seems also to have indicated the sentence-tone, since the verb of the principal clause has no accent whatever attached to it. Previously, however, both in Greek and Sanskrit the accents denoted the word-tone, and the remarkable agreement between the accentuation of the two languages enables us to restore in great measure the accentuation of the undivided parent-speech. It cannot be an accident, for instance, which makes the numeral seven (*saptán, ἑπτά*) oxyton in both languages, and the numeral five (*pánchan, πέντε*) paroxyton, or places the acute accent on the last syllable of adjectives in *-us* ; the accentuation in each instance must have been that of the Parent-Aryan. Where the accentuation of the two languages differs, it can generally be explained by the disturbing influence of analogy. Thus while there is so remarkable an agreement between the accentuation of Vedic and Greek nouns, there is next to none between that of the verbs. But an

explanation of this is forthcoming. The verb of the principal clause in the Veda loses its accent, as has just been remarked, unless it stand at the beginning of the sentence; in fact, it is regarded as an enclitic, and throws its tone back upon the preceding word however many syllables it may contain. Now in Greek a rule gradually grew up forbidding the accent to be placed further back than the antepenultimate; the accent, accordingly, which in the case of verbal forms of more than two syllables would have been on the last syllable of the preceding word in the Veda fell on the penultima of the corresponding verbal form itself in Greek. The accentuation which thus fixed itself in the verb of the principal clause was extended by analogy to the verb of the subordinate clause, and eventually to verbal forms of less than three syllables; *φημι*, *εἶμι*, and *ἔστι*, however, remained unaccented to bear witness to the process whereby the Greek language had changed the original accentuation of the Aryan verb.<sup>1</sup> This, like the accentuation of the noun, was mostly (and probably at the outset altogether) on the flexion-suffix to which it called attention, and thus marked out the symbols that expressed the grammatical relations of the sentence. In the Semitic languages, on the contrary, the primitive accentuation was on the penultima, though there may possibly have been an earlier time when it was upon the ultima.<sup>2</sup> The tendency to throw back the accent set in early in Aryan speech; in Latin, as in the Æolic dialect of Greece, it was uniformly

<sup>1</sup> See Wackernagel in Kuhn's "Zeitschrift," 23 (1877).

<sup>2</sup> See Sayce in "Journal of Royal Asiatic Society," x. 2 (1878), pp. 251, 252.

as near the beginning of a word as possible, and the preservation of the original pitch-accent in Lithuanian is one of the most curious marks of archaism in that most conservative of West-Aryan tongues.

In Aryan the word-tone, we have seen, was primarily used in the service of grammar. In Chinese, Siamese, and other Taic languages, however, its use is lexical rather than grammatical; here it serves to distinguish the senses of words which would otherwise be pronounced in the same way. Dr. Edkins has shown that modern Mandarin Chinese is an exceedingly decayed speech; its initial consonants have been worn away; and all its final consonants reduced to the same monotonous nasal. To prevent the confusion that would thus have been occasioned in a monosyllabic language, where the possible number of different syllables denoting words was limited even before the corroding action of phonetic decay, tones were adapted to the expression of meaning, and as old letters disappeared new tones came into existence. To create a new tone, says Dr. Edkins, requires about 1,200 years.

The sentence-tone is inseparable from speech even of the most lifeless character. Each sentence has its own key, and the several parts of it their own pitch. The tone rises when we ask a question, it falls when we answer it, it reaches the "level" point of neutrality when we speak in monotone. But there are dialects and languages in which monotone is either acute or grave. "Thus in Scotch the rising tone is often employed monotonously, not only in questions but also in answers and statements of facts. In Glasgow Scotch the falling tone predomi-

nates." <sup>1</sup> In French, too, the rising tone is often used in making statements of fact.

Quite distinct from accent of pitch is accent of stress, though the close connection between the two may be gathered from the fact that in modern Greek the stress accent regularly answers to the acute and circumflex of the ancient language. Much of this regularity, however, may be due to the same pedantic revival which has resuscitated the dialect of Plato and Thucydides and substituted it for the "modern Greek" spoken half a century ago. Stress is the force with which the different syllables of words are uttered, and increased force is naturally accompanied by increased pitch. Stress, in fact, corresponds to syllable-tone and word-tone, emphasis—the stress of a sentence—corresponding to sentence-tone. Like pitch, it may be regarded as either rising, level, or falling. Stress, however, differs from pitch in its variability; there is no gradual fall, but a tendency "to sway to and fro," as Mr. Sweet expresses it. Rising stress may consequently be of varying degrees of force and falling stress of weakness, level stress, even in French, being practically unknown. Stress and pitch together give to speech its rhythmic character, and make it the lyric utterance in which man expresses his thoughts and his emotions. Where the rhythm is regular we have poetry and song, where it is irregular the language of ordinary prose. Stress is the great conservator of language; the chief counterpoise to the action of phonetic decay. The accented syllable will be preserved though all the other syllables

<sup>1</sup> Sweet: "Handbook," p. 35.

by which it is surrounded may disappear in pronunciation, just as the idea upon which emphasis is laid will hold out successfully against the attacks of age and forgetfulness. Winteler<sup>1</sup> has laid down the law that in accented syllables, liquids, nasals, and spirants are always long after a short vowel if followed by a consonant (e.g. *manly*, Germ. *alt*.)

The loss of the accent of pitch in modern English and the consequent extension of the accent of stress have made us less observant of *quantity* than the grammarians of India or the poets of ancient Greece. All syllables, however, may be classed as long, half-long, or short, due to the duration of the force with which they are uttered. According to Brücke, the duration needed for the production of a long vowel is to that needed for the production of short vowels in the proportion of five to three, but Sievers remarks that this only applies to the oratorical pronunciation of modern literary German. In any case, the length of the same vowel may vary according to circumstances; it is long, for instance, in the English *sīz* (*seize*), short in *sīs* (*cease*). Several of the Scotch dialects possess no long vowels at all, while in French most vowels are half-long, distinctly short accented vowels being final, as in *oui*.<sup>2</sup> Like vowels, consonants, too, may be long or short. In our own language final consonants are long after short vowels (as *hill*), short after long vowels (as *heel*), and *l* and the nasals are lengthened before sonants (as *build*), shortened before surds (as *built*). Short final consonants after

<sup>1</sup> "Kerenzer Mundart," pp. 142 sq.

<sup>2</sup> Sweet: "Handbook," pp. 59, 60.

short vowels make the pronunciation appear clipped, as in German words like *mann*.

Accent has considerable influence upon quantity. On the one side short vowels may be lengthened and pure vowels converted into diphthongs by the accent falling upon them. This is partly the origin of the Sanskrit *guṇa* and *vriddhi*, according to which a simple *ā* is raised to *ā̄*, an *i* to *ī̄* (*ai*) and *ai* (*āi*), and an *u* to *ū̄* (*au*) and *au* (*āu*).<sup>1</sup> The lengthening of short vowels in Hebrew in a "pause," that is at the end of a sentence, is another example. In the German dialects monosyllables which end in a consonant frequently have their vowel changed into a diphthong by the accent, the original vowel appearing again as soon as an additional syllable is added. In our own English the short vowel of a monosyllable which ends in a sonant frequently becomes half-long when accented (compare *fog* with *fóggý*, *god* with *góddess*). On the otherside, the absence of the accent may bring with it a diminution of quantity. Thus a diphthong may be shortened by being pronounced in the same period of time as is required for the pronunciation of a short vowel, or may even be reduced to the short vowel which lies midway between the two elements of which the diphthong consists. A short vowel, again, may be reduced to a vocalic consonant like the Slavonic *r*. Since much movement of the lips in speaking implies an

<sup>1</sup> In many instances, however, *guṇa* and *vriddhi* seem to be due to the presence of the vowel *a* in the following syllable, which has been anticipated, as in the case of the German *umlaut* or the Greek epenthesis (as in *λόγοις* for the locative *λόγο-σι*, and then, by false analogy, *λόγοισι*).

energetic enunciation, shortened syllables are naturally pronounced with passive lips. To this fact we must ascribe the numerous short syllables of modern cultivated English.

There is but little difference between a long or "strong" consonant and a doubled one. In the first case, the position of the vocal organs for pronouncing the consonant is retained with gradually decreasing force, until it is suddenly shifted to the position needed for the following vowel ; in the second case it is shifted back again, when the force required to produce it is half spent. Strictly speaking, therefore, the consonant cannot be said to be doubled ; there is simply a break or pause in the utterance of it, the force necessary to produce it being renewed before it has been fully exhausted. In English, French, German, or Slavonic the double consonants have become long ones ; to find them still pronounced we must turn to Italian, Swedish, Finnic, or Magyar. Analogous to a double consonant is the combination of a sonant with a surd, when assimilation does not take place, as in *has to do* or *has scen*. In Sanskrit and Greek aspirated letters could not be doubled, Sanskrit permitting only *kkh*, *tth*, and *pph*, and Greek only *κχ*, *τθ*, and *πφ* ; hence it seems plain that there was either no glide or a glide practically inaudible.

It is obvious that the combination of a consonant and a vowel admits of an almost infinite series of variations according as the formation of the one or other sound is made prominent in pronunciation. The consonant may, as it were, swallow up the vowel ; on the other hand, the vocal organs may be shifted to form the vowel while



they are still in the act of forming the consonant. Hence arise *mouillé* and labialized letters. If the front part of the tongue be raised and the lips opened while a consonant is being uttered, a palatalized or *mouillé* letter is the result, of which the Italian *gl* and *gn*, the Spanish *ll* and *ñ*, or the Portuguese *lh* and *nh*, may be regarded as examples. Still better examples, according to Sievers, are combinations of consonants with an original *i* in many Slavonic languages (e.g. Russian *nikto*). Certain consonants are incapable of being *mouillé*; gutturals, for instance, in whose formation the back part of the tongue plays so prominent a part can only be so by becoming palatals. Labialized sounds are those in which the lips are rounded while the pronunciation of a consonant is in process. Labials and gutturals show the same fondness for this labialization or "rounding," that the palatals and dentals do for mouillation; and a comparison of the derived languages proves that the primitive Aryan speech must have possessed a row of labialized or "velar" gutturals—*kw*, *gw*, *ghw*—of which the Latin *qu* and our own *cw*, *qu* are descendants. There is nothing to show that these velar gutturals were ever developed out of the simple gutturals; so far back as we can go in the history of Indo-European speech the two classes of guttural exist side by side, and the groups of words containing them remain unallied and unmixed. Γυνή and *queen* (*quean*) must be separated from γένος, *genitrix*, *kinder*, and other derivations of the root which we have in the Sanskrit *janâmi*, the Greek γίνομαι, γείνομαι, and the Latin *gigno*; and the labialized *quies* can have nothing to do with the Greek κείμαι and κώμη (κύμη), our own *home* and

*ham-let*.<sup>1</sup> Both rounding and mouillation may be combined, as in the Danish *kyst*, *pynte*, and when occurring at the end of a word may frequently be explained from the analogy of cases in which the word is followed by a syllable beginning with *u* and *i*. Such an explanation, however, is more likely to be true of mouillation than of rounding; indeed, an *i* or *y* sound is very apt to develop itself after consonants in affected pronunciation, as in the English *kyind*, *duke* (for *dook*), or the Greek ζορκάς (*dyorkas*) for δορκάς and the Magyar *ágy*, "bed." Conversely a palatal *i* or *y* may develop a dental sonant before it: thus the Italian *diacere* comes from the Latin *jacere*, the Low Latin *madius* from *majus*,<sup>2</sup> and the Greek ξειά (*dyeia*) and ζυρόν (*dyronon*) from *yava* and *jugum* (Sansk. *yugam*). In these instances we may trace the influence of emphasis; the parasitic letter is due to the attempt to speak with greater distinctness and solemnity.

But whether it be emphasis or the other two causes of change described in an earlier chapter, the pronunciation of sounds, like the meaning they convey, is in a constant state of flux. Nowhere is the dogma of Herakleitus, πάντα ῥεῖ, truer than in the history of speech. No two people pronounce exactly alike, nor does the same person always pronounce the same word or group of words in exactly the same way. Apart from the changes undergone by the pronunciation of words according to the sounds of the other words with which they may be associated, it is difficult

<sup>1</sup> The existence of these velar gutturals was first pointed out by Ascoli, and since by Fick and Havet.

<sup>2</sup> Diez: "Grammatik d. romanisch. Spr." (2nd edition), i. 248, 254.

to pronounce the same word when uttered singly twice in precisely the same way. The very effort to do so produces modification of the sound. Such shades of difference in utterance, however, are imperceptible to any but an unusually sensitive ear ; it is only when the difference becomes considerable that it attracts notice. It then constitutes what we may term a variety, and such varieties we may hear sometimes from the lips of a single individual, sometimes from the members of a family, sometimes from those who live in daily contact and under the same conditions of life. The faculty of imitation is strong within us, and a particular pronunciation once started soon spreads, as it were instinctively, amongst those who are much together. It has often been observed how like the members of a family are to each other, not only in general appearance and manner, but still more in the use of similar expressions and idioms and the pronunciation of sounds. It is the same with schools, and to a less degree with universities to which the students come with their habits of phonetic utterance more or less formed : it has been said that the handwriting betrays the school at which the man has been educated ; it may be said with equal justice that the mode of speaking does so too. In a savage state of existence, where tribe-life and village-life are on the one hand strict and intense, and the husband on the other hand sees but little of his wife and children, the conditions favourable to the growth of varieties in pronunciation are more numerous than among civilized men. The language of the nursery becomes in time the language of the tribe.

This phonetic variety may be broadly stated as mainly

due to differences in the structure of the vocal organs. Putting aside imitation and analogy, putting aside, too, all wilful and conscious changes of pronunciation such as those enumerated on page 205, a particular sound or a particular way of pronouncing a sound may be easier to one speaker than to another. Very slight differences in the physical formation of the organs of speech may produce the most important consequences. And when a habit of pronunciation has once been fixed, it is difficult to alter it. The child who is learning to speak will as readily learn Chinese as English, the Japanese *r* as the Northumberland *burr*; it is quite another matter when the attempt to catch the sounds of a new language has to be made in adult years.

Climate and food have, doubtless, an important effect in producing changes in the formation of the vocal organs; but at present we have no means of knowing the nature and extent of their influence. Professor March remarks of the change of *i* to *g* in Anglo-Saxon,<sup>1</sup> that "the movement (of consonants to vowels) is sometimes reversed, as when a nation moves northward, or northern peoples mix with a vowel-speaking race." The Rev. W. Webster has drawn attention to the nasal twang which distinguishes not only American English, but American Spanish, Portuguese, and French as well; and which seems to be due to the dryness and the extremes of the American climate, while he further suggests climatic influences for the origin of the loss of the aspirate in Spanish words like *hijo*, pronounced *ijo*, the

<sup>1</sup> "Comparative Grammar of the Anglo-Saxon Language" (1870), p. 28.

Latin *filius*, which in the fourteenth century still had *f*, and for the intensification of the aspirate in the corresponding Gascon words. We are all well acquainted with the hoarseness and roughness that exposure to the atmosphere lends to the voice, and the exercise and strength that a mountainous region gives to the lungs produce their effect in the vigour with which sounds are uttered. In cold countries the respiration is accelerated, while the air being denser contains a larger volume of oxygen.<sup>1</sup> The prognathism of the lower and older races of men, again, must have considerably modified their powers of utterance. "The lower jaw," says Dr. Rolleston, "which in every well-marked variety of the human species contributes very importantly towards the making up of its distinctive character, was in the brachycephalous Briton usually a very different bone from the lower jaw of his Silurian predecessor."<sup>2</sup> The strange fashions, too, which lead the savage to mutilate and deform his person, have frequently a very direct bearing upon phonology. Thus the loss and confusion of the labials and the excessive nasalization in the languages of the natives of the Pacific coast of America must be traced to the rings that are worn through the nostrils and lips of the people.<sup>3</sup> The Otyi-herero of South Africa is lisping in consequence of the custom of knocking out the four lower teeth, and partly filing off the upper front ones, to which also Professor Max Müller suggests the occurrence of the English, *th* and *dh* in the language may be due,

<sup>1</sup> See Robin and Verdeil: "Chimie anatomique," ii. p. 44.

<sup>2</sup> Appendix to Greenwell's "British Barrows" (1877), p. 645.

<sup>3</sup> Daa: "On the Languages of the Northern Tribes of the Old and New Continents," in the "Transactions of the Philological Society" (1856), p. 256.

and the Dinkas, who, like all the negroes of the White River, extract the front teeth of the lower jaw, have no sibilants.<sup>1</sup>

Whatever may be the causes which bring about varieties in pronunciation, certain it is that they are as continually making their appearance as varieties in the realm of natural history. Where they are unrestrained by the conservative tendencies of literature and education, they soon spread from the individual and the household and become species or dialects. The dialect itself may in course of time assume so marked a character of its own, and be so widely spoken as to be accounted a separate language; and will stand to the varieties and species destined to grow out of it in the relation of a genus to its species. But with this further development phonology has little to do.

It is otherwise with the changes which result in the rise of a new dialect. Comparative philology is based on the recognition that the same word will be represented by different combinations of sounds in a group of allied dialects or languages, and that each combination will be governed by a fixed phonetic law. An English *h*, for example, will answer to a Greek and Latin *k*, an English *t* to a German *s* and a Sanskrit *d*. When once a sound is given in a language, we may know the sounds which must correspond to it in the cognate languages. Now and then, of course, subordinate laws will interfere with the working of the general law; but unless such an interference can be proved, we must never disregard the

<sup>1</sup> "Sir George Grey's Library," i. p. 167; and A. Kaufmann: "Das Gebiet des weissen Flusses und dessen Bewohner" (1861), quoted by Max Müller: "Lectures," 8th edition, ii. p. 178.

general law for the sake of an etymological comparison, however tempting. To compare the Greek *θεός* with the Latin *deus* and the Sanskrit *devas*, rests upon almost as unstable a foundation as the old derivation of *whole* from *ἅλος*, and *call* from *καλέω*.<sup>1</sup> We must never forget that the laws of phonology are as undeviating in their action as the laws of physical science, and where the spelling does not mislead us will display themselves in every word of genuine growth. Even the vowels cannot be changed and shifted arbitrarily; they, too, follow definite laws of development, and though it is not yet possible to state their equivalence in the several languages of a single family with the same precision as in the case of the consonants, we may feel quite sure that this is the fault of our ignorance and not of the facts themselves.

It was the great Grimm who, following in the wake of Rask, first formulated the empiric law of that regular *Lautverschiebung*, or shifting of sounds, in our Indo-European family of speech which has since gone under his name. Since his time the law has been the subject of much discussion and examination;<sup>2</sup> his statements have been amended and amplified, and an endeavour made to apply the same law to the vowels that has been applied to the consonants. The following table<sup>3</sup> exhibits the equivalence of sounds in the Aryan family of speech:—

<sup>1</sup> See, however, Ascoli's ingenious attempt to remove the phonological difficulties in his "Studj Critici," ii. (1877), pp. 386-396.

<sup>2</sup> For a recent English examination of the subject see Douse: "Grimm's Law: a Study" (1876), and Rhÿs's review in the "Academy," Jan. 12, 1878; also Murray and Nicol in the "Academy," Feb. 23, March 2 and 16, 1878.

<sup>3</sup> The table of consonants is taken from Rhÿs: "Lectures on Welsh Philology," p. 17.



Old Welsh.	c p g h, m?	g b	t d	... <sup>3</sup>	b, m b, m ng n m, b r, l j, dd, dd j, g, u h	— — — — —	
Old Irish.	c, ch c, ch g b, m?	g b	t, th d d	... <sup>3</sup>	b, m b, m ng n m, b r, l ... f, b s	— — — — —	
Gaulish.	c p g b?	g b?	t d	... <sup>3</sup>	b b ng n m, b r, l j v v s	— — — — —	
Church Slavonic.	s k, p z z	z z	g g	t d d d	p b b b -n m, -n r, j j - j s, ch e o a a	— — — — — i i u, o, ŭ	
Lithuanian.	sz k, p z	g z	g z	t d d d	p b b b ng n m r, l j v v s	— — — — — e o, a a a i i u u	
Modern High German.	b, g w, f k, ch qu, k	g w?	d, t z, ss, sz t, th f, b pf?, f?	g u m r, l j y w w s, r	— — — — —	— — — — —	
English.	h, g wh, f k, ch qu, c	g, y g, w?	d, th t d f, b p?	ng n m r, l j y w w s, r	— — — — —	— — — — —	
Gothic.	h, g hv, f(p), h	k kv g, v?	th, d t d f, b p?	ng n m r, l j y v v s, z c	— — — — —	— — — — — a a i i u, au	
Oscan and Umbrian.	k p g b b	h ?	t d d f p p b b f f	ng n m r, l j y v v s, r, z c	— — — — —	— — — — — i i u u	
Latin.	c qu, c, v g [g]v, b h, g	y, gv, g	t d d, l f, d, b <sup>2</sup> p f, b ng	ng n m r, l j y v v s, r c	— — — — —	— — — — — o, e a, o a, o i i u, o, i	
Greek.	κ π τ γ β, γ <sup>1</sup> Χ	ϕ	τ δ θ ζ π β φ φ γ γ λ λ ϕ, λ j, δ, δ r, v, c	σ, τ ε o α, o ω i y	— — — — —	— — — — —	
Zend.	ç k, ch, p z, sh g, j, zh, k z	g, j, zh	t d d d p b?	h h n n m r y y v h, s a	— — — — —	— — — — — i i u u	
Sanskrit.	's (ç) k, ch, p j, sh g, j, k h	[g] h	t d d d p b [b] h n n m r, l y y v v s s a	— — — — —	— — — — — a, a a, a a, a i i u u	— — — — —	
	K Kw } (K2) G Gw } (G2) G H G Hw } (G H2)	D D H P B B H N G N M R Y V S S A A <sup>2</sup> A <sup>3</sup> A A L U					

\*\* For notes, see next page.

Some of the changes of sound recorded in the above table are as old as the undivided Aryan speech itself. They go back to the dialects that existed in the earliest period of which our materials allow us to know. Instead of clinging, with Fick, to a genealogical tree, and deriving the Aryan languages of Europe and Asia from two parent-stems, Western and Eastern Aryan, and these again from a single *Ursprache* or primitive speech, it is better to follow J. Schmidt in tracing the later languages to co-existent dialects, which by the loss or absorption of intermediate dialects and the migration of the speakers became more and more distinct and divergent one from the other. It is, of course, quite possible that the speakers of the most western of these dialects moved across the Ural range into Europe in a compact body, and there settled for a while in a district westward of a line drawn from Königsberg to the Crimea, where the beech grew, and that it was from this second home of the Aryan race that the waves of European emigrants successively broke off. Certainly Professor Fick seems to have shown the common possession of certain phonetic peculiarities, such as the vowel *e*, by the Western as distinguished from the Eastern Aryans, and the Eastern or Indic branch of the family clearly once formed a single whole which subsequently divided into Iranian and Hindu. Unfortunately the position of Armenian and the allied dialects is still a matter of doubt; and there are scholars who

<sup>1</sup> Before *v*.

<sup>2</sup> In the middle of a word, e.g. *ruber* (ῥυθρῶς).

<sup>3</sup> *P* did not exist in the early Keltic languages; hence proper names like *Menapia* must be treated as non-Aryan, or at all events as non-Keltic.

would regard them as a link between the European and the Asiatic sections of the Aryan group. But Fick labours hard, and apparently with success, to prove that the Aryan dialects of Asia Minor, such as we know them from glosses and inscriptions, belonged to the European, not the Asiatic section, while Armenian, on the other side, is an Iranian tongue. Fick's conclusion is confirmed by the evidence of the cuneiform inscriptions. Up to the eighth century B.C. Armenia was still inhabited by tribes who spoke non-Aryan languages, and it was only a century previously that the Medes had first forced their way into the country regarded by the agglutinative Accadians as the cradle of their race, but which was afterwards to be the seat of the Aryan Medes. Eastward of the Halys there was nothing Aryan until long after the occupation of Armenia by the new-comers.

We have certain proof that the series of changes which resulted in the formation of High German took place subsequently to the overthrow of the Roman Empire. Latin words for instance like (*via*) *strata* or *campus*, adopted by the Teutons during the era of their wars with Rome, are found in both Low and High German in the very forms which the application of Grimm's law would require them to have were they native words. Thus *strata*, Low German *strata*, our *street*, becomes *straza* in Old High German, *campus*, our *camp*, similarly becomes *kamph*. *kampf*. The Hessians were called Catti in Roman times, and though now High Germans, had the same ancestors as the Batavi, from whom the modern Dutch draw their descent, while the Malbergian glosses show the language of the Franks to have been Low German, although the

Franconians of to-day, who are descended from the same stock as the Suabians and Ripuarians, speak High German. Here, at any rate, we have an instance of a series of varieties finally resulting in a new language in historical times.

It must not be supposed that all the changes of pronunciation that serve to distinguish one branch of the Aryan stock from another took place simultaneously. On the contrary, they were slow and gradual; first one and then another new fashion in sounding words sprang up and became general: when once the new pronunciation had, from any cause, taken a firm hold of the community, analogy caused every word to be submitted to its influence, unless special reasons, such as accent, stood in the way, until in course of time the process of shifting the sounds was completed. An instructive illustration of this shifting of sounds has lately been going on almost under our eyes. In the Samoan Islands of the Pacific only fifteen years ago *k* was an unknown sound except in one small island of the group, where it replaced *t*. Since then it has practically disappeared from all of them, and *t* has taken its place. What makes the rapidity of the change the more extraordinary is that the speakers of the language live on separate islands, and that intercourse between them is less intimate now, according to Mr. Whitmee, than it was in the days of heathenism. And yet in spite of books and schools, in spite of education and every effort to check it, the change has come about. The natives will ridicule the foreigner who pronounces in the new fashion, they will themselves take pains to sound the *k* when reading aloud or making

a set speech, but in conversation it has ceased to be heard. The tendency to put *k* for *t* seems to be irresistible; it is in the air, like an epidemic, and the spelling, so recently introduced, no longer represents the common pronunciation of the people.<sup>1</sup>

We must be on our guard against thinking that the sounds represented by the same letter of the alphabet in different languages are really identical. We have seen of what numberless variations each sound that we utter is capable, and it does not follow that because the Sanskrit *cha* and the English *church* are written with the same palatal *ch*, that therefore they are to be pronounced alike. And what is true of the consonants is still more true of the vowels. There is much to show that the European scale of three short vowels—*ǎ*, *ě*, *ǫ*—is more primitive than the Indic single vowel *ǎ*, in which three distinct vowel-sounds of the parent-speech have coalesced, but we cannot infer from this that the three vowel-sounds of the parent-speech were actually *ǎ*, *ě*, and *ǫ*. Indeed, when we remember that the Greek *ἑκατον* (for *ἑν-κατων*) corresponds to the Latin *centum*, while *ferentis* is represented by *φέρωντος*, it is quite clear that the Latin *ě* must have developed out of one or more sounds which were distinct from it. In dealing with the hypothetical Parent-Aryan it is best, with Brugman, to symbolize these three primitive vowels as *a*<sup>1</sup>, *a*<sup>2</sup>, and *a*<sup>3</sup>.<sup>2</sup> It is possible that some at least of the

<sup>1</sup> Pratt: "Grammar and Dictionary of the Samoan Language" (edited by Whitnee), p. 1, 1878.

<sup>2</sup> To Brugman belongs the credit of first demonstrating the existence of these three distinct vowel-sounds in the Parent-Aryan (Kuhn's "Zeitschrift," 1877). Brugman has been criticized by Collitz in Bezzenger's "Beiträge zur Kunde der indogermanischen

earlier sounds out of which more than one articulate sound have afterwards developed, were of a vague indeterminate character, not properly-formed vowel utterances. Professor Max Müller<sup>1</sup> quotes authorities to prove that in the Sandwich Islands *k* and *t* are undistinguished, and that "it takes months of patient labour to teach a Hawaian youth the difference between *k* and *t*, *g* and *d*, *l* and *r*."<sup>2</sup> The confusion between *k* and *t*, however, has already been explained by the similar fact observed in Samoan where the sound has actually changed within the last fifteen years, a distinctly-articulated *k* becoming an equally distinctly-articulated *t*. But even in English we find people saying *a cleast* instead of *at least*, while at Paris and elsewhere the lower classes say *amikié* for *amitié*, *charkier* for *charretier*, *crapu* for *trapu*.<sup>3</sup> So in

Sprachen," ii. 4 (1878), who maintains that the three primitive sounds were really *é*, *ø*, *ā*, and not the indeterminate *a*<sup>1</sup>, *a*<sup>2</sup>, *a*<sup>3</sup>. On the other hand, an able article by De Saussure in the "Mémoires de la Société de Linguistique de Paris," iii. 5 (1878), accepts Brugman's nomenclature, while criticizing and modifying some of his conclusions. His *a*, Brugman's *a*<sup>1</sup>, became *e* in West Aryan, and is never weakened into *i* or *u* in Sanskrit. His *a*<sup>2</sup> (also Brugman's) is the West Aryan *o*<sup>2</sup>, and in Sanskrit is lengthened in an open syllable (e.g. *jajāna* = *γέγονε*). In Latin *ø* often became *é*, as in *genu* (Greek *γόνυ*, Sansk. *jānu*). Different from this *o*<sup>2</sup> is another *o*<sup>1</sup>, standing in the same relation to *a* that *o*<sup>2</sup> does in Latin to *e*, and answering to a Sanskrit *i* or *î*. Besides this short *o*<sup>1</sup> is also a long *ō*, which appears also as *ā*, and corresponds with Sansk. *ā*. De Saussure further points out that velar *k* in Sanskrit is palatalized (becomes *ch*) when followed by *a* (= *é*) and *a*<sup>2</sup> (= *ø*).

<sup>1</sup> "Lectures," ii. pp. 184 *sq.* (8th edition).

<sup>2</sup> "The Polynesian," October, 1862.

<sup>3</sup> Agnel: "Observations sur la Prononciation et le Langage rustique des environs de Paris," pp. 11, 28; Terrien Poncel: "Du Langage," p. 49.

the old Paris argot *j'équions* stood for *j'étais*, and in Canada the uneducated part of the population says *mékier* for *métier*, *moikié* for *moitié*. Bleek, again, writes of the Setsuana dialects: "One is justified to consider *r* in these dialects as a sort of floating letter, and rather intermediate between *l* and *r*, than a decided *r* sound."<sup>1</sup> To these instances of confusion between two consonants which Professor Max Müller believes to be "a characteristic of the lower stages of human speech," may be added the fluctuation between two forms of the same sound in the North German dialects, where no distinction is made between surd and sonant *mediæ*, as well as in many of the Armenian dialects.<sup>2</sup> But we must bear in mind that this childlike inability to distinguish between sounds may be due to two very different causes. It may be a result either of the sound being formed at the neutral point, as it were, intermediate between two distinct sounds, or of the ear being unable to discriminate between different articulations. The latter cause is analogous to colour-blindness, and has most to do with the imperfections of childish utterance or the substitution of *r* for *l* so often heard; the other cause is of a purely phonetic character, and takes us back to the time when man was gradually fashioning the elements of articulate speech. This infantile state of language had probably been long left behind by the cultivated speakers of the Parent-Aryan; indeed, the very existence of the three vowels marked *a*<sub>1</sub>, *a*<sub>2</sub>, and *a*<sub>3</sub>, would imply that such was the fact. If

<sup>1</sup> "Sir George Grey's Library," i. p. 135. Professor Mahaffy informs us of a child of three years of age who invariably substitutes *n* for *l*, and cannot be made to feel the difference between them.

<sup>2</sup> Sievers: "Lautphysiologie," p. 127.



there was any confusion in the pronunciation of their words it would have to be ascribed rather to sound-blindness than to imperfection of utterance.

The regular action of Grimm's law may be interfered with by the influence of other laws, just as in physical science the regular action of the law of attraction may be interfered with from time to time. Foremost among these disturbing agencies is the accent. K. Verner has shown<sup>1</sup> that the position of the accent has occasioned that apparent disregard of Grimm's law in the Teutonic languages which has produced *mutter* and *vater* (O. H. G. *muotar* and *fatar*) by the side of *bruder* (O. H. G. *brôpar*), *sieben* (Goth. *sibun*) by the side of *fünf* (Anglo-Saxon *fif*), *schwieger* (O. H. G. *swigar*=*ἐκρῆ*, *so-cru-s*) by the side of *heil* (Greek *καός*), or such a curious change in the conjugation of the same verb as the Anglo-Saxon *lîde*, "I sail," but *liden*, "sailed." The same cause has brought about the varying representation of an original *f* now by *s*, and now by *z* or *r*. In the Veda, *bhrâtar* is accented on the first syllable, like the Greek *φράτης*, *mâtâr* and *pîtâr* on the last, again like the Greek *μητήρ* and *πατήρ*. *Sieben* answers to the Vedic *saptân*, the Greek *ἑπτά*, whereas *fünf* is the Vedic *pánchan* and Greek *πέντε*. *Schwieger* similarly goes back to the Vedic 'stvá'srû', Greek *ἐκρῆ*, just as the O. H. G. *snura* from *snusa* goes back to the Vedic *snushâ'*, Greek *νόσ*, in contradistinction to *nasc*, *nose*, the Vedic *nâ'sa*, the Lithuanian *nósis*. If we turn to the verb, we find that in Anglo-Saxon, whereas the present *lîde*, "(I) sail," corresponds with a

<sup>1</sup> Kuhn's "Zeitschrift," xxiii. pp. 97-130 (1877).

Vedic *bhédâmi*, and the singular of the past tense *lâṭ* with a Vedic *bibhêda*, the plural of the preterite *lidon* corresponds with a Vedic *bibhidûs*.<sup>1</sup>

There are other influences besides that of the accent which may change and mar the face of words. Although every change takes place in strict accordance with phonetic laws, and is consequently capable of explanation, the occurrence of the changes is more or less sporadic and arbitrary. That is to say, they may act upon one word and not upon its neighbour. In *should* or *would*, for instance, *l* has been assimilated to *d*, but in *fold* and *cold* it still maintains its existence. Such changes may be either independent or dependent on the action of surrounding sounds. The diversification of the Teutonic *a* into *e* and *o*, or the transition of the Latin *ĭ* and *ŭ* into Romanic *e* and *o* are instances of independent change. So, too, the modern English pronunciation of the vowels with passive lips, and the consequent loss of the intermediate vowels *ii* and *ö*, is another example of the same facts. Wherever, indeed, these intermediate vowel-sounds exist, we may feel sure that the lips take an active part in articulation. In all these cases the change happens in the formation of

<sup>1</sup> The termination of the participles of German weak verbs, such as the Goth. *tami-da* ("domitus"), answers to the Vedic *dami-tâs* (like the Greek *κλυτός*) where the accent is oxytone. Verner sums up his conclusions as follows: (1) The original accentuation was preserved in Teutonic even after the introduction of those changes of sound characteristic of the Teutonic branch of the Aryan family; (2) the accent, however, was no longer purely tonic, it had become also an accent of stress; (3) the exceptional representation of an Aryan *k*, *t*, and *p* at the beginning of a syllable by a Teutonic *g*, *d*, *b* is due to the original accentuation of the words in which it occurs; and (4) this is also the case with *z* or *r* in the place of *s*.

the sound, uninfluenced by the neighbourhood of other sounds. The extension of a simple vowel into a diphthong may also be brought under this head, though the presence of the circumflex accent seems to have much to do with it. On the other hand, changes in the dentals, the passage of *z* into *r* and *r* into *l*, or the transition from a guttural to a palatal and a dental, are all examples of purely independent change. When we find an Aryan *kṛ* (*k*<sup>2</sup>) and *gṛ* becoming *ch* and *j* in Sanskrit or *τ* in Greek, we merely see the gradual forward movement of the tongue, which is moved with less exertion towards its tip than towards its root. The change of Aryan *kṛ* and *gṛ* into *ϕ* and *β* in Greek (as in *πίστους* and *βίος*<sup>1</sup>) is held by Sievers to be due to a sudden "leap" in the articulation, *k* and *g* partially assimilating the second part of each compound into *ϕ* and *β*, and then falling away altogether.

Most of the changes recorded in Grimm's law may be brought under the head of independent change. No doubt the transition of *g*, *d*, *b*, into *k*, *t*, and *p* in German is partially dependent upon the accent, but the growth of an aspirate out of a *tenuis*, as exemplified in the Irish pronunciation of English, is probably due to nothing but an increase in the energy and duration with which our breath is expired. The want of the stress accent brings about the shortening and loss of final vowels, the tonic accent, on the other hand, tending to lengthen them.

The changes caused by the action of one sound upon another may be divided into those which are due to assi-

<sup>1</sup> Sanskrit *jīva*, Latin *vivo* (*vixi*), English *quick*, presupposing an original reduplicated *gwi-gwi*.

milation, and those that are not. In either case the time occupied in pronouncing the changed sound remains the same as it was before; it is only in cases of independent change that it may differ. Assimilation is effected in one of two ways. The relative positions of the vocal organs needed for the pronunciation of two sounds may be made to approximate, as in the reduction of *ai* ( $a+i$ ) to *e*, or the time that elapses between the pronunciation of two sounds may be reduced or destroyed altogether, as when *supmus* becomes *summus*. Where the change is not due to assimilation, it will be found to depend on an alteration in the time needed for the formation of two or more sounds.

Assimilation may be regressive, progressive, or reciprocal. Regressive assimilation is where a sound is assimilated to that which follows it, as in ἔννυμι for *Fεσ-νυμι*, from the root *ιαs*, or ποσσί for ποδ-σι (ποδ-σ*F*-ι), and γράμμα for γράφ-μα(τ). Progressive assimilation is the converse of this, as in στέλλω for στελ-γω, μάλλον for μαλ-ιον, *mellis* for *melu-ís*, or the Æolic ἔστελλα for ἔστελ-σα. Regressive assimilation largely preponderates in our Aryan languages, progressive assimilation in the Ural-Altaiic ones; and it is very possible that Sievers is right<sup>1</sup> in tracing this contrast to the difference of the accentuation, which in Ural-Altaiic falls upon the first syllable of the word, while in the parent-Aryan it fell for the most part on the final syllable. Böhtlingk<sup>2</sup> says, very appositely: "An Indo-Germanic word is a real whole of such a kind that the speaker has uttered the whole word, as it were, in spirit,

<sup>1</sup> "Lautphysiologie," p. 137.

<sup>2</sup> "Jenaer Literaturzeitung" (1874), p. 767; quoted by Sievers.

as soon as he has pronounced the first syllable. Only in this way can it be explained how a syllable (or sound) is modified in order to assist the pronunciation of the syllable (or sound) that follows it. A member of the Ural-Altai race forces out the first syllable of a word—that part of it, namely, which has the accent—little caring for the fortune of the rest; on this he next strings in more or less rude fashion a few more significant syllables, only thinking of a remedy at the moment when he first feels the want of one." As for reciprocal assimilation, an example of it may be found in the reduction of *ai* to *e* quoted above, where both sounds influence one another.

Assimilation may be either complete or partial. There are sounds which can never be thoroughly assimilated to each other, *bn*, for instance, can never at once become *nn*, only *mn*. Partial regressive assimilation meets us very frequently in the classical languages; e.g., *λεν-τός* from the root *λεγε*, *ἤνυσμαι* from *άνυτ-*, *δύγμα* from *δου-*; partial progressive assimilation is rarer; e.g., *πάσχω* for *πάσκω* from *παβ-σκω*.

The changes dependent on the presence of a second sound, which are not due to assimilation, are necessarily produced by varying the time needed for pronunciation. Of these the most striking is metathesis. Metathesis must be referred rather to a mental than to a phonetic origin. Our thought and will outstrip our pronunciation, the result being that the sound which ought to follow is made to precede, or else the vocal organs are shaped prematurely for the formation of a sound which ought to be heard later, the consequence being that the sound which should come first has to come last. Metathesis, in fact,

is similar to the rapidity, or rather relaxation, of thought which leads us sometimes to write or speak a word which belongs to a subsequent part of the sentence ; and it may be of two kinds : either the place of two sounds may be simply inverted, or the second sound may be made to precede the first by two or three syllables. How easily the first case can happen is shown by the phonograph, where each syllable that has been uttered can be reproduced backward by merely turning the handle of the machine the wrong way. *R* and *l* are the most subject to metathesis, then the nasals ; the other consonants vary according to their relationship to the vowels. More regular than metathesis are the insertion and omission of consonants, as in ἀν-δ-ρὸς, ἄ-μ-β-ροτος, τέτυφθε for τέτυφθε, *rémus* for *resmus*. Somewhat different are the insertion and omission of vowels, the first of which goes under the technical name of *Swarabhakti*. This name was imported from the Hindu grammarians by Johannes Schmidt,<sup>1</sup> to mark the growth of a short or reduced vowel from a liquid or nasal, when accompanied by another consonant. Thus *ānman*, "name," became *ānā-man*, and then, by the loss of the first vowel and the compensatory lengthening of the second, *nōmen* and *nāmā*. *Swarabhakti* is, however, incompatible with the acute accent. We may find examples of it in the slow pronunciation which in English turns *umbrella* into *umbĕrella*, and *Henry* into *Henĕry*.<sup>2</sup>

<sup>1</sup> "Zur Geschichte des indogermanischen Vocalismus," ii.

<sup>2</sup> According to the current theory the sonant or vocalic *n*, *l*, and *r* develop out of a consonantal *n*, *l*, *r*. Fick (Bezenberger's "Beiträge," iv., 1878) has shown that Greek aorists like ἔδρακε or παθών owe their *a*-vowel to this cause. The accentuation of the last syllable occasioned the loss of the vowel of the present-stem (which Fick

Prosthesis, or prothesis, the insertion of a short vowel at the beginning of a word before two consonants, is another illustration of *Swarabhakti*. There are many nations which find a difficulty in pronouncing two consonants at the beginning of a word. Thus the Bengali calls the English *school* *yschool*, the Arab says *Iflatún* for *Platon*, and the Ossete uses *a* for the same purpose. In other cases, one of the consonants is dropped altogether, as so frequently by children and systematically by the natives of Polynesia. In Latin inscriptions and MSS. later than the fourth century we find forms like *istatuam*, *ispirito*, just as in the Romanic tongues we have *estar* and *espée* (*épée*) for *stare* and *spada*, or in Welsh *ysgol* from *schola*, *yspryd* from *spiritus*. According to Wentrup,<sup>1</sup> *a* is often used as a prothetic vowel in Sicilian; Lithuanian has forms like *iskadà*, German "*schade*," and Basque and Hungarian prefix a similar aid to the pronunciation. No trace of a prothetic vowel can be found in Latin; in Greek, however, such vowels are very plentiful. Thus we have *ἄσταχυς* by the side of *στάχυς*, *ἐχθές* by the side of *χθές*, *ἰγνύη* by the side of *γνού*, *Ὀβριαρηνός* by the side of *Βριαρένος*. In Greek, too, as in other languages where prothesis occurs, the complementary vowel may be inserted before a liquid, more especially *r*, as well as before a strictly double consonant, *c.g.*, *ἀμύνω* by the side of *μύνη*, *ἐρυθρός* by the side of

proves to represent the oldest form of the verb), and out of the resulting *ἔδρακε* or *πθών* grew *ἔδρακε* and *παθών*. The corresponding Swarabhakti vowel in Teutonic is *u* (cfer. *ἑκατόν*, *i.e.* *ἑκατόν* for *ἑκτόν*, and Gothic *hund* (our *hundred*), *ἄρκτος*, and Gothic *vulfs*, *-ματός* and Gothic participial *-munds*). According to the Indian grammarians the Sanskrit *ṛi* =  $\frac{1}{4} a + \frac{1}{2} r + \frac{1}{4} a$  (Greek *ῥῖ*).

<sup>1</sup> "Beiträge zur Kenntniss der Sicilianischen Mundart," p. 154.



*ruber*, ὀρέγω by the side of *rego*. Even the digamma may perhaps take the prefix as in the Homeric ἔεδνον. But it is probable that no other single consonant does so, the apparent exceptions being really explained by the loss of a consonant which once existed along with the one that is left. Ὀκέλλω, for instance, presupposes ὀ-κFέλλω (Latin *pellere*), Ἀπόλλων presupposes A-κFολίων, "the son of the revolving one" (Sanskrit *char*, Greek πέλομαι). In other cases we are dealing not with a prothetic vowel, but with a part of the primitive root : ὄνομα, for example, is shown by the Irish *ainm* and Old Prussian *emnes* to be more original than the Sanskrit *nāmā* or the Latin *nomen*, and to stand for an earlier *an-man* ; and ὄνυξ, the Latin *unguis*, the Irish *inga*, is earlier in form than the Sanskrit *nakha* and the English *nail* (*nagel*)<sup>1</sup>. We may discover a tendency in Greek to adapt the prothetic vowel to that of the root, though it is hardly so regular as in Zend roots beginning with *r*, where we find *i-rith* for *rith*, but *u-rud* for *rud*. Sanskrit, like Latin, shows an inclination rather to drop initial vowels than to add them, but even in Sanskrit, Curtius has pointed out<sup>2</sup> the Vedic *i-raj-yāmi* from *raj* (*rego*) and *i-radh*, "to seek to obtain," from *rādhi*. As for the loss of a vowel, it is too familiar to every one to need any illustration.

More akin to metathesis is epenthesis, which closely resembles the Teutonic *umlaut*. Epenthesis is especially plentiful in Greek, where κτέν-γω becomes κτείνω, χερ-ίων χεῖρων, λόγοςσι λόγεις, ἔλαν-Γω ἐλαύνω, νερFον νεῦρον. Probably λέγει

<sup>1</sup> See Joh. Schmidt : "Ueber Metathesis von Nasalen," in Kuhn's "Zeitschrift," xxiii. pp. 266-302 (1877).

<sup>2</sup> "Grundzüge" (2nd edition), p. 650.

for λεγειτ is to be explained as resulting from the epenthesis of *i* (λεγειτ for λεγετι), just as λέγεις stands for an earlier λεγεσι. Epenthesis thus presupposes a mouillation or labialization in which the articulation of the consonant is absorbed, as it were, by that of the *i* and *u*. The greater the participation of the lips and tongue in the formation of these vowels, the greater will be the tendency towards epenthesis.

Lastly, we have to consider the lengthening of vowels, either by way of compensation or before certain consonants. By compensation is meant the additional force with which a vowel is pronounced after the loss of a consonant which followed or preceded it. Thus in Greek the loss of the digamma in βασιλεῖς-ος produced the Ionic βασιλῆος on the one side and the Attic βασίλειος on the other, just as the loss of the *god* in πολυ-ος similarly produced πολῆος and πόλειος. So, too, πᾶνς became πᾶς, δαίμωνς δαίμων, ἔφην-σα ἔφηναι, *rĕs-mus rĕnnus, pĕds pĕs, exāgmen exāmen, māgior mājor*. In certain cases the vowel was raised into a diphthong, as in φέρουσι for φεροντι, τιθείς for τιθεις, ἔστειλα for ἔστελσα. But a vowel may also be lengthened before liquids, nasals, and spirants when combined with another consonant. If the grave or the circumflex accent fall upon the preceding vowel, the tendency is to lengthen the vowel at the expense of the sonant or spirant following. Hence it is, that whereas in our English *tint*, or *hilt*, where the vowel has the acute, the nasal and liquid are long; in *kind* and *mild*, on the other hand, where the vowel is circumflexed, it is the vowel (or rather the diphthong) that is long. The vowel, again, may be lengthened to compensate for the loss of a double letter.

Thus in Latin we find *vīlicus* by the side of *villicus*, from *villa*, and whereas the grammarians lay down that when *ll* is followed by *i*, single *l* must be written, we find *millia* in the famous inscription of Ancyra. So, too, the inscriptions vary between *Amulius* and *Amullius*, *Polio* and *Pollio*, and good MSS. have *loquella*, *medella*, instead of *loquēla*, *medēla*.

There is another fact to be remembered when we are looking for the application of Grimm's law—a fact which the law itself ought to bring to our minds. Different languages have different phonetic tendencies; the same sound is not equally affected by phonetic decay in two different dialects or modified in the same way; each language has phonetic laws and phænomena peculiar to itself. Thus, in Greek,  $\sigma$  between two vowels is lost, in Latin it becomes *r*; in Greek a nasal preserves, or perhaps introduces, the vowel *a*, in Latin it prefers the vowel *e*. Because  $\tau$  between vowels becomes  $\sigma$  in Greek, or *sr* in Latin is changed into *br* (as in *cerebrum* for *ccres-rum*, κέρας, 'siras), we are not justified in expecting similar changes in other tongues. In fact we have only to look at the table of sound-changes, known as Grimm's law, to see that it is just because two languages do not follow the same course of phonetic modification that a scientific philology is possible.

To speak of Grimm's law being "suspended," of "exceptions to Grimm's law," and the like, is only to show an ignorance of the principles of comparative philology. Grimm's law is simply the statement of certain observed phonetic facts, which happen invariably, *so far as we know*, unless interfered with by other facts which, under

given conditions, equally happen invariably. The accidental has little place in phonology, at all events in an illiterate and uncultivated age. Literature and education are no doubt disturbing forces : a writer may borrow a word without modifying its sound according to rule ; and the word may be adopted into the common speech through the agency of the schoolmaster ; but such words are mere aliens and strangers, never truly naturalized in their new home, and the philologist must treat them as such. Native words, as well as words which, though borrowed from abroad, have been borrowed by the people and so given a native stamp, undergo, and must undergo, all those changes and shiftings of sound which meet us in Grimm's law, in the phonetic laws peculiar to individual languages, or in any other of the generalizations under which we sum up the phænomena of spoken utterance. False analogy, it is true, may divert a word from the path it would naturally have taken ; one word may be assimilated to another regardless of its real etymology, or words whose real origin has been forgotten may be modified so as to convey a new meaning to the speaker. But, in such cases, the worst that could happen would be the loss of the true etymology ; Grimm's law would still hold good, and the originals of the existing sounds would be those demanded by the regular *Lautverschiebung*. So far as the present form of a word like *Shotover* (for *château vert*) is concerned, it is to the mere phonologist, as to the ordinary speaker, a compound of *shot* and *over*, and in comparing these two words with allied words in other languages the prescribed letter-change holds good. It is only the comparative philologist, who has to deal

with the psychological as well as with the phonetic side of language, that needs to know more, and to determine that *Shotover* is not what it professes to be, but the product of a more or less conscious imagination. In most cases of analogy we have to do with mental as opposed to phonetic assimilation, and they fall, therefore, under sematology, the science of meanings, rather than under phonology, the science of sounds. No doubt we find instances of analogy, like the Greek accusative  $\beta\epsilon\beta\alpha\tilde{\omega}\tau\alpha$ , modelled after the nominative  $\beta\epsilon\beta\alpha\acute{\omega}\varsigma$ ,<sup>1</sup> or the Latin genitives *dici*, *dierum*, modelled after the accusative *diam* for *diam*, but such instances fall under the laws and conditions of that phonetic assimilation which has been already described. Let us hold fast to the fact that the generalizations, the chief of which are summed up in the formula known as Grimm's law, are at once uniform and unvarying. If an etymology is suggested, which violates these generalizations, that etymology must be rejected, however plausible or attractive. It is upon the fixed character of these generalizations that the whole fabric of scientific philology rests.

Necessarily similar generalizations may be made in the case of other languages which, like the Aryan, can be grouped into single families of speech; nay, they must be made before we are justified in grouping them together, or in comparing and explaining their grammar and vocabulary. It is not always, however, that the changes of sound are so marked and violent as in the Indo-European. A group of allied languages may be as closely related to one another as the modern Romanic dialects of Europe,

<sup>1</sup> Brugman in Kuhn's "Zeitschrift," xxiv. p. 81 (1878).

and various causes may have combined to give a stability and fixity to their phonology which has made it change but slightly in the course of centuries. This is the case with the Semitic dialects, whose laws of sound-change are extremely simple. Practically the sound shiftings are confined to the sibilants, where the equivalence of sounds is as follows:—

Assyrian.	Hebrew.	Ethiopic.	Arabic.	Aramaic.
<i>s</i> ( <i>sh</i> )	<i>s</i> ( <i>sh</i> )	<i>s</i> , 's	<i>sh</i> , <i>s</i> , <i>th</i>	's, <i>s</i> , <i>th</i>
's	's	<i>s</i> , 's	<i>s</i> , <i>sh</i>	's
<i>ts</i>	<i>ts</i>	<i>ts</i>	<i>ts</i> , <i>ds</i> , <i>dhs</i>	<i>ts</i> , <i>dh</i> , 'e
<i>z</i>	<i>z</i>	<i>z</i>	<i>z</i> , <i>dh</i>	<i>z</i> , <i>d</i> <sup>1</sup>

One or two other general laws of phonetic change may be laid down for special members of the Semitic group; thus, in Assyrian, *s* before a dental becomes *l*, and *kh* is dropped when it answers to the Arabic and Ethiopic weak *kħ*. In the Babylonian dialect, again, *k* took the place of *g*, and the *n* of the other dialects is sometimes replaced by *r* in Aramaic.

<sup>1</sup> Recent researches seem to have shown that the parent-Semitic possessed two dentals, which may be written *t* and *d*, and are represented in Arabic by *th* and *dh* (ð), and in Assyrian, Hebrew, and Ethiopic by *s* (*sh*) and *z*. Consequently the table of sound-shiftings will be—

Parent-Semitic.	Arabic.	Assyrian.	Hebrew.	Ethiopic.	Aramaic.
<i>t</i>	<i>th</i>	<i>s</i>	<i>sh</i>	<i>s</i>	<i>th</i>
<i>d</i>	<i>dh</i>	<i>z</i>	<i>z</i>	<i>z</i>	<i>d</i>
<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i>	<i>t</i> ( <i>th</i> )
<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>	<i>d</i>
<i>sh</i>	<i>s</i>	<i>s</i>	<i>sh</i>	<i>s</i>	<i>s</i>
<i>s</i>	<i>sh</i>	<i>s</i>	<i>s</i>	<i>sh</i>	<i>sh</i>
's	<i>s</i>	's	's	<i>s</i>	<i>sh</i>

But the Semitic idioms are dialects rather than languages, so intimate is the connection between them, so slight the differences by which they are separated. It is quite otherwise if we turn to a group like the Malayo-Polynesian, where the word *oran*, "man," may be represented in the different dialects by *rang*, *olan*, *lan*, *ala*, *la*, *na*, *da*, and *ra*.<sup>1</sup> But here, too, the law of equivalence is fixed and determinate: the Samoan *s* is changed into *h* in Tongan and Maori, while the Maori *k* is dropped in Samoan.

Equally extensive is the series of changes undergone by sounds in the Ugro-Finnic tongues, and when the law of sound-shifting has been determined not only for the Ugro-Finnic division of the Turanian family, but for the whole Turanian family, comprising Turkish, Mongol, and Mandshu, we may expect it to include a far larger number of changes of sound than that summed up in Grimm's law. So far as the Ugro-Finnic dialects are concerned, M. de Ujfálvy, in continuance of the investigations of Riedl,<sup>2</sup> has been able to lay down the following rules for the phonetic permutations observable in these idioms: (1) The Finnish and Bulgar *k* becomes *k/h* in Ostiak, Vogul, and Old Magyár, and *h* in modern Magyár; (2) *k* = *ts*; (3) *k* or *g* = *s*, *z*, *ʃ*, *j*, *ts*, &c.; (4) Finnish *ks* = Votiak *hs* (earlier *ht*); (5) Finnish *kl*, *pl* = Lapp *vl*; (6) Medial Finnish *k* and *h* = Bulgar and Ugrian *v* and *f*; (7) Initial Finnish *h* disappears in Livonian and Lapp (in Lapp also becomes *v* before a dental); (8) Finnish *h* = *s*, *ʃ*, *ts*, *sy*, *ts* (*c*), *z*, *tsy*, &c.; (9)

<sup>1</sup> Logan: "Indian Archipelago," iii. p. 665.

<sup>2</sup> "Magyarische Grammatik" (1858).



Finnish and Bulgar *k, g, h* = Lapp and Ostiak *ng, n* = Magyar *g*; (10) Medial Finnish *nk* = Lapp *gg*; (11) Finnish *nt* = Lapp *dd*; (12) *gy, ny = y, v*; (13) *t = s* (Finnish *t = s, s, sy, ts, z, z, z, &c.*); (14) Finnish *s, h* = Ostiak and Vogul *t*; (15) Finnish *p* = Votiak *b* = Magyar *b, f*; (16) Finnish *t* = Magyar *s, z, ts*; (17) Finnish *m* = Lapp *bm*; (18) Lapp *dn* = Finnish *nm* or *n*; (19) Finnish *mb* = Lapp *bb*; (20) Finnish *kk, tt, pp* = Vêpse and Livonian *k, t, p*; (21) Finnish *k, t, p* = Vêpse and Livonian *g, d, b*. This list of phonetic equivalents will make it clear that the original phonology of the Ugro-Finnic group is generally best represented by Suomi or Finnish; in some cases, however, Vêpse (or Tchude) is more archaic than Finnish, and in one case, that of the change of *t* into *s*, Ostiak and Vogul are more primitive than Suomi. Vêpse, again, shows that the long vowels of Suomi are due to contraction. Within Suomi itself *kk, tt, and pp*, after a liquid are softened into simple *k, t, and p*. The diphthongal consonants of Magyar (*ly, my, ty, &c.*), are the result of a contraction of a consonant and a vowel or diphthong following. The changes undergone by sounds within the Ugro-Finnic group may be summed up as a whole in the two formulæ: (1) The Finnish hard explosives are represented by soft explosives in the other languages of the group; (2) spirants, and the sounds derived from them, answer in the allied dialects to the explosives of Finnish. As for the Samoied idioms, similar phonetic permutations may be discovered in them also. In the Yurak dialect *h = s, ng = nr*, and *k = ts*; in Tavghi *k* and *t* tend to become *g* and *d*; in Yenissei *dd = md (nt, nd, ntt, ltt), gg = rk (rg)* or *nk*, and

*tt=bt*, while in Ostiak-Samoied and Kamassinche the hard explosives pass into the soft *g, d, b*.<sup>1</sup>

Quite as regular as the permutations of sounds in the Finnic group is the law of sound-change discovered by Bleek to exist in the Bâ-ntu or Kafir family. The following table gives it for the principal members of the group :—

Kafir.	Se-tshuana.	Herero.	Ki-suahili.	Ki-nika.	Mpongwe.	Bunda.
<i>k</i>	<i>kh, h</i>	<i>k</i>	<i>k, g</i>	<i>k, g</i>	<i>k, g</i>	<i>k</i>
<i>ng</i>	<i>k</i>	<i>ng</i>	<i>ng</i>	<i>ng</i>	<i>ng</i>	<i>ng</i>
<i>t</i>	<i>r, s</i>	<i>t</i>	<i>t</i>	<i>h</i>	<i>r, ty</i>	<i>t</i>
<i>d</i>	<i>l, r</i>	<i>t</i>	<i>nd</i>	<i>nd</i>	<i>nd, l</i>	<i>nd, r</i>
<i>p</i>	<i>p, f, h</i>	<i>p</i>	<i>p</i>	<i>v, h</i>	<i>v</i>	<i>b</i>
<i>b</i>	<i>b, p</i>	<i>v</i>	<i>'b, w</i>	<i>b, 'v</i>	<i>v</i>	
<i>s</i>	<i>ts, s</i>	<i>t, ty</i>	<i>s, k</i>	<i>s, dz</i>	<i>z, k, 'v</i>	<i>s, k</i>
<i>z</i>	<i>ts, l, r</i>	<i>z, h</i>	<i>z, dz</i>	<i>z, ts</i>	<i>dz, g, s</i>	<i>sh, g</i>
<i>f</i>	<i>f, h, s</i>	<i>s</i>	<i>f</i>	<i>f</i>	<i>w</i>	<i>f</i>
<i>v</i>	<i>b, r</i>	<i>s</i>	<i>f</i>	<i>f</i>	—	<i>f</i>
<i>l</i>	<i>l, r</i>	<i>r</i>	<i>l</i>	<i>r, l</i>	<i>l, nl</i>	<i>l</i>
<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>	<i>m</i>

The Bâ-ntu law of sound-shifting has the advantage over its Aryan analogue, that it deals with actually existing sounds which can still be heard and noted by the scientifically trained ear, whereas many of the Aryan languages and sounds recorded in Grimm's law are now extinct. The Aryan philologist, accordingly, has to assume that the spelling of Sanskrit, Greek, Latin, and Gothic words is a fair approximation to their pronunciation. It is upon this assumption that the whole fabric of historical grammar is built; nay, comparative philology itself, which began with the comparison of allied forms

<sup>1</sup> De Ujfálvy, in the "Revue de Philologie et d'Ethnographie," i. 1, pp. 20-50.

and words in the classical languages of India and Europe, is also based upon it. The assumption offers little difficulty to the Italian, whose spelling accurately represents his pronunciation, or to the German, who writes pretty much as he speaks; but it need not be pointed out how strange and unnatural it seems to the Englishman. English spelling, under the guidance of the printers, has become a mere system of marks and symbols, arranged upon no principle, selected with no rational purpose, each of which by a separate effort of the memory is associated with some sound or word.

For the scientific philologist, no less than for the practical teacher, a return to the phonetic spelling of our English language is of the highest importance. What the philologist wishes to know is not how words are spelt, but how they are pronounced, and this end can be obtained only by means of an alphabet in which all the chief sounds of the language are represented, and each character represents but one sound. No doubt the practical man does not want the alphabet required by the phonologist, who must denote every shade of sound and have separate symbols for the sounds heard not in English only, but in other languages as well, but the alphabet of the practical man should be based on that of the phonologist. The reformed alphabet should be one which would enable the child or the foreigner to recognize at once the sound of the word he is reading, and the philologist to determine the pronunciation of the writer.

Thanks to Messrs. Ellis, Pitman, and others, the question of reforming our English spelling has not only been brought before the public, but the conditions under

which it is practicable have been discussed and ascertained, and the merits of rival schemes put to the test. The sounds of the English language have been analyzed, and the great work of Mr. A. J. Ellis on the "History of English Pronunciation" has shown how our absurd and anomalous spelling grew up. At the present time we have in the field the phonology of Mr. Pitman—an alphabet of thirty-eight letters—a large proportion of which have new forms; the palæotype and glossic of Mr. Ellis, the former retaining the type now used by the printers, but enlarging the alphabet by turning the letters, and similar devices, the latter by its likeness to the present spelling intended to bridge over the passage from the present or "Nomic" mode of spelling to the reformed one; the narrow and the broad Romic of Mr. Sweet, the second an adaptation of the first to practical use; the ingenious system of Mr. E. Jones, which by the employment of optional letters for the same sound contrives to introduce little *apparent* difference in the spelling of English words; and several other English and American systems that have been proposed, more especially the reformed alphabet of the American Philological Association, together with the transitional alphabet intended to lead on to it. Some of these are true phonetic alphabets, words spelt in them varying according to the pronunciation of the writer, others are merely attempts to reform the present spelling of English words by making it more consistent, and bringing it more into harmony with their actual pronunciation. Such attempts would only substitute a less objectionable mode of spelling for the existing one, a mode of spelling, too, that

would in course of time become as stereotyped and far removed from the pronunciation of the day as is the present system. With such attempts, therefore, the scientific philologist can have but little sympathy; his efforts must rather be directed towards the establishment of a phonetic alphabet, based on a thorough analysis of English sounds and conformed to practical requirements.

The question of spelling reform is nothing new. Mr. Ellis has brought to light a MS. written in 1551 by John Hart of Chester, and entitled "The Opening of the unreasonable writing of our inglish tounge: wherin is shewed what necessarili is to be left, and what folowed for the perfect writing therof." This the author followed up by a published work in 1569, called "An Orthographic, conteyning the due order and reason, howe to write or painte thimage of mannes voice, most like to the life or nature."<sup>1</sup> The object of this, he says, "is to vse as many letters in our writing, as we doe voyces or breathes in our speaking, and no more; and neuer to abuse one for another, and to write as we speake." Hart, however, it would seem, tried to amend the pronunciation as well as the spelling of English. The year before (1568) Sir Thomas Smith, Secretary of State in 1548, and successor of Burleigh, had published at the famous press of Robert Stephens in Paris, a work, "De recta et emendata linguæ anglicæ scriptione, dialogus." In this he had suggested a reformed alphabet of thirty-four characters, *c* being used for *ch*, *ð* for *th* (in *then*), and *θ* for *th* (in *think*), long vowels being indicated by a diæresis. In 1580 came another book in black letter on the same

<sup>1</sup> Reprinted by I. Pitman in 1850.

subject, by William Bullokar. His alphabet consisted of thirty-seven letters, most of which have duplicate forms, and in which *c'*, *g'*, and *v'*, represent *s*, *j*, and *v*. He composed a primer and a short pamphlet in the orthography he advocated. In 1619, Dr. Gill, head-master of St. Paul's School, published his "*Logonomia Anglica*," which was quickly followed by a second edition in 1621. His alphabet contained forty characters, and, as might be expected from his position, his attempt to reform English spelling was a more scholarly one than those of his predecessors. He found a rival in the Rev. Charles Butler, an M.A. of Magdalen College, Oxford, who brought out at Oxford, in 1633, "*The English Grammar, or the Institution of Letters, Syllables, and Words in the English Tongue*." He printed this phonetically, according to his own system, as well as another book, "*The Feminine Monarchy or History of the Bees*" (Oxford, 1634). "These," says Mr. Ellis, "are the first English books entirely printed phonetically, as only half of Hart's was so presented. But Meigret's works were long anterior in French." Butler represents the final *e* mute by *'*. In 1668 Bishop Wilkins published his great work, the "*Essay towards a Real Character and a Philosophical Language*." In this he has a good treatise on phonetics, in which he probably made use of an important work on the physiological nature of sounds, brought out by John Wallis, Savilian Professor of Geometry at Oxford, in 1653;<sup>1</sup> and he has transcribed the Lord's Prayer and

<sup>1</sup> The "*Grammatica Linguæ Anglicanæ*," to which is prefixed a treatise "*De Sonorum omnium loquelarium formatione: Tractatus Grammatico-physicus*."

Creed in his phonetic alphabet of thirty-seven letters. After Bishop Wilkins the matter rested for a while; but in 1711 the question of reforming English spelling was once more raised, this time, however, in a practical direction. Dean Swift appealed to the Prime Minister to appoint a commission for "the Ascertaining, Correcting, and Improving of the English Tongue."<sup>1</sup> His appeal, however, was without effect; and the next to apply himself to the subject was Benjamin Franklin, who, in 1768, put forth "A Scheme for a New Alphabet and reformed mode of Spelling, with Remarks and Examples concerning the same, and an Enquiry into its Uses." Franklin embodied his views in a letter to Miss Stephenson (dated September 20th, 1768), written in his phonetic alphabet, and intended to meet objections to the proposed reform. It is curious to find the wholly mistaken objection already put forward that "all our etymologies would be lost" by a reform of spelling.

But spelling reformers have not been confined to England. Ninety years ago a reform of Dutch spelling was successfully carried out, though the result was unsatisfactory, as might have been expected from the ignorance of phonology that existed at the time. Spanish spelling has recently undergone revision on the part of the Academy; and even German, which seems to the Englishman so far advanced on the road towards perfection, is in process of reformation. The work was begun by Schleicher, who not only struck out the aphonic *h* and other useless letters, but even emulated the Emperor Claudius by inventing a new character. A committee

<sup>1</sup> Swift's "Works," ix. pp. 137-139 (edit. Sir W. Scott).



was lately appointed by the Minister of Education to decide upon such changes of spelling as seemed to them desirable, and a thorough-going system of reform, with a new alphabet, like that of Mr. Pitman, has been inaugurated through the exertions of Dr. Frikke and others.<sup>1</sup>

Of scientific alphabets, also, the phonologist has now his choice. Putting aside Melville Bell's "Visible Speech," in which each character symbolizes by lines the action of the vocal organs in forming the sound it represents, the best are the well-known "Standard" and "Missionary Alphabets" of Lepsius and Max Müller, the alphabets of Ellis and Prince L-L. Bonaparte, and the alphabet of Sweet. Max Müller's alphabet is founded on that of Sir W. Jones, and he brings with justice the charge against Lepsius's "Standard Alphabet" that its physiological analysis is sometimes wrong, and that many of its characters have been found too complicated for use. Sweet's alphabet has the advantage of avoiding new type, of having special signs for voice and whisper, for quantity and stress, force, pitch, and glide, and of indicating by a full stop the place of a "force-impulse." Prince L-L. Bonaparte's alphabet, however, as edited by Ellis, is the most complete; indeed, out of his 385 characters, there occur a few which have not been detected in any known language. The two last alphabets will be found in the Appendix to the present chapter.

It is possible that the phonograph may hereafter assist us in constructing a more perfect alphabet than is now

<sup>1</sup> The monthly journal of these reformers, published at Bremen, is entitled: "Reform. Zeitschrift des allgemeinen Vereins zur Einführung einer vereinfachten deutschen Rechtschreibung."

possible. Just as Melville Bell's letters have a physiological origin, so the letters of the alphabet of the future may be derived from the forms assumed by sounds on the sensitive plate of the phonograph. The phonautograph had already informed us that every sound we utter has a distinct shape and pattern; it only remained to apply this fact practically by the invention of the phonograph.

The phonautograph as constructed by Barlow, Léon Scott, and König, is made to record the sounds of the human voice by the help either of a pencil or of a gas-flame. The pencil is set in motion by a thin membrane, against which sounds and words are spoken, and draws on a cylinder covered with sand the curves which delineate the sounds uttered. When a gas-flame is employed, the forms assumed by it take the place of those drawn on the sand. In Edison's phonograph the fact that the form of every sound can thus be imprinted on a tangible substance has been utilized for the reproduction of speech. A plate of tin-foil is folded round a revolving cylinder indented from one end to the other with a spiral groove. As the cylinder revolves the groove is kept constantly beneath a needle, which is attached to a membrane or sounding-board, against which the voice is impinged through a conical aperture: with each sound that is uttered the needle presses the tin-foil into the furrow below, imprinting upon it at the same time the form of the sound. By reversing the process the needle is made to travel once more over the indented tin-foil, and the sounding-board being thus set in motion reproduces the sounds originally spoken. Before the tin-foil is thus

reduced to its original smoothness, a cast of it may be taken, and at any subsequent period another piece of tin-foil may receive the impression of the cast, and so reproduce the words which first caused the indentations. It is needless to point out the assistance which the phonograph is likely to render to phonology. It is still, of course, new and faulty, and unable, for instance, to reproduce sibilants; but it cannot fail to be improved and become almost as perfect a speaking-machine as the human throat itself. Already it has contributed some facts of importance to phonetic science. Thus we find that all sounds may be reproduced backwards by simply beginning with the last forms indented on the tin-foil, *sociability*, for example, becoming *ytilibaishos*. Diphthongs and double consonants may be reversed with equal clearness and precision, so that *bite*, which the phonograph pronounces *bâ-ect*, becomes *tee-âb*. In this way we have learnt that the *ch* of *cheque* is really a double letter, the reversed pronunciation of the word being *kesht*.

The problem of reproducing human speech has thus been approached more successfully from the physical and acoustic side than from the physiological side, where it was attacked by Faber, Kempelen, and others. They attempted to construct instruments in which the vocal organs could be represented with the greatest exactness attainable, the lungs being replaced by a pair of bellows, the trachea by a hollow tube, and so on. But though these instruments spoke, it was not in human speech, or anything like it. The utmost they could do was to imitate the first utterances of a child, or the imperfect and laboured syllables of one who is learning a foreign tongue.

Nevertheless, it is not in the organs of the human voice any more than in the mechanism of a lifeless instrument that we have to discover the source and creator of speech. All that the vocal organs can do is to supply the skeleton into which the mind breathes the breath of life. Unmeaning sounds do not constitute language : until a signification has been put into them, the sounds that have been described and analyzed are no better than the singing of the birds, the stirring of the trees, or even the dead utterances of a machine. Phonology, like anatomy, deals only with the dry bones which have yet to be clothed upon with living flesh.

But by its very nature a science of meanings, sematology, as it has been named, can never have the same certitude, the same exactness, as a science of sounds. The laws of sematology are far less distinct and invariable ; significant change cannot be reduced to the same set of fixed rules as phonetic change. The phenomena with which sematology deals are too complicated, too dependent on psychological conditions ; the element of chance or conscious exertion of will seems to enter into them, and it is often left to the arbitrary choice of an individual to determine the change of meaning to be undergone by a word. Still this meaning must be accepted by the community before it can become part of language ; unless it is so accepted it will remain a mere literary curiosity in the pages of a technical dictionary. And since its acceptance by the community is due to general causes, influencing many minds alike, it is possible to analyze and formulate these causes, in fact, to refer significant change to certain definite principles, to bring

it under certain definite generalizations. Moreover, it must be remembered that the ideas suggested by most words are what Locke calls "mixed modes." A word like *just* or *beauty* is but a shorthand note suggesting a number of ideas more or less associated with one another. But the ideas associated with it in one mind cannot be exactly those associated with it in another; to one man it suggests what it does not to another. So long as we move in a society subjected to the same social influences and education as ourselves we do not readily perceive the fact, since the leading ideas called up by the word will be alike for all; but it is quite otherwise when we come to deal with those whose education has been imperfect as compared with our own. A young speaker often imagines that he makes himself intelligible to an uneducated audience by using short and homely words; unless he also suits his ideas to theirs, he will be no better understood than if he spoke in the purest Johnsonese. If we are suddenly brought into contact with experts in a subject we have not studied, or dip into a book on an unfamiliar branch of knowledge, we seem to be listening to the meaningless sounds of a foreign tongue. The words used may not be technical words; but familiar words and expressions will bear senses and suggest ideas to those who use them which they will not bear to us. It is impossible to convey in a translation all that is meant by the original writer. We may say that the French *juste* answers to the English *just*, and so it does in a rough way; but the train of thoughts associated with *juste* is not that associated with *just*, and the true meaning of a passage may often depend more on

the associated thoughts than on the leading idea itself. Nearly every word, in fact, may be described as a complex of ideas which is not the same in the minds of any two individuals, its general meaning lying in the common ideas attached to it by all the members of a particular society. The significations, therefore, with which the comparative philologist has to concern himself, are those unconsciously agreed upon by a body of men, or rather the common group of ideas suggested by a word to all of them alike. Here, again, some general causes must be at work which may yet be revealed by a careful analysis. The comparative philologist has not to trouble himself, like the classical philologist, with discovering the exact ideas connected with a word by some individual author; it is the meaning of words as they are used in current speech, not as they illustrate the idiosyncrasies of a writer, which it is his province to investigate.

“The genealogies of words,” says Pott,<sup>1</sup> “are the genealogies of concepts.” As in phonology we have the growth or decay of sounds, so in sematology we have the growth or decay of ideas. The three principles of linguistic change, imitation, emphasis and laziness, are incessantly at work on the meanings as well as upon the sounds of words. Analogy is ever lending them new senses, and the metaphorical senses may come to be used to the utter forgetfulness of the original one. The Latin who spoke of his “mind” or “soul” as *animus* had altogether forgotten that at the outset *animus* was merely the “wind” or “breath.” Here analogy or

<sup>1</sup> “Etymologische Forschungen,” v. p. xxii.

imitation is helped by laziness, which makes us forget a little-used meaning. *Impertinent* has almost lost its prior and proper signification, and our children will have to seek it in the records of an obsolescent literature. But a dead meaning may again rise to life ; the early meaning of a word, whether recovered from books or from the fresh spring of a local dialect, may once more impress itself upon a community anxious to emphasize and mark out an idea by an unfamiliar term.

Professor Whitney<sup>1</sup> has summed up significant change under the two heads of specialization of general terms and generalization of special terms, but a more thorough-going attempt to determine its laws and distinguish its causes has been made by Pott.<sup>2</sup> First of all, he points out, words may be more accurately defined either by widening or by narrowing their signification. While in the Neo-Latin languages *caballus*, "a nag," has taken the wider meaning of "horse" in general, under the form of *cavallo* or *cheval*, the modern Greek *ἄλογον* is no longer the "irrational beast," but is narrowed into the specific sense of "horse." Like our *deer*, which once meant "wild animals" generally (German *thier*), so *emere* has narrowed its primary signification of "taking" into the special one of "buying." But, on the other hand, when we speak of "going to town," it is not "town" in general or any town whatsoever that is meant, but London alone.

Then, secondly, there is metaphor, with its ceaseless play upon speech. Language is the treasure-house of

<sup>1</sup> "Language and the Study of Language," p. 106.

<sup>2</sup> See his "Etymologische Forschungen," v. i., Introd. (2nd edition).



worn-out similes, a living testimony to the instinct of man to find likeness and resemblance in all he sees. The Tasmanians, who had no general terms, had yet the power of seeing resemblances between things: though they could not form the concept "round," they said "like the moon" or some other round object. All the words which have a spiritual or moral meaning go back to a purely sensuous origin: *Divus, Deus, Dieu* was once "the bright sky;" *soul* was nothing but the "heaving" sea. It is only by likening such ideas to the objects of sense that we can imagine them at all, or convey a hint of our meaning to others. The vocabulary of a language on its significant side grows by metaphor and analogy. We have only to take a word like *post*, once the Latin *positum*, "what is fixed" or "placed," and trace it through its many derived meanings of "stake," "position," "office," "station," "public medium of correspondence," and "receptacle for letters," to see how endless are the shades of colour which a single word may catch from those with which it is associated. To know the idioms of a language and the conditions under which its speakers live, is often to know the history of the changes in signification undergone by its vocabulary. The mere expression "send to the post" gave to the word *post* its last meaning of a building in which letters are deposited and sorted, and the conditions of schoolboy life are a clue to many of the metaphorical uses of words which bear quite another meaning in school life from what they do in ordinary language. Where else but in a country of examinations could "pass" signify to go through an examination with success? Each craft, each industry has its own store of

technical words, many of which are merely words in common use employed in particular senses intelligible only to those who belong to it.

Words, thirdly, will vary in meaning according to their application to persons or things, to what is good or bad, great or small. What a difference there is, for instance, between a "beautiful woman" and a "beautiful picture," "a fine day" and "a fine fellow." *Silly*, again, is simply the German *selig*, "blessed," and such is still its meaning in Spenser's "silly sheep;" but in modern English it has long lost its favourable sense, and is used only in an unfavourable one. Diminutives, originally the symbols of affection, have in many cases become the symbols of contempt, while "childishness" is as much a compliment when applied to a child as it is the reverse when applied to a man.

In the fourth place, words change their signification according to their use as active or passive, as subjects or as objects. "The sight of a thing" has a very different meaning from "the enjoyment of a sight," as different, in fact, as is the meaning of *venerandus* when applied to the object of veneration or to his admirer. The passive has been evolved from the middle *τύπτομαι*, "I beat myself" passing gradually into "I am beaten." In English we may say indifferently "a matter is reflected," or "a matter reflects itself," after the usage of French. Similarly a neuter verb may be regarded as an active followed by the reflective pronoun; our "to be silent," or "to walk," for example, are the French "se taire," "se promener."

Fifthly, an idea may be expressed either by a com-

pound or periphrasis, or by a single word. The Latin *nepos* is the French *petit fils*, our "nephew" the French *quatre-vingt-dix*. The Taic languages of Further India preserve the primitive habit of denoting a new idea by comparing it with some other to which it stands in the relation of species to genus. Thus in Siamese "a heifer" is *lik nghoa*, "child (of a) bull;" "a lamb" is *lik-ké*, "child (of a) sheep," much as in English *inkstand* is "a stand for ink." It is only by comparison that an object can be known, its limits marked and determined; it is equally only by comparison that an idea can be defined and made intelligible. But when this has once been done, there is no longer any need of setting genus and species side by side in speech and thought; to do so is but a survival of the early machinery of language. The fact that the derivatives of the Aryan speaker are replaced by compounds, or rather antithetic words, in Taic, shows not only the mental superiority of the former, but also the fundamental contrast that exists between the two modes of thought. Collectives imply no small power of abstraction, and the collectives formed by antithesis in Taic are as much a proof of it as the existence of our "contentment" by the side of the Siamese *aróí chíí*, literally "pleasant heart."

In the sixth place, we must always keep steadily in view the relativity of ideas and of the words which denote them. The same word may be applied in a variety of senses, the particular sense which it bears being determined by the context. The manifold shades of meaning of which each word is capable, the different associations of ideas which it may excite, give rise to varieties of

signification which in course of time develop into distinct species. Hence come the idioms that form the characteristic feature of a dialect or language, and make exact translation into another language so impossible. Hence, too, that diversification of synonyms which causes words like *womanly* and *feminine* gradually to assume different meanings, and prevent us from saying "I am very obliged," or "I am much tired."

Seventhly and lastly, change of signification may follow in the wake of change of pronunciation or the introduction of new words. Phonetic decay may cause the old form of a word to be forgotten, and so allow it to assume the new meaning which has gradually been evolved out of its earlier one. This is the history of most of those inflections which can be traced back to independent words, such as the sign of the past tense in English, once the reduplicated perfect of *do*. The signification of *jeopardy* has travelled far from that of *jeu parti*, but preparation had first been made by the change of pronunciation. There are many myths and mythological beings which owe their existence to the same cause. It was not till Promêtheus had lost all resemblance in outward name to the *pramanthas* or "fire-machine" of India that he borrowed his attributes from *προμηθευμαι*, and became the wise benefactor of mankind, the gifted seer of the future, whose brother was Epimêtheus, or "Afterthought." It is the same with the legends that group themselves round the distorted name of a locality. The nose of brass or gilt which adorns Brasenose College at Oxford could never have come into existence until the old *Brasing-house* or "Brewery" had been transformed, and the

phœnix that stands in the centre of the Phœnix Park at Dublin, would have been impossible without the assistance of Saxon lips, which turned the Irish *fiou uisg* or "fine water" into *phœnix*. But change of pronunciation is especially serviceable in increasing the wealth of a language by producing two co-ordinate forms out of a single original one. In course of time the two forms assume different meanings, due to the different contexts in which they may be used, and when once all memory of the original identity has perished, the distinction of meaning becomes fixed and permanent, and tends to grow continually sharper. In the second century B.C. a Latin writer could still use *prior* as a neuter, *prios* or *prius* as a masculine; but a time soon came when *prior* was classed exclusively with other masculine nouns in *-or* or *-tor*, *prius* with neuter nouns like *genus*. So, again, the Latin infinitive active *amare* and the infinitive passive *amari* were at the outset one and the same—the dative singular of a verbal noun in *-s* (*amas-*), and one verb, *fiō*, the Greek  $\varphi\upsilon(i)\omega$ , continued to the last to preserve a recollection of the fact by the length of the final syllable in *feri* or *fiesci*, "to become." But the shortening of final syllables which characterizes Latin was early at work, and out of the dative *amasci* soon originated the two co-existing forms *amase* (*amare*) and *amasi* (*amari*). For a while they were used indifferently, but when the distinction that exists between the German *waren zu haben* and the English "were to be had" came to make itself felt, one form remained the property of the active, while the other was appropriated to the passive. But a consciousness of the origin of *amari* seems to have long

survived in the language, since there was a tendency to associate it more closely with the other forms of the passive voice by affixing to it the characteristic of the passive, *r* (*amarier*). What is here effected by the diversification of the same word, may also be effected by the diversification of two synonyms, one of which has come from abroad. Sometimes both may come from abroad, but at different times, the result being that whereas one of them has been naturalized in the language, the other is but the nurseling of a learned age. *Priest* and *presbyter*, for instance, have both descended from the same source, and were once identical in meaning. But not only may the old words of a dialect be thus affected by new comers, the foreign words may even succeed in destroying the native ones altogether. The same natural selection which has wellnigh extirpated many of the native plants of Central America in the presence of the imported cardoon, is also at work in language. Our Old English *sicker* has had to give way before *sure*, the Old French *sëur*, Provençal *segur*, Latin *securus*, and the Latin *equus* has been replaced in the Romanic dialects by *caballus*, "a nag." *Cabállus* is at once an example of the way in which the meaning of a word may be widened, and of the operation of natural selection in the field of speech.

The etymologist must keep before him the laws both of phonology and of sematology before he can venture to group words together and refer them to a common root. For the etymologist is not merely a historian, or student of historical grammar; above and beyond the words which can be traced back, step by step, to their early forms, by the help of contemporaneous records, there

are many more, the derivation of which has to be constructed much in the same way that a palæontologist reconstructs a fossil animal by the help of a single bone. The task is often a difficult and a delicate one, and the best trained scholars may sometimes fail. The result of false analogy may be regarded as an organic form, or a foreign word, conformed possibly to the genius of the language which has borrowed it, may be mistaken for a native. The præ-Aryan populations of Greece or of Britain must have left some remains of their languages in the vocabulary of Greek and Keltic, and Greek and Keltic words which have been counted as Aryan may, after all, be but aliens. Apart from these dangers, there is further the double one of assuming a connection between ideas which have nothing to do with one another, and of separating ideas which start from a common source. On the one hand, we are apt to judge of primitive man by ourselves, and to fancy that the ideas which we associate together were equally associated together by him. On the other hand, we have only to turn to the Ugrian idioms, with their greater transparency and openness to analysis to see the passage of one signification in a root into another of a wholly different kind, accompanied by a modification of the vowel. Thus *karyan* is "to ring," and "to lighten;" *kar-yun* and *kir-yun*, "to cry," but *kir-on*, "to curse;" *kah-isen*, *koh-isen*, *kuh-isen*, "to hit," "stamp;" *käh-isen*, *köh-isen*, "to roar;" *keh-isen*, *kih-isen*, "to boil."<sup>1</sup> We have here the same symbolization of a change of meaning by a change of vowel as in the Greek perfect  $\delta\acute{\epsilon}\delta\omega\kappa\alpha$  by the side of the present  $\delta\acute{\iota}\delta\omega\mu\iota$ .

<sup>1</sup> Donner: "Z. D. M. G.," xxvii. 4 (1873).



The four facts to be remembered in etymology are thus summarized by Professor Max Müller.<sup>1</sup> (1.) The same word takes different forms in different languages. Each language or dialect has its peculiar phonetic laws and tendencies; because a particular interchange of sounds takes place in one language it does not follow that it does so in another. In Greek, for instance, *s* between two vowels is lost, in Latin it becomes *r*. Our English *two* is the same word, so far as origin is concerned, as the German *zwei*, the Latin and Greek *duo*, the Sanskrit *dwi*; the English *silly* is the German *selig*, "blessed." As words are carried down the stream of time, they change in both outward form and inward meaning, and this change is in harmony with the physiological and psychological peculiarities of the particular people that uses them. (2.) The same word, again, takes different forms in one and the same language. *Brisk*, *frisky*, and *fresh* all come from the same fountain-head, and *bank* and *bench* are the differentiated forms of which *banquet* is the Romanized equivalent. So, too, in French *noël* and *natal* are but forms of the same word of different ages, like *naïf* and *native*, *chétif* and *captif*. Then (3) different words take the same form in different languages. The Greek *καλέω* and the English *call* have as little connection as the Latin *sanguis* and the Mongol *sengui*, "blood," or the modern Greek *mati* for ὀμμάτιον, and the Polynesian *mata*, "an eye." To compare words of different languages together because they agree in sound is to contravene all the principles of scientific philology; agreement of sound is the best possible proof of their want of connection,

<sup>1</sup> "Lectures," ii. pp. 268 *sq.* (8th edition).

since each language has its own phonology and consequently modifies the forms of words in a different fashion. The comparison even of roots is a dangerous process, not to be indulged in unless the grammar of the languages to which they belong has been shown to be of common origin. What we call roots are only the hypothetical types to which we can reduce the words of a certain group of tongues; they are, therefore, merely the expression of the phonetic laws common to all the members of the group. But it does not follow that the selected phonetic laws which all the members of a certain group of tongues have in common are the same as the phonetic laws of another language or another group. Roots, moreover, owing to their shortness, their vagueness, and their consequent simplicity, are necessarily limited in number, while the ideas they convey are so wide and general as to cover an almost infinite series of derived meanings; to say nothing of the probability that many of them are to be traced to imitations of natural sounds. (4.) Different words, in the fourth place, may take the same form in one and the same language. The French *feu*, "fire," is the Latin *focus*; *feu*, "late," the Low Latin *fuitus* (from *fui*). So too the English *page*, in the sense of a servant, comes ultimately from the Greek *παίδιον*, *page*, in the sense of a leaf of a book, from the Latin *pagina*. An arbitrary and antiquated spelling may often keep up a distinction between such words in writing when in speaking all distinction has long since disappeared. The French *sang*, *cent*, *sans*, *sent*, *s'en*, the English *sozv*, *sew*, *so*, are respectively pronounced in the same way. That no inconvenience would be caused by writing them in

the same way is shown not only by the fact that many words of similar sound but varying sense, such as *sound*, *box*, or *lie*, are not distinguished in writing, but also by the ease with which we can distinguish between them in conversation, although in conversation we are unable to dwell upon a word or view it by the light of the completed sentence, as is the case in reading. The scientific etymologist would welcome the accurate representation of sounds by symbols, his object is to know what sounds pass into others in the course of centuries, and this he can only ascertain when the spelling represents the pronunciation; the amateur etymologist had better leave the subject alone. Etymology is not a plaything for the amusement of the ignorant and untrained; it is a serious and difficult study, not to be attempted without much preparation and previous research. The etymologist must be thoroughly trained in the principles of scientific philology, he must have mastered both phonology and sematology, and he must be well acquainted with more than one of the languages with which he deals. Then and then only can his labours be fruitful; then, and then only will his work be a gain and not a hindrance. False etymologies stand in the way of true ones, and the charlatans who have brought the name of etymology into contempt have discredited the labours of better men. There is much in etymology which must always defy analysis, there is much which will have to be corrected hereafter, but this will matter little if we have once learnt the lesson that change of sound and meaning can only take place in accordance with fixed and invariable law. Etymology is but a means to an end, and that end is partly

the history of the development of thought and civilization as reflected in the fossil records of speech, partly the discovery and illustration of the laws which govern the shifting and decay of sounds and the modifications of sense.

## APPENDIX I. TO CHAPTER IV.

### THE VOCAL ORGANS OF ANIMALS.

COMPARATIVE anatomy is the foundation of modern physiology: to understand the human organism we must compare it with the organisms of the lower animals. This is as true of the organs of speech as of the organs of locomotion or sensation, and we shall find that, in spite of varying degrees of development, the vocal organs of both man and beast present a general resemblance to each other. Some of the quadrumana have large sacs between the thyroid cartilage and the *os hyoideum*, which have much to do with modifying and increasing the resonance of the voice. The laryngeal sacs possessed by some of the monkeys of Africa cause the acuteness of tone and hoarseness of cry that characterize them. The great intensity of the voice in the American "howlers" is due to the size of the epiglottis and the existence of large cavities in the thyroid cartilage and *os hyoideum* which communicate with the ventricles of the larynx and the laryngo-pharyngeal sacs. The bray of the ass has been traced to two large sacs existing between the vocal

chords and the inner surface of the thyroid cartilage. Some of the marsupials, such as the kangaroo, have membranous vocal chords which stretch upon themselves and so cannot be stretched by the arytenoid muscles. A few of the mammalia, *e.g.* the giraffe, the porcupine, and the armadillo, have no vocal chords, and are therefore mute. This is also the case with the cetacea, the bel-  
lowing of the whale being produced by the expulsion of water through the nostrils during the act of expiration.

Birds possess a superior larynx which differs considerably from that of the mammalia, and has nothing to do with the production of sound. Below this is the inferior larynx at the lower end of the trachea, just before it bifurcates into the two bronchi. This is the organ of voice, and differs a good deal, both in form and structure, in the several species of birds. It is double, except in the parrot and a few other birds, and is almost always symmetrical. It is composed of the lower rings of the trachea united so as to form a tube, at the lower end of which are two protuberances, one in front of the other, and joined together in most birds by a thin rod of bone (the *os transversale*). To the upper edge of this bone is attached a delicate membrane (the *membrana semilunaris*), which is turned upwards, and to the lower edge another membrane (the *membrana tympaniformis*), formed of the membranous wall of the bronchus. The latter membrane is highly developed in singing birds, and still more so in speaking birds, and it can render the first-mentioned membrane (with which it is connected) tense when made to vibrate. In some birds the inferior larynx has as many as five muscles, in others none. It is wanting altogether in

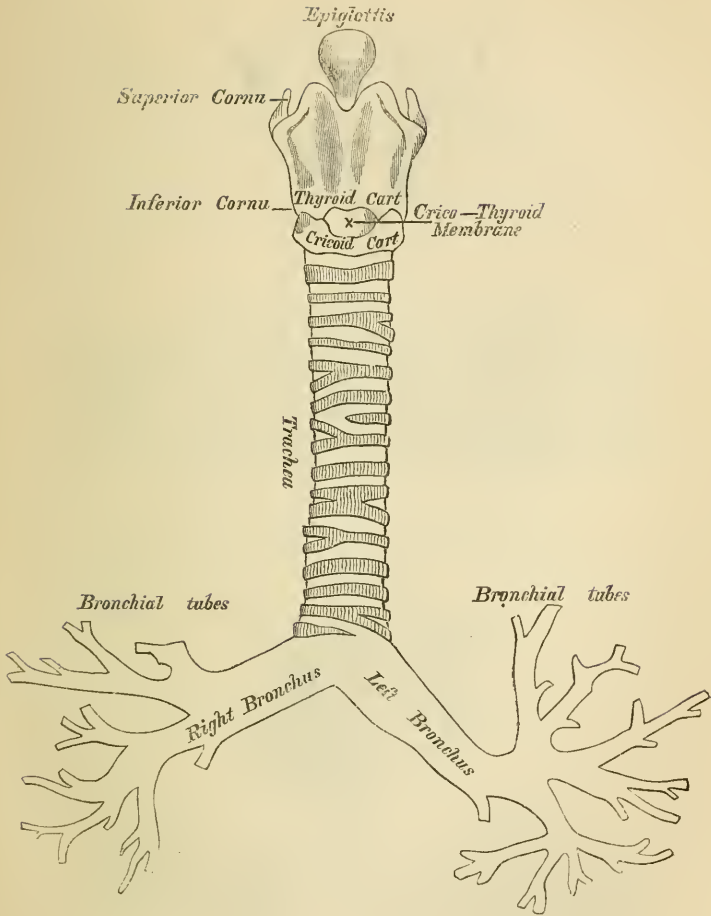
vultures. It will be seen that the two membranes correspond to the vocal chords in the mammalia, sounds being produced by the vibration of their margins. The various notes are caused by changes in the degree of tension of the membranes, by differences in the force of the air-current, and by changes in the length and degree of tension of the trachea and other parts. The range of the voice in birds is usually within an octave, but may be much greater.

Serpents have no vocal chords, and their hiss is the result of breath being forcibly driven through a soft glottis. Frogs have no trachea, so that their larynx opens into the bronchial tubes; but the loudness of the croaking of male frogs is due to the distension of two membranous sacs at the sides of the neck. Some frogs have membranous vocal chords: others two reed-like bodies, the anterior ends of which are fixed, while the posterior ends looking into the bronchi are free.

We must wait for the microphone to confute or confirm the statement of M. Langlois, of Freiburg, that ants communicate with one another by means of audible sounds. The recent observations of Sir John Lubbock seem to show the contrary. At all events, the sounds produced by most insects are produced externally and not internally. The stridulation of the cricket or grasshopper is made by rubbing certain file-like organs against the edges of membranous drums on the wings. The pitch of the sounds produced by the cricket is high, consisting of 4,096 vibrations per second. The shriek of the death's-head moth is produced by the friction of parts connected with the mouth and proboscis, the buz-

PLATE I.

Fig. 1.

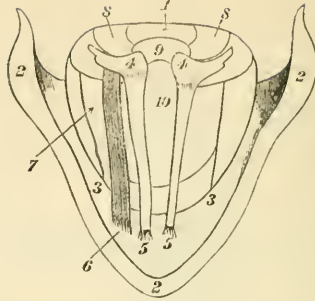


VIEW OF THE TRACHEA AND LARYNX.



PLATE II.

*Fig. 2.*



VIEW OF THE LARYNX FROM ABOVE.

1, Crico-arytenoid ligaments; 2, thyroid cartilage; 3, cricoid cartilage; 4, arytenoid cartilages; 5, chordæ vocales; 6, the right thyro-arytenoideus lateralis; 7, the left crico-arytenoideus lateralis (the right being removed); 8, crico-arytenoid ligaments; 9, arytenoideus transversus (connecting the arytenoids); 10, rima glottidis.

*Fig. 3.*



1, Soft palate (velum pendulum palati); 2, uvula; 3, tongue; 4, hyoid bone; 5, thyroid cartilage; 6, epiglottis; 7, glottis; 8, trachea; 9, cricoid cartilage; 10, pharynx; 11, superior opening of larynx; 12, œsophagus; 13, orifice of Eustachian tube.

PLATE III.

*Fig. 4.*



Position for *a*.

*Fig. 5.*



Position for *e* (in *hay*).

*Fig. 6.*



Position for *i* (in *he*).

*Fig. 7.*



Position for *u*.

*Fig. 8.*



Position for *k, g, ng*.

*Fig. 9.*



Position for *m*.

PLATE IV.

*Fig. 10.*



Position for *r*.

*Fig. 11.*



Position for *t, d, n*.

*Fig. 12.*



Position for *y*.

*Fig. 13.*



Position for *s, z*.

*Fig. 14.*



Position for *th*.

*Fig. 15.*



Position for *f, v*.

*Fig. 16.*



Position for *ph*.

PLATE V.

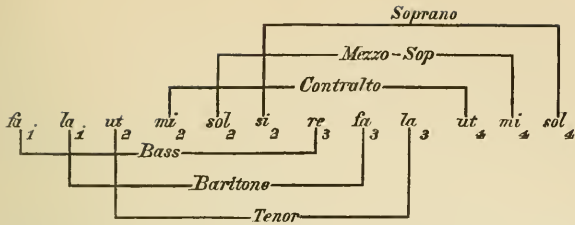
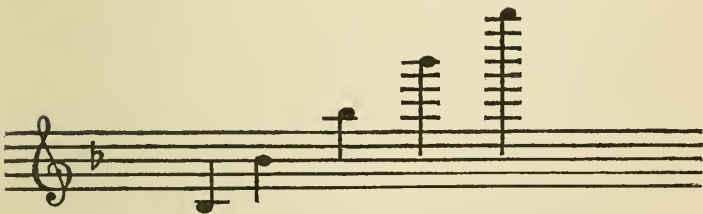


DIAGRAM SHOWING THE RANGE OF THE HUMAN VOICE.  
(From McKendrick's "Outlines of Physiology," p. 642.)



Vowels :	ou	o	a	ai	e	i	eu	u
Tones :	fa	sib	sib	sol	sib	re	ut	sol
	2	3	4	5	5	6	5	5
				re	fa	fa	fa	fa
				4	3	2	3	2

Pitch of the vowels, according to Helmholtz.



Vowels :	ou	o	a	e	i
Tones :	sib	sib	sib	sib	sib
	2	3	4	5	6

No. of Vibrations: 470, 940, 1880, 3760, 7520.  
Pitch of the vowels, according to König.



zing of flies and gnats by the rapid vibration of two rudimentary posterior wings called *halteres*. The humming of humble-bees, beetles, and the like is due to the passage of the air through the spiracles.

Fish, with few exceptions, have no special sonorous apparatus. The noise they make when taken out of the water is caused by the sucking or flapping movements of their mouth or gill coverings. It is possible that the air-bladder opening into the pharynx which is possessed by some fish, may enable them to emit sounds.

## APPENDIX II. TO CHAPTER IV.

THE ALPHABETS OF PRINCE L-L. BONAPARTE (MR. A. J. ELLIS) AND MR. H. SWEET.

PRINCE L-L. BONAPARTE'S Alphabet, as edited (and amplified) by Mr. A. J. Ellis in palæotype ("Early English Pronunciation," pp. 1293-1307, and 1352-1357).

### THE VOWELS

(as heard in European languages only).

- |  |  |
|--|--|
| 1. a (in <i>fAther</i> ).                                  | 8. æ (in Eng. <i>man</i> ).                            |
| 2. a <sub>i</sub> (in Gaelic <i>math</i> , "good").        | 9. a <sup>Λ</sup> (in Port. <i>cama</i> ).             |
| 3. a <sup>Λ</sup> (in Fr. <i>dent</i> , Port. <i>lã</i> ). | 10. e (in Eng. <i>pollute</i> ).                       |
| 4. ɛ (in Eng. <i>the book</i> ).                           | 11. œ (in Gael. <i>laogh</i> , "calf").                |
| 5. 'a (in Dan. <i>mand</i> , "man").                       | 12. œ <sub>i</sub> (in Gael. <i>maodal</i> , "tripe"). |
| 6. ah (in Eng. <i>ass</i> ).                               | 13. œ (in Eng. <i>bird</i> ).                          |
| 7. ə (in Eng. <i>character</i> ).                          | 14. ɪ (in Eng. <i>car</i> ).                           |
|  | 15. ɹ (not found).                                     |
|  | 16. 'h (in Eng. <i>open</i> , Germ. <i>mutter</i> ).   |
|  | 17. "h (not found)                                     |

18. 'h (in Dan. *hat'*, Eng. *bit'*).
19. əh (not found).
20. a (in Fr. *diAble*).
21. Œ (in Roumanian *taŦĂ*, "father.")
22. E<sub>1</sub> (not found).
23. E (in Finnic *pää*, "the head").
24. e<sub>1</sub> (not found).
25. e<sub>1</sub> (in Fr. *père*, Germ. *fett*).
26. e<sub>1</sub> (in Gael. *freumh*, "root").
27. e<sub>1</sub> Δ (in Fr. *vin*).
28. e (in Eng. *bed*).
29. e (in Fr. *dé*, Germ. *Ehre*).
30. e Δ (in Port. *senha*, "sign").
31. e<sup>1</sup> (in Port. *cear*, "to sup").
32. e<sup>1</sup> (in Dan. *een*, "one").
33. y (in Welsh *dyn*, "man").
34. Y<sub>2</sub> (in Polish *byli*, "they have been").
35. i (in Eng. *milk*).
36. i<sup>1</sup> (in Eng. *fill*).
37. i (in Eng. *bee*).
38. i<sub>c</sub> (in Gael. *sinnseadh*, "ancestors").
39. i Δ (in Port. *sim*, "yes").
40. 'j (in Eng. *gate*).
41. ɔ (in Eng. *God*).
42. ɔh (not found).
43. A (in Eng. *all*).
44. əh (not found).
45. o<sub>1</sub> (not found).
46. o<sub>1</sub> (in Germ. *Gott*).
47. o<sub>1</sub> (in Gael. *didomh-naich*, "Sunday").
48. o<sub>1</sub> Δ (in Fr. *bon*).
49. o (in Eng. *more*).
50. oh (in Esthonian *wõlg*, "debt").
51. o (in Eng. *Omit*).
52. o Δ (in Port. *sonho*, "dream").
53. oh (not found).
54. uh (in Port. *o*, "the").
55. o<sup>1</sup> (in Dan. *stor*, "great").
56. u<sub>1</sub> (in Finnish *Suomi*).
57. u (in Eng. *book*).
58. u (in Eng. *pool*).
59. u<sub>c</sub> (in Gael. *déanadh*, "doing").
60. u Δ (in Port. *um*, "one").
61. 'w (in Eng. *home*).
62. u<sup>1</sup> (in Swed. *skuld*, "cause").
63. u<sup>1</sup> (in Lap. *jukkim*, "I parted").
64. U (in Swed. *hus*, "house").
65. y (in Fr. *lune*, Germ. *brüder*).
66. y Δ (in Basque *sũhĩa*, "son-in-law"; Albanian *hũni*, "he entered").
67. I (in Dan. *nyde*, "to enjoy").
68. əh (in Lap. *buorre*, "good").
69. əh (in Fr. *veuf*).
70. əh Δ (in Fr. *un*).
71. œ (in Germ. *böcke*).
72. ə (in Fr. *feu*).
73. ə Δ (not found).
74. œ<sup>1</sup> (in Gael. *keayn*, "sea").



75.  $\sigma^1$  (in Swed. *syster*).  
 76. 'l (in Bohemian *vlk*,  
 "wolf").  
 77. 'r (in Bohemian *prst*,  
 "finger").

CONSONANTS.

*Labials.*

- He.*<sup>1</sup> 78.  $p^2$  (in Eng. *pea*).  
 79. pj (in Kasikumuk *p'o-*  
*run*, "glass").  
 80. pp (in Italian *coppa*).  
 81. p|h (in Bav. Germ.  
*pfard*).  
 82. [p|h (in Thush *p'e*,  
 "side").  
 83. wh (in Eng. *which*).  
 84. pj (in Pol. *gap*, "loun-  
 ger").  
 85. p $\omega$  (in Fr. *pois*).  
 86. p $\omega$ j (in Fr. *puits*).  
*Se.*<sup>3</sup> 87. b (in Eng. *bee*).  
 88. bj (in Kasikumuk *b'ar*,  
 "pond").  
 89. bb (in Ital. *gobba*).  
 90. 'p (in Saxon Germ).  
 91. w (in Eng. *wine*).  
 92. bj (in Pol. *jedwab*,  
 "silk").  
 93. b $\omega$  (in Fr. *bois*).  
 94. b $\omega$ j (in Fr. *buis*).  
*Ne.*<sup>4</sup> 95. m (in Eng. *me*).  
 96. mh (in Eng. *tempt*).  
 97. mm (in Ital. *fiamma*).

98. mj (in Kas. 'maq,  
 "thirst").  
 99. b<sub>i</sub> (in Westmoreland  
*sebm*, "seven").  
 100. w<sub>i</sub> (in Erse *saMrad*,  
 "summer").  
 101. mj (in Polish *karm*,  
 "feeding").  
 102. m $\omega$  (in Fr. *moi*).  
 103. m $\omega$ j (in Fr. *muid*).  
*Hc.*<sup>5</sup> 104. ph (whispered bh; ? in  
 Greek  $\phi$ ).  
*Sc.*<sup>6</sup> 105. bh (in Spanish *haba*).  
 106. bh $\omega$  (Dutch *w*).  
*Ht.*<sup>7</sup> 107. prh (whispered brh).  
*St.*<sup>8</sup> 108. brh (made by children  
 with the lips).  
 109. u (in Eng. *very*).  
 110.  $\iota$   $\omega$  (in Eng. *our* occ.).

*Labio-Dentals.*

- He.* 111. P (not found).  
*Se.* 112. B (lower lip against  
 the teeth).  
*Hc.* 113. f (in Eng. *foe*).  
 114. ff (in Ital. *schiaffo*).  
 115. f (not found).  
 116. 'fh (not found).  
 117. fj (in Guernsey *fyaiz*,  
 "flee ye").  
 118. f $\omega$  (in Fr. *foie*).  
 119. f $\omega$ j (in Fr. *fuite*).  
*Sc.* 120. v (in Eng. *vine*).

<sup>1</sup> That is, hard-explosive.

<sup>2</sup> These characters represent the palæotype symbols employed by Mr. Ellis.

<sup>3</sup> Soft-explosive.

<sup>5</sup> Hard-continuous.

<sup>7</sup> Hard-trill.

<sup>4</sup> Nasal-explosive.

<sup>6</sup> Soft-continuous.

<sup>8</sup> Soft-trill.

121. vj (in Kas. 'warta,  
"plate").
122. vv (in Ital. *avventura*).
123. [v (in Dan. *KjöBen-  
hævn*).
124. v (not found).
125. 'v (Dutch *v*).
126. vH (not found).
127. vj (in Pol. *paW*, "pea-  
cock").
128. vw (in Fr. *voix*).
- Nc.<sup>1</sup> 129. v, (in Erse *feih*,  
"mild").

*Labio-Linguals.*

- He. 130. ,p (in Abasian *aTà*,  
"hay").
131. ,p,p (in Ab. *γTa*, "sit  
down").
- Se. 132. ,b (in Ab. *αDÿ*, "field").
- Sl.<sup>2</sup> 133. ,lw (in Gaelic *Lamh*,  
"hand").

*Dentals.*

- He. 134. „t (in Erse *Talain*,  
"earth").
135. „tj (in Erse *tirm*,  
"dry").
- Se. 136. „d (in Erse *donn*,  
"brown").
137. „dj (in Erse *dia*, "God").
- He. 138. th (in Eng. *thin*).
139. c (not found).
- Sc. 140. dh (in Eng. *then*).
141. c (not found).
- Hl.<sup>3</sup> 142. Jh (not found).
143. J (in Manx *ooYL*,  
"apple").

*Alveolo-Dentals.*

- He. 144. c (in West Nyland Fin-  
nish *metsä*, "forest").
145. ,th (in Ital. *vizio*).
- Sc. 146. c (in Albanian *zot*,  
"lord").
147. ,dh (in Span. *lid*).

*Double Alveolars.*

- He. 148. ,s (in Ital. *lo zio*).
149. ,s,s (in Ital. *pazzo*).
150. .,s (in Ab. *aca*, "gra-  
nary").
151. ff (in Ab. *aC'abyrg*,  
"truth").
152. .,f (in Ab. *áca*, "wild  
cherry").
153. .,fj (in Kas. *čabre*,  
"much").
154. ,sj (in Pol. *siaC'*, "to  
sow").
155. ,sW (in Abasian *aC'a*,  
"apple").
156. .,s w (in Ab. *ac'*, "ox").
- Sc. 157. ,z (in Ital. *lo zelo*).
158. ,z,z (in Ital. *rozzo*).
159. ,zj (in Pol. *jedz'*, "go").
160. ,zW (in Ab. *az'γ*, "some  
one").

*Alveolars.*

- He. 161. ,t (in Fr. *tas*).
162. ,tj' (in Kas. *l'ai*, "colt").
163. ,t,t (in Ital. *matto*).
164. tjh (in Dan. *til*, "to").
165. t,jh (in Kas. *ja't'olša*,  
"red").

<sup>1</sup> Nasal-continuous.<sup>2</sup> Soft-liquid.<sup>3</sup> Hard-liquid.

166. t<sub>h</sub> (in Thush *t'uix*,  
"salt").
167. t<sub>j</sub> (in Russ. *poot'*,  
"way").
168. t<sub>w</sub> (in Fr. *toi*).
169. t<sub>wj</sub> (in Fr. *étui*).
- Se. 170. d (in Fr. *doux*).
171. dj (in Kas. *dòxlu*,  
"freshness").
172. d<sub>d</sub> (in Ital. *Iddio*).
173. 'd (in Saxon).
174. dj (in Russ. *loshad'*,  
"horse").
175. d<sub>w</sub> (in Fr. *doigt*).
176. d<sub>wj</sub> (in Fr. *conduire*).
- Ne. 177. n (in Fr. *nain*).
178. nj (in Kas. *n'ak*,  
"blue").
179. n<sub>n</sub> (in Ital. *canna*,  
"reed").
180. d<sub>i</sub> (in Irish *bean*, "wo-  
man").
181. nj (in Russ. *lén'*,  
"tench").
182. n<sub>w</sub> (in Fr. *noix*).
183. n<sub>wj</sub> (in Fr. *nuit*).
- Hc. 184. s (in Eng. *so*).
185. ss (in Ital. *cassa*).
186. sjsj (in Kas. *š'át*,  
"hour").
187. sh (= the Arab. *ص*).
188. sj (in Pol. *kos'*, "mow").
189. s<sub>w</sub> (in Fr. *soie*).
190. s<sub>wj</sub> (in Fr. *suie*).
- Sc. 191. z (in Eng. *zeal*).
192. zz (in Hungarian *azzal*,  
"with the").
193. .z (in Ab. *zaqa*, "how  
much").
194. zj (in Pol. *lez'*, "go  
up").
195. z<sub>w</sub> (in Fr. *rasoir*).
196. z<sub>wj</sub> (in Fr. *dix-huit*).
- Nc. 197. zh<sub>i</sub> (not found).
- Hl. 198. l<sub>w</sub>h (not found).
- Sl. 199. l (in Fr. *lait*).
200. lj (in Kas. *šap*, "shine").
201. Jj (in Ital. *stella*).
202. lj (in Russ. *korol'*,  
"king").
203. l<sub>w</sub> (in Fr. *loi*).
204. l<sub>wj</sub> (in Fr. *lui*).
- St. 205. r (in Span. *rey*).
- Whishes (Chuintantes).*
- Hc. 206. sh (in Eng. *she*).
207. shj (in Kas. *šarabuču*  
[š'], "fellow-country-  
man").
208. shsh (in Ital. *pesce*).
209. shjshj (in Kas. *šoldi*,  
"green").
210. .sh (in Ab. *aša*, "rope").
211. shj (in Russ. *vosh'*,  
"louse").
212. sh<sub>w</sub> (in Fr. *choix*).
213. sh<sub>wj</sub> (in Fr. *chuint*).
214. sh<sub>w</sub>sh<sub>w</sub> (in Ab. *aš'*,  
"plane-tree").
215. .sh<sub>w</sub> (in Ab. *aš*, "door").
- Sc. 216. zh (in Eng. *pleasure*).
217. zhzh (in Hung. *a'zseb*,  
"the pocket").
218. .zh (in Ab. *aša*, "hare").
219. zhj (in Basque [Soule]  
*jin*, "come").
220. zh<sub>w</sub> (in Fr. *joie*).
221. zh<sub>w</sub>zh<sub>w</sub> (in Ab. *aš'*,  
"cow").
222. .zh<sub>w</sub> (in Ab. *š'aba*,  
"ten").
223. zh<sub>wj</sub> (in Fr. *juin*).

- Ht.* 224. rsh (in Polish *przez*, "through").
- St.* 225. rzh (not found).
- Palatal Whishes.*
- Hc.* 226. ,sh (in Ital. *pecc*).  
 227. ,sh,sh (in Ital. *caccia*).  
 228. .sh (in Ab. *a'ā*, "quail").  
 229. f<sub>h</sub> f<sub>h</sub> (in Ab. *ač'y*, "mouth").  
 230. .f<sub>h</sub> (in Ab. *ač'y*, "horse").  
 231. .f<sub>h</sub>j (in Kas. *č'an*, "early").  
 232. ,shj (in Russ. *noch'*, "night").  
 233. ,shw (in Louisiana Creole *choui*, "to cook").  
 234. ,shwj (in Trinidad Creole *chouite*, "to cook").
- Sc.* 235. zh (in Ital. *regio*).  
 236. zh,zh (in Ital. *maggio*).  
 237. ,zhj (in Basque [Soule] *espundja*, "sponge").  
 238. zhwj (in Louisiana Creole *néju'*, "needle").
- Double Palatals.*
- Hc.* 239. ʒs (in Basque *otso*, "wolf").
- Palatals.*
- Hc.* 240. t (in Eng. *tea*).  
 241. ṭ (in Dan. *huset*, "the house").  
 242. Jh (in Eng. *hue*).  
 243. tj (in Hung. *tyúk*, "hen").  
 244. tj̣tj̣ (in Hung. *a' tyúk*, "the hen").
- Se.* 245. d (in Eng. *do*).  
 246. dd (in Sardinian *beddu*, "beautiful").  
 247. ɫd (in Span. *lado*).  
 248. ɫḍɫ̣ (in Jutland *Gud*, "God").  
 249. J (in Eng. *yet*).  
 250. JJ (in Hung. *ejjel*, "night").  
 251. dj (in Hung. *gyöngy*, "pearl").  
 252. dj̣dj̣ (in Hung. *a' gyöngy*, "the pearl").
- Ne.* 253. n (in Eng. *no*).  
 254. nh (in Eng. *tent*).  
 255. J<sub>i</sub> (in Basque [Roncal] *azkoña*, "badger").  
 256. nj (in Fr. *digne*).  
 257. nj̣nj̣ (in Hung. *a' nyul*, "the hare").  
 258. njh (not found).
- Hc.* 259. s (in Sp. Basque *su*, "fire").
- Sc.* 260. z (in Port. *zagal*, "young shepherd").
- Hl.* 261. lh (in Eng. *felt*).  
 262. lj̣h (in Saintongeais *glas*, "knell").
- Sl.* 263. l (in Eng. *low*).  
 264. lj (in Ital. *figlio*).  
 265. lj̣lj̣ (in Hung. *melly*, "which").
- Ht.* 266. ʕ<sup>h</sup> (not found).  
 267. ḥ (= Arab. ح).  
 268. ḥj (in Kas. *h'olu*, "orphan").  
 269. ḥjḥj̣ (in Kas. *h'i*, "pigeon").  
 270. rH (in Kas. *h'aba*, "fish").
- St.* 271. r (in Eng. "ray").

272. rr (in Ital. *terra*).  
 273. ε (= Arab. ع).  
 274. rj (in Lusatian *wuhor'*,  
 "eel").  
 275. rɔw (in Fr. *roi*).  
 276. rɔwɟ (in Fr. *bruit*).

*Ultra-Palatals.*

The whole of this set of letters comes originally from Lepsius's Alphabet, and "must be considered, therefore, very doubtful."

- He.* 277. T (in Sansk.).  
*Se.* 278. D (in Sansk.).  
*Ne.* 279. N (in Sansk.).  
 280. Nh (in Dravidian).  
*Hc.* 281. sh (in Sansk.).  
 282. Thh (in Drav.).  
*Sc.* 283. zh (theoretical).  
 284. Dhh (in Drav.).  
*Hl.* 285. Lh (in Drav.).  
*Sl.* 286. L (in Sansk.).  
*Ht.* 287. Rh (theoretical).  
*St.* 288. R (in Sansk.).  
 289. Rhh (in Drav.).

*Gutturo-Labials.*

- He.* 290. p (in Peruvian).  
 291. wjh (in Ab. *ih'y*,  
 "speak").  
*Se.* 292. b̄ (not found).  
 293. wj (in Fr. *huile*).  
*Hc.* 294. fh (not found).  
*Sc.* 295. vh (not found).

*Gutturo-Dentals.*

- Hc.* 296. th (in Surgut Ostiak  
*kat'*, "day").

297. thth (in S. Ost. *wal'*-  
*t'ak*, "without").  
 298. thj (in Low S. Ost. *si't'a*,  
 "gunpowder").  
 299. thj/thj (not found).  
*Sc.* 300. dh (in S. Ost. *ad'an*,  
 "morning").  
 301. dhdh (in S. Ost. *wad'*-  
*d'ax*, "without").  
 302. dhj (in High S. Ost.  
*si'd'a*, "gunpowder").  
 303. dhj/dhj (not found).

*Guttural Whishes.*

- Hc.* 304. „sh (in Tempiese Sar-  
 dinian *la chjai*, "the  
 key").  
 305. „sh„sh (in Temp. Sard.  
*vecchju*, "old").  
 306. „shwɟ (in Picard *kyuir*,  
 "leather").  
*Sc.* 307. „zhwɟ (in Temp. Sard.  
*la ghjesgia*, "the  
 church").  
 308. „zhwɟ „zhwɟ (in Temp.  
 Sard. *ogghji*, "to-  
 day").

*Gutturo-Palatals.*

- He.* 309. t (= Arab. ب).  
 310. tj (in Basque [La-  
 bourd] *ttorttoil*, "tur-  
 tle-dove").  
*Se.* 311. d (= Arab. ض).  
 312. dj (in Basque [La-  
 bourd] *yaun*, "lord").  
*Ne.* 313. n (not found).  
*Hc.* 314. s (not found).  
 315. s (in Basque [Labourd]  
*su* "fire").

- Sc. 316. *z* (not found).  
 317. *z* (in Basque [Labourd] *Jesus*).

*Double Guttural.*

- Hc. 318. *kh* (in Gaelic *mac*, "son").

*Gutturals.*

- He. 319. *k* (in Eng. *key*).  
 320. *kj* (in Kas. *k'orn*, "nest").  
 321. *kk* (in Ital. *bocca*).  
 322. *kjh* (in Upper Germ. *komm*).  
 323. *kj|h* (in Kas. *k'ala*, "white").  
 324. *[k]h* (in Thush *k'ok*, "foot").  
 325. *h* (in Germ. *hand*).  
 326. *hh* (in Hung. *ahhoz*, "thereto").  
 327. *h* (in Eng. *hand*).  
 328. ; (= Arab. *hemza*).  
 329. *kj* (in Ital. *la chiave*).  
 330. *kjkj* (in Ital. *occhio*).  
 331. *hj* (in Florentine Ital. *la chiave*).  
 332. *kʷ* (in Fr. *quoi*).  
 333. *hʷh* (an ordinary whistle).  
 334. *hʷ* (a voiced whistle).  
 335. *kʷj* (in Fr. *biscuit*).  
 Sc. 336. *g* (in Eng. *go*).  
 337. *gg* (in Ital. *veggo*).  
 338. 'g (in Ostiak *argem*, "I sing").  
 339. *h'w* (in Span. *huevo*).  
 340. *gj* (in Ital. *la ghianda*).  
 341. *gjj* (in Ital. *raggiare*).

342. *gʷ* (in Fr. *goître*).  
 343. *gʷj* (in Fr. *aiguille*).  
 Ne. 344. *q* (in Eng. *singer*).  
 345. *qh* (in Eng. *sink*).  
 346. *h<sup>h</sup>* (in Scutari Albanian *halk*, "multitude").  
 347. *qj* or *qJ* (in Sanskr.)  
 Hc. 348. *kh* (in Germ. *dach*).  
 349. *x* (existence doubtful).  
 350. *khkh* (in Sassarese Sard. *palchi*, "because").  
 351. *khjkhj* (in Kas. *x'ot*, "shade").  
 352. *khH* (not found).  
 353. *kjh* (in Germ. *milch*).  
 354. *kʷh* (in Scotch *loch*).  
 Sc. 355. *gh* (in Germ. *tage*).  
 356. *x* (existence doubtful).  
 357. *ghgh* (in Sass. Sard. *organu*, "organ").  
 358. *.gh* (existence doubtful).  
 359. *gjh* (in Germ. *selig*).  
 360. *gʷh* (in Germ. *auge*).  
 Nc. 361. *gh,h* (in Avar *xonkodize* [*ḡ*] "to snore").  
 Hl. 362. *lh* (not found).  
 363. *lhh* (in Welsh *llaw*, "hand").  
 364. *lhhj* (not found).  
 365. *lʷh* (not found).  
 Sl. 366. *l* (in Pol. *łamac*, "to break").  
 367. *lhh* (theoretical voiced Welsh *ll*).  
 368. *lhhj* (not found).  
 369. *lʷ* (not found).  
 Hl. 370. *krh* (= Arab. *ḫ*).  
 371. *.rh* (not found).

- Sl.* 372. grh (= Arab.  $\text{غ}$ ).  
 373. .r (= Newcastle  
 "burr").  
 374. [ r (in Jutland *var.*,  
 "was").  
 375. r (in Parisian *Paris*).  
 376. rr (in Parisian *irre-*  
*gulier*).

*Ultra-Gutturals.*

- He.* 377. κ (= Arab.  $\text{ك}$ ).  
 378. κj (in Kas. *q'apa*,  
 "hat").

- Sc.* 379. G (not found).  
 380. Gw (not found).  
*Ne.* 381. Q (not found).  
*Hc.* 382. kh (in Dutch *nacht*).  
 383. khj (in Kas. *q'ort*,  
 "pear").  
 384. kh (in Kas. *q'ata*,  
 "house").  
 385. κwh (not found).  
*Sc.* 386. Gh (in Dutch *God*).  
 387. Gwh (not found).  
*Ht.* 388. Th (not found).  
*St.* 389. T (in Dan. *ret*, "right").  
 390. tT (in Dan. *var.*, "was").

J denotes palatalized or *mouillées* characters, w labialized or *veloutées* characters, wj labio-palatalized or *mixtes* characters, [ a weakened consonant, a doubled letter or group of letters an emphasized consonant, a prefixed . a semi-emphasized consonant, prefixed \ an alveolarized or dentalized or "advanced" consonant, a prefixed , a "retracted" consonant, and j a semi-palatalized or semi-mouillée consonant.<sup>1</sup>

MR. SWEET'S NARROW ROMIC ALPHABET AND  
 LIST OF SYMBOLS.<sup>2</sup>

- |  |                             |
|--|-----------------------------|
| 1. a (in <i>father</i> ).                        | 6. æ (in <i>men</i> ).      |
| 2. v (in <i>bat</i> ).                           | 7. æe (in <i>man</i> ).     |
| 3. α (broad a).                                  | 8. æh (in <i>turn</i> ).    |
| 4. v (broad v).                                  | 9. æeh (in <i>opener</i> ). |
| 5. { <sup>A</sup> <sub>V</sub> (varieties of v). | 10. b (in <i>bee</i> ).     |
|  | 11. bh (German w).          |

<sup>1</sup> For Mr. Ellis's own Palæotype Alphabet, see "Early English Pronunciation," part i. pp. 3-12, where also a list of signs denoting clicks, pitch, whisper, glide, &c., is given.

<sup>2</sup> In "A Handbook of Phonetics," pp. xv-xvii.



12. bhj (palatalized bh).  
 13. d (in *day*).  
 14. dh (in *then*).  
 15. dhj (palatalized dh).  
 16. D (palatal d).  
 17. e (close e).  
 18. ə (French close eu).  
 19. e (variety of open e).  
 20. ə (variety of French open eu).  
 21. { eh  
 { eh (German unaccented e).  
 22. f (in *fee*).  
 23. g (in *go*).  
 24. gh (voiced kh).  
 25. ghr (trilled gh).  
 26. ghw (labialized gh).  
 27. { gj  
 { G (palatalized g).  
 28. h (general diacritic).  
 29. H (aspirate).  
 30. Hh (open glottis).  
 31. i (narrow i).  
 32. i (wide i).  
 33. ih (Welsh u).  
 34. ih (wide ih).  
 35. j (in *you*).  
 36. jh (voiceless j).  
 37. jhw (labialized jh).  
 38. kh (Scotch ch).  
 39. khr (trilled kh).  
 40. khw (labialized kh).  
 41. kH (aspirated k).  
 42. { kj  
 { K (palatalized k).  
 43. l (in *lee*).  
 44. lh (voiceless l).  
 45. L (palatal l).  
 46. T (guttural l).  
 47. m (in *may*).  
 48. mh (voiceless m).  
 49. n (in *now*).  
 50. nh (voiceless n).  
 51. n (nasality).  
 52. N (palatal n).  
 53. o (close o).  
 54. o (open o).  
 55. oh (between o and ə).  
 56. oh (between o and ə).  
 57. ɔ (open o in *all*).  
 58. ɔh (between ɔ and œ).  
 59. ɔ (open o in *not*).  
 60. ɔh (between ɔ and œ).  
 61. œ (open French eu).  
 62. œ (wide œ).  
 63. p (in *pay*).  
 64. ph (voiceless bh).  
 65. phj (palatalized ph).  
 66. pH (aspirated p).  
 67. q (in *sing*).  
 68. qh (voiceless q).  
 69. q (French nasality).  
 70. r (in *red*).  
 71. r (trilled letter).  
 72. rr (trilled r).  
 73. rh (voiceless r).  
 74. rhr (trilled rh).  
 75. rj (palatalized r).  
 76. R (laryngal r).  
 77. Rh (voiceless R).  
 78. s (in *say*).  
 79. sj (palatalized s).  
 80. sh (in *fish*).  
 81. shj (palatalized sh).  
 82. shw (labialized sh).  
 83. t (in *tea*).  
 84. th (in *thing*).  
 85. thj (palatalized th).  
 86. tH (aspirated t).  
 87. T (palatal t).  
 88. u (narrow u).  
 89. uh (Swedish u).

90. *u* (English *u*).  
 91. *uh* (wide *uh*).  
 92. *v* (in *vie*).  
 93.  $\wedge$  (denotes voice).  
 94.  $\left\{ \begin{array}{l} \wedge h \\ \wedge \end{array} \right.$  (whisper).  
 95. *w* (in *we*).  
 96. *wh* (in *why*).  
 97. *w* (labialization).  
 98. *x* (glottal catch).  
 99. *y* (French *u*).  
 100. *y* (wide *y*).  
 101. *z* (in *zeal*).  
 102. *zh* (in *rouge*).  
 103. (a)I (denotes length).  
 104. a II (extra length).  
 105. a · (stress or force).  
 106. a ·· (extra stress).  
 107. a : (half stress).  
 108.  $\left\{ \begin{array}{l} \overline{\quad} \\ a \end{array} \right.$  (level force).  
 109.  $\left\{ \begin{array}{l} \lessdot \\ a \end{array} \right.$  (increasing force).  
 110.  $\left\{ \begin{array}{l} \grave{ } \\ a \end{array} \right.$  (diminishing force).  
 111. — (level tone).  
 112. / (rising tone).  
 113. \ (falling tone).  
 114. v (falling and rising tone).  
 115.  $\wedge$  (rising and falling tone).  
 116. [i] (glide).  
 117. ‘z (whispered s).  
 118. a / (inner or away from the teeth).  
 119. a, (outer).  
 120. r † (protruded).  
 121. r ‡ (inverted or cerebral).  
 122. \* (denotes simultaneity of two sounds it comes between).  
 123. e<sup>1</sup> (raised tongue).  
 124. o<sup>1</sup> (narrowed lip-opening).  
 125. — (beginning of sound-group on weak stress).

## CHAPTER V.

### THE MORPHOLOGY OF SPEECH.

“In der Wirklichkeit wird die Rede nicht aus ihr vorangegangenen Wörtern zusammengesetzt, sondern die Wörter gehen umgekehrt aus dem ganzen der Rede hervor.”—W. VON HUMBOLDT.

“Rien n'autorise donc à admettre deux moments dans la création du langage : un premier moment, où il n'aurait eu que des radicaux, à la manière chinoise, et un second moment, où il serait arrivé à la grammaire.”—RENAN.

WE have seen in an earlier chapter that the form under which our thought may express itself in language is capable of many variations. The minds of men and races are very various, and what may seem a perfectly natural mode of thought and expression to one man may be wholly strange and unnatural to another. It is as difficult for us to realize the conception of the sentence formed by the Chinaman, as it is for the Chinaman to realize ours. The world wears a different aspect to different individuals, and the relation of the speaker to the things about him may be regarded in widely different ways. Races start each with a peculiar temperament and peculiar characteristics ; indeed, it is just these peculiarities that constitute what we call a race. And race peculiarities become strengthened by time and tradition, by the continuous influence of the circumstances which have at once created and fostered them. What may

have been only a tendency in the beginning becomes in the end a settled and permanent feature; the germ develops into the full-grown organism, and in the course of ages makes explicit all the possibilities that lie implicit within it. The manifold races of mankind do not all think in the same manner, and the divergent modes in which they think are reflected in the languages they utter.

Hence it is that languages can be classed morphologically, that is, according to the form assumed by the sentence. Here the sentence may be built, as it were, around a verb, there any conception of a verb may be absent; here its several parts may be regarded as so many equipollent monads, set one against the other, there as interdependent pieces of a Chinese puzzle which all fit into their appropriate places. In one class of tongues the root may be monosyllabic, in another polysyllabic; one language may interpose the stem between the root and the grammatical suffix, another may know nothing of such an intermediary. Morphologically, therefore, languages differ from each other in the structure of the sentence and the grammatical relation of its parts.

Now we must not forget that the idea of race has not the same signification for the glottologist that it has for the physiologist. For the student of language it means an assemblage of psychological and physiological peculiarities which are expressed in articulate speech. For him the European Jew, who has no language but that of the country in which he is settled, is a member of the European race; only the Jew whose mother-tongue belongs to the Semitic stock can be reckoned a Semite. At the outset, no doubt, race meant the same thing in both a

glottological and a physiological sense. The characteristics which reflected themselves in language were characteristics of which the physiologist has to take account. But the physiological races of the modern world are far more mixed than the languages they speak ; the physiologist has much more difficulty in distinguishing his races than has the glottologist in distinguishing his families of speech.

But, as elsewhere in nature, so, too, in the domain of language, species passes gradually and insensibly into species, class into class. The types remain clear and strongly-marked, but the dividing lines between them are hard to draw. Around each type is grouped a large assemblage of languages which stand at a perpetually widening distance from it ; on the one side the furthest member of the group almost loses itself in the outlying member of another, while the most distant member on the other side can with difficulty be distinguished from the most distant member of a third group. Isolating Chinese presents the phenomena of agglutination and even of inflection ; the agglutinative Finnic dialects approach so nearly to inflection that attempts have been made to include them in the Aryan family ; and English is in many respects highly agglutinative and even polysynthetic, while the French *je vous donne* is almost as good an instance of incorporation as could be given from Basque itself. But with all this gradual approximation the several types of language still remain fixed and distinct. The Chinese in its main features, in its bone and muscle, so to say, continues true to its isolating type, just as Finnic continues true to its agglutinative type, or

French to its inflectional one. The greater or less departure of a language from its primitive type is due to several causes. First of all, race in language may become mixed just as much as race in physiology. Contact between two languages produces not only mixture in their vocabularies, but a mutual influence upon their phonology, and even grammar as well. This is a point to which we shall have to return hereafter. Few languages any more than races in the physiological sense can have remained quite isolated during the long course of their history or been preserved from contact with languages of an alien class. Then, secondly, with all their differences the minds of most men are cast in the same mould. Thought is one, as a philosopher has said, though the forms under which it shows itself are infinitely various. Unity underlies diversity, and this unity finds its expression in the tendency of all languages to break away from their types and assume common forms. It is true that a language cannot wholly break away from its type without becoming another language, and so ceasing to exist; it is true, also, that such a psychological change as would be implied by the occurrence is almost inconceivable, and is certainly contrary to historical experience; but nevertheless languages belonging to two different types may gradually approach one another during the long ages of their development, and the difficulty experienced by the student in deciding to which type they belong may testify to the similarity of the intellectual outfit of all mankind. Here, at any rate, we can discover a common origin, a common descent for the manifold branches of the human family.

Schlegel's attempt to divide languages morphologically has already been described. He distinguished them primarily as inorganic and organic, the first class including languages "with grammatical structure," like the Chinese, and languages with affixes, and the second class, including the synthetic or ancient and analytic or modern dialects of the inflectional tongues. Pott, following Wilhelm von Humboldt, established the division which with various modifications is still upheld by most linguistic students. According to this the languages of the world fall into four groups, the polysynthetic (such as the Eskimaux or the Mexican), the isolating (like the Chinese), the agglutinative (like the Turkish), and the inflectional (like Sanskrit). The first group he terms transnormal, the second two intra-normal, and the third alone normal. Bopp falls back upon Schlegel's classification, making but three kinds of speech, the isolating with monosyllabic roots but "without organism, without grammar;" the languages capable of composition, of which the Indo-European form the highest type; and the Semitic languages which denote the relations of grammar by internal vowel-change. Schleicher, like Max Müller, discards the first or polysynthetic class of Humboldt and Pott, while Max Müller acutely seeks historical support for the threefold division by referring the isolating languages to races which have not risen above family-life, the agglutinative to nomad tribes, and the inflectional to peoples who have arrived at the conception of the state.

All these divisions, so far as [they are founded in fact, are really based, not on the word, but on the sentence,



and only have a meaning if we explain them as representing the different forms under which the sentence has been conceived by the various races of mankind. To speak of Chinese being "without grammar," as Bopp does, or to describe the larger number of languages as inorganic or other than normal, like Schlegel and Pott, is simply self-contradictory. Every morphological classification of language must be founded on grammar—that is, on the relations of the several parts of the sentence to one another; and the very existence of a class implies that it has a grammar and an organic life. We shall never have a satisfactory starting-point for our classification unless we put both word and root out of sight, and confine ourselves to the sentence or proposition, and the ways in which the sentence may be expressed. The reason why languages differ morphologically is that the thought which they embody assumes different forms.

In the second chapter (pp. 122-132) the languages of the world have been classed as (1) polysynthetic, (2) isolating, (3) incorporating, (4) agglutinative, (5) inflectional, and (6) analytic, and reason shown from the structure of the sentence why such a classification should be made. Steinthal was the first to make the sentence rather than the word the basis of morphological arrangement, and to point out that where we are dealing with grammar and structure, we must have at least two words standing in grammatical relation to each other. Steinthal's system is very elaborate. He begins with the division of language into formless and formal, a division, however, of very questionable accuracy. It seems to take us back to the scheme of Schlegel, and to forget that where lan-

guages are distinguished from one another by the forms they assume, we cannot describe any of them as having no form at all. The form of speech, indeed, is the mode in which the mind views the connection between the several parts of a proposition, so that wherever we have a proposition, wherever, in fact, we have language, there must be form. Steinthal, however, goes on to divide his formless languages into "juxta-positive" and "compositive," the Taic languages belonging to the first, and the Polynesian, Ural-Altaic, and American belonging to the second. The formal languages are similarly divided into "juxta-positive" and "compositive," Chinese coming under the head of the one and Old Egyptian, Semitic, and Aryan coming under that of the other.

Humboldt did better than Steinthal in using the terms "imperfect" and "perfect," instead of "formless" and "formal." Like Steinthal, he classed Chinese along with the inflectional languages of Europe, rather than with Burman and the other isolating idioms of the far East. This seems most unnatural, since—so far as outward form is concerned—little difference can be made between isolating Chinese and isolating Burman. It is true that the order in which the parts of the sentence follow one another is more or less free in Chinese, while it is fixed in Burman, but this is a difference essentially unlike that between inflectional Aryan with its suffixes and inflectional Semitic with its internal vowel-change. Besides, both Aryan and Semitic are included in the same class. But both Humboldt and Steinthal found themselves in a difficulty. Starting with the assumption that all language follows a regular course of development,

ascending from the isolating stage to the inflectional, they had further to assume that this development was but a reflection of the general development of the mind, and that the passage from one stage of speech to the other was marked by a passage to a higher intelligence and a higher form of civilization. How, then, could it be possible that the Chinese nation, which seems to have originated a considerable civilization, should show no signs of that civilization in its language, the mirror and reflection of the spirit of man? How could it be that the language spoken by the primitive Aryans, when they were still simple shepherds on the Hindu-Kush, before they had learnt the elements of writing and culture from their Semitic neighbours, was so much in advance of that of a race to whom belonged the hard task of initiating a civilization? The only escape from the difficulty was to deny that Chinese should be classed with Burman, in spite of appearances, and so to throw the whole system of classification into confusion.

For that system depends upon the mode in which the grammatical relations of the sentence are expressed, and so long as the mode is the same, the order followed by the several parts of the sentence matters but little. The order of words, in fact, is constantly liable to change, and the simple fact that the definite article is postfixed in Scandinavian, Albanian, Bulgarian, and Wallachian, while it is prefixed in those other members of the Aryan family which possess one, shows how impossible it is to ground any important conclusions upon it. The same language varies from age to age in the position it assigns to the words it uses. The modern *moreover*, for example,

appears as *overmore* in the Paston letters, and the Coptic, once a postfix language, has now become a prefix one. As we shall see presently, the order assumed by the parts of the sentence depends in great measure upon the development of grammatical forms.

Humboldt and Steinthal, nevertheless, are quite right in believing that there is a distinction between Chinese and Burman, but the distinction is that between a decrepit and civilized language on the one hand and a fresh and uncultivated language on the other. Chinese civilization is immensely old, and the language which enshrines it is immensely old also; but we must be on our guard against supposing that the antiquity of Chinese is proved by its isolating character. Chinese is no example of arrested growth, no fossilized relic of an earlier condition of speech. Were it so, Chinese civilization, and the originality and progress it implies, would be inexplicable. When we compare classical Chinese with Burman or Siamese, or even with the less cultivated dialects of the Chinese empire itself, we find the progress and development we should expect; but it is progress and development within the limits of "isolation." All the possibilities of the isolating sentence have been worked out; and if these possibilities are not so numerous or so adequate as in the case of an agglutinative or inflectional sentence, the fault is due to the original conception of the sentence with which the Chinese started, not to fossilization or arrested growth. The Mandarin dialect of China has been affected by phonetic decay to an enormous extent; numerous sounds have perished, and words once dissimilar have become

identical in pronunciation. By the help of the ancient rhymes, of the cognate dialects, and of a scientific examination of the written characters, Dr. Edkins has been able to restore the pronunciation of Chinese as it was two thousand and more years ago, and the evidences thus obtained of the wear and tear of the speech are most striking. *Dak*, "the flute," for instance, has become *yo*; *zhet*, "the tongue," is now *she*, and the table of correspondent sounds given in the foot-note will show how great has been the changes undergone by the outward form of the cultivated language.<sup>1</sup> Side by side with this decay of sounds went a corresponding grammatical development. Tones were introduced to distinguish words that had come to be pronounced alike, and the different parts of the sentence were marked out by "empty words," used like our "of" or "if" in a purely symbolical and grammatical sense. It is probable that the spread of education and the extensive employment of ideographic writing had much to do with the phonetic decay that attacked the language. Ambiguities in conversation could always be remedied by an appeal to written symbols. At all events, it is curious that Accadian was almost equally affected by phonetic decay; and Accadian not only possessed a similarly ideographic system of writing, but was spoken in a country where education

Old Chinese.	Mandarin.	Old Middle Dialect.	Hakka Dialect.	South Fukien.	Canton.
g	c'h, k' (h)	g (dj)	k'	k', k	k'
d	t' (l)	d	t'	t', t	t'
b	p' (f)	b (v)	p'	p', p (h)	p'

This table applies only to words which have the fifth tone (Edkins: "Introduction to the Study of the Chinese Characters," p. 185).

was similarly widespread, and clay—the ordinary writing material—was always at hand.

We are apt to assume that inflectional languages are more highly advanced than agglutinative ones, and agglutinative languages than isolating ones, and hence that isolation is the lowest stage of the three, at the top of which stands flexion. But what we really mean when we say that one language is more advanced than another, is that it is better adapted to express thought, and that the thought to be expressed is itself better. Now, it is a grave question whether from this point of view the three classes of language can really be set the one against the other. So long as thought is expressed clearly and intelligibly, it does not much matter how it is expressed—how, that is, the relations of the sentence or proposition are denoted. When we begin to contrast the morphology of two classes of speech, there is a tendency to import our prejudices into the question, and to assume that the grammatical forms to which we have been accustomed are necessarily superior to those which appear strange to us. The masterpieces of Greek, or Latin, or Sanskrit literature have produced the impression that the languages which embody them must surpass all others as instruments of thought. But such an impression may, after all, be an incorrect one. English literature stands on quite as high a level as the literature of the classical tongues. The English language is quite as good an instrument of thought as Sanskrit or Greek, and yet English can hardly be said to be inflectional in the way that Sanskrit and Greek are. If we turn to China we shall find the Chinaman preferring his own classics to any-

thing produced by the West, and regarding his own language as the best possible instrument of thought. Preferences of this kind can as little be referred to an absolute standard as preferences in the matter of personal beauty. The European, for instance, has a wholly different ideal of beauty from the Negro, and the Negro from the Mongol. If the excellence of a language is to be decided by the number and variety of its grammatical forms, the palm will be borne off rather by the Eskimaux or the Cherokee than by the dialects of Greece and Rome; if by the attainment of terseness and vividness, Chinese will come to the front; if by clearness and perspicacity, English will dispute the prize with the agglutinative languages. Indeed, the agglutinative languages are in advance of the inflectional in one important point, that, namely, of analyzing the sentence into its component parts, and distinguishing the relations of grammar one from another. It has been remarked<sup>1</sup> that "were the development theory true, the inflectional would have developed into the agglutinative, and not the converse." Thought is obscured, not assisted, by the existence of different terminations to express the same grammatical relation, or of the same termination to express different grammatical relations; and yet this is an anomaly and source of confusion which continually meets us in the inflectional tongues. The ascription of gender to inanimate objects is worthy only of a savage and unreasoning age, and where the signs of gender have lost all reference to their original import, as in modern Ger-

<sup>1</sup> Sayce: "Principles of Comparative Philology," Preface to 2nd edition, p. ix.



man, they become merely a relic and survival of barbarism. In fact, when we examine closely the principle upon which flexion rests, we shall find that it implies an inferior logical faculty to that implied by agglutination. In a flexional language the relations of the sentence are denoted by particular suffixes or internal vowel-changes, which group themselves, as it were, round the principal thought contained in the sentence. In other words, every subordinate thought should be denoted by a flexion. Such a principle, however, cannot be worked. *Amabit*, it is true, means "he will love;" but in order to express "he must love," language has to break through its flexional principle and denote the idea, not by flexion, but by independent words—*necesse est ut amet*, or *illi amandum est*. But this is not the only mode in which the principle of flexion is violated by the necessities of developed speech. When sentences come to be brought into relation with one another, the subordinate sentence ought to be pointed out by flexional means. This is done in some cases, as in the Greek use of the inflected article with the infinitive. Generally, however, the subordination is left to be marked by independent words, such as the conjunctions, by the very means, in fact, adopted by Chinese and other isolating languages in accordance with their fundamental principle. In fact, the principle of flexion cannot be logically carried out beyond the narrow circle of those simple sentences which sufficed for the needs and intelligence of primitive man, and the progress of thought in modern Europe has been marked by a corresponding revolt from the trammels of flexion. It is only dialects like those of Slavs and

Lithuanians which still cling to an elaborate system of flexion. English has fitted itself to become a universal language by struggling to assimilate its condition to that of Chinese. Even the polysynthetic languages of America can, with a certain show of reason, claim a higher place for themselves than inflectional speech. If the object of language is to express thought, it is obvious that that thought should be expressed as a whole, as in a picture; and this is just what is done by a polysynthetic sentence. Our own language, when it forms such compound epithets as "The Employers' Liability for Injury Bill," or German when it interpolates a whole sentence between the article and its substantive, virtually adopt the principle of polysyntheticism. Polysyntheticism, however, is only to be preferred when we wish to represent our thought as a single whole, to bring it before the mind of another just as it presents itself to our own mind. The best test we really have of a growth in intelligence and reasoning power is an increasing clearness and analysis of thought. The polysynthetic languages are essentially the languages of races whose logical faculties are backward, or who have not yet left behind them the "jelly-fish" stage of development.<sup>1</sup> Division of labour, differentiated organization, analysis of thought and its expression—all these are the signs of advancing civilization.

The whole picture is imaged in the mind before we break it up into its several parts. So, too, the sentence which embodied a thought was conceived as a whole before it was separated into its elements. Gestures were

<sup>1</sup> See "Contemporary Review," April, 1876.

the first makeshift for grammar ; they determined the relations of each particular utterance. Then these utterances came to be compared together, and those that agreed were put on one side, and those that disagreed on another. By slow degrees the relations of grammar were thus evolved ; gestures became more and more unnecessary, until at last in the most highly cultivated languages, such as modern English, they have disappeared almost entirely or been banished from educated speech. But this primitive monad, this undifferentiated sentence-word, developed very variously in the mouths of different speakers. In one case a number of antecedent circumstances combined to produce a certain conception of the outer world and the relation of things to each other and to the mind, altogether unlike the conception which grew up in other cases. Here the Chinaman regarded the elements of the sentence as co-ordinate and equal, setting part against part, and member against member, and leaving the relations between them to be supplied by the mind. There the Mongol drew a hard and fast distinction between the principal and the subordinate, between the nucleus of the proposition and the ideas dependent on it, but he took care to express each by a corresponding word and to place these words in the exact relation demanded by the thought. Elsewhere, again, the Hindu merged the subordinate in the principal, expressing the relations of the several parts of the sentence by modifications of the individual words or imitating the original form of speech by a long and elaborate compound. But in all cases the developed sentence of the later period would seem to have been evolved out of the primitive

undifferentiated one according to the genius of the speakers and the mode in which they conceived the relations of ideas. The American tongues alone preserved a semblance of the form once assumed by all speech, and in the compounds of the inflected idioms we may also trace a reflection of the earliest utterances of man. What these were may still be gathered from the grammar of the Eskimaux, even though there is as great a gap between this and the primæval sentence-words of his forefathers as there is between the social condition of the Eskimaux and the social condition of his first ancestors. A cultured language like the Mexican shows the highest development attainable by the polysynthetic form of speech; here words may be isolated and separated from the sentence by means of the affix *tl*. *Sotsitl*, for instance, is "flowers," *ni-sotsi-temoa*, "I look for flowers." All over the world, indeed, wherever we come across a savage race, or an individual who has been unaffected by the civilization surrounding him, we find the primitive inability to separate the particular from the universal by isolating the individual word, and extracting it, as it were, from the ideas habitually associated with it. Thus the Hottentot cannot use a noun without a pronominal suffix indicating not only gender and case but also person as well, except as a predicate;<sup>1</sup> in several of the South American dialects the words which denote "head," "body," "eye," or other parts of the person, cannot be named without personal relation being denoted by a prefixed possessive pronoun or denied by a negative or privative

<sup>1</sup> Fr. Müller: "Grundriss der Sprachwissenschaft," i. 2, p. 2.

prefix,<sup>1</sup> and in Mr. Wallace's vocabularies from the river Uapes this inability extends to other words. A Kurd of the Zaza tribe who furnished Dr. Sandwith with a list of words belonging to his dialect, was so little "able to conceive a *hand* or *father*, except so far as they were related to himself, or something else, and so essentially concrete rather than abstract were his notions, that he combined the pronoun with the substantive whenever he had a part of the human body or a degree of consanguinity to name," saying *sèrè-min*, "my head," and *pic-min*, "my father." Dr. Latham, from whom this fact is quoted, goes on to refer to a similar amalgamation noticed by him in the languages of the Louisiade and mentioned in the appendix to Macgillivray's "Voyage of the Rattlesnake," as well as in the ordinary Gipsy dialect spoken in England.<sup>2</sup>

A morphological review of the languages of the world reveals one curious and significant fact. Particular types of language belong to particular localities. In other words, a morphological classification of speech is also a geographical one. The polysynthetic idioms are characteristic of America, the isolating dialects of the extreme east of Asia. So, too, the leading inflectional families of speech, the Aryan and the Semitic, have both proceeded, it would seem, from Western Asia, like the Alarodian family, also inflectional, and best represented by the modern Georgian. The prefix-pronominal languages are confined to Southern Africa, as the incorporating Basque to the Pyrenees and

<sup>1</sup> Sayce: "Principles of Comparative Philology" (2nd edition), p. 229.

<sup>2</sup> "Transactions of the Philological Society" (1856), pp. 40, 41.

the verbless Malayo-Polynesian to the islands of the Pacific. This fact would go to show that the distant emigration of languages, like the distant emigration of races, is very exceptional and chiefly characteristic of the higher species with their greater energy and expansiveness. The wanderings of savage tribes are circumscribed by the climatic and other conditions to which they are peculiarly subject. Without canoes voyages cannot be taken, and mountains, rivers, deserts, or stronger neighbours are all obstacles to movement more or less insurmountable. The fact would also go to show that it is only within the area peculiar to a certain class of languages that we may look for their progress and development. It is only in Eastern Asia or in America that we can hope to discover the highest development of which an isolating or a polysynthetic language is capable, and so regard Chinese and Mexican not as "arrested growths," but as instinct with the progressive intelligence and cultivated life of the peoples that speak them. Where no traces of a type of speech different from the prevailing one are to be found, we are justified in concluding that it never existed there. And finally the fact will correct that tendency we all have to assume a unity upon insufficient evidence. Types of language, like types of race, are as strongly marked off from one another as the countries to which they belong. Polysyntheticism is as much characteristic of America as the hatchet face and red skin of the aboriginal; isolation of Eastern Asia as the yellow skin and oblique eyes of the Chinaman or the Burman. Modern discoveries are gradually producing a conviction that the civilizations of China, of Babylonia,

and of Egypt were all independent and self-evolved. Such at all events is the case with their modes of writing, the best product of any civilization, and no one can study the character of these three civilizations without perceiving that they are radically distinct. Egypt, when the monuments first cast light upon her some 6,000 years ago, is in the height of her culture and advancement ; but she comes before us as a pharos of light in the midst of utter darkness, self-contained and self-sufficient, but surrounded on all sides by tribes and nations even more barbarous than the untaught Negro of to-day. And such as was the civilization, such too was the language ; the civilizations of the Nile, of the Euphrates, and of the Hoang-ho, were not more isolated and peculiar than the languages which embodied them. It is difficult for us with our steamers and railways and telegraphs to realize the separation and practical immobility of the ancient world. Geographical barriers cut off tribe from tribe, race from race, language from language, and war instead of peace was the sole means that existed of overcoming them. It is to these barriers, however, that we owe the persistency of racial and linguistic type which we may still note in so many parts of the world. It has often been remarked that the fauna and flora of America take us back to a geological rather than a historical age ; the same may also emphatically be said of the American type of speech. The Eskimaux may or may not be the survivor of the man of the reindeer age ; his grammar, at all events, is a relic of a bygone era of speech.

The morphology of speech, then, deals with the relation of the parts of the sentence one to another. This



relation is expressed by what we term grammatical forms. Position, it is true, as well as accent, frequently takes the place of grammatical forms, especially in languages like Burman or English, but in this case both position and accent will have to be considered as belonging to the province of morphology. The rule which in Burman makes the first of two substantives a genitive or in English a substantive which follows a transitive verb an accusative is itself a grammatical form. Even in those tongues in which the expression of grammatical relations is fullest and most exact, there is much that can never be expressed by outward means, but only hinted at and understood. "The rudest of men," says Chaignet,<sup>1</sup> "are yet sages; ils s'entendent à demi-mot; ils parlent par *sous-entendus*." "It is," as he goes on to observe, "the gesture, the tone, the connection of the sense or its abrupt breaking off, the undefinable and speaking expression of the face, that supply and complete our thought, marking its relations, or more truly its formal side, its most spiritual element, whereby language raises itself above mere sensation and matter." The structure of a language is determined not only by the general type, isolating, agglutinative, or otherwise, to which it conforms, but also by the mode in which its words are linked together, by the way in which its grammatical forms are used and connected, and by the greater or less extent to which the quickness of the hearer in understanding what is not expressed is called upon. Structurally, Coptic belongs to the inflectional class of tongues, but among these it is distin-

<sup>1</sup> "La Philosophie de la Science du Langage étudiée dans la formation des mots" (1875), p. 83.

guished by its prefixing its grammatical forms instead of affixing them, as was the case with its parent the Old Egyptian.

We must not forget, however, that whether in Coptic or Old Egyptian, or any other language, the grammatical form, the relation to be expressed, the idea to be developed and formulated, lay quite as much in the mere act of prefixing or affixing as in the sounds which were prefixed or affixed. The Sanskrit *ad-mi* means "I eat," not only because it is a compound of a verbal stem or root signifying "eating," and the personal pronoun *mi*, but because the pronoun is attached to the stem in such a way as to convey the conception of the relation intended to exist between the two ideas "eating" and "I." We may therefore lay down that one of the modes adopted by language for denoting the relations of grammar is (1) the attachment of prefixes or affixes which may or may not be significant when used alone. (2) A second is the insertion of what are called infixes, as in Dayak, where from *kan*, "to eat," the stem *k-um-an* comes, or in Malay, where by the side of *ka-kan* and *ma-kan* we have also *k-um-akan*. So, too, in Tagala we find *b-in-atin* for *in-batin*, just as in the secondary conjugations of the Semitic verb, *iphthal*, *iphthael*, *istaphal*, the suffix *ta* is inserted between the first and second consonants of the root instead of being prefixed as elsewhere. No doubt, metathesis aided by analogy was the primary cause of this curious phænomenon, as it is in the Sanskrit *yu-na-j-mi*, "I join," instead of *yuj-na-mi* corresponding with the Greek  $\xi\acute{\epsilon}\gamma\upsilon\upsilon\mu\iota$ . The incorporating and polysynthetic languages are examples of the principle on a large scale. (3) A third

mode of expressing the relations of grammar is by a change of vowel. The vowel may either pass into another or receive a different quantity or accent. Professor Pott refers to the use of *vṛiddhi* in Sanskrit patronymics by way of illustration as well as to change of accent in Greek proper names or vocatives. A difference of vowel which was originally purely phonetic has been adapted to distinguish between singular and plural in the English *man* and *men*, between transitive and intransitive in Greek verbs in *-όω* and *-έω*. Among the less cultivated languages of the world extended use has been made of this method of indicating the forms of grammar. In Javanese, for instance, *iki* is "this," *ika*, "that," *iku*, "that there;" in Japanese *ko* is "here," *ka*, "there;" in Carib, *ne* is "thou," *ni*, "he;" in Brazilian Botocudo *ati* is "I," *oti*, "thou."<sup>1</sup> In African Tumali *ngi* is "I," *ngo*, "thou," and *ngu*, "her." Even differences of signification may be denoted by the same means; the Carib *baba*, "father," is contrasted with *bibi*, "mother," just as the Mantschu *chacha*, "man," and *ama*, "father," stand over against *cheche*, "woman," and *eme*, "mother," or the Finnic *ukko*, "old man," and African Ibo, *una*, "father," over against *akka*, "old woman," and *une*, "mother." The numerals have not escaped being distinguished in a similar manner; *tizi* is "one" in Lushu, and *tazi*, "two;" "three" and "four" are *ngroka* and *ngraka* in Koriak, *niyokh* and *niyakh* in Kolyma, *gnasog* and *gnasag* in Karaga, and *tsúk* and *tsaak* in Kamschatkan, while in Japanese *fitó*, *mi(tsu)*, and *yo*, are "one," "three," and "four," *fütá*,

<sup>1</sup> Tylor : "Primitive Culture," i. pp. 199-201.

*mu(tsu)*, and *yá*, "two," "six," and "eight."<sup>1</sup> The Grebo of West Africa can distinguish between "I" and "thou," "we" and "you," solely by the intonation of the voice, *má di* being equally "I eat" and "thou eatest," *a di*, "you" and "we eat," and in Bâ-ntu Mpongwe *tõnda* means "to love," *tõnda*, "not to love."<sup>2</sup> (4) An internal change of consonant will be the next mode adopted by language of marking a grammatical idea. Thus in Burman the active is distinguished from the passive or neuter by aspirating an unaspirated consonant, *kya*, for instance, being "to fall," but *khya*, "to throw," *pri*, "to be full," *phri*, "to fill."<sup>3</sup> (5) Fifthly, position may be the determining mark of relations of grammar, as is so pre-eminently the case in Chinese and the Taic languages. It makes a good deal of difference in English whether we say, "The man killed the dog," or "The dog killed the man." (6) Another determining mark is reduplication, which is common to all the languages of the world though used to express very different grammatical ideas. Sometimes it may denote a past tense, as in Aryan (*ῥέδωνα*, *ceçidi*, *did*, &c.); sometimes a plural, as in the Bushman *tu-tu*, "mouths," the Sonorian *qui-qui*, "houses," or the Malay *raja-raja*, "princes;" sometimes a collective, as in the Canarese *nîru gîru*, "water and the like;" sometimes a superlative, as in the Accadian *gal-gal*, "very great," the Mandingo *ding-ding*, "a very little child," or the French *beaucoup-beaucoup*, "very much;" sometimes

<sup>1</sup> See Sayce: "Principles of Comparative Philology," 2nd edition, p. 253.

<sup>2</sup> Wilson: "Grammar," p. 32.

<sup>3</sup> Schiefner: "Tibetische Studien" (1851), p. 30.

continuous action, as in the Dayak *kaká-kaka*, "to go on laughing loud," or the Tamil *muru-muru*, "to murmur;" sometimes intensity, as in the Sanskrit *upary-upari*, "higher and higher," the Greek *παυ-φαίνα*, "to shine brightly," or the Dayak *ku lyang ku lyang*, "to think deeply;" sometimes emphasis and asseveration, as in the Dayak *kawai kawai*, "very strange!" *shi shi*, "yes, yes;" sometimes frequentative or repeated action, as in the Brazilian *acêm*, "I go out," *ace-acêm*, "I go out frequently," *oce-cem*, "they go out one after the other."<sup>1</sup> The reduplication is often a broken one, that is, only the first syllable or part of a syllable is reduplicated, as in the Latin *mo-mordi* for *mor-mordi*. Broken reduplication is very common in the Aryan languages, but Brugman<sup>2</sup> has shown reason for believing that it has arisen out of an earlier complete reduplication through the action of phonetic decay. Now and then the reduplication takes place in the middle of a word, as in the Sonorian Tepeguana where some plurals are formed by repeating the second syllable, as in *aliguguli*, "boys," from *alguli*, "boy," or a medial syllable, as in *hiim*, "gourds," and *gogosi*, "dogs," from the singulars *him* and *gogosi*.<sup>3</sup> Instead of the first syllable, only the initial vowel of a word may undergo reduplication; thus in Tepeguana *ali*, "child," is *a-ali* in the plural, *ogga*, "father," is *o-ogga*, *ubi*, "woman," is *u-ubi*. On the other hand, a word may be lengthened by the repetition of the vowel at the end, as well as in the middle; the Botocudos of Brazil, for instance, turn *uatu*,

<sup>1</sup> Platzmann: "Brasilianische Grammatik," chap. xv.

<sup>2</sup> In Curtius' "Studien," vii. pp. 185 sq.

<sup>3</sup> Buschmann: "Abhandlungen d. Berlin. Akad.," 1869, i. p. 122.

“a stream,” into *uatu-u-u-u*, “ocean;” with the Aponegricans “six” is *itawuna*, “seven,” *itawu-ú-una*, while the Madagascar *ratchi*, “bad,” becomes *ra-a-atchi*, “very bad.”<sup>1</sup> When whole words are reduplicated a change may be made in the initial consonant of the second part of the reduplication; thus in Canarese the initial consonant becomes the guttural *g*, as in the example quoted above, and the French *pêle-mêle* and English *lurdy-gurdy* are familiar instances of the same fact. Sir John Lubbock<sup>2</sup> has made an interesting calculation of the proportion of reduplicated words found in English, French, German, and Greek on the one side, and some of the barbarous languages of Africa, America, and the Pacific on the other, the result being that whereas “in the four European languages we get about two reduplications in about 1,000 words, in the savage ones the number varies from 38 to 170, being from twenty to eighty times as many in proportion.” Reduplication, in fact, is one of the oldest contrivances of speech. It is largely employed by children in their first attempts to speak, and we need not, therefore, be surprised at finding it so persistently holding its ground both in the nursery and among barbarous tribes. The Polynesians seem to have a special affection for it, though on the other hand, Mr. Matthews tells us that in North America while reduplication is a prominent feature of the Dakota verb it occurs in only one verb in the closely allied Hidacha dialect.<sup>3</sup>

<sup>1</sup> The whole subject of reduplication has been exhaustively treated by Professor Pott, to whose work reference should be made: “Doppelung als eines der wichtigsten Bildungsmittel der Sprache.”

<sup>2</sup> “On the Origin of Civilization,” pp. 403-405.

<sup>3</sup> “Ethnography and Philology of the Hidatsa Indians,” p. 77.

Reduplication, however, is one of the most important modes adopted by language for denoting the relations of grammar; it is, in fact, one of the most obvious and natural of its outward means of expressing those inward forms and grammatical conceptions which the human intelligence has painfully struggled to realize.<sup>1</sup>

The common division of speech into formal and material is at once defective and misleading. The articulate sounds of which words are composed may indeed be called their matter, but they do not become words, do not constitute a part of speech until they have thought and significancy breathed into them like the breath of life into man. This significancy is a relative one, that is to say, the meaning of a word depends upon its relation to some other. But this relation may be of two kinds, it may exist either between the ideas denoted by the words or between the words when coupled together in some particular sentence. In the first case we have to do with sematology, in the second with grammar. We can understand what is meant by the word *tree* only by comparing and contrasting the idea of *tree* with other cognate ideas; but the relation between *tree* and *sheds* in such a sentence as "the tree sheds its leaves," is of a totally different nature. The idea of *tree* remains the same whatever be the outward symbol by which it is expressed, whether *tree*, or *arbor*, or *baum*, or anything else; the relation between *tree* and *sheds* is one that can be discovered only by a historical and comparative investigation of English grammar. It is to this grammatical

<sup>1</sup> See Pott: "Humboldt's Verschiedenheit des menschlichen Sprachbaues" (1876), i. pp. 305, 306.



relation alone that the term *formal* is strictly applicable ; it has to do with the forms, or, as in the instance before us, the want of forms, whereby the relations of grammar, the relations, that is, of words in a sentence, are denoted. Going back to the primitive sentence-word, we shall have to distinguish between the material sounds of which it was composed, the meaning it always possessed whenever and however used, and the form (or position) that it assumed according to the occasion on which it was used. The child who says "Up!" always attaches the same signification to the general idea contained in the word, but whether it is to be regarded as an imperative, a hortative, an optative, or any other particular grammatical form is left to the context, the tone and gesture, or the intelligence of the hearer. Language consists of the material, the significant, and the formal, and it is only the latter, that part of language, in fact, the origin of which we have elsewhere traced to gesture, that properly concerns morphology.

Whatever, therefore, belongs to grammar belongs also to morphology. Not only general form and structure, but also grammar in the narrower sense of the word, as well as composition, and what our German neighbours term "word-building" must be included under it. Composition, indeed, is but a species of declension and conjugation. *Parricida* and *patris (oc)cisor*, *φερέσικος* and *οἶκον φέγει*, have exactly the same force and meaning. The only difference between *good-for-nothing* as a compound and "he is good for nothing" in a complete sentence, is that the first can be used as an attribute. The ordinary genitive of the Semitic tongues, the so-called "construct

state," is really an instance of composition, the first noun—that which "governs" the second—being pronounced in a single breath with the other, and accordingly losing the case-terminations. This did not happen originally, as may be seen from the occasional occurrence of these terminations even in Assyrian, which is more strict in following out the rule than any other of the cognate idioms. The power of composition is greater in some languages than in others. The polysynthetic sentences of an American dialect present the appearance of gigantic compounds, with this difference, however, that in a true compound the language has put together two words that have already been used independently, or at all events are capable of being used independently, whereas in the less advanced American languages the several members of the sentence have never attained the rank of independent words which can be set apart and employed by themselves. Even in some of the compounds of the Aryan family, where the flectionless "stem" shows itself, it may be questioned whether we have not before us the relics of that earliest stage of speech when the flections had not yet been evolved, and when the relations of grammar were expressed by the close amalgamation of flectionless stems in a single sentence-word. However that may be, the power of forming compounds possessed by the Aryan group of languages stands in marked contrast to the repugnance felt by the Semitic tongues in this respect. Composition is as rare in Semitic as it is common in Aryan, and this contrast between the two families of speech is one of the many that demonstrate the radical difference existing between them. Perhaps the

extended use made by the Semitic languages of denoting the relations of grammar by internal vowel-change had much to do with their objection to the employment of compounds. They are less agglutinative in character than the Aryan dialects, truer, in fact, to the principle of flexion, and the same instinct that makes them represent the ideas of "killing" and "a killing" by *kodhêl* and *kidhl* (*kedhel*), rather than by *trucida-n-s* and *trucida-ti-o(n)*, makes them also use two unallied roots like *hâlach* and *yâtsâ* where the Aryan would have said *ire* and *ex-ire*. Even within the Aryan family itself we find the Greek with compounds like the comic *λεπαδο-τεμαχος-σελαχος-γαλεο-κρανιο-λειψανο-δριμ-υπο-τριμματο-σιλφιο-παραιο-μελιτο-κατα-κεχυμενο-κιχλ-επι-κοσσυφο-φαττο-περι-σπερ-αλεκτρουν-οπτι-εγ-κεφαλο-κιγκλο-πελειο-λαγω-σιραιο-βαλη-τραγανο-πτερύγων*,<sup>1</sup> and the Latin comparatively poor in them, while modern English, in spite of the loss of its flexions, lags but little behind German. Russian can form such specimens of agglutination as *bezbozhnichestvovat*, "to be in the condition of being a godless person," from *bez Boga*, "without God," and classical Sanskrit almost dispenses with syntax by its superabundant use of composition. Where syntax is highly developed, as it was in Latin, the growth of composition is checked and limited.

Composition has been a fruitful source of grammatical flexion, and a still more fruitful source of what is meant by "word-building." It is highly probable that the person-endings of the Aryan verb *as-mi*, *a(s)-si*, *as-ti*, or *êσ-μι*, *êσ-σι*, *êσ-τι*, are but the personal pronouns closely compounded with the verbal stem. Such, certainly, has been the case

<sup>1</sup> Aristoph. "Eccl." 1169.

with the so-called *tempus durans* of Aramaic, where *kâdhêlnâ*, "I am killing," is resolvable into *kâdhêl*+*'anâ*, "killing+I," and *kâdhêlath*, "thou art killing," into *kâdhêl*+*at'*, "killing+thou."<sup>1</sup> The Latin imperfect and future in *-bam* and *-bo* seem to be compounds of the verbal stem with the verb *fuô*, "to exist,"<sup>2</sup> like the perfect in *-ui* or *-vi* (*fui*), while the pluperfect *scripseram* is a combination of *eram* or *esam* and the perfect *scripsi* (itself formed from the verbal stem *scrib-* and the old perfect *esi* of the substantive verb "sum"). So, too, the form *amavissem* is just as much a compound of *amavi* (*ama*+*fui*) and *essem* (*es*+*siem*) as is *amatus sum* of the passive participle and the substantive verb. If we turn to our own language we can trace our perfects in *-ed* back to the Gothic amalgamation of the verb with *dide*, the reduplicated perfect of the verb *do*, while the origin of the French *aimerai* in the infinitive *aimer* (*amare*) and the auxiliary *ai* (*habeo*) is as plain as that of the Italian *dârmelo* ("to give it to me") or *fâteglielo* ("do it for him"). The real character of the compound has come to be forgotten in course of time, and its final part has gradually lost all semblance of independence and been assimilated to the terminations which simply denote grammatical relations. The general analogy of the language has been too strong for it, and the agglutinated word has become a flexion.

But there are many suffixes which are not flexions—

<sup>1</sup> See Sayce: "The Tenses of the Assyrian Verb," in "J. R. A. S.," Jan. 1877.

<sup>2</sup> Not *dhâ*, "to place," like the perfect in the Teutonic languages, since Old Irish has *b* (e.g. *caru-b* = "amabo"), and in Keltic *b* cannot come from *dh*.

that is to say, which do not denote the relations of grammar, or rather the relations that exist between the different parts of the sentence. In *I loved* for *I love-did* the grammatical relation which we name a perfect tense, is not really expressed by the suffixed word *did*, but by the reduplication which that word has undergone. It was the reduplication that gave *did* (*dide*) the force of a perfect, and the attachment of *did* to another verb merely handed on to the latter the perfect force which it already possessed. Strictly speaking the suffix *-ed* is a flection only because it is the relic of a reduplication, the flection—that is to say, the expression of a grammatical relation—lying in the reduplication or *form* of the word. So, too, when we find *dēv-mā*, meaning “in God,” in Gujerati, or *andhē-mē*, meaning “in the blind,” in Hindustani, we must not suppose that the locative sense actually lies in the suffixes *mā* and *mē*. These suffixes go back to the Sanskrit *madhyā*, “in the middle,” where the flection is to be sought in the termination *i* (contained in  $\acute{e} = a + i$ ) not in the stem *madhya*, “middle.”

When, then, we say that composition may be a fruitful source of flection, what we mean is this. Flection is the means adopted by a certain class of languages for expressing the relations that exist between the members of a sentence, but a perception of these relations must first grow up in the mind before external means are found for embodying them. The idea of past time must be arrived at and realized before the simple process of reduplication can be adopted to denote it. Not only in other languages but also in the Aryan family of speech reduplication serves to represent other relations of gram-

mar than that of past time. When the Frenchman says *beaucoup beaucoup*—meaning “very much”—he is employing reduplication to express the superlative relation just as much as the old Accadian with his *galgal*, “very great,” while the very fact that there are Greek presents like *δίδωμι* and *τίθημι*, ought to show that there was once a time in the history of Aryan speech when reduplication served other purposes than that of denoting past time. So it is with all the rest of the grammatical machinery which we call flexion. First of all the growing intelligence came to have, as it were, an intuition of certain relations between the parts of a sentence, and then sounds and forms already existing were adapted to denote these. And the very same form might at successive periods in the development of a language be adapted to denote different relations, as we have just seen was the case with reduplication. When suffixes were used for a similar purpose, they too had to follow the general analogy. Many of these suffixes seem coeval with the beginnings of Aryan speech, at least so far as we know anything about it, but others of them, like the person-endings of the verb, are really instances of composition, the final part of the compound having become a mere suffix, and so, like many other suffixes, been adapted to the use of flexion.

This brings us to those suffixes which have never been applied to a purely flexional purpose. If we turn over the pages of an English dictionary we shall come across the two familiar words *knowledge* and *wedlock*, which at first sight seem to have nothing in common. On tracing them back to earlier forms, however, we find that *know-*

*ledge*, Old English *know-leche*, like *wed-lock*, Old English *wed-lâc*, are both compounded with the Anglo-Saxon *lâc*, "sport" or "gift," the Old High German *leih*, the Old Norse *leikr*, and the Gothic *lâiks*. The word still survives in the north of England under the form of *laik*, "to play," and the provincial *lake-fellow* is merely "play-fellow."<sup>1</sup> Several abstracts were formed in Anglo-Saxon by the help of it; thus we have *feoht-lâc*, "fight," *gudh-lâc*, "battle," *bryd-lâc*, "marriage," *reaf-lâc*, "robbery."

Now what has happened in the case of the English *lâc* has happened in the case of a good number of other words in all the languages spoken throughout the world. Words originally independent and distinct become so glued together in composition that one of them loses its personal identity, as it were, and comes to be the mere shadow of the other, whose meaning it qualifies and classifies. Thus, for instance, the Greek *κατὰ*, when compounded with the verb *ἄγω*, "to lead," limits the sense of the latter to "leading down," and our own *hood* or *head*, the Anglo-Saxon *hâd*, "a state," in words like *Godhead* or *maidenhood*, refers the nouns to which it is attached to a new and particular class.

Besides flecational suffixes, then, classificatory or formative suffixes also may ultimately be due to the process of composition. Upon them, too, analogy will have worked its influence, assimilating them to the other suffixes which in course of time they had come to resemble. When composition had once reduced a word to the condition of a mere adjunct of another word, there

<sup>1</sup> Earle: "Philology of the English Tongue" (2nd edition), p. 305.



was no reason why it should not be put to the same uses as other similar adjuncts. When the root *bhar*, "to bear," in such Latin compounds as *letifer* could no longer be distinguished from the suffix *-tio(n)* in words like *na-tio*, it was naturally treated in the same way.

But it does not follow, as a good number of writers on language have assumed, that because some of the classificatory suffixes are examples of composition, all of them are so, any more than in the case of flection and the flectional suffixes. Indeed, we have only to glance at the numerous suffixes employed by our own Aryan family of speech in forming or "building" words to see how impossible it would be to trace back a large proportion of them to independent words. How, for instance, could we claim any such origin for the suffixes *-la-* and *-ra-* in *querela* and *λαμπρός*, or the suffixes *-ana-*, *-na*, and *-an* in *pecten*, *donum*, and *ἰκανός*? With such suffixes all we can do is to watch the changes they have undergone, or caused other sounds to undergo, through the action of phonetic decay and false analogy. Thus in Latin where the combination *sr* changes into the softer *br*, stems like *ceres* (Sanskrit *'siras*), "head," and *fes* (as in *festus*) have turned into *cerebrum* and *Februus* when combined with the suffix *-ra*; and if we take the suffix *as* itself, we shall find its sibilant passing into *r* before another vowel, and so originating a long series of curious transformations. The *r* which we get in the genitive of *temporis* was transferred by analogy to the nominative also, where no vowel followed it, and though there was a struggle at first between the twin forms in *s* and *r*, traces of which survive

in the twin *arbos* and *arbor*, the later and incorrect form with *r* finally carried the day, and classical Latin knows only of a *sopor*, not a *sopos*. But it may be asked why should the penultimate syllable of *sopōris* be long whereas it is short in *tempōris* and *arbōris*, and why, too, should *sopor* be masculine while *tempus* is neuter? Here, again, false analogy has been at work. A certain number of masculine nouns terminating in *-tor* and denoting agents, like *dator* or *victor*, existed in the language, and when *sopos* was changed to *sopor*, it was assimilated to these both in gender and in declension. Even *victor*, however, had passed under the action of false analogy. When we compare the Latin *victor* with *pater*, or the Greek *σωτήρ* with *πατήρ*, it is at once clear that we are dealing in each case with the same suffix, although in *victor* the vowel has been thickened into the fuller *o*. But while *victor* and *σωτήρ* have a long vowel in the oblique cases, this is not the case with the much older words *pater* and *πατήρ* (accusative *πατέρα*). It is evident, therefore, that this long vowel must have been a sort of after-thought; and so, in fact, it was. First of all the vowel of the nominative was lengthened to compensate for the loss of the final sibilant (*paters*), and the quantity of the vowel in the nominative was then analogically extended to the other cases as well. How far this was from having been originally the case may be gathered from another form of the same suffix which we have in the Sanskrit *patram*, the Greek *πάτριον*, and the Latin *ara-tr-um*. Here the vowel between the two consonants of the suffix has disappeared altogether, as it has also in words like the Latin *sæclum* for *sæ-culu-m*, or the Gothic *nê-thla*, our *needle*, where the

suffix, in spite of the change it has suffered, really goes back to *tar*. The latter group of words (in *tar*), however, is distinguished from the former (in *trum*) in both signification and gender, the masculine agent being replaced by a neuter noun of instrumentality. We can easily see how such a transition of meaning must have come about. The agent presupposes the act just as much as the act presupposes the agent. Agent and act, in fact, are correlative terms, and the parent-Aryan distinguished them, not by the classificatory suffix—for they both belonged to the same class—but by the flecational suffix, which was in the one case *-s* in the nominative singular, and in the other *-m*. The Latin *trucidator* and the English *murder* (formerly *murther*, like *slaugh-ter* and *laugh-ter*) have precisely the same suffix, and it is only a recollection of the difference in meaning in the flecational suffixes which has survived their loss that prevents them from being used with the same signification. Even these flecational suffixes themselves—as we shall see hereafter—did not originally imply that difference of meaning to the expression of which they were afterwards adapted. In nouns like the Latin *virus* or the Sanskrit '*siras*-, the final sibilant denoted a neuter rather than a masculine or a feminine, while *servum* or *humum* show that the final labial might characterize the objective case of both masculine and feminine nouns.

The suffix *tar* (*ter*) brings us back to those classificatory suffixes which trace their descent from independent words, if, as is very probable, we have to connect it with the root found in our *through*, the Latin *trans* and *ter-minus*, the Zend *tarô*, "across," the Sanskrit *tar-âmi*,

"I pass over," and perhaps, too, the numeral *tri, tres, three*.<sup>1</sup> It is not difficult to understand how a word signifying "to go through with a thing," could be taken to form nouns of agency. What more suitable description could be given of "a giver" than "one who goes through with giving," *dator(s)*? The antiquity of this use of the suffix in our family of speech may be gathered from the fact that it is employed to form those nouns of relationship which are the first to require a name. *Brother, sister, daughter, mother, father*, all contain this ancient suffix. *Brother* (*bhrâ-tar*) is "the bearer," from the root *bhar*, *daughter*, "the milker" or rather "sucker," from the root *dugh*, while the Sanskrit grammarians derive *father* (*pitar*) and *mother* (*mâtar*) from the roots *pâ* and *mâ*, which respectively mean "to defend" and "to create." It is obvious, however, that both "father" and "mother" must have received names long before it was necessary to speak of "going across" or "passing through," and that our Aryan ancestors would not have waited to compound two words together before giving names to the nearest and dearest of relationships. As a matter of fact, in almost all languages names have been found for the parent in the two simple labial utterances *pa* and *ma*; and the identity of these with the Aryan roots *pâ* and *mâ* must be a pure accident. What seems to have happened in the case of our names of relationship was this. When the Aryan family first comes before us in the records of speech, it is as a civilized clan with a vast but indeterminate background of unknown history lying

<sup>1</sup> The only difficulty here is that the base of the feminine in Sanskrit is *tîsar*.

behind them. They had long since entered upon what may be termed the epithetic stage, when man discovered that he was a poet, and began to invent epithets for the objects about him, and to form compounds. It was at this stage of culture and civilization that the Aryan community coined compound epithets for *brother*, for *daughter*, and for *sister*, which succeeded in driving out and replacing the older words that had preceded them. The new compounds in *tar* took the fancy of the community, and were widely extended by the force of analogy. The old labials which had done duty for the ideas of "father" and "mother" followed the fashion set by the younger names of relationship, and so just as *bhrâ-tar* had come to signify "brother," *pa-tar* and *mâ-tar* came to signify "father" and "mother."

Languages do not begin with composition. If the sentence is anterior to the word, a considerable time must elapse between the first beginnings of a language and the piecing together of two independent words. Isolating tongues like the Chinese or the Burman, where so much use is made of composition in order to create new conceptions or to define old ones, are shown by this very fact to have passed into a decrepit stage of existence. The epithetic stage is one far advanced in the history of a speech; it implies poetic imagination, a certain measure of culture and civilization, and the germs of a mythology. The new compounds of this epithetic stage follow the genius and analogy of the language to which they belong. If the formation of words depends largely on the use of suffixes, the newly coined words will in time adapt themselves to the old rule; what were

once independent words will become suffixes, and be employed in exactly the same way as the other suffixes of the language.

The very existence, then, of classificatory suffixes due to composition in our Indo-European idioms implies the existence of earlier suffixes for which we cannot claim a similar origin. We have already seen that this is the case with many of the suffixes which serve the purposes of flexion; though the person-endings of the verb go back to separate words, every attempt to discover such a derivation for the principal case-endings has ended in failure. What is true of the case-endings is pre-eminently true of those suffixes which are neither flexional nor classificatory. If we analyze the Latin *alumnus*, we find first of all the flexional suffix *-(u)s*, then the classificatory suffix *mino*, which relegates the word to the same class of middle participles as the Greek *τυπτόμενος*, and lastly, the suffix *u*, which intervenes between the root *al* and the classificatory suffix *mino*. We may call this *u* a "connecting-vowel," or "an euphonic vowel," or anything else we choose, but the fact remains that it is a suffix which can be separated from the root *al*. It is a suffix, however, which is neither flexional nor classificatory, and may be termed secondary for want of a better name. Secondary suffixes play an important part in our family of speech, and just as a flexional suffix often appears as a classificatory one, so, too, a classificatory suffix may appear as a secondary one. If, for example, we compare a word like *civitas* (*civ-i-ta-t-s*) with *sec-ta*, we may not only get the secondary suffix *-i-*, following immediately upon the root, but also a reduplication of the classifi-

catory suffix *ta*, which here at least can have no classificatory sense. We may accordingly define a secondary suffix as one which does not refer the word of which it forms a part to any particular class; and where we have several classificatory suffixes amalgamated together the first of these have generally become secondary. Thus the English *songstress* is a combination of two suffixes, one Saxon and the other Romanic, which equally denoted the feminine. By the side of *sang-cre*, "the singer," stood in Anglo-Saxon *sang-estre*, "the songstress;" it was only when the classificatory significance of the termination had died out that a new one which really went back to the Greek *-ισσα* through the Latin *issa* (as in *abbatissa*), and the French *-esse* (as in *justesse*),<sup>1</sup> was attached to it, and so the old classificatory suffix became a merely secondary one. In fact, as soon as the force of a classificatory suffix has been weakened in a word, a fresh classificatory suffix is always ready to be attached to it, just as children will talk of *more-cr* and *most-est*, or as Lord Brougham introduced the equally anomalous *worser*.

Now these secondary suffixes play a most important part in a large number of languages, and more especially in our own Aryan ones. It is seldom that a classificatory or flecational suffix can be added immediately to the root, as in the Sanskrit *ad-mi*, "I eat;" a secondary suffix has usually to intervene, by means of which the root is raised to what has been variously termed a base, a theme, or a stem. So far as the Indo-European family of speech

<sup>1</sup> Brachet, however, holds that *justice* and *justesse* are collateral forms, both from the Latin *-itia*.



is concerned, it is probable that even such exceptions to the general rule as that of *ad-mi* are really due to phonetic decay, which has worn away the original stem to a simple monosyllable, as it has done in so many English words like *man* or *fall*. When we come to deal with roots, we shall see good reason for believing that they were all or for the most part once dissyllabic, and the tendency that many children show to turn the monosyllables of modern English into dissyllabic words may be but an instinctive reversion to the early type of speech. No doubt it is very possible that just as classificatory suffixes have been changed into secondary ones, so on the other hand secondary suffixes may have come in course of time to assume a classificatory character. A conspicuous example of this may be found in the suffix *γα*, which in Greek words like *φέρουσα* for *φερο-ντ-γα*, or *δότερα* for *δοτ-εφ-γα*, has become a mark of the feminine gender. A distinction of gender is by no means engrained in the nature of things, and the majority of spoken languages, such as most of those which are agglutinative or isolating, know nothing at all of it. In some idioms, those of the Eskimo, Chocktaw, Mush-togee, and Caddo, for instance,<sup>1</sup> the place of gender is taken by the division of objects into animate and inanimate, while elsewhere they are divided into rational and irrational. In the Bâ-ntu dialects of South Africa, nouns are separated into a number of classes, in one case as many as eighteen, by means of prefixes which were originally substantives like our *-dom*, *-ship*, or *-hood*; and the agreement of the pronoun, adjective, and verb with

<sup>1</sup> "Archæologia Americana," ii. pp. 25, 166, 169.

the substantive is denoted by the employment of the same suffix. Bleek has not inaptly compared these classes of the Bâ-ntu noun with the genders of our own family of speech. Thus if we were to take a noun like I-SI-*zwe*, "nation," which belongs to the *si*-class or gender, in order to express the sentence "our fine nation appears, and we love it," the Kafir would have to say I-SI-*zwe* S-*etu* E-SI-*χ'le* SI-*ya-bonakala si-SI-tanda*, literally "nation ours appears, we-it-love." Similarly the noun U-LU-*ti*, "stick," would require a corresponding change of prefix in the words in agreement with it; and the sentence would run: U-LU-*ti* LW-*etu* O-LU-*χ'le* LU-*ya-bonakala si-LU-tanda*.<sup>1</sup> There are many indications that the Aryan language, or rather the ancestor of that hypothetical speech which we term the parent-Aryan, was once itself without any signs of gender. We have only to turn to Latin and Greek to see that the words which denote "father" and "mother," *pater* and *mater*, *πατήρ* and *μητήρ*, have exactly the same termination, while so-called diphthongal stems as well as stems in *i* (*γα*) and *u* (like *ναῦς* and *νέκυς*, *πόλις* and *λίς*) may be indifferently masculine and feminine. Even stems in *o* and *a*, though the first are generally masculine and the second generally feminine, by no means invariably maintain the rule, and feminines like *humus* and *ὄδος* or masculines like *advena* and *πολίτης* show us that there was a time when these stems also indicated no particular gender, but owed their subsequent adaptation, the one to mark the masculine and the other to mark the feminine, to the influence of

<sup>1</sup> Bleek: "Comparative Grammar of the South African Languages," pp. 97, 98.

analogy. How analogy came to act seems to have been as follows. First of all the idea of gender was suggested by the difference between man and woman, male and female, and, as in so many languages at the present day, was represented not by any outward sign, but by the meaning of the words themselves. Thus in the Hidacha of North America we are told that "gender is distinguished by using, for the masculine and feminine, different words, which may either stand alone or be added to nouns of the common gender,"<sup>1</sup> and in the Sonorian languages further south it can only be denoted by the addition of words which signify "man" and "woman."<sup>2</sup> Then when the conception of gender had once been arrived at it was extended to other objects besides those to which it properly belongs. The primitive Aryan had not yet distinguished the object thought of from the subject that thought of it; he was still in the stage of childhood, and just as he transferred the actions and attributes of inanimate objects to himself, so too he transferred to them the actions and attributes of himself, and endowed them with a life similar to his own. The same age which saw the creation and growth of a mythology saw also the origin of gender in nouns, and the distinction of gender in the demonstrative pronouns, due to their reference to animate beings, reacted on the nouns expressive of inanimate objects to which they likewise referred. As soon as the preponderant number of stems in *o* in daily use had come to be regarded as masculine

<sup>1</sup> Matthews: "Ethnography and Philology of the Hidatsa Indians" (1877), p. 95.

<sup>2</sup> Buschmann: "Abhand. d. Berliner Akademie" (1869), i. p. 103.

on account of their meaning, other stems in *o*, whatever might be their signification, had to follow the general rule and be classed as masculine nouns. How readily the gender of a word may be determined by its termination has been already seen in the history of the Latin stems in *-os*. Here and there the constant use of a word with particular pronouns or its obvious and natural meaning resisted the common tendency, and hence the preservation of such anomalies as *ὄδος*, *humus*,<sup>1</sup> and *advena* mentioned above. The suffix *ya*, however, like the suffix *-id-* (as in *αὐλητής*) in Greek or the suffix *-ic-* (as in *victrix*) in Latin, formed part of a class of words which all followed the dominant type; neither use nor meaning interfered with the appropriation of them all to express the feminine gender. The accident by which the suffix was attached to words which chiefly denoted female agents eventually caused it to become a classificatory instead of remaining a mere secondary suffix. But the Aryans were not contented with only two genders, as the Semites and some other races were. A time came when the Aryan awoke to the consciousness that he was essentially different from the objects about him, that the life with which he had clothed them was really but the reflection of his own. He began to distinguish the agent from the patient, and to turn his middle conjugation into a passive one. The first sign of this new-grown consciousness was the formation of a nominative for the first personal pronoun; *ego*, *ἐγών*, the Sanskrit *aham*, is a far later creation

<sup>1</sup> The Sanskrit equivalent of *humus*, however, has had to submit to the prevailing analogy, and in the form of *bhūmi* assume what has become the feminine suffix.

than the objective *me* or *mâ*, and whether it be a compound or not, as some scholars believe, at all events it marks the epoch when the "me" became an "I." The discovery had been made that a difference existed between the nominative and the accusative. But this difference existed only in the case of animate beings, or of those objects which the custom of language and the habits of thought it had produced regarded as animate; there was another class of objects and ideas which were beginning to require a name and yet could not be reckoned as coming under either of the two genders with which the language was already acquainted. The same development of thought which had revealed the distinction between subject and object brought with it also the conception of abstracts or general terms. Besides the individual trees which had long ago received their names, the idea of "tree" itself now needed a word to express it, and the speaker was no longer contented with detailing his single utterances one by one, but wanted a general term like "word" or "speech" wherein to sum them up. And so the new class of neuter nouns came into existence, which were really nothing more than old accusative cases or bare stems used as nominatives and given a separate life of their own. So far as form goes, the Greek *δένδρον* and *ἔπος* cannot be distinguished from *λόγον* and *ὄπες*, the Sanskrit *vâchas* representing both *ἔπος* and *ὄπες* alike, any more than the Latin *regnum* and *vulgus* can be distinguished from *dominum* and *reges*. In the pronouns the bare stem in *t* or *d*, which had once served for all cases and all genders, was set apart for neuter nouns, and the Aryan declension was made

complete with its encumbrance of three genders, which it has needed the practical genius of the English language to shake off. The further changes that took place in the distribution of these three genders must be described by the historical grammars of the special languages of the Aryan family: the age came when their original meaning and intention was as much forgotten as that of mythology; they were looked upon as the functions of certain suffixes which thus became classificatory, and, as in Latin stems in *-as* or French nouns like *mer* which owe their gender to the confusion of the plural nominative *maria* with the singular nominative of *musa*, they became the sport and puppet of false analogy. The mixture of dialects which varied as to the genders they assigned to particular nouns completed the confusion, and modern German is an instance of a language which still clings to an outward excrescence of speech which originated in childish habits of thought and has now lost all sense and reason for its existence. A mere tax upon the memory and an embarrassment to free literary expression, it is no wonder that German genders are a sore trial to the children, who are sometimes several years before they learn to use them correctly. In this respect they resemble the Swedish peasantry, who are said to find an equal difficulty with the genders of their own tongue.

The origin of gender is one of the questions belonging to what some German scholars have termed "the metaphysics of language." The metaphysics of language deals with the source and nature of grammatical ideas as distinct from the phonetic machinery by which they are expressed; it seeks by a comparison, firstly of cognate

dialects and then of families of speech, to discover the conception which lay at the bottom of such grammatical facts as gender, number, and the like. We want to know not merely how the relations between the several parts of the sentence are expressed, but what those relations actually are. The idea must exist before phonetic means are adapted to represent it, and in order to reach it we must scientifically trace the history of the phonetic means. The metaphysics of speech, therefore, is but the second branch and division of its morphology, bearing the same relation to the inquiry into the growth and origin of stems and suffixes and suchlike phonetic forms of grammar that sematology does to phonology. The morphology of language is as much concerned with grammatical ideas as with the external form in which they are embodied. It is these grammatical ideas more than their phonetic embodiment that constitute the *structure* of a tongue.

Let us see, for example, whether we can track the conception of number back to its first starting-point. Strange as it may seem there are some uncivilized languages which make as little distinction between the singular and the plural as we do ourselves when we use words like *sheep*. Thus Mr. Matthews states that "Hidatsa nouns suffer no change of form to indicate the difference between singular and plural,"<sup>1</sup> and in the Sonorian tongues, according to Buschmann,<sup>2</sup> "the simple word in the singular serves also for the plural," while the monosyllabic Othomi can distinguish between singular

<sup>1</sup> "Ethnography and Philology of the Hidatsa Indians," p. 96.

<sup>2</sup> "Abhandlungen d. Berlin. Akad." (1869), i. p. 122.



and plural only by the prefixed article *na* and *ya*,<sup>1</sup> and the Amara of Africa can only say *fürüşn ayūhu*, "I have seen horse," leaving the hearer to decide whether the horse is one or many. In spite of the vast length of time during which these languages have been shaping and perfecting themselves, the conception of number is still so far from being consciously realized that no phonetic means have yet been adapted or devised to express it. If we turn to the Tumali of Africa we find in the case of the personal pronouns *ngi*, "I," *ngo*, "thou," and *ngu*, "he," a slight advance upon this poverty of thought. Here the plural is denoted by the postposition *da*, "with," so that *ngi-n-da*, "we," is literally "(some one) with me." The mind has come to distinguish between itself and that which is outside itself, to realize, in fact, that it has an individual existence distinct from that of some one else, and so the conception of duality is attained. At this conception mankind stopped for a long while; indeed, there are many races and tribes who have not even yet passed beyond it. Wherever the so-called plural is formed by means of reduplication—that is to say, wherever the doubling of a thing is the furthest point of multiplicity to which the mind can reach, there we have not yet a true plural, but only a dual. All over the world reduplication seems to have been the earliest contrivance for denoting something beyond the singular, and to this day in Bushman, as in many other savage jargons, it serves for a plural.<sup>2</sup> The same evidence that is borne by the so-

<sup>1</sup> "Eléments de la Grammaire Othomi," in the "Revue Orientale et Américaine," p. 21.

<sup>2</sup> Friedrich Müller: "Grundriss der Sprachwissenschaft," i. 2, p. 27.

called reduplicated plural is borne also by the numerals. The aborigines of Victoria, according to Mr. Stanbridge, "have no name for numerals above two;"<sup>1</sup> the Puris of South America call "three" *prica* or "many," which is also the original meaning of the same numeral in Bushman, and "the New Hollanders," says Mr. Oldfield of the western tribes, "have no names for numbers beyond *two*." It is even possible, as has been already noticed, that our own Aryan *tri*, *three*, goes back to the same root as that of the Sanskrit *tar-ô-mi*, "I pass beyond," and once signified nothing more than that which is "beyond" two. The fact that the conception of duality preceded the conception of plurality, explains how it is that the seemingly useless dual has been preserved in so many languages by the side of the plural. It is a relic of a bygone epoch, a survival, as Mr. Tylor would call it, which tends to be more and more restricted in use until it disappears altogether. In both Aryan and Semitic the dual appears only as an archaic and perishing form. The Æolic, in this as in the throwing back of the accent, the least conservative of the Greek dialects, has lost it entirely; the Latin keeps it merely in *duo*, *octo*, and *ambo*, and if we pass to the Semitic idioms, the dual of the noun is preserved only in words which denote natural pairs like "the eyes" or "the ears," while in the verb it has been maintained by Arabic alone, and in some exceptional cases by Assyrian. Language, however, did not always proceed at once from the dual to the plural, from the conception, that is, of limited plurality to the conception of unlimited plurality. Many languages pos-

<sup>1</sup> "Trans. of the Ethnological Society," i. p. 304.

sess a trinal number, or what are called inclusive and exclusive forms of the personal pronouns, and in one of the Melanesian idioms, as well as in Vitian or Fijian, we even find a quadruple number formed by the attachment of *tavatz* or *tovatz*, "four," to the pronouns *na*, "you," and *dra*, "we."<sup>1</sup> In Cherokee the dual of the first person has one form when one of two persons speaks to the other, another form when the one speaks of the other to a third, *inaluiha* being "we two (*i.e.* thou and I) are tying it;" *awstaluiha*, "we two (*i.e.* he and I) are tying it." In Annatom, again, *aniyak* is "I," *akaijan*, "you two + I," *ajumrau*, "you two - I," *akataij*, "you three + I," *ajumtaij*, "you three - I." More usually the reduplicated dual led to a plural without the intervention of a trinal number, or the plural was denoted by some word like "multitude" or "heap," which in course of time came to be a plural sign, just as in other instances it came to signify the numeral "three." In the Aryan languages M. Bergaigne has shown<sup>2</sup> that the plural of the weak cases (nominative, accusative, and vocative) was identical with the singular of abstract nouns, and their formatives, *-as* or *-âs*, *-i* or *-î*, *-â* or *yâ*, and *-an*, continued to the last to mark abstracts like the Sanskrit *âhan*, "the day," *lipi*, "writing," *vrajyâ*, "the act of travelling," or *mudâ*, "joy." So in Semitic Assyrian, where an abstract is generally regarded as feminine, the feminine plural in *-utu* has become the termination of singular nouns like *'sarrutu*,

<sup>1</sup> Latham in the "Proceedings of the Philological Society" (1852), p. 59.

<sup>2</sup> "Du Rôle de la Dérivation dans la Déclinaison indo-européenne," in the "Mémoires de la Société de Linguistique de Paris," ii. 5.

“a kingdom,” and then by a curious change of function been appropriated to a certain class of masculine plurals. There are reasons for thinking that the Semitic plural has been based on the dual; however this may be, the suffixes of the Aryan plural, so far at least as the weak cases are concerned, are suffixes which we find elsewhere used as secondary and not classificatory ones.

Even the genitive case, necessary as it appears to us to be, once had no existence, as indeed it still has none in groups of languages like the Taic or the Malay. Instead of the genitive, we here have two nouns placed in apposition to one another, two individuals, as it were, set side by side without any effort being made to determine their exact relations beyond the mere fact that one precedes the other, and is therefore thought of first. Which of the two should thus precede depended on the psychological point of view of the primitive speaker. We are all acquainted with the distinction between the objective genitive where the governed word is the object of the other, as in *amor Socratis*, “love felt for Socrates,” and the subjective genitive where the converse is the case, as in *Socratis amor*, “love felt by Socrates,” and this distinction has led to two different conceptions of the genitive relation being formed by different races. In the Aryan family, for instance, the genitive must precede its governing noun; *Horsetown*, equally with *horse's town*, means “town of the horse.” In Semitic, on the contrary, the position of the words is reversed; here the genitive has to follow, not precede. Perhaps we may see in the position of the genitive in the two great inflectional families of speech a symbol of the characters of the two races.

The Aryan, the inventor of induction and the scientific method, fixes his first attention on the phænomenon and traces it up to its source; the Semite, on the other hand, makes the first cause his starting-point, and derives therefrom with easy assurance all the varying phænomena that surround him.

Now, this apposition of two nouns, which still serves the purpose of the genitive in many languages, might be regarded either as attributive or as predicative. If predicative, then the two contrasted nouns formed a complete sentence, "cup gold," for instance, being equivalent to "the cup is gold." If attributive, then one of the two nouns took the place of an adjective, "gold cup" being nothing more than "a golden cup." The apposition of two substantives is thus the germ out of which no less than three grammatical conceptions have developed—those of the genitive, of the predicate, and of the adjective. It is but another instance of that principle of differentiation which we have found at work upon the phonetic forms whereby the relations of grammar are expressed. Dr. Friedrich Müller has observed<sup>1</sup> that, as a general rule, the attribute and the genitive, or as he terms it the possessive, occupy the same place, and are treated as one and the same relation. In Hottentot, as in Chinese, where the defining noun must precede that which is defined, "right-path" means equally "the right path" and "the path of right," and our own English language is another example of the same usage. In Malay, on the contrary, as in the Semitic tongues, both adjective and genitive have to follow the noun they define; thus the Malayan *ōran ūtan*, or "man

<sup>1</sup> "Grundriss der Sprachwissenschaft," i. 2, p. 2.

of the wood," is literally "man-wood," and *gūmin besar*, "a great mountain," "mountain-great." On the other hand, the predicative relation is marked off from the attributive and genitival by a converse order of words; in Malay, for instance, the predicate is placed before its subject, as in *besar gūmin*, "great (is) the mountain," and the Semitic perfect is formed by affixing the pronouns of the first and second persons to a participle or verbal noun.<sup>1</sup> These primitive contrivances for distinguishing between the predicate, the attribute, and the genitive, when the three ideas had in the course of ages been evolved by the mind of the speaker, gradually gave way to the later and more refined machinery of suffixes, auxiliaries, and the like.

Now it will be noticed that while the predicative relation is contrasted with the attributive and the genitival, the two latter assume the same form. Where the relations of grammar are denoted by position alone, no distinction is made between the attribute and the possessive. There is nothing in the outward form to tell us whether in expressions like *horsetown* or *ōran ūtan*, *horse* and *ūtan* are to be considered as adjectives or as genitives. And in point of fact there is at bottom little or no difference between them. The primitive instinct of language did not err in treating the two conceptions as essentially one and the same. A "gold cup" is exactly equivalent to a "cup of gold." The adjective describes the attribute which defines and limits the class to which its substantive belongs; and so, too, does the

<sup>1</sup> See Sayce: "The Tenses of the Assyrian Verb," in the "J. R. A. S.," Jan. 1877.

genitive. Both indicate the species of a genus, limiting the signification of the substantive, and so having the same functions as those determinatives which, as we have seen, play so large a part in a Chinese or Burman dictionary. In such languages these defining words perform the same classificatory office as the classificatory suffixes of an Aryan dialect; but whereas the classificatory suffixes of an inflectional tongue are neither adjectives nor attributes, the classificatory substantives of the isolating language are really both. We are told that a school-inspector plucked some children a short time ago for saying that *cannon* in *cannon-ball* was a noun instead of an adjective; the pedantry of the act was only equal to the ignorance it displays, and illustrates how often the artificial nomenclature of grammar breaks down when confronted with the real facts of language.

So long therefore as the adjective or genitive is denoted by position only, we cannot draw any true line of distinction between them and the determinatives of the Taic idioms. They all have the same end—that of limiting and defining a noun—of referring it to some special class or investing it with some special quality. Hence it is that the genitive case so frequently assumes the form of an adjective, even in those languages in which the adjective and the genitive have been eventually distinguished from one another. In the Tibetan dialects adjectives are formed from substantives by the addition of the sign of the genitive, as *ser-gyi*, “golden,” from *ser*, “gold;” and in Hindustani the genitive takes the marks of gender according to the words to which it refers.<sup>1</sup>

<sup>1</sup> Max Müller: “Lectures,” i. p. 106.



Greek adjectives like  $\delta\eta\mu\acute{o}\text{-}\sigma\iota\omicron\text{-}\varsigma$  remind us of the old genitive  $\delta\eta\mu\omicron\sigma\iota\omicron$ , which has become  $\delta\eta\mu\omega\iota\omicron$  in Homer, or the Sanskrit genitive  $'siva\text{-}sya$  and the pronouns  $ta\text{-}sy\acute{a}\text{-}s$  and  $ta\text{-}sya\text{-}i$ , and though the suffix of  $\delta\eta\mu\acute{o}\text{-}\sigma\iota\omicron\text{-}\varsigma$  was originally rather  $\text{-}t\acute{y}a$  than  $\text{-}sya$ , since a Greek sibilant between two vowels tends to disappear, the two suffixes once performed the same functions and bore the same relation to each other as the demonstratives  $sa$  and  $ta$ . The Aryan genitive stands on the same footing as the other cases of the nouns which have been traced back by M. Bergaigne to adjectives used adverbially. If we look at the Bâ-ntu languages we shall have little difficulty in understanding the reason of this close connexion between adjective and genitive. As we have seen, the agreement of words together in these languages is pointed out by the use of common prefixes, which were once independent substantives, and have come to answer somewhat to the marks of gender in Greek and Latin. The same prefixes, however, not only indicate the concord of adjective and substantive, of verb and subject, but also of nominative and genitive. Thus the Zulu would say  $I\text{-}SI\text{-}t\acute{y}a\ S\text{-}O\text{-}m\text{-}fazi$ , "the dish of the woman," where the common prefix  $si$  declares the relation that exists between the two ideas. If we assume that the primary meaning of  $si$  was "mass," the words  $I\text{-}SI\text{-}t\acute{y}a\ S\text{-}O\text{-}m\text{-}fazi$  would properly be read "mass-dish mass-woman." The word  $si$  is thus the standard and connecting link by means of which the other two are brought together and compared. It had been attached to a certain group of words at a time when the conception of adjective or genitive had not yet been clearly realized,

and when mere position, mere apposition, indicated by itself the association of two ideas. This close association caused it finally to lose all distinctive existence of its own, to become, in short, an "empty word" or formative, the index of a particular class like the classificatory suffixes of our own tongues. Like these suffixes, again, it came to have what would be called in Sanskrit or Greek a flexional power; it not only marked the class to which the substantive belonged, but also the fact that another word was in concord with it. Whether this were a concord of the adjective or the genitive, however, the Kafir dialects have never advanced so far as to determine.

Unlike either the Kafir with prefixes which denote at once attribute, possessive, and even predicate, or the Aryan languages with their suffixes each fulfilling a special function, the Semitic tongues distinguished between genitive and adjective by subordinating the governing word to its "genitive," and keeping the attention fixed on the characteristics which separated species from species within a common genus. While the adjective constituted an independent word by the side of the substantive with which it was joined, the genitive was regarded merely as the latter half of a compound of which the word defined by it was the first part. In the so-called *construct state*, the governing noun is pronounced, as it were, in one breath with the genitive that follows it; its vowels are shortened, and its case-terminations tend to disappear. Thus in Assyrian, while *'sarru rabu* is "great king," *'sar rabi* is "king of great ones," and in Hebrew the construct *dhiv'rê hâ'âm*, "words of the

people," stands in marked contrast to the simple *dhčvârim*, "words."

The agglutinative languages of Western Asia, again, traversed an altogether different road. In the Accadian of ancient Chaldea, we still find instances in the oldest inscriptions of a genitive by position, which only differs from an adjective by the meaning it bears. Thus, *lugal calga* is "strong king," *lugal'Uru*, "king of Ur." But a postposition soon came to be added to the second substantive in order to point out more distinctly its place in the sentence, and these postpositions seem originally to have been verbs. At all events, such is the case with one of the postpositions, *lal*, used for the genitive; *lugal'Uru-lal*, for instance, being literally "king Ur-filling," though the more usual postposition *-na* has lost all traces of its source and derivation. The latter postposition is found throughout the Ural-Altai family, as in the Turkish *evin*, "of a house," or the Votjak *murten*, "by a man." It indicates the genitive in Finnish and Lapp, in Mordvin and Samoyed, in Mongol (*-yin*, *-un*), and Mantshu (*-ni*). It is somewhat remarkable that though the Ural-Altai family is characterized by the use of postpositions, that is, by making the defining word follow that which it defines, the modern dialects, with a few exceptions,<sup>1</sup> have discarded the general rule and placed the adjective before its noun. This change of position must be ascribed to a wish for differentiation, when the employment of a special postposition for the genitival relation had familiarized the speaker with the distinction between

<sup>1</sup> See, for instance, Wiedemann: "Grammatik der Wotjakischen Sprache" (1851), pp. 268-271.

adjective and genitive. Elsewhere the distinction was brought into relief by the help of special words or symbols to denote the genitive relation. Just as the Accadians or the Finns employed a postposition which was originally an independent word with a meaning of its own, so, too, the Semites replaced the "construct state" by the insertion of the demonstrative or relative pronoun, *'sarru sa rabi*, for example, literally "king that (is) the great ones," coming to signify simply "king of the great ones," and the Chinese assigned the same office to their *tchi*, "place." The analytic languages of modern Europe have followed in the same track, only employing prepositions like *de*, *of*, or *von*, instead of demonstrative pronouns or other words. When the conception of the genitive had once been clearly recognized, means were soon found for making it as clear in phonetic expression as it was in idea, and the ambiguous machinery of flexion was superseded by a method of expression which had been familiar to the more advanced Ural-Altai idioms from a very remote period.

The history of the genitive has shown us that the same germ may develop very differently in different families of speech. The conception of the genitival relation, when fully realized, has worn a varying aspect to Aryans and Semites, to Accadians and Kafirs. The same grammatical relation admits of being looked at from many points of view, and of being expressed in many ways. Let us now turn to another adjunct of grammar which has assumed more than one form within the same family of speech itself. A definite article is by no means a universal possession of language ; on the contrary, the

majority of languages want it altogether, and wherever it makes its appearance we can trace it back to the demonstrative pronoun, with which it is still identical in German. "That man" and "the man" are in fact one and the same, the only difference between them being that the demonstrative draws emphatic attention to a particular individual, while the article acts like a classificatory suffix by narrowing the boundaries of a genus and reducing it to the condition of a species. The article has thus the same ultimate function as the adjective or the genitive, and we should therefore expect to find it following the lead of the latter and occupying the same position in the sentence. This, however, is not the case. It is true that in English and German the article precedes the noun, but it does the same in Hebrew and Arabic, as also in Old Egyptian, where the adjective follows its substantive; while, on the other hand, in Scandinavian, as in Wallach, Bulgarian, and Albanian, the place of the article is after its noun. The cause of this irregularity is the fact that the article is a very late product in any speech; it does not grow out of the demonstrative until an age which has lost all recollection of the early contrivances of language and found other means than mere position for indicating the attribute of the noun. How late this is may be judged from the absence of the definite article in dialects cognate to those which possess one. Thus in the Semitic languages there is none in either Ethiopic or Assyrian, except in the very latest period of the latter tongue; among the Aryan dialects, Russian and the other Slavonic idioms (Bulgarian excepted) have no article, the Greek article being

very inadequately represented by the relative pronoun *iĵe* in Old Slavonic, while Sanskrit also may be said to be without one, though the demonstrative *sa* sometimes takes its place, as in *sa puruṣa* like *ille vir* in Latin. Neither the Finnic nor the Turkish-Tatar languages have an article, Osmanli Turkish alone occasionally having recourse to the Persian mode of expressing it by a *kezra* (*i*) or *hemza* (') as in *naṭwale-y-ushk*, "the lamentations of love;" Hungarian, however, has been so far influenced by the neighbouring German dialects as to turn the demonstrative *az* or *a* into a genuine article, as in *az atya*, "the father," *a leány*, "the daughter." On the other hand, the objective case, or "casus definitus," as Böhtlingk terms it, seems formed by a demonstrative affix not only in Turkish-Tatar, but also in Mongol and even Tibetan; in Mongol, for instance, it is marked by a suffix which is commonly pronounced *-yighi*.<sup>1</sup> This definite case very often answers exactly to the use of a definite article with the noun, and has arisen through a similar desire to give definiteness and precision to the expression. So, too, Castrén tells us that an affix *-et* or *-t*, which he believes to be the pronoun of the third person, is sometimes attached to the Ostiak accusative, and in Hindustani, where there is no definite article, its place is taken before the accusative by a dative with the suffix *-ko*, and in Persian by the suffix *-ra*, a suffix, by the way, which Schott considers to have been borrowed from the Tatar or Mongol tongues. We may judge how attributive and defining is the nature of the objective case from the Chinese, where the same empty word *tchi*, which,

<sup>1</sup> Böhtlingk: "Jakutische Grammatik," p. 160.

according to Dr. Fdkins, was originally *ti*, is the affix of both the objective and the possessive cases. Passing to the New World, we find the Algonkins alone among the North American Indians prefixing the article *mo* or *m'*, originally a contracted form of the demonstrative *monko*, "that," while the monosyllabic Othomis use *na* and *ya* in the same sense.

But now the question arises—granting the late growth of the definite article and its appearance only here and there in a group of allied languages—Why do some of these use it as a prefix and others as an affix? As in Greek, or Keltic, or Teutonic, the Romanic article which has been developed out of the Latin *ille* always precedes its noun, except in Wallachian, where "the master" must be rendered by *domnul*, that is, *dominus ille*. Professor Max Müller thinks that this position of the article was borrowed from Wallachian by the Bulgarians and Albanians;<sup>1</sup> M. Benlów, on the contrary, holds that Albanian set the example both to Wallach and to Bulgarian.<sup>2</sup> Assuming that Albanian belongs to the Indo-European family of speech—a point, however, which has yet to be satisfactorily determined—we should still have an Aryan language reversing the usual order of Aryan speech. Thus *ἔμερ* is "name," but *ἔμερι*, "the name;" *δῆ* is "earth," but *δῆου*, "the earth;" *δῆρῖε*, "door," but *δῆρῖα*, "the door;" *νιεῖ*, "man," in the accusative, but *νιεῖ-νε*, "the man;" *νιέρεξ*, "men," but *νιέρεξι-τ(ε)*, "the men." Whatever

<sup>1</sup> In Bunsen's "Philosophy of Universal History," i. p. 265.

<sup>2</sup> "La Grèce avant les Grecs," p. 45. According, however, to M. Dozon ("Grammaire albanaise," 1878), the postfixed Albanian article is really a termination like that of the German adjective, and not a relic of the demonstrative pronoun.



may be thought of Albanian, however, we have a clear case of the postposition of the Aryan article in the Scandinavian tongues, where the Swedish *world-en*, for instance, signifies "the world," *luft-en*, "the air," and it is, perhaps, curious that the Scandinavians, like the Albanians, are natives of a comparatively cold and mountainous country. Mountaineers are famous for the use of their lungs, and a postfixed article is necessarily more emphatic than a prefixed one. More effort is required in laying stress on the last syllable of a word than in slurring it over and throwing the accent back.

Now M. Bergaigne has shown<sup>1</sup> that in the primitive Aryan sentence the qualifying word, whether adjective or genitive or adverb, came before the subject and governing word, and this agrees with what we have seen was the early conception formed by the Aryan mind of the attributive relation in contrast to that formed by the Semitic. We should therefore expect to find the article following the rule of other qualifying words, and standing before its noun in the Aryan tongues, and after its noun in the Semitic tongues. So far as the Aryan tongues are concerned, this is its general position. The German dialects which have maintained so firmly the place of the adjective and the genitive have been equally firm in maintaining the place of the definite article.<sup>2</sup> If Wallach influenced Bulgarian and Albanian in affixing the article, an explanation may be found in the forgetfulness shown

<sup>1</sup> "De la Construction Grammaticale," in the "Mémoires de la Société de Linguistique de Paris," iii. 1, 2, 3.

<sup>2</sup> It is possible that the position of the article in the greater number of the Romanic languages may have been influenced by Teutonic usage.

by the Romanic idioms of the early rule of Aryan speech, as evidenced by their putting the adjective after the substantive ; if, as seems more probable, Wallach and Bulgarian were influenced by Albanian, we must bear in mind that the latter language may not be Aryan at all. As for Swedish and the other Scandinavian dialects, the inverted position of the article may be ascribed to what we may call the disorganization of their syntax. While Gothic observed the old rule which made the dependent and defining word precede, it is very noticeable that already in the Icelandic Snorra Edda the genitive without a preposition occurs not only before, but also after its noun. The syntactical instinct of the language was thus disturbed, and there was therefore little to prevent a new defining word like the article from occupying an anomalous place. In the Semitic languages Aramaic alone assigns a natural position to the article, which is represented by the so-called *emphatic aleph* attached to a noun when not otherwise defined by being in the construct state. Now there are many reasons which would lead us to believe that Aramaic was the first of the Semitic dialects in which the article developed itself, and that this happened shortly after its separation from the dialect which subsequently branched off into Hebrew, Phœnician, and Assyrian. The article did not make its appearance in Hebrew or Arabic until the old order of the sentence had been thrown into confusion by rhetorical inversions and the periphrastic genitive formed by the demonstrative pronoun. How it came to be prefixed to its noun is illustrated by the Assyrian. Here a kind of article makes its appearance in the Persian period,

which, when placed after its noun, has the force of the demonstrative "this" or "that." Now and then, however, we find it in conjunction with another demonstrative before the noun, a construction which can easily be explained if we regard the demonstrative and the noun as having been first in apposition, and then brought so closely together that the demonstrative became an article. In Arabic, too, the demonstrative can be prefixed to a noun which is already furnished with the article, and the pronoun and noun are thus regarded as being in apposition to one another. The same is the case in Hebrew, where we occasionally meet with a construction like *zeh ha'âm*, "this people," literally "this the people," as well as *zeh Moshel*, "this Moses."<sup>1</sup> The last example shows us that a proper name was considered definite enough to be put in apposition to the pronoun, even when without the article, and it is not difficult to assume that an usage which first grew up in the case of proper names, should in time have extended itself to all nouns which were considered definite. Even the adjective *rabbim*, "many," is found preceding its noun.<sup>2</sup> The preservation of the case-endings in Hebrew and Arabic may have had something to do with the position chosen by the article; it was easy enough for a demonstrative to pass into an affixed article in Aramaic, where the case-endings seem to have perished early, but it was only possible for it to do so in languages where they were preserved by its standing before the noun. Old Egyptian agrees with Hebrew and Arabic in the general rule of placing the determining

<sup>1</sup> Exod. xxxii. 1, Josh. ix. 12 sq., Is. xxiii. 13.

<sup>2</sup> Jer. xvi. 16, Ps. xxxii. 10, lxxxix. 51.

word after the word it determines ; it also agrees with them in prefixing the article. But this, again, may be explained by the use of the demonstrative as an article having originated in its apposition to the substantive ; while the use of *ua*, "one," as an indefinite article probably assisted in the process. Of course, when a definite article had once come into existence, a difference of position served to distinguish it from the demonstrative pronouns to which it had formerly belonged.

This long inquiry into the causes which have made the article sometimes an affix and sometimes a prefix has introduced us to the last department of the morphology of speech—that which is known as syntax, or the arrangement of words in a sentence. Professor Earle has remarked that syntax varies inversely as accidentence ; wherever we have an elaborate formal grammar, there we have a corresponding poverty of syntax ; wherever we have little formal grammar, as in Chinese or English, there syntax comes prominently into view. This is only another way of stating the fact that in default of such contrivances as inflections, language has recourse to rules of position in order to denote the grammatical relations of words ; and though Greek shows us that a highly developed accidentence may exist along with an equally developed syntax, yet it is quite true that a language which makes such large use of composition as Sanskrit, must be very poor in the matter of syntax. Composition and syntax are antagonistic to each other. The study of comparative accidentence, or, as it is rather loosely called, comparative grammar, is much in advance of that of comparative syntax ; indeed, it is but lately that comparative syntax

has attracted the attention of philologists to any extent, Jolly, Delbrück, Bergaigne, and others being among the pioneers of this branch of linguistic science. Here, too, we must work back to that inner form which underlies the choice of the position of words in a sentence ; we must find out by the comparative method what were the primary syntactical rules observed by a group of cognate tongues, what were the grammatical conceptions they indicated, and how they were modified by the several languages in the course of their subsequent history. The germs of syntax are capable of infinitely various development, although each family of speech starts with its own special point of view, its own particular principle. The Aryan began by placing the defining word before the word defined ; the Semite by placing it after ; just as in Burman the defining word precedes, while in Siamese or Tai it follows. Languages, which have never attained to the idea of a verb, like the Polynesian, must necessarily differ materially from those in which the verbal conjugation plays a principal part ; while in the polysynthetic languages of America, syntax in the proper sense of the term can hardly be said to exist at all. Unlike formal grammar, however, syntax is comparatively changeable ; Coptic has become a prefix language, whereas its parent, Old Egyptian, was an affix one, and the growth of rhetoric as well as the development of grammatical forms tend to obliterate the old landmarks and principles of syntactical arrangement.

The history of the accusative with the infinitive in Latin is a good example of this. Prof. Max Müller

describes his utter amazement when he was first taught to say, *Miror te ad me nihil scribere*, "I am surprised that you write nothing to me,"<sup>1</sup> and there was plenty of reason for it. He has clearly shown that most of the Greek and Latin infinitives were originally dative cases of abstract nouns, and not locatives, as has often been maintained; the Greek *δοῦναι* or *δοῦνέαι*, for instance, answering to the Vedic *dāvāne*, "to give," *τετυπέναι* to *vibh-rāne*, "to conquer" or "effect," *amare, monere, audire*, to *jīv-āse*, "to live." The Greek middle infinitive in *-σαι* is a relic of the Vedic dative of an abstract infinitive from the root *dhû*, "to do" or "place," *ψευδέσ-θαι*, "to do lying," exactly answering to the Vedic *vayodhai* (for *vāyas-dhai*), "to do living," or "to live," on the model of which analogy has created the false forms *τύψεσθαι*, *τύψασθαι* and *τυφθήσεσθαι*. The true character of the Latin infinitive may be discovered from the verb *fieri*, which goes back to an earlier *fiesei*, the dative of a stem in *-s*. Bearing in mind, then, what the infinitive originally was, we have little difficulty in understanding how it came to be used with an accusative, which was really the object after the principal verb. The sentence quoted above simply meant at first: "I am surprised at you for the writing of nothing to me," just as *te volo vivere* was "I choose you for living," or *tempus est videndi lunæ*, "it is the time of the moon, of seeing (it);" and the extension of the use of the accusative with the infinitive to sentences in which we can no longer trace any reflection of its original force, is only another example of the power of analogy in spread-

<sup>1</sup> "Chips," iv. p. 39.

ing a particular habit, the proper sense and meaning of which have been forgotten.

Let us remember, however, that at the time when an Aryan syntax was first forming itself, there was as yet no distinction between noun and verb. The accusative and genitive relations of after days did not yet exist; they were still merged together in a common attributive or defining relation, and the growth of the verb was necessary before a genitive could be set apart to define the substantive, and an accusative or object to define the verb. Reminiscences of this primitive state of things have survived into the later forms of speech. When Plautus says, "Quid tibi hanc tactio est," he is using *tactio* as he would *tango*, and while in the Rig-Veda nouns in *-tar* govern an accusative like transitive verbs, we actually find a verb undergoing comparison in *bharati-tarâm*, "he is more so." In fact, genitive and accusative alike are what Mr. Sweet calls "attribute-words," the one being the attribute of the noun, the other of the verb, and before there was any distinction between verb and noun there could be no distinction between them also. The modern Englishman may well ask whether there is any difference between "the performing this," and "the performing of this;" or between "doing a thing," and "doing badly." The Latin supines and gerunds, which are petrified cases of nouns, are followed by what are termed "the cases of their verbs," and the so-called indeclinable participles of Sanskrit, which are really instrumentals of nouns in *-tu*, equally take the accusative after them. In Greek *ἐδτυχώς ἔχειν* has the same meaning as *ἐδτυχίαν ἔχειν*, and the Greek and San-



skrit use of an accusative with the verb "to be," shows us how artificial are our distinctions between transitive and intransitive verbs. The adverbial sense of the accusative comes out plainly in the Homeric ἀκὴν ἔσαν, and is one more proof of the fact that the accusative, like the genitive, must be classed along with the adjective and the adverb as a qualifying word that defines and limits the words to which it is attached. Custom and grammatical development have alone determined how such qualifying words should be severally used.

The languages of our family of speech are in fair agreement as to the employment of the accusative and the genitive; there are other syntactical contrivances, however, where such an agreement is not to be found. The "ablative absolute" of Latin, for instance, is replaced by a genitive absolute in Greek, by a dative in Lithuanian, by a locative, sometimes also a genitive, and very rarely an ablative, in Sanskrit. In old English we have apparently a dative (as in Anglo-Saxon), as when Wycliffe writes, "they have stolen him, us sleping," whereas, as Mr. Peile observes,<sup>1</sup> we should now say, "we sleeping," using the nominative as occasionally in Greek. As a matter of fact, this so-called "casus absolutus," this case "freed" from all government, and standing outside the sentence to the perpetual astonishment of the grammarians, is really a qualificatory word, dependent like the adverb upon the verb, and denoting the circumstances, or instrument, or mode of an action. Instead of the construction used by Wycliffe, we might just as well have had, "they have stolen him during our sleep."

<sup>1</sup> "Primer of Philology" (1877), p. 112.

Perhaps the first thing that strikes us when we first learn the classical languages, and more especially Latin, is the freedom with which words are dropped *pêle-mêle*, as it were, into a sentence. This power of transposing words stands in marked contrast with the comparatively fixed order of words in a modern European language. When Tennyson says, "Thee nor carketh care nor slander," we feel that he has gone to the extreme length of what is possible even in poetry, and the arrangement of a German sentence, in spite of its inflections, is determined by somewhat severe rules. We must remember, however, that the apparent freedom of the classical languages is due in great measure to the artificial style of literary men who took advantage of the inflectional character of the dialects they spoke to invert the position of words for rhetorical purposes, and that such inversions were not usual in the language of everyday life. We cannot judge a language properly from the works of its literary men, and this is particularly the case with Latin, where the language of literature was divided by a great gulf from the language of the streets. But even in Latin we find the verb gravitating towards the end of the sentence ; this is its predominant position, for instance, throughout the second book of the "Gallic War" of Cæsar, who represents the spoken language of his time much more closely than most of the other authors of Rome. Now, M. Bergaigne, in the very able series of articles already referred to,<sup>1</sup> has lately tried to show that this was not always the position of the Aryan verb. He

<sup>1</sup> "De la Construction Grammaticale," in the "Mémoires de la Société de Linguistique," iii. 1, 2, 3.

begins by distinguishing between *phænomena*, or qualities and acts, and *objects* which are recognized either as bearing these qualities, or as the ends and instruments of the acts. His *phænomena*, therefore, will answer to our qualificatory words, and a sentence in which they occupy the principal place will be a predicative one, just as sentences in which an object is brought into prominence will be "sentences of dependence." The substantive verb is but a late creation; even in Latin a sentence like "majorum benefacta perlecta" is perfectly intelligible though "sunt" is omitted; and such a phrase as *Deus est sanctus* meant at first "God exists as a holy being," the adjective being a predicative attribute or "phænomenon" in apposition to *Deus*. It was only by degrees that the sense of "existence" disappeared from the verb, and it became a simple copula. More than once we have referred to the primary rule of Aryan syntax, according to which the qualifying word is placed before the word qualified; this is a rule which is borne witness to by almost every compound, by the verb which affixes the personal pronouns to its stem; nay, even by our own English, which still makes the adjective precede its noun. Where the rule seems to be violated, an explanation is generally forthcoming. Latin and Greek compounds like *versipellis* or *φιλάδελφος*, really signify "who has the skin changed," "one who has a brother beloved," the first part of the German *tauge-nichts*, our *dare-devil*, is an imperative, and the second element in the Sanskrit *dṛishṭa-pûrvva*, "seen before," is a pronoun. Whether Bergaigne is right in following Grimm's explanation of compounds like *φερέ-φοικος*, *πασί-νοσος*, as containing imperatives, is an open question, though in the Rig-Veda

the imperative and conjunctive are certainly inverted and set before their case ; it is more probable that we are here dealing with instances of false analogy, *δαμάσιππος*, "she who tames horses," having been made equivalent to *ἵππόδαμος*, "horse-tamer," and so made the model of a new formation. As for the *hippopotamus*, or "river-horse," the animal came from Egypt, and so, too, did the manner of compounding its name. Proper names like Ἄγαθος δαίμων, or *Neapolis*, are scarcely in point ; in them, moreover, the attribute and subject are in apposition. The curious use of the article in Greek with two nouns, one of which is a genitive, is based upon a different reason. When the article had once established itself in speech, ὁ τοῦ χοροῦ διδάσκαλος exactly answered to ὁ χορο-διδάσκαλος, "the choir-master," and the second noun being drawn back to the place of its article, we get ὁ διδάσκαλος τοῦ χοροῦ and ὁ διδάσκαλος ὁ τοῦ χοροῦ, an order which is observed in modern Albanian. Turning to Latin, we find that the adjective when placed after the substantive implies a sentence of predication, *res militaris* being "a thing which is military," *navis longa*, "a ship which is long." It is only proper names compounded with *Forum* and *Portus*, like *Forum Julii*, which reverse the order of words as we have it in *juris-consultor*, and in these proper names the stress is on the second part of the compound. The altered position of the adjective in the Romance languages is probably due to the influence of the periphrastic genitive with the preposition *de* ; at all events the older constructions place the adjective before its noun.

The rule followed by genitives and adjectives must have been followed by verbs, which are merely attributes of their subjects, and the formation of the verb by affix-

ing the personal pronouns to the attribute or verbal stem confirms this conclusion. In the primitive sentence the object would have come first, then the attribute or verb, and lastly the subject ; and the Latin *credo*, which has the same origin as the Sanskrit *'srad-dadhâmi*, "heart-placing-I," is a good illustration of it. But a want came to be felt of distinguishing between the attribute as a mere qualificative and the attribute as a predicate, and so while the old order remained the type of a qualificative sentence, it was reversed in predicative sentences ; the subject was put at the beginning and the verb at the end. This process was assisted by the division of the sentence into two halves, one-half consisting of the subject with its dependent words, and the other half of the verb and object ; and if we suppose that each half was represented by a single compound, we can easily see how ready to hand the process would have been. Indeed, the verb seems to fix itself at the end of the sentence almost naturally, since the deaf-mute when taught to communicate with others, invariably sets the verb in this position, the subject and object to which his thought is chiefly directed being the first to occur to his mind. It is this position of the verbal attribute which has established itself in Sanskrit, Greek, Latin, Gothic, and Anglo-Saxon ; which still is the rule in German in dependent sentences, and has only been changed in English and the Scandinavian and Romanic dialects through the analogy of the substantive verb and the extended use of prepositions. A preparation for the new arrangement of the sentence, however, which places the object last, was already made by the infinitive. On the one hand, the infinitive could govern a case, and so was correctly preceded by the

governed word ; on the other hand, it was itself a case dependent on the principal verb. But its nominal character was more and more obliterated by its employment with verbs like *posse* or *velle*, *can* or *will* ; “he has the ability for doing,” gradually came to be “he can do.” Hence in Homer, as in Old Latin and Old German, the infinitive is mostly found at the end of the sentence, originally, it is true, accompanied by its cases, but afterwards standing alone to qualify the verb, and separated by the latter from the cases with which it was construed. But with all this confusion of the old order, such cases as the ablative or instrumental still maintained their proper position before the word they qualified, and when crystallized into adverbs continued to stand preferably immediately before the verb. Many of these adverbs afterwards became prepositions, the government of the noun passing from the verb to the adverb that accompanied it ; other prepositions, like the Latin *gratiâ* or the Greek *χάριτι*, originated in substantives construed with genitives ; and hence the preposition was first of all a post-position, following and not preceding its case. Even now *nach* stands after its case in German, and we speak of *thereon* and *thercof*, *homeward* and *leeward*, to say nothing of *God-wards* and *you-wards*, or of what is told us of Chaucer’s Shipman,<sup>1</sup> that “fful manye a drauȝt of wyne hadde he i-drawe ffrom Burdeaux ward,” while the Latin *mecum*, *nobiscum*, and the like, survived to the last days of the language. So, too, in Anglo-Saxon the preposition sometimes runs counter to its name by coming after its case, as *hî wyrcað þone cyle hine on*, “they produce cold him on,”<sup>2</sup> but this construction is

<sup>1</sup> Prologue, 396.

<sup>2</sup> Orosius, i. 1, 23.



fully explained when we find the preposition occupying the same place in an adverbial sense, as in the Saxon Chronicle (1016) : *se here him fleâh beforan*, "the army him fled before."

So long as sentences remained simple and unconnected, there was but little reason for serious changes to occur in the order of their words. But it was quite different when an attempt began to be made to connect them together, to compose sentences that were dependent or subordinate. When a sentence became an object or attribute of another, the arrangement that had hitherto held good was necessarily thrown into confusion. Not only might an idea be an attribute of an attribute, but that again might be the attribute of another attribute. This intimate connection and fusion of sentences seems peculiarly suited to the genius of Aryan speech ; where a whole sentence could be expressed by a single long compound, it was easy enough to make it dependent on something else. The Semitic tongues, which held composition in abhorrence, were equally averse to an intimate connection of sentences ; neither process was very compatible with the habit of thought which placed the qualifying word second instead of first, and we are left to gather the relation of a subordinate sentence to a principal one merely from their juxtaposition, or the monotonous repetition of the simple conjunction "and." Indeed, the Semitic languages have not risen far above the condition of the deaf-mute or the Polynesian, who have no dependent sentences, each sentence standing complete and entire by itself.<sup>1</sup> If the Dayak wishes to express

<sup>1</sup> Gaussin : " Du dialecte de Tahiti " (1853).



even so simple a notion as "I thought that he was rich," he is obliged to say, *ingära-ku iä tatan*, "my thought ; he rich." What a contrast to the Greek language with its manifold particles, its subtle analysis of thought, its delicate expression of every shade of connection between ideas ! Such, however, had not always been the condition even of the Greek language, or at all events of the language from which it had sprung. If, for instance, we examine the history of the relative sentence, we shall find it growing by slow degrees out of simple subordination. First of all it was merely set side by side with the principal clause, as in Hebrew and Assyrian poetry, or such English phrases as "This is the man I saw." Next, the object of the antecedent clause was represented in the consequent by a demonstrative pronoun for the sake of clearness and emphasis ; and so we may say : "This is the man, that (man) I saw." Then in time the demonstrative came to be used in all cases alike, and not only where peculiar stress had to be laid ; it ceased to be any longer a pure demonstrative, and became a relative applied by analogy to instances in which the demonstrative could hardly have been employed.<sup>1</sup>

We have now passed in review all that is included under the morphology of speech. The morphology of speech is the reverse side of its physiology, dealing with the spirit and inner life of the sentence just as the physiology of speech deals with the outward frame. If words are posterior to the sentence, if they are in fact

<sup>1</sup> See Jolly : "Ueber die einfachste Form der Hypotaxis im Indogermanischen," and Windisch : "Untersuchungen über den Ursprung des Relativpronomens," in Curtius's "Studien," vi. 1 and ii. 2.

but so many crystallized and abbreviated sentences, that part of the science of language which treats of their meanings ought strictly to follow a chapter on morphology. That which is most scientific, however, is not always the most practically convenient, and such is the case with our present subject. But we must not forget that the signification of a word is really determined by its relation to the other words with which it is combined, and if this does not seem to be the case with the isolated words we find in the dictionary, it is only because these isolated words are petrified sentences whose meaning has long ago been established, partly by reference to other sentences, partly by a determination of the relations between the parts of which they are composed. The mutual relations of the elements of a sentence, as well as of fully formed sentences, constitute grammar in its widest sense; they constitute also the morphology of language. A fact of grammar is a compound of two things—the conception of a relation between one idea and another, and the embodiment of this conception in phonetic utterance. Both parts of the compound are continually developing, and becoming at once simpler and clearer, and the duty of the linguistic morphologist is to trace the history of this development, and follow it back to its earliest source. We have to discover the different mental points of view from which the structure of the sentence was regarded by the different races of mankind, to investigate and compare the various contrivances and processes through which these points of view eventually found their fullest expression, to classify the modes of denoting the relations of grammar at the disposal

of language, to examine the nature of composition and of stems in the groups of speech of which they are characteristic, to analyze the conceptions of grammar and determine the elements and germs out of which they have sprung, and finally, to ascertain the true origin and meaning of the so-called rules of syntax, and keep record of the changes that take place in the arrangement of words. The mind of man has indeed been cast everywhere in the same mould, but the scenes amid which its infancy was cradled, the conditions under which it grew up, have differed materially and produced a corresponding difference in the expression of its thoughts in language. Two rivers may start from the same spring, but one may flow, clear and limpid through granite mountain ranges and silent forests into a tropical sea—the other may run a turbid and discoloured course through low marsh-lands, by steaming mills and crowded wharves into a northern ocean. It is only when we have thoroughly explored the morphology of each group of kindred tongues, have seen how their inner form has gradually expanded like the flower out of the seed, that we can venture to bring our results together, to compare the morphology of one group of languages with that of another, and learn wherein they differ and wherein they agree.



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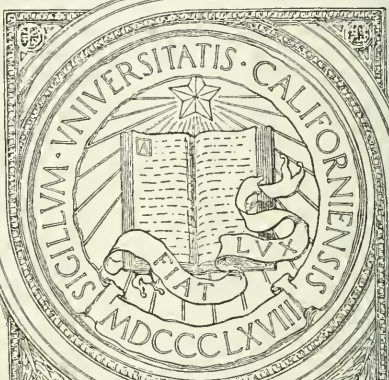


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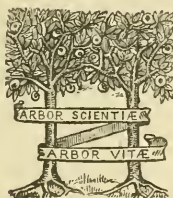
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IN TWO VOLUMES.

VOL. II.



LONDON :

C. KEGAN PAUL & CO., 1, PATERNOSTER SQUARE.

1880.

“ Ille demum foret nobilissima grammaticæ species, si quis in linguis tam eruditis quam vulgaribus eximie doctus, de variis linguarum proprietatibus tractaret ; in quibus quæque excellat, in quibus deficiat ostendens.”—BACON (“ De Aug. Scient.,” vi. 1).

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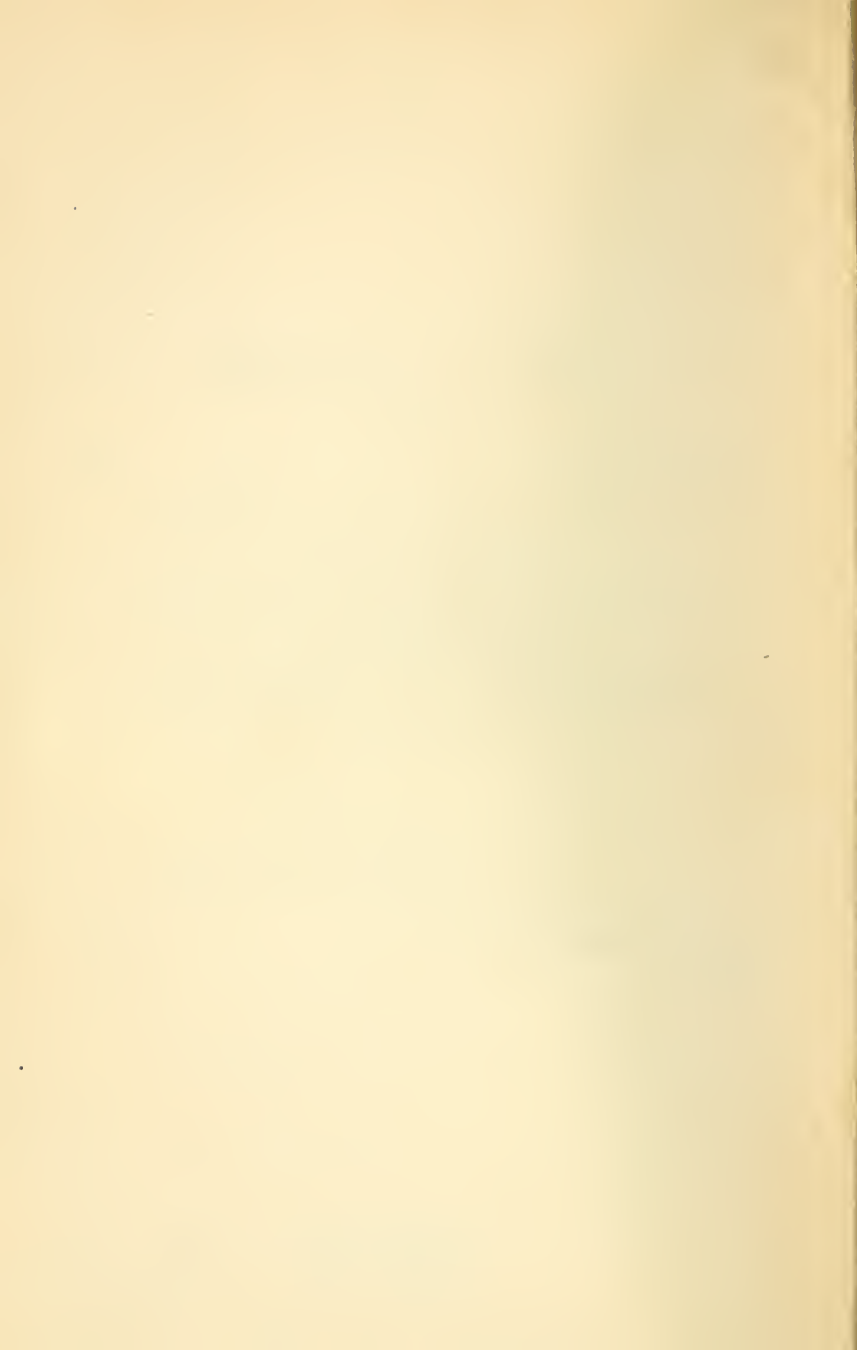
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## CHAPTER VI.

### ROOTS.

“Innumeræ linguæ dissimillimæ inter se, ita ut nullis machinis ad communem originem retrahi possunt.”—F. SCHLEGEL.

“Die Etymologie hat den vollen Reiz aller der Wissenschaften, welche sich mit den Anfängen und dem Werden grosser Erzeugnisse der Natur oder des Geistes beschäftigen.”—G. CURTIUS.

IN the Welsh book of Taliessir, a manuscript of the fourteenth century, the bard declares that “there are seven score Ogyrven in song,”<sup>1</sup> and Prof. Rhÿs points out<sup>2</sup> that these are the same as the “seven score and seven Ogyrven,” or roots, which, according to another Welsh writer, who lived a century or two later, “are no other than the symbols of the seven score and seven parent-words, whence every other word.” But the doctrine that all our words are descended from a limited number of primæval germs or roots is far older than the Welsh bards. More than two thousand years ago the grammarians of India had discovered that the manifold words of their language could all be traced back to certain common phonetic forms which they termed “elements.” Already the Prâti’sâkhya of Kâtyâyana speaks of the verb “by which we mark being” as a *dhâtu* or

<sup>1</sup> Skene: “The Four Ancient Books of Wales” (1868), i. p. 527, ii. p. 132.

<sup>2</sup> “Lectures on Welsh Philology” (1877), p. 320.



root, and before the Nirukta of Yâska was composed, a fierce controversy had begun as to whether these roots were all necessarily verbs. Yâska sums up the controversy, and after stating fairly the arguments on both sides, decides in favour of the Nairuktas or "etymologists," the followers of the philosopher 'Sâkatâyana, who held that every noun was derived from a verb. Vain were the pleadings of Gârgya and the Vaiyâkaranas or "analyzers" on the other side. They urged that if all nouns came from verbs, a knowledge of the verb would of itself make the noun intelligible, that whoever performed the same action would be called by the same name (all flying things, for instance, being called *feathers*, from *pat*, "to fly"), and that everything would receive as many names as there are qualities belonging to it, while the derivations proposed for many words were forced and unnatural, and as things come before being *per se*, that which comes first could not be named from that which comes afterwards. But the Nairuktas had their answers ready. All words, they said, really were significant and intelligible, while custom rules that agents and objects should get their names from some single action or quality, the "soldier" from the pay he receives, the "stable" from its standing up. If an etymology were forced, so much the worse for the etymologist, not for the method he pursued; and as for the last objection, no one can deny that some words are derived from qualities, even though qualities may be later than the subjects to which they belong.<sup>1</sup>

<sup>1</sup> Max Müller: "History of Ancient Sanskrit Literature," 2nd edition (1860), pp. 164-68.

The question over which the Hindu grammarians contended has been revived in our own day. Comparative philology was the result of the study of Sanskrit, and the Sanskrit vocabulary had been ranged under a certain number of verbal roots. Both the term and the conception, indeed, had already been made familiar to the scholars of the West by their Arab and Hebrew teachers, the only difference between the Sanskrit and the Semitic root being that the one was a monosyllable, the other a trilateral. European philology began to recognize at last that words have a history; that we cannot compare Latin and Greek and English words together before we have discovered their oldest forms, and that the common phonetic type under which a cognate group of words is classed must be no mere arbitrary invention of the lexicographer, but be based on reality and fact. Roots are the barrier that divides language from the inarticulate cries of the brute beast; they are the last result of linguistic analysis, the elements out of which the material of speech is formed, like the elementary substances of the chemist. But we must be careful not to fall into the mistake of the Indian grammarians and their modern followers, and confound these roots with verbs or any other of the constituents of living speech. The roots of language are like the roots of the tree with its stem and branches; the one implies the other, but all alike spring from the seed, which in language is the undeveloped sentence of primitive man, the aboriginal monad of speech. Roots, as Professor Max Müller has fitly called them, are phonetic types, the moulds into which we pour a group of words allied in sound and

meaning. Thus in the Semitic tongues, a root is the union of three consonants, out of which numberless words are created by the help of varying vowels and suffixes. *Kâtal*, for instance, is "he killed," *kotl*, "killing," *k'tol*, "to kill" and "kill," *kâtûl*, "killed," *katl*, *kitl* or *kutl*, "a killing," where the difference of signification is marked by a difference of vowel; and the whole series of co-existing forms presupposes a trilateral root or phonetic type *k-t-l*, to which was attached the general sense of "killing." Such a root could not, of course, have found any actual expression in speech; it was an unexpressed, unconsciously-felt type which floated before the mind of the speaker and determined him in the choice of the words he formed. When Van Helmont invented the word *gas*, he did but embody in a new shape the root which we have in our *ghost* and *yeast*. The primordial types which presented themselves almost unconsciously before the framers of language, which lay implicit in the words they created, must be discovered and made explicit by the comparative philologist. Just as the phonologist breaks up words into their component sounds, so must the philologist break up the groups of allied words into their roots, for roots are to groups of words what the letters and syllables are to each word by itself.

The influence of the Hindu tradition has introduced into European philology expressions like "a language of roots," "the root-period of language," and the like, and has made some writers even speak as though our remote ancestors conversed together in monosyllables which had such general and vague meanings as "shining," "going," or "seeing." Prof. Whitney, the leading representative

of the "common-sense" school of philology, has not shrunk from stating clearly and distinctly the logical consequences of such language. He tells us that "Indo-European language, with all its fulness and inflective suppleness, is descended from an original monosyllabic tongue; our ancestors talked with one another in single syllables, indicative of the ideas of prime importance, but wanting all designation of their relations."<sup>1</sup> Such a language, however, is a sheer impossibility—even for a body of philosophers or comparative philologists, and it is contradicted by all that we know of savage and barbarous dialects. In these, while the individual objects of sense have a superabundance of names, general terms are correspondingly rare. The Mohicans have words for cutting various objects, but none to convey cutting simply; and the Society Islanders can talk of a dog's tail, a sheep's tail, or a man's tail, but not of tail itself. "The dialect of the Zulus is rich in nouns denoting different objects of the same genus, according to some variety of colour, redundancy, or deficiency of members, or some other peculiarity," such as "red cow," "white cow," "brown cow;"<sup>2</sup> and the Sechuâna has no less than ten words to denote horned cattle.<sup>3</sup> The Cherokee possesses thirteen different verbs to denote particular kinds of washing, but none to denote "washing" itself;<sup>4</sup> and, according to Milligan,<sup>5</sup> the aborigines of Tasmania

<sup>1</sup> "Language and the Study of Language," p. 256.

<sup>2</sup> "Journal of the American Oriental Society," i. No. 4, p. 402.

<sup>3</sup> Casalis: "Grammar," p. 7.

<sup>4</sup> Pickering: "Indian Languages," p. 26.

<sup>5</sup> "Vocabulary of the Dialects of some of the Aboriginal Tribes of Tasmania," p. 34.

had "no words representing abstract ideas ; for each variety of gum-tree and wattle-tree, &c. &c., they had a name, but they had no equivalent for the expression 'a tree ;' neither could they express abstract qualities, such as hard, soft, warm, cold, long, short, round." The lower races of men have excellent memories, but very poor reasoning powers ; and the European child who acquires a vocabulary of three or four hundred words in a single year, but attaches all its words to individual objects of sense, reflects their condition very exactly. We may be sure that it was not "the ideas of prime importance" which primitive man struggled to represent, but those individual objects of which his senses were cognizant. As M. Bréal observes,<sup>1</sup> "It is not probable that in the ante-grammatical period there were as yet no words to denote the *sun*, the *thunder*, or the *flame*. But the day when these words came into contact with pronominal elements, and so became verbs, their sense also became more fluid, and they dissolved into roots which signified *shining*, *thundering*, or *burning*. We can understand how the old words which designated the (individual) objects, afterwards disappeared to make room for words derived by the help of suffixes from these newly-created roots. We can better understand, too, the existence of numerous synonyms which signify *going*, *shining*, *resounding* ; they are the abstracts or *abstracta* of former appellatives. The idea of *shining*, for instance, could be taken from the fire as well as from the sun, and so a considerable number of roots, from

<sup>1</sup> See his excellent article : "La Langue indo-européenne," in the "Journal des Savants," Oct. 1876 (p. 17).

very different starting-points, have come to be united in a common term." An elementary work on French etymology groups words like *rouler*, *roulement*, *roulage*, *roulier*, *rouleau*, *roulette*, *roulis*, round a root, *roul*, with the general sense of "circular movement ;" yet in this case we know that this imaginary root *roul* is nothing else than the Latin substantive *rotula*. The error of the Sanskritists is really the same, though the loss of the parent-language prevents us from checking it with the same ease as when we are dealing with French. "Father" and "mother" must have had names in Aryan speech long before the suffix *tar* was attached to what we call the "roots" *pā* and *mā*, and Buschmann has shown that throughout the world these names are almost universally *pā* or *ta* and *mā*. Words like our *door*, the Latin *fores*, the Greek *θύρα*, the Sanskrit *dwāram* (*dur*), cannot be traced to any root ; that is to say, a group of cognate words has either never existed, or else been so utterly forgotten and lost, that we can no longer tell what common type they may have represented. "A word like [the French] *car*," remarks M. Van Eys,<sup>1</sup> "could pass for a root if we did not know its derivation."

Roots, then, are the phonetic and significant types discovered by the analysis of the comparative philologist as common to a group of allied words. They form, as it were, the ultimate elements of a language, the earliest starting-point to which we can reach, the reflections of the manifold languages framed by the childhood of our race. Each family of languages has its own stock of roots, and these roots are the best representatives

<sup>1</sup> "Dictionnaire basque-français" (1873), p. v.

we can obtain of the vocabulary of primitive man. Like grammar and structure, roots, too, embody the linguistic instinct and tendency of a race; they are the mirror whereon we can still trace the dim outlines of the thought and mental point of view which has shaped each particular family of tongues. What the language is, that also are its roots; the roots of Chinese or Polynesian are as distinctively and characteristically Chinese or Polynesian as the roots of Aryan are Aryan. We have to extract them from the existing records of speech, and like the individual sounds of which words are composed, the character they assume will be that of the particular speech itself. "Unpronounced," says Prof. Pott,<sup>1</sup> "they fluttered before the soul like small images, continually clothed in the mouth, now with this, now with that, form, and surrendered to the air to be drafted off in hundredfold cases and combinations." They are, in fact, the product of the unconscious working of analogy, that potent instrument in the creation of language. The name given to an individual object becomes a type and centre of the ideas that cluster about it; sense and sound are mingled together in indissoluble union, and the instinct of speech transforms the combination into a root. Upon this root, or rather upon the analogy of the name that is the true source of the root, is built a new superstructure of words by the help of suffixes and other derivative elements. But the root and all the family of words that belong to it must remain the shadow and reflection of the original word from which it arose, and consequently display all the characteristics

<sup>1</sup> As quoted by Professor Max Müller, "Lectures," ii. p. 85.



of the words itself, and the language of which it forms part.

Hence it is that the roots of a family of languages have the characteristics of the languages to which they belong. Thus the roots of a Semitic tongue are trilateral, consisting, that is to say, of three consonants, while the roots of the Finno-Ugrian dialects exhibit the same vowel-harmony as the developed dialects themselves.<sup>1</sup> Hence, too, it is that the roots given by lexicographers merely represent the oldest forms of words of which we know, and do not exclude the possibility that these words are really compounds, or that phonetic decay has acted upon them in some other way long before the earliest period to which our analysis can reach back. In certain cases, indeed, we have good proof that such a possibility has been an actual fact. Thus the Arabic root *'âm*, "to be orphaned," is a decayed form of an older *'âlam*,<sup>2</sup> and such co-existent Aryan roots as *vridh* and *ridh*, both signifying "growing," imply the loss of an initial letter, while it is only within the last few years that the labours of Dr. Edkins and M. de Rosny have given us any idea of the roots of Old Chinese. By the help of the old rhymes, of a comparison of the living dialects and of other similar sources of aid, Dr. Edkins has restored the pronunciation of Mandarin Chinese such as it was 2,000 or even 4,000 years ago.<sup>3</sup> Thus *yi*, "one," was once *tit*; *ta*, "great," was *dap*;

<sup>1</sup> Donner in the "Z. d. D. M. G.," xxvii. 4 (1873).

<sup>2</sup> Ewald: "Ausführliches Lehrbuch der Hebraischen Sprache" (8th edition), p. ix.

<sup>3</sup> See his "Introduction to the Study of the Chinese Characters" (1876).

*yc*, "to throw," was *tik*. There are words in which we can trace a continuous process of change and phonetic decay, *tsic*, "a joint," for instance, being *tsit* in the classical poetry, and since in Chinese *k* changes to *t*, and not contrariwise, while there is evidence that the word once ended in a guttural, we are carried back to a period earlier than 1100 B.C. for the time when *tsit* was still *tsik*. But even *tsik* is not the oldest form to which we can trace it back. *Tsik* is developed out of *tik*, and to *tik*, therefore, we must look for a representation of the root to which it and other allied words have to be referred.

Wherever ancient monuments, or a sufficient number of kindred dialects are wanting, the roots we assign to a set of languages will represent only their latest stage. The further we can get back by the help of history and comparison, the older the forms of the words we compare, the better will be the chance we have that our roots will reflect an epoch of speech, not so very far removed, perhaps, from its first commencement. The so-called "root-period" of the primitive Aryan, really means the analysis of the most ancient Aryan vocabulary, which a comparison of the later dialects enables us to make. Behind that "root-period" lay another, of which obscure glimpses are given us by the roots we can still further decompose. A series of words, for instance, like the Greek *ἑνωμένη*, and the Sanskrit *yudhmas*, presuppose a root *yudh(a)*, but when we remember other sets of words presupposing the roots *yu* ("joining together") and *dha* ("placing"), we are carried back to a time when the word signifying "battle," which embodied, as it were,

the root *yudh*, was itself a newly-formed compound meaning "conflict."

The existence of such a primary "root-period" is also made clear to us in another way. M. Bréal<sup>1</sup> draws attention to the number of homophonous roots in comparative dictionaries like those of Fick or Curtius; thus we have a root *kar*, "making" (Latin *creare*), another root *kar*, "mingling" (Greek *κεράννυμι*), and a third root *kar*, "cutting" (Latin *cernere*). So, too, in Old Chinese, as we have seen, there were homonyms like *tik*, "to throw," and *tik*, a "joint," which may both be referred to a root *t-k*. Now in the actual speech there was little danger of any confusion arising from the homophony of these roots. In Chinese, where phonetic decay has made such widespread ravages, an immense number of words has certainly come to assume the same outward appearance, but means have been found for distinguishing between them by the invention of "tones," and by recourse to writing. In the Aryan tongues the words embodying such homophonous roots as those quoted just now are conjugated differently. Nevertheless, Chinese "tones" cannot claim a very much greater antiquity than Chinese writing, the spread of education producing a slovenly pronunciation, and the results of a slovenly pronunciation being obviated by the introduction of new tones, while we can follow the Aryan verb up to an age when it did not yet exist, and when, consequently, there were as yet no verbal flexions. We cannot suppose, however, that language was at all less particular at this period about distinguishing between its words than it has been during

<sup>1</sup> "La Langue indo-européenne," p. 14.

the historical epoch ; indeed, the observation of savage idioms proves that a barbarous dialect is much more careful to keep its words apart in pronunciation than a cultivated and literary one. The Frenchman with his written speech, his large vocabulary, and his practised keenness of intelligence, can far better afford to heap homophone upon homophone than the inhabitant of the Admiralty Islands. The Aryan *kar* and the Chinese *tik* alike show that the epoch of speech they represent has another behind it, when as yet the words embodying the ideas of "making," "mingling," and "cutting," or of "throwing," and "joint," had not coalesced in sound. The roots which represented this epoch are irrecoverable, because the words which contained them are lost, but we may feel sure that the words from which the homophonous roots are extracted, are but the worn relics and remains of those earlier ones.

Roots differ as the languages to which they belong differ ; here they are monosyllabic, there they are polysyllabic. In the Polynesian family every consonant must be accompanied by a vowel ; in Aryan two and even three consonants may follow one another ; while in Semitic, and possibly Chinese, the root contains no vowel at all. It is probable that the majority of roots in most languages are of more than one syllable, and that if we could get back to the first stage of speech, we should find that this was universally the case. As Dr. Bleek has pointed out, such natural sounds as sneezing, and the like, can only be represented articulately by a succession of syllables, and since languages change mainly through the action of phonetic decay, we should expect

to find the words becoming more and more polysyllabic the further we mount back. Professor Whitney observes with truth that "*bow-wow* is a type, a normal example, of the whole genus 'root.'"<sup>1</sup> The sentence-words of primitive language were probably at least disyllabic, and the monosyllabism of Chinese or of the Taic and Bushman tongues would merely be an illustration of their vast antiquity and the long-continued action of phonetic decay. The roots of the Semitic languages are disyllabic, or if sounded with vowels trisyllabic, like *kadhala*, and the attempts that have been made to reduce them to a single syllable have all been failures. Böhtlingk<sup>2</sup> notes that many Tibetan words at present monosyllabic were formerly polysyllabic, and the polysyllabism of the roots of the Bâ-ntu family is well known. Such is also the case with the roots of Kanuri, Wolof, Púl, Maforian, and Malayo-Polynesian. In some of these instances monosyllabic roots stand by the side of polysyllabic ones, just as in Old Egyptian, where we find *keb*, "to go round," by the side of *kebehh*, *uonen*, "to be," by the side of *uon*. They stand out like the stray waifs of an otherwise extinct world, the last record of the first beginnings of speech. Like the child of the present day, the primæval speaker did not confine his utterances to a simple *ah!* or *oh!*

The Hindu grammarians reduced the roots of their language to single syllables, and comparative philology inherited from them the belief that the roots of the Aryan family are necessarily monosyllabic. Such is un-

<sup>1</sup> "Life and Growth of Language" (1875), p. 299.

<sup>2</sup> "Ueber die Sprache der Jakuten," p. xvii. note 46.

doubtedly the case with a root like *i* or *ya*, "going," but there are good grounds for believing that is not the case with most other roots. Thus a certain number of these roots end with the double consonant *kv* or *kṽ*, like *sakṽ*, "following" (Latin *sequor*), and whatever we may imagine to have been the pronunciation of such a sound, we can imagine none which would allow it to be pronounced without a vowel after it.<sup>1</sup> If, again, we compare the Latin *vectu* or *vectū* with the Sanskrit *vodhavai*, and the Slavonic *věsti*, we can discover no bond of union between them, unless a root, *vaghi-tavai*, be presupposed. So, too, compound roots, like *yu-dh* for *yu-dha*, are necessarily disyllabic, and, as Fick has lately shown,<sup>2</sup> the so-called stems in *a*, *ya*, *i*, and *u*, are really rather roots than stems. We cannot separate words like *ἄγο-ς* and *ἄγο-μεν*, the Sanskrit *bhara-s*, *bhara-tha*, and *bhara-ti*, "he bears," any more than we can separate *φόρο-ς* and *φέρε-τε*, or *φριξό-ς* and *ἐ-φριξα-μεν*. We cannot derive either the verb from the noun or the noun from the verb; they are co-existent creations, belonging to the same epoch and impulse of speech. The second vowel which characterizes both alike, therefore, cannot be a classificatory suffix; it distinguishes neither noun nor verb, but is the common property of both. What makes *φόρο-ς* a noun is the pure flexion—the change of vowel in the first syllable. A form like *bhara-*, accordingly, cannot be treated

<sup>1</sup> In fact, De Saussure has shown that the velar *k* implied a following *a*<sup>3</sup> (*a* or *ā*, *o* or *ō*) when represented in Sanskrit by a guttural, *a*<sup>1</sup> or *a*<sup>2</sup> (*ḷ*, *ḹ*) when represented by a palatal ("Mémoires de la Société de la Linguistique de Paris"), and consequently *sakṽ*- (the Sanskrit *sach*) must have been followed by *ā* or *ḷ*.

<sup>2</sup> Bezenberger's "Beiträge," i. pp. 1, 120, 231, 312, &c.

as a stem, because a stem is necessarily furnished with a classificatory suffix or some other mark to determine to what part of speech it belongs ; we have nominal stems and verbal stems, but a stem which is at once nominal and verbal is not a stem but a root. It is the ultimate element, the phonetic type, contained by a group of allied words whose grammatical relations are indicated by varying contrivances. The so-called suffix *-γα* must be banished along with the suffix *-α* ; “ἀγγελία is nothing else than ἀγγελο declined as a noun, which appears as a verb in ἀγγελο-μεν,” and μάζος (μάζο-ς) and the Latin *mædo* are equally based on a “root” *maδγα*. Even the “stems in *-ας*” must lose their initial vowel ; the classificatory suffix is *-s*, not the vowel, which is common to both nouns and verbs ; and though there may seem to be a grammatical difference between the final vowels of ἦδος and ἦδύς, the difference vanishes when we compare the Greek μελι-ἦδες on the one side and the Latin *argu-ere* on the other. ἦδύς would seem to stand for ἦδε-*φε-ς*. As Fick observes, even in the case of those nouns whose “root” agreed with that of the sigmatic future and aorist in possessing no vocalic ending, “the Indians with horrible consistency assumed a suffix—namely, the suffix Zero.”<sup>1</sup>

<sup>1</sup> In the fourth volume of Bezenberger's “Beiträge” (1878), Fick shows that the stem of a present, like *πείθω* or *φείγω*, is more original than the stem of the aorist *ἔ-πιθ-ον*, *ἔ-φυγ-ον*, the shortening of the vowel being occasioned by the accent which in the aorist fell upon the last syllable. Accordingly *ā*, *ī*, and *ṽ* in the present are contracted into *ǎ*, *ǎ*, and *ǎ* in the aorist, and *ε* disappears altogether. Fick further remarks that the old theory would logically make *σπ*, *πτ*, *φν*, and *φπ* the roots of such verbs as *σπέσθαι*, *πτέσθαι*, *πέφνε*, and *εἰπέϊν* (= *φε-φπέϊν*), the final *ε* being considered “thematic,” and



There is yet another reason for thinking that the majority of Indo-European roots—that is of the types which underlay the oldest Aryan vocabulary of which we know—must be regarded as polysyllabic. Prof. Max Müller<sup>1</sup> draws attention to the fact that the existence of parallel roots of similar meaning, but different terminations, like *mardh*, *marg*, *mark*, *marp*, *mard*, *smar*, and *mar*, can be better explained by *elimination* than by *composition*. The so-called determinatives or final letters cannot be classificatory, as they convey no modification of meaning, and are to be found in words belonging to all the parts of speech. “There is at all events no *à priori* argument against treating the simplest roots as the latest, rather than the earliest products of language.” “It would be perfectly intelligible that such roots as *mark*, *marg*, *mard*, *mardh*, expressing different kinds of crushing, became fixed side by side, that by a process of elimination their distinguishing features were gradually removed, and the root *mar* left as the simplest form expressive of the most general meaning.” In other words, the vocables

not belonging to the root. In the second part of the third volume of the same periodical (1879), Fick points out that, “through the influence of the accent the vowels *e* and *o* can be reduced to *ě* and *ǒ*, mere voice-checks, for which loss of the vowel can be substituted, especially in open syllables. This original *ě* and *ǒ*, which I call sh’wa for the sake of brevity, generally appears in Sanskrit as *i* or *ī* (also as *u* or *ū* before and after liquids), in Zend as *e* and *é*, in Greek mostly as *α*, in German as *o* (Gothic *u*).” “In the aorist the final sh’wa is retained in the *α* of the Greek aorist *ἔχενας*,” &c. “Hence it is clear that stems like *ed*, *bhid*, or *ruk* had no existence whatever originally, but first arose out of *edě*, *bhidě*, and *rukě*; the Indian theory of roots, with all its perverse consequences (thematic and union vowels, Guna, &c.), must be definitely set aside.”

<sup>1</sup> “Chips,” iv. pp. 128, 129.

that embodied these roots underwent the wear and tear of phonetic decay, many of them passed out of the living speech and were replaced by others, and there was left at last a whole family of nouns and verbs, whose sole common possession was the syllable *mar*. That alone had resisted the attacks of time and change. We indeed have some difficulty in realizing the variability of savage and barbarous languages, or of the readiness with which new words are coined and old ones forgotten. Mr. Theal, illustrating the Kafir rule that a woman may not mention the names of any of her husband's male relations in the ascending line,<sup>1</sup> states that "a woman who sang the song of Tangalimlibo for me used the word *angoca* instead of *amansi* for water, because this last contained the syllable *nsi*, which she would not on any account pronounce. She had therefore manufactured another word, the meaning of which had to be judged of from the context, as standing alone it is meaningless." It will be noticed that the word is trisyllabic, and not a monosyllable, as the Indianist theory would require, and if other words came to be framed after its model, it would originate a root, which would certainly be of more than one syllable. Phonetic decay alone could reduce it to the orthodox monosyllabic form.

The existence of compound roots has already been alluded to, implying a division of roots into simple and compound, the first class consisting of those which were really simple from the first, as well as of those which our ignorance prevents us from decomposing. Compound roots form part of the class of "secondary" roots as dis-

<sup>1</sup> "Cape Monthly Magazine," xiv. 36 (June, 1877), p. 349.

tinguished from "primary;" *yu* and *mar* being examples of primary roots, *yudh* and *yug*, *mardh*, *mard*, *marg*, *mark*, and *smar* of secondary ones. A primary root, therefore, is the simplest element of sound and meaning which can be extracted from a group of words; it constitutes their characteristic mark and sign of relationship, and indicates where the line of division must be drawn between them and other unallied words. A secondary root determines a species within the larger genus; words containing the root *mardh*, for instance, form a specific class within the wider class of those which contain the root *mar*. The Latin *ju-s*, "right" or "bond," is an example of the genus of which *jung-ere*, "to join," is an example of the species; but whereas in natural history a species is posterior to the genus, the converse is the case with the roots of the philologist. The reason of this is plain enough; the genera and species of zoology and botany answer to actually existing forms of life, whereas the roots of language are due to the reflective analysis of the grammarian. At the same time, some of the secondary roots are undoubtedly compounds, that is to say, are extracted from compound words, and wherever this is the case, the species or secondary root will necessarily be later than the primary or generic one.

One of the first attempts to decompose the secondary roots was made by Professor Pott. He started the view that a large number of them were compounded with prepositions; thus *pinj*, "painting," is derived from *api* or *ἐπι* and *anj*, "anointing." But such a view is no longer tenable. The loss of the initial vowel in a word like *api* is peculiar to Sanskrit, and not a characteristic of the

parent-Aryan ; the origin of the Latin *ping-ere* would therefore be inexplicable. Moreover, the preposition was a late growth in Aryan speech, and in early times there was no close amalgamation of it with the verb. Even in Greek and Sanskrit the prepositions are still so independent that the augment and reduplication are inserted between them and the verbal form, and we all remember how loosely attached they are to the verb throughout the larger part of Homer. Pott's theory must therefore be given up, and another be proposed in its place. This has been done by Professor G. Curtius, who suggests that many of the compound roots were similar to such Latin tenses of a later day as *amav-eram* (for *amavi-eram*) and *amav-ero* (for *amavi-ero*), where we have two verbal forms agglutinated one to another. Hence in a secondary root like *yudh*, we may see an amalgamation of the two primary roots *yu* and *dha*, the first with the sense of "mingling," and the second with that of "placing." It is very possible that the Greek passive aorist ἐ-τύφ-θη-ν and optative τιμασ-ι-ν may contain the roots *dha*, "placing," and *ya*, "going," which we find in the Latin *ven-eo*, *venum-ire* ; at all events, the existence of such compounds in the parent-Aryan is shown to be more than a mere conjecture by the Latin *crēdo* which appears under the form of 'srad-dadhāmi in Sanskrit. Sanskrit and Latin alike throw light on one another, and show us that *credere*, "to believe," is really a compound of *cor(d)*, "the heart," the Greek *καρδία*, and the root *dha*, "to place," which elsewhere appears in the Latin *ab-dere*, *con-dere*, *e-dere*.<sup>1</sup> "To believe" was therefore originally "to

<sup>1</sup> Darmesteter : "Mémoires de la Société de Linguistique," iii. p. 52.

place" or "set the heart" towards another object. How old the compound is may be gathered from the form it has assumed in Sanskrit. The ordinary word for "heart" in both Sanskrit and Zend presupposes a root *ghard*; 'srad alone in this curious old compound has the same root, *kard*, as the words which signify "heart" in the European branch of the Aryan family. The parent-Aryan had its dialects like all spoken languages, and these dialects possessed slightly differing forms of the same word. One form finally triumphed in Western Aryan, another form in Eastern Aryan, but before this happened the compound *crêdo*, 'srad-dadhâmi, was already in existence, testifying to a time when the West-Aryan form was employed in East Aryan itself.

A very common secondary root is one formed by reduplication. Originally the whole root was probably repeated; but in course of time broken reduplication became prevalent, consisting in the repetition of only a part of the whole root. Thus by the side of *μάριμαρος* and *fur-fur* we find *me-mor* and *πίπ(ε)τ-ω*, *tu-tud-i* and *τέ-τυπ-α*. The loss of the second consonant might be compensated for; in the Greek *λαίλαψ* and *δαιδάλεος*, for instance, a diphthong marks the existence of a former consonant. On the other hand, the vowel of the second syllable might be lengthened or intensified, as in the Greek *ἀγωγή* and *ἔτ-ήτυμος*, and when the second syllable was thus strengthened the vowel of the first syllable was very liable to become correspondingly weak. So in Latin we have *cī-conia* and *cī-catrix*, and in Greek *δι-δάσκω* for *δι-δακσκω*, and *ἴστημι* for *σι-στημι*. When the variation of vowel had once been introduced, the changes that could be

rung upon it were almost innumerable. We have seen how they were made subservient to the needs of flexion in the Greek verb where the difference of the vowel in *δί-δωμι* and *δέ-δωκα* marked also a difference of tense.

But reduplication is one of those primitive contrivances of language which, though continually reappearing in the nursery dialect or thieves' slang, does not seem to be a favourite with a more cultivated age. There is hardly anything which is attacked with more persistency by phonetic decay than reduplication. *Did* alone bears witness to the reduplicated perfects of our Teutonic ancestors, and the reduplicated perfects of Latin are few and exceptional. A reduplicated root can sometimes be recovered only by a wide-reaching comparison of words, and even where this is not the case the original reduplication has often been so far obliterated as at first sight to escape observation. If we take the Greek *βίος*, "life," we shall have some difficulty in detecting any reduplication at all, and it is not until we come to the Latin *vivo* that the fact becomes clear to us. But *vivo* itself is but a fragment of its primitive self. The perfect *vixi* (*vix-si*) tells us that it has lost a guttural, and what this guttural was is only to be discovered by an appeal to the English *quick* and the Sanskrit *jīvitam*, "life." Both *βίος* and *vivo* are the bare and shattered relics of a word which contained the reduplicated root *gwi-gwi*.

Roots naturally display all the variability of the words in which they inhere. The vowel may change not only when they are reduplicated, but in other cases as well. By the side of *ar* in *aro*, "to plough," we have *er* in *ἔρεπμόν*, "an oar," and *or* in *ὄρ-νυμι*, "to rise," and within the same

Greek verb itself we find ἔ-κταν-ε with *α*, κτείνω for κτειν-γω with *ε*, and ἔ-κτον-α with *ο*. As we have seen before, in cases like φόρος by the side of φέρω, the change of vowel becomes a sign of flexion, and we have to look to Sanskrit, where the single vowel *ā* answers to the three European vowels *ā*, *ε*, and *ο*, for our root. At other times instead of a change of vowel we find a change in the position of the consonant. Thus, if we compare the Greek ἀλφάνω and κρῖνω with the Latin *labor* and *cerno*, or the Greek forms τλάω and τάλαντον with one another, we have vocalized consonants developing vowels in different positions. The root is ἀλφ- for Greek, and *lab-* for Latin. Again, the consonant itself may vary in two allied dialects or even within one and the same dialect; in Greek, for instance, ἐλ-θεῖν and δάμβος stand by the side of ἔρχομαι (ἔρ-σκομαι) and ἔταρον, and the Latin *vivere* corresponds with the Greek βίος. Sometimes the consonant may become a vowel or a vowel become a consonant, as in λούειν, "to wash," the Latin *lavere*, or ὕδωρ, our *water*. The Latin *deus* and *divus*, like the Greek δῖος and δῆλος (for δεῖλος), go back to a root *div*, whereas the allied words Ζεὺς and *Jupiter*, for Δυεύς and *Dyu-piter*, answering to a Sanskrit *dyaus-pitar*, presuppose a root *dyu*. Here we see *v* vocalized to *u* in the one case, and *i* hardened to *y* in the other. The roots have no existence apart from the words which contain them, and the phonetic variations of the words must therefore be faithfully represented in their corresponding roots.

Now just as words are divisible into two great classes, presentative and representative, conceptual and symbolic, predicative and pronominal, so too necessarily are roots.



There are pronominal and demonstrative roots, just as there are verbal or predicative ones, and since a root does but reflect the common characteristic of the group of words to which it belongs, pronominal roots, like the pronouns themselves, are short in outward form and symbolic in inward meaning. "Symbolic words," says Prof. Earle,<sup>1</sup> "are those which by themselves present no meaning to any mind, and which depend for their intelligibility on a relation to some presentive (or objective) word or words." They are what the Chinese call "empty" words, that is, words which have been stripped of their original nominal or verbal signification, and applied as auxiliaries and helpmeets to express the relations of a sentence. *Ki*, "place," *li*, "interior," or *ÿ*, "to use," for instance, have all become empty words with hardly a trace of their primitive meaning, *ki* being used as a relative pronoun, *li* and *ÿ* as mere signs of the locative and instrumental. The number of symbolic words in a cultivated and analytic language like English is very considerable; *a* or *an*, *the*, *but*, *from*, *if*, *of*, *is*, *there*, *then*, and the pronouns generally will occur at once to the mind of everyone. Many of these symbolic words, like the "empty words" of Chinese, can be traced back to a time when they were still predicative, when they still denoted objects and attributes, and could be used as predicates of the sentence. Others of them, however, have lost all vestiges of any such predicative meaning, if ever they possessed it; even during the earliest period at which we become acquainted with them they are already sym-

<sup>1</sup> "Philology of the English Tongue" (2nd edition), p. 222. See Locke's "Essay on the Understanding," iii. ch. vii. ("On Particles.")

bolic, already mere marks of relation. This is especially the case with the pronouns, and since most of the pronouns can be shown to have once had a demonstrative sense, those roots which are not verbal or predicative have been termed sometimes pronominal, sometimes demonstrative. Pronominal or demonstrative roots form a smaller class by the side of the predicative ones. Constant use and close amalgamation with other words tend to attenuate symbolic words, and cause them to be especially affected by the action of phonetic decay; hence it is that pronominal roots consist for the most part of open syllables like *ka*, *na*, *ma*, *ta*. We may describe them, in fact, as consisting of only one consonant, the initial letter of those little but important words which they represent. It has often been proposed to identify the classificatory suffixes of a flecational language with these attenuated pronominal roots, and appeal has been made to the fact that the person-endings of the verb—*ad-mi*, *at-si*, *at-ti*—actually are personal pronouns. It is difficult, however, to see what else they could be, since the persons of the verbs necessarily imply the personal pronouns, and the fact in question, therefore, gives no support to a theory which assumes the existence of pronouns where no pronominal meaning can be attached to them. Decay, it is true, attacks the meaning as well as the sounds of words, and what was once significant may afterwards cease to be so; but before we can admit the hypothetical presence of pronouns or pronominal roots, we must be assured of the appropriateness or even the possibility of the meanings to be assigned to them. The similarity that exists between the phonetic form of many

of the suffixes and that of the pronominal roots can be accounted for very simply by the attenuated character of these roots. Now and then, however, a similarity has been assumed that does not exist. Thus the guttural suffix *ka* can have nothing to do with the "root" of the Latin *quis*, the Greek *τις* and the Sanskrit *chit*, "somewhat," since the guttural here is velar; and as Prof. Ludwig has pointed out,<sup>1</sup> the "pronominal" *ta* which plays so great a part in the ordinary analysis of flexional forms is a pure nonentity, as *t* is always followed by the vowel *i*. In fact, the identification of suffixes and "demonstrative roots" is due to a confusion of ideas; suffixes can have no roots; they are only parts of words, common to nearly all groups of words alike, and varying continually within the same group. But groups of words alone can be said to possess roots, and if we assign roots to symbolic words, it is because they also, like the predicative words of the sentence, fall into groups. The root is a property of words, not of their suffixes.

It is highly probable that even those words which we find acting as auxiliaries and pronouns as far back as our linguistic analysis allows us to go, were themselves once full or predicative words, and that if we could penetrate to an earlier stage of language, we should meet with the original forms of which they are the maimed and half-obiterated descendants. Analogy certainly is in favour of this view. Such symbolic words as *an* (*one*) or *will*, of which we have a history, are known to have been formerly presentative, and there is nothing to prevent other symbolic words, with whose history we are

<sup>1</sup> "Agglutination oder Adaptation" (1873), p. 18.

unacquainted, from having been so too. The relative pronoun in Chinese can be proved to have once been a substantive meaning "place," and it would seem that the Hebrew relative *'asher* had the same origin, *'asru* in Assyrian, *'athar* in Aramaic signifying "a place." The Assyrian pronoun *mala*, "as many as," is merely a fossilized substantive meaning "fulness," and the Ethiopic *lālī* and *cīyā*, which, when combined with suffixes, express the nominative or accusative of the personal pronoun, really signified originally "separation" and "entrails."<sup>1</sup> The Malay *ulun*, "I," is still "a man" in Lampong, and the Kawi *ngwang*, "I," cannot be separated from *nwang*, "a man." In Japanese the same word may stand for all three persons; but this is because it was primitively a substantive, such as "servant," "worshipper," and the like. Even now the Chinese scholar will say, *ts'ie* ("the thief") instead of "I," while *tsián* ("bad") and *ling* ("noble") are used for "mine" and "thine."<sup>2</sup> "The inhabitants of Ceylon," says Adelung,<sup>3</sup> "have seven or eight words to denote the second personal pronoun," and Pott remarks<sup>4</sup> that even German is still so much influenced by the habits of an earlier barbarism as scrupulously to avoid the employment of the second personal pronoun, recourse being had, where *Er* and *Sie* fail, to the uncivilized method of denoting the personal pronoun by means of a substantive. In Greek we find *ὁδε ὁ ἀνὴρ* used as the equivalent of "I," and a somewhat unsatis-

<sup>1</sup> Prätorius: "Z. d. D. M. G." xxvii. 4 (1873).

<sup>2</sup> Endlicher: "Chines. Grammatik," pp. 258-89.

<sup>3</sup> "Mithridates," i. 233.

<sup>4</sup> "Die Ungleichheit menschlicher Rassen," pp. 5, 6.

factory attempt has been made to derive this pronoun itself, the Latin *ego*, the Sanskrit *aham*, from the root *agh*, "speaking," which we have in the Latin *ad-agi-um*, "a proverb," the Greek ἄ-μι, and the Gothic *af-aik-an*, "to deny." However this may be, we must always bear in mind the possibility of tracing symbolic words to conceptual ones, and of discovering that what we have imagined to be the pronominal root is really a reduced and mutilated form. Above all, we must not fall into the mistake of confounding these pronominal roots with the classificatory suffixes, a mistake which has been perpetrated in the classification of roots as material and formal. It is perfectly true that some of the suffixes, such as *-tar*, or our own *-ward*, or the person-endings of the Aryan verb, can be referred to old nouns and pronouns; but what is true of some of them is not true of all, while even these suffixes are not identical with pronominal roots but belong to groups of words containing both pronominal and predicative roots.

And so we are brought back to our starting-point. Roots are the phonetic and significant types which underlie a group of words in a particular family of speech. Each family of speech has its own stock of roots, its own common heritage of words, which serve, like its grammar and its structure, to mark it off from every other family. We have seen how the various races of man have started with different grammatical conceptions and modes of constructing the sentence; they have equally started with different lexical types. Roots are for the dictionary what the mental ways of viewing the relations of the sentence are for grammar. Allied lan-

guages must agree in their roots as well as in their grammar.

But it is not necessary that the roots possessed by each member of a family of speech should all be the same. We find cases and case-endings in Latin which do not exist in Greek, while the Greek terminations in *-σι* and *-σειν* are equally unknown to Latin. Similarly in the vocabulary, one dialect may retain words which have been lost by another, or drop words which are in use in the remaining cognate tongues. This is one of the causes of the difficulty experienced by etymologists in finding a derivation for every word in the lexicon, that is to say in settling the root to which it must be referred. Unless we have allied words in cognate dialects with which to compare our recalcitrant word, no etymological tact or scientific attainments will enable us to determine its roots and connections. The logicians tell us that we can draw no inference from a single instance; it is just as impossible to discover an etymology for an isolated word. But there may be other reasons for this impossibility besides the simple one that a word may be the last waif and stray of an otherwise extinct group. Languages borrow words from their neighbours, and it may very well happen that the word whose derivation we are seeking may be a foreign importation which has slightly changed its appearance in being naturalized. We know from Livy (vii. 2) and Festus<sup>1</sup> that the Latin *histrion* (*hister*), "a play-actor," and *nepos*, "a spendthrift," were borrowed from Etruscan, and the inscriptions have further informed us that the Latin *Aulus* was originally the

<sup>1</sup> Ed. Müller, p. 165.

Etruscan *Avile*, "the long-lived one," but there is little doubt that many words exist in Latin which were also introduced from Etruria, but of whose parentage our ignorance of the old Etruscan language forbids us to give any account. *Maize* and *hammock* seem genuine English words enough, but they have come to us through the medium of Spanish from the dialect of the natives of Hayti.<sup>1</sup> To search for their etymology in the Aryan family of speech would be parallel to M. Halévy's endeavour to explain agglutinative Accadian from the Semitic lexicon. But there is yet a third reason for the existence of roots peculiar to only one out of a group of allied languages. Even in its most advanced and cultured state, language never wholly resigns its power of creating new words, and with them new roots. It is true that the inventions of the nursery are nipped in the bud or confined within the nursery walls; it is also true that words like the Kafir *angoca*, mentioned before, could never be introduced into literary idioms like English and French; but it is also true that the native instinct of language breaks out wherever it has the chance, and coins words which can be traced back to no ancestors. The slang of the schoolboy, the *argot* of the large towns, Americanisms, and thieves' cant, all contain evidences that the creative powers of language are even now not extinct. The murderer Pierre Rivière invented the word *ennepharer* for the torture to which, as a boy, he subjected frogs, and the word *calibène* for the instrument with which he killed birds.<sup>2</sup> Prince "Plon-plon" can be assigned no

<sup>1</sup> Humboldt : "Travels" (Engl. transl.), i. p. 329.

<sup>2</sup> Charma : "Essai sur le Langage" (1846), p. 66.



parentage, any more than the game of *squails* with its *szwoggle* and *absquatulate*. Du Mérit refers to the purely musical names given by children to those they are fond of, and Nodier tells a curious story to account for the origin of a lady's *falbala*.<sup>1</sup> A witty prince of the last century, Marshal de Langlée, entered a shop with the intention of testing the assurance of the milliner in it. He therefore coined the word *falbala* on the spot, and immediately asked for one. The milliner at once brought him the dress called *volant*, which with its light floating points reminded her of the root involved in the newly-invented word, and perhaps called up the sound and signification of *folâtre* or *flotter*.<sup>2</sup> Even natural science has added to the stock of Aryan roots. To pass over Van Helmont's *gas*, Neckar invented *sepal* to denote each division of the calyx,<sup>3</sup> Reichenbach the expression "Od force," and Guyton de Morveau the chemical terms *sulfite* and *sulfate*. Here, however, we have a reference to *sulphur*, just as M. Braconnot's *ellagic acid*, the substance left in the process of making pyrogallic acid, is merely *galle* read backwards.<sup>4</sup> To find the process of word-making in full vigour, we must look elsewhere than to the scientific age. We have something better to do than to spend our time in inventing new words; that employment must be left to the disciples of Irving and other theological enthusiasts. The heritage we have received is large enough for our wants; our part is to

<sup>1</sup> "Notions de Linguistique," p. 211.

<sup>2</sup> *Falbala* has been borrowed by most of the European languages under various forms, appearing in English as *furbelow*. It is first found in De Caillières (1690).

<sup>3</sup> Whewell: "History of the Inductive Sciences," ii. p. 535.

<sup>4</sup> Whewell: *op. cit.* ii. p. 547.

improve and develop it. But the case is very different with the savage tribes of the modern world or the still more savage tribes among whom the languages of the earth first took their start. With them language is still a plaything ; a plaything, it may be, which has a mysterious influence for good or ill, but nevertheless a plaything which may help to while away the long hours of the day. Hence it is that the vocabularies of the lower races are in a perpetual state of flux and change ; the word which is in fashion one day is dropped the next, and its place taken by a fresh favourite. But they are words and not roots which are thus suddenly called into existence. The Kafir woman coins a fully-formed word, not the root which we can extract from it. Here, as elsewhere in nature, the complex precedes the simple, the embryonic jelly-fish is older than man. What is logically first is historically last.

Roots, however, are one of the instruments with which the comparative philologist determines and classifies his families of speech. We have seen that languages may be arranged morphologically as polysynthetic, incorporating, isolating, agglutinative, inflectional, and analytic ; we have further seen that grammar forms our first and surest ground for asserting or denying the relationship of languages ; but besides similarity of structure and grammar we must also have a common stock of roots before we can throw a group of languages and dialects together, and assert their connection one with another. The genealogical classification of languages, that which divides them into families and sub-families, each mounting up, as it were, to a single parent-speech, is based on the evidence of grammar and roots. Unless the grammar

agrees, no amount of similarity between the roots of two languages could warrant us in comparing them together, and referring them to the same stock. Accidental resemblances of sound and sense between words are to be found all the world over, and the probable origin of language in great measure from the imitation of natural sounds, or the cries uttered during the performance of a common action, would produce superficial likenesses between the roots of unallied tongues. But on the other hand, where we find dissimilar roots combined with grammatical agreement, it is necessary to hesitate before admitting a genetic relationship. There are instances, indeed, in which nearly the whole of a foreign vocabulary has been borrowed, whereas a borrowed grammar is a doubtful, if not unknown occurrence; but, nevertheless, such instances are rare, and we must have abundant testimony before they can be admitted. The test of linguistic kinship is agreement in structure, grammar, and roots. Judged by this test, the languages at present spoken in the world probably fall, as Prof. Friedrich Müller observes,<sup>1</sup> into "about 100 different families," between which science can discover no connection or relationship. When we consider how many languages have perished since man first appeared on the globe, we may gain some idea of the numberless essays and types of speech which have gone to form the language-world of the present day. Language is the reflection of society, and the primitive languages of the earth were as infinitely numerous as the communities that produced them. Here and there a stray waif has been left of an otherwise

<sup>1</sup> "Grundriss der Sprachwissenschaft," i. 1. p. 77.

extinct family of speech. The isolated languages of the Caucasus, or the Basque of the Pyrenees, have remained under the shelter of their mountain fastnesses to tell of whole classes of speech which have been swept away. It is but the other day that the last Tasmanian died, and with him all trace of the four Tasmanian dialects which our colonists found on their arrival in the island. Etruscan seems to be a language *sui generis*, the remnant probably of a family which once spread over the present Tyrol; and all that we know of Etruscan is contained in some three thousand short inscriptions, bristling with proper names, and only half-decipherable. "Nature," said Aristotle, "does nothing sparingly,"<sup>1</sup> and the myriad types of life that she has lavished upon the globe are but the analogue and symbol of the types of language in which the newly-awakened faculty of speech found its first utterance. So far as the available data allow, the existing languages of the world may be classified as follows, though it must be remembered that in many cases our information is scanty and doubtful, and languages here grouped under a single head may hereafter turn out to be distinct and unrelated.<sup>2</sup>

I. Bushman (agglutinative and isolating):—Baroa :  
!Khuai : &c.<sup>3</sup>

<sup>1</sup> "Polit." i. 1.

<sup>2</sup> The list of linguistic families, as well as the leading authorities upon them, are taken from Dr. Friedrich Müller's "Grundriss der Sprachwissenschaft" (1876), i. 1. pp. 82-98, with modifications and additions. The obelus (†) denotes that the language mentioned is extinct.

<sup>3</sup> Dr. Bleek: in "The Cape and its People, and other Essays," edited by Prof. Noble (1869), p. 269, *sq.*; Bleek: "A Brief Account of Bushman Folklore and other Texts" (1875); Hahn: in "Jahres-

II. Hottentot (semi-inflectional):—Namaqua : ! Kora : †Cape dialect: Eastern dialects.<sup>1</sup> Perhaps a dialect spoken near Lake Ngami is to be included.<sup>2</sup>

III. Kafir or Bâ-ntu (prefix-pronominal):—

(α). Eastern: Zulu; Zambesi (Barotse, Bayeye, Mashona); Zanzibar (Kisuahili, Kinika, Kibamba, Kihiau, Kipokomo).

(β). Central: Setshuana (Sesuto, Serolong, Sehlapu).

(γ). Tekeza (Mankolosi, Matonga, Mahloenga).

(δ). Western: Herero; Bunda; Londa; Congo, Mpongwe, Dikele, Isubu, Fernando-Po, Dualla or Dewalla.<sup>3</sup>

berichte des Vereins für Erdkunde zu Dresden," vi. and vii. (1870), pp. 71-73; Fr. Müller: "Grundriss d. Sprachw." i. 2, pp. 25-89; MS. grammar by Rev. C. F. Wuras, in Sir G. Grey's Library, Capetown.

<sup>1</sup> Bleek: "Comparative Grammar of South African Languages" (1862 and 1869); Tindall: "Grammar of Namaqua Hottentot;" Wallmann: "Die Formenlehre der Namaqua-Sprache" (1857); Hahn: "Die Sprache der Nama" (1870); Fr. Müller: "Gr. d. W." i. 2, p. 189; Grammar of the !Kora dialect in Appleyard: "The Kafir Language" (1850), pp. 17, *sq.*; vocabularies of Cape Hottentot in Witsen (1691), and "Cape Monthly Magazine," Jan. and Feb. 1858.

<sup>2</sup> This is Miss Lloyd's opinion, who has heard it spoken. She thinks it resembles Namaqua.

<sup>3</sup> Bleek: "Comp. Gram. of S. African Lang.;" Brusciotto: "Regulæ quædam pro Congensium idiomatis faciliori captu" (Rome, 1659); Appleyard: "The Kafir Language" (1850); Bishop Colenso: "Grammar of the Zulu Language" (1859); Grout: "The Isizulu; a Grammar of the Zulu Language" (1859); Steere: "A Handbook of the Swahili Language" (1870), and "Collections for a Handbook of the Yao Language" (1875); Archbell: "A Grammar of the Bechuana Language" (1837); Clarke: "Introduction to the Fernandian Tongue" (1848); Saker: "Grammatical Elements of the Dualla Language" (1855); Krapf: "Outline of the Elements of the Kisuáheli Language, with special reference to the Kinika

IV. Wolof<sup>1</sup> (agglutinative):—Kayor : Walo : Dakar : Baol : Gambia.

V. Mende (agglutinative):—Mandingo : Bambara : Susu : Vei : Kono : Tene : Gbandi : Landoro : Mende : Gbese : Toma : Mano.<sup>2</sup>

VI. Felup (agglutinative):—Felup : Filham : Bola : Sarar : Pepel : Biafada : Pajade : Baga : Kallum : Temne : Bullom : Sherbro : Kisi.<sup>3</sup>

VII. Central-African (isolating):—Sonrhay : Hausa : Landoma : Limba : Bulanda : Nalu : Banyum : Bijogo.<sup>4</sup>

VIII. Bornu (agglutinative):—Kanuri : Teda : Kanem : Nguru : Murio.<sup>5</sup>

IX. Kru (agglutinative):—Grebo : Kru.<sup>6</sup>

dialect" (1850); Canecattim : "Collecção de Observações Grammaticas sobre a Lingua Bunda ou Angolense" (1805); Hahn : "Grundzüge einer Grammatik der Herero-Sprache" (1857); Le Berre : "Grammaire de la Langue Ponguée" (1873).

<sup>1</sup> Dard : "Grammaire Woloffe" (1826); Boilat : "Grammaire de la Langue commerciale du Sénégal ou de la Langue woloffe" (1858).

<sup>2</sup> Steinthal, H. : "Die Mande-Neger Sprachen" (1867); Koelle : "Outlines of a Grammar of the Vei Languages" (1854). [For an account of the Vei syllabary invented by Momoru Doalu Bukere or Mohammed Doalu Gunwar, Doalu meaning "Bookman," see Steinthal : "Mande-Neger-Sprachen," p. 257, *sq.*, and Koelle : "Outlines."]

<sup>3</sup> Schlenker : "Grammar of the Temne Language" (1864); Nyländer : "Grammar and Vocabulary of the Bullom Language" (1814).

<sup>4</sup> Barth : "Sammlung central-afrikanischer Vocabularien" (1862-1866); Schön : "Grammar of the Hausa Language" (1862).

<sup>5</sup> Kölle : "Grammar of the Bornu or Kanuri Language" (1854); Norris and Richardson : "Grammar of Bornu or Kanuri, with Dialogues, Vocabulary, &c." (1853).

<sup>6</sup> "A Brief Grammatical Analysis of the Grebo Language" (Cape Palmas, 1838, 8vo.).

X. Eve (agglutinative):—Eve: Yoruba: Oji or Ashanti: Fanti or Inta: Ga or Akra.<sup>1</sup>

XI. Nubian (agglutinative):—

(α). Fulah or Poul dialects (Futatoro, Futajallo, Bondu, Sokoto).<sup>2</sup>

(β). Nuba dialects (Tumale, Nubi, Dongolawi, Koldagi, Konjara).<sup>3</sup>

(γ). Wakuafi: Masai.<sup>4</sup>

XII. Ibo (agglutinative):—Ibo: Nupe.<sup>5</sup>

XIII. Nile Group (agglutinative):—Barea: Bari: Dinka: Nuer: Shilluk.<sup>6</sup>

XIV. & XV. Unclassified Negro-languages:—

(α). Isolating:—Mbafu: Maba: Michi.

(β). Agglutinative:—Musgu: Batta: Logone: Baghirmi.<sup>7</sup>

<sup>1</sup> Schlegel: "Schlüssel zur Ewe-Sprache" (1857); Bowen: "Grammar and Dict. of the Yoruba Language" (Smithsonian Inst. 1858); Crowther: "Grammar and Vocabulary of the Yoruba Language, with Introductory Remarks by O. E. Vidal" (1852); Riis: "Elemente des Akwapim-Dialektes der Odschi-Sprache" (1853); Zimmermann: "A Grammatical Sketch of the Akra- or Ga-Language, with an Appendix on the Adamme-dialect" (1858); Christaller: "Grammar of the Asante and Fante language" (1876).

<sup>2</sup> Macbrair: "Grammar of the Fulah Language" (1854); Faidherbe in the "Revue de Linguistique et de philologie comparée," vii. pp. 195, *seq.* (1875).

<sup>3</sup> Tutschek in the "Gelehrte Anzeigen der k. bayer. Akademie der Wissenschaften," xxv. p. 729, *seq.*

<sup>4</sup> Krapf: "Vocabulary of the Enguduk Eloikob, spoken by the Masai in East Africa" (1857).

<sup>5</sup> Schön: "Oku Ibo, Grammatical Elements of the Ibo Language" (1861).

<sup>6</sup> Mitterutzner: "Die Dinka-Sprache in Central-Afrika" (1866); and "Die Sprache der Bari in Central-Afrika" (1867); F. Müller: "Die Sprache der Bari" (1864); Reinisch: "Die Barea-Sprache" (1874).

<sup>7</sup> See Barth: "Sammlung central-afrikanischer Vocabularien" (1862-6).



## XVI. Hamitic (inflectional) :—

(α). † Old Egyptian :<sup>1</sup> † Coptic.<sup>2</sup>(β). Sub-Semitic or Libyan : † Numidian :<sup>3</sup> † Guanches of Canaries :<sup>4</sup> Berber, Kabyle, Tamashék, &c.<sup>4</sup>(γ). Ethiopian : Beja, Denkâli, Somâli, Galla, Agaü, Saho.<sup>5</sup>XVII. Semitic<sup>6</sup> (inflectional) :—(α). Northern : † Assyro-Babylonian ;<sup>7</sup> † Phænico-

<sup>1</sup> Brugsch : "Hieroglyphische Grammatik" (1872), and "Grammaire démotique" (1855) ; Le Page Renouf : "An Elementary Manual of the Egyptian Language" (1876).

<sup>2</sup> Schwartze : "Koptische Grammatik" (1850) ; Revillout in "Mélanges d'Archéologie Egyptienne et Assyrienne," ii. 2, 3, iii. 1, (1875-6) ; F. Rossi : "Grammatica Copto-Geroglifica" (1878).

<sup>3</sup> See Pritchard : "Researches into the Physical History of Mankind," iii. 2, 2, p. 32 ; and De Macedo in the "Journal of the Royal Geographical Society," 1841, pp. 171-183.

<sup>4</sup> Hanoteau : "Essai de Grammaire Kabyle" (1858) ; and "Essai de Grammaire de la Langue Tamachek" (1860) ; Faidherbe : "Collection complète des Inscriptions numidiques," in the "Mémoires de la Société des Sciences, etc., de Lille," viii. p. 361 (1870).

<sup>5</sup> Isenberg : "A small Vocabulary of the Dankali Language" (1840) ; Tutschek : "A Dictionary and Grammar of the Galla Language" (1845) ; Halévy : "Essai sur la Langue agaou" (1874) ; Munzinger : "Ost-Afrikanische Studien" (1864) ; Prätorius in the "Z. D. M. G." xxiv. (1870) ; Pott in the "Z. D. M. G." xxiii. (1869).

<sup>6</sup> Renan : "Histoire des Langues sémitiques" (2nd edit. 1858) ; Castell : "Lexicon Heptaglotton" (1669).

<sup>7</sup> Oppert : "Grammaire assyrienne," 2nd edit. (1868) ; Sayce : "An Assyrian Grammar for Comparative Purposes" (1872), "An Elementary Assyrian Grammar and Reading-book," 2nd edit. (1876), and "The Tenses of the Assyrian Verb," in the "J. R. A. S." Jan. 1877 ; Schrader : "Die assyrisch-babylonischen Keilinschriften," in the "Z. D. M. G." xxvi. 1, 2 (1872).

Hebrew ;<sup>1</sup> † Punic ; Samaritan ;<sup>2</sup> Aramaic († Chaldee, † Syriac, † Mandaite, Neo-Syriac).<sup>3</sup>

(β). Southern : † Gheez (Ethiopic) ;<sup>4</sup> Amharic ;<sup>5</sup> Tigre (Tigrina) ;<sup>6</sup> Harari ;<sup>7</sup> † Himyaritic (Sabean) ;<sup>8</sup> Mehri ;<sup>9</sup> † Ehkili ;<sup>9</sup> Arabic ;<sup>10</sup> † Sinaitic ;<sup>11</sup> † Safa ;<sup>12</sup> Maltese.<sup>13</sup>

<sup>1</sup> Gesenius: "Hebrew Grammar," edit. by Rödiger (Engl. trans. 1869); Ewald: "Ausführliches Lehrbuch der hebräischen Sprache des Alten Bundes," 8th edit. 1870; Olshausen: "Lehrbuch der hebräischen Sprache" (1861); Land: "Principles of Hebrew Grammar" (transl. by Poole, 1876); Schröder: "Die Phönizische Sprache" (1869); Driver: "Use of the Tenses in Hebrew" (1874).

<sup>2</sup> Petermann: "Brevis linguæ Samaritanæ grammatica" (1873); Nichols: "Grammar of the Samaritan Language" (1859); Uhlemann: "Institutiones Linguæ Samaritanæ" (1837).

<sup>3</sup> Merx: "Grammatica Syriaca" (1867-70); Hoffmann: "Grammatica Syriaca" (1827); Uhlemann: "Grammatik der syrischen Sprache" (2nd edit. 1857); Nöldeke: "Grammatik der neu-syrischen Sprache am Urmia-See und Kurdistan" (1868), and "Mandäische Grammatik" (1875).

<sup>4</sup> Ludolf: "Grammatica Æthiopica" (1661); Dillmann: "Grammatik der aethiopischen Sprache" (1857); Schrader: "De lingua Æthiopica cum cognatis linguis comparata" (1860).

<sup>5</sup> Isenberg: "Grammar of the Amharic Language" (1842); Massaja: "Lectiones grammaticales pro missionariis qui addiscere volunt linguam Amaricam" (1867).

<sup>6</sup> Praetorius: "Grammatik der Tigrinasprache" (1871-2).

<sup>7</sup> Praetorius in "Z. D. M. G." xxiii. (1869).

<sup>8</sup> Prideaux: "A Sketch of Sabean Grammar" in the "Transactions of the Society of Biblical Archæology," v. 1, 2 (1877).

<sup>9</sup> Von Maltzan in "Z. D. M. G." xxvii. 3 (1873).

<sup>10</sup> Wright: "Arabic Grammar," 2nd edit. (1874-6); De Sacy: "Grammaire arabe," 2nd edit. (1831); Ewald: "Grammatica critica linguæ Arabicæ" (1832).

<sup>11</sup> Beer: "Inscriptiones veteres Litteris et Lingua huc usque incognitis ad montem Sinai servatæ" (1840-3); Tuch in the "Z. D. M. G." xiv. (1849).

<sup>12</sup> Halévy in the "Z. D. M. G." xxxii. 1. (1878).

<sup>13</sup> Schlienz: "On the Maltese Language" (1838).

XVIII. Aryan or Indo-European (inflectional) <sup>1</sup> :—

(α). Indian Group : † Sanskrit ; <sup>2</sup> † Prakrit ; <sup>3</sup> † Pali, Singalese or Elu <sup>4</sup> (see under DRAVIDIAN) ; modern vernaculars (Bengalese, Assamese, Oriya, Nepaulese, Kashmirian, Scindhi, Punjâbi, Brahui, Gujarati, Marâthi, Hindi, Hindustani) ; <sup>5</sup> Siyâh-pôsh-Kafir ; <sup>6</sup> Dard ; <sup>7</sup> Rommany (Gipsy), with 13 European dialects.<sup>8</sup>

<sup>1</sup> Bopp: "Vergleichende Grammatik des Sanskrit, Zend, Griechischen, Lateinischen, Lithauischen, Altslavischen, Gothischen und Deutschen" (1833-52, 3rd edit. 1868-70; English translation by Eastwick from the first edit. 1845); Schleicher: "Compendium der vergleichend. Grammatik der indo-germanischen Sprachen" (1861, 3rd edit. 1871; English translation by Bendall, 1874).

<sup>2</sup> Benfey: "Handbuch der Sanskritsprache" (1852-54); Max Müller: "A Sanskrit Grammar for Beginners," 2nd edit. (1870); Monier Williams: "Practical Grammar of the Sanskrit Language," 3rd edit. (1864); Delbrück: "Das altindische Verbum" (1874).

<sup>3</sup> Lassen: "Institutiones linguæ Pracriticæ" (1837).

<sup>4</sup> Kuhn: Beiträge zur Pali-Grammatik (1875); Minayeff: "Grammaire Pâlie" (1874); Carter: "Lesson-book of Singhalese, on Ollendorf's System" (1873); Lambrick: "Sinhalese Grammar" (1834).

<sup>5</sup> Cust: "A Sketch of the modern Languages of the East Indies" (1878); Beames: "A Comparative Grammar of the modern Aryan Languages of India" (1872); Forbes: "A Grammar of the Bengali Language" (1862); Sutton: "An Introductory Grammar of the Oriya Language" (1831); Trumpp: "Grammar of the Sindhi Language" (1872); "A Grammar of the Panjabi Language" (Lodi-ana, 1851); Yates: "Introduction to the Hindustani Language" (1845); Garcin de Tassy: "Rudiments de la Langue hindoui" (1847); Shapurji Edalji: "A Grammar of the Gujarati Language" (1867); "The Student's Manual of Marathi Grammar" (Bombay, 1868).

<sup>6</sup> Trumpp in "Z. D. M. G." xx. (1866).

<sup>7</sup> Leitner: "Results of a Tour in Dardistan" (1868).

<sup>8</sup> Pott: "Die Zigeuner in Europa und Asien" (1844-5); Paspati: "Études sur les Tchinghianes" (1870); Miklosich: "Ueber die Mundarten und Wanderungen der Zigeuner Europa's" (1872-77); Ascoli: "Zigeunerisches" (1865).

- (ē). Iranian Group: † Old Persian (Achæmenian);<sup>1</sup>  
 † Pahlavi;<sup>2</sup> Parsi;<sup>3</sup> Neo-Persian;<sup>4</sup> Kur-  
 dish;<sup>5</sup> Beluchi;<sup>6</sup> † Zend (Old Baktrian);<sup>7</sup>  
 Pukhtu (Afghan);<sup>8</sup> Ossetian.<sup>9</sup> Armenian<sup>10</sup>  
 is generally included in this group.
- (γ). Keltic Group: Insular (Welsh, † Cornish, Breton,<sup>11</sup>  
 Irish, Manx, Scotch); † Continental († Gaulish).<sup>11</sup>
- (ð). Italian Group: † Umbrian;<sup>12</sup> † Oscan;<sup>13</sup> † Latin;<sup>14</sup>

<sup>1</sup> Spiegel: "Die altpersischen Keilinschriften" (1862); Kosso-  
 wicz: "Inscriptiones Palæo-Persicæ" (1872).

<sup>2</sup> Spiegel: "Grammatik der Huzvâresch-Sprache" (1856); Haug:  
 "An old Pahlavi-Pazend Glossary" (1870).

<sup>3</sup> Spiegel: "Grammatik der Parsi-Sprache" (1851).

<sup>4</sup> Vullers: "Grammatica linguæ Persicæ" (2nd edit. 1870).

<sup>5</sup> Friedrich Müller: "Beiträge zur Kenntniss der neupersischen  
 Dialekte" in the "Sitzungsberichte der k. Akademie der Wissen-  
 schaften zu Wien," xlv. and xlviii. (1864-65); Garzoni: "Grammatica  
 e Vocabulario della lingua Kurda" (1787); Chodzko: "Études phi-  
 lologiques sur la Langue Kurde" (1857).

<sup>6</sup> See Mockler's Grammar of the Mekráni dialect (London, 1877).

<sup>7</sup> Justi: "Handbuch der Zendsprache" (1864); Hovelacque:  
 "Grammaire de la Langue zende" (1872); Haug: "Essays on the  
 Parsi," edit. by West, in Trübner's "Oriental Series" (1878);  
 Bartholomæ: "Das altiranische Verbum" (1878); Hübschmann,  
 in Kuhn's "Zeitschrift," xxiv. 4 (1878).

<sup>8</sup> Trumpp: "Grammar of the Pashto, or Language of the Af-  
 ghans" (1873).

<sup>9</sup> Sjögren: "Ossetische Sprachlehre" (1844).

<sup>10</sup> Petermann: "Grammatica linguæ Armeniacæ" (1837); Hübsch-  
 mann, in Kuhn's "Zeitschrift," xxiii. 1, 3 (1877); Cirbied: "Gram-  
 maire de la Langue arménienne" (1823).

<sup>11</sup> Zeuss: "Grammatica Celtica" (2nd edit. 1871); Rhÿs: "Lec-  
 tures on Welsh Philology" (2nd edit. 1879).

<sup>12</sup> Aufrecht and Kirchhoff: "Die umbrischen Sprachdenkmäler"  
 (1849-51); Bréal: "Les Tables Engubines" (1875).

<sup>13</sup> Bruppacher: "Oskische Lautlehre" (1869); Enderis: "Ver-  
 such einer Formenlehre der oskischen Sprache" (1871).

<sup>14</sup> Corssen: "Ueber Aussprache, Vokalismus und Betonung der

Neo-Latin or Romanic (Italian, Sardinian, Gallo-italic, French, Provençal, Catalan, Spanish, Portuguese, Rumansh, Friulian, Rumanian);<sup>1</sup> † Messapian (Iapygian).<sup>2</sup>

(ε). Thrako-Illyrian Group : † Thracian ;<sup>3</sup> Albanian.<sup>4</sup>

(ζ). Hellenic Group : † Phrygian ;<sup>5</sup> † Greek ;<sup>6</sup> Modern Greek.<sup>7</sup>

lateinischen Sprache" (2nd edit. 1868-70); and "Kritische Beiträge zur lateinischen Formenlehre" (1863-66); Draeger: "Historische Syntax der lateinischen Sprache" (1874-8); Roby: "A Grammar of the Latin Language" (1872-4).

<sup>1</sup> Diez: "Grammatik der romanischen Sprachen" (1836, 3rd edit. 1870) and "Etymologisches Wörterbuch der romanischen Sprachen" (1853) (4th edition with additions by Scheler, 1878); Prince L-L. Bonaparte: "Remarques sur les Dialectes de la Corse" (1877); Lemcke's "Jahrbuch für romanische und englische Literatur," since 1860; Boehmer's "Romanische Studien," since 1871; "Revue des Langues romanes," since 1870; "Romania," since 1872; "Rivista di filologia romanza," since 1872; Ascoli: "Archivio glottologico italiano," since 1873; Brachet: "Grammaire historique de la Langue française" (1873); Littré: "Histoire de la Langue française" (1863).

<sup>2</sup> Mommsen: "Die unteritalischen Dialekte" (1850).

<sup>3</sup> Böttcher: "Arica" (1851) [Lagarde: "Gesammelte Abhandlungen," 1866].

<sup>4</sup> Von Hahn: "Albanesische Studien" (1853); Camarda: "Saggio di grammatologia comparata della lingua Albanese" (1864-7); Dozon: "Manuel de la Langue Chkipe ou albanaise" (1878).

<sup>5</sup> Fick: "Die ehemalige Spracheinheit Europa's" (1873).

<sup>6</sup> Georg Curtius: "Grundzüge der griechischen Etymologie" (1858, 4th edit. 1874, English translation by Wilkins and England), and "Das Verbum der griechischen Sprache" (1873-6); Leo Meyer: "Vergleichende Grammatik der griechischen und lateinischen Sprache" (1861-5); Kühner: "Ausführliche Grammatik der griechischen Sprache" (1869-72).

<sup>7</sup> Mullach: "Grammatik der griechischen Vulgärsprache" (1856).

- (η). Letto-Slavonic : (1) Slavic :<sup>1</sup> † Old Slavonic (Church Slavonic) ;<sup>2</sup> Bulgarian ; Russian ; Servian ; Slovene ; Slovak ; Polish ; Polabic (Cassubian) ; † Wend ; (2) Lettic : † Old Prussian ;<sup>3</sup> Lithuanian ;<sup>4</sup> Lett.<sup>5</sup>
- (θ). Teutonic Group : (1) † Gothic ;<sup>6</sup> Low German (Old, Middle, and New) ; † Anglo-Saxon ;<sup>7</sup> English ; Frisian ; Dutch ; (2) High German (Old, Middle, and New) ;<sup>8</sup> (3) † Old Norse ;<sup>9</sup> Icelandic ;<sup>10</sup> Swedish ; Danish ; Norwegian.

XIX. † Etruscan (agglutinative).<sup>11</sup>

<sup>1</sup> Miklosich : "Vergleichende Grammatik der Slavischen Sprachen" (1852-76), and "Altslovenische Formenlehre" (1874).

<sup>2</sup> Schleicher : "Die Formenlehre der kirchenslawischen Sprache" (1852) ; Chodzko : "Grammaire paléo-slave" (1869) ; Leskien : "Handbuch der altbulgarischen Sprache" (1871).

<sup>3</sup> Pauli : "Preussische Studien," in Kuhn's "Beiträge," vi. and vii.

<sup>4</sup> Schleicher : "Handbuch der litauischen Sprache" (1856-7).

<sup>5</sup> Bielenstein : "Die lettische Sprache nach ihren Lauten und Formen" (1863-4), and "Handbuch der lettischen Sprache" (1863).

<sup>6</sup> Leo Meyer : "Die gothische Sprache" (1869) ; Stamm : "Ulphilas" (4th edit. by Heyne, 1869) ; Holtzmann : "Altdeutsche Grammatik, umfassend die gotische, altnordische, altsächsische, angelsächsische und althochdeutsche Sprachen" (1870) ; Helfenstein : "A Comparative Grammar of the Teutonic Languages" (1870) ; "Zeitschrift für deutsche Philologie," since 1869 ; "Archiv für die Geschichte der deutschen Sprache und Dichtung," since 1873.

<sup>7</sup> March : "A Comparative Grammar of the Anglo-Saxon Language" (1870) ; Sweet : "An Anglo-Saxon Reader" (1876).

<sup>8</sup> Schleicher : "Die deutsche Sprache" (3rd edit. 1874) ; Weinholt : "Grammatik der deutschen Mundarten" (1863-67) ; Scherer : "Zur Geschichte der deutschen Sprache" (2nd edit. 1878).

<sup>9</sup> Wimmer : "Oldnordisk formlaere til Brug ved Undervisning og Selvstudium" (1870) ; (translated by Sievers : "Altnordische Grammatik," 1871).

<sup>10</sup> Cleasby-Vigfusson : "An Icelandic-English Dictionary, chiefly founded on the Collections made from prose-works of the Twelfth to the Fourteenth Centuries" (1869-76).

<sup>11</sup> Deecke : "Corssen und die Sprache der Etrusker" (1875), and



XX. Basque (Eskuará), (incorporating).<sup>1</sup>

XXI. Turanian or Ural-Altaic (Ugro-Altaic) (agglutinative) :<sup>2</sup>—

(1). † West-Asia Group :—

(*α*). † Accadian or Sumerian.<sup>3</sup>

(*β*). † Susianian, † Kossæan : † Protomedic.<sup>4</sup>

(2). Uralic Group :<sup>5</sup>—

(*α*). Tchudic :—(*a*). Finnish or Suomi,<sup>6</sup> Vêpse or Old Tchude,<sup>7</sup> Vote,<sup>8</sup> Karelian : Estho-

“Etruskische Forschungen,” 3 pts. (1876-79); K. O. Müller: “Die Etrusker,” ed. by Deecke (1875-7).

<sup>1</sup> Prince L-L. Bonaparte : “Le Verbe basque en tableaux, accompagné de notes grammaticales, selon les huit dialectes de l’Euskara” (1869); Van Eys : “Essai de Grammaire de la Langue basque,” 2nd edit. (1867), and particularly “Grammaire comparée des Dialectes basques” (1879); “Ribáry: “Essai sur la Langue basque,” translated with notes, &c., by Vinson (1877).

<sup>2</sup> Max Müller on the “Last Results of the Turanian Researches,” in Bunsen’s “Outlines of the Philosophy of Universal History,” vol. i. pp. 263-520.

<sup>3</sup> Sayce : in the “Journal of Philology,” iii. 5 (1870), and the “Transactions of the Philological Society,” pt. 1 (1877) (“Accadian Phonology”); Fr. Lenormant: “Études accadiennes” (1873), and “La Langue primitive de la Chaldée” (1875).

<sup>4</sup> Sayce: in the “Transactions of the Society of Biblical Archæology,” iii. 2 (1874) (“The Languages of the Cuneiform Inscriptions of Elam and Media”).

<sup>5</sup> Boller: “Die finnischen Sprachen” in the “Berichte der k. Akad. zu Wien,” x. 1 (1853); Thomsen: “Ueber den Einfluss der germanischen Sprachen auf die finnischen-lappischen (1870); Weske: “Untersuchungen zur vergleichenden Grammatik des finnischen Sprachstammes” (1873); De Ujfalvy, in the “Revue de Philologie et d’Ethnographie,” i. 1, 2 (1874-5).

<sup>6</sup> Eurèn : “Finsk Spraklära” (1869); Strahlmann : “Finnische Sprachlehre” (1816); Kellgrèn : “Die Grundzüge der finnischen Sprachen mit Rücksicht auf die andern altaischen Sprachen” (1847).

<sup>7</sup> Lönnrot: “Om det nord-tschudiska Spraket” (1863).

<sup>8</sup> Ahlqvist: “Wotisk Grammatik,” in the “Transactions of the Finnish Society,” v. (1855).



nian,<sup>1</sup> Krevingian : Livonian,<sup>2</sup> † Dialect of Salis. (b). Lapp.<sup>3</sup>

(β). Permian:—(a). Permian, Zyrianian.<sup>4</sup> (b). Votiak.<sup>5</sup>

(γ). Volgaic:—(a). Tcheremiss :<sup>6</sup> (b). Mordvin (Ersa and Moksha).<sup>7</sup>

(δ). Uigur:—(a). Magyar.<sup>8</sup> (b). Vogul.<sup>9</sup> (c). (Oloi) Ostiak.<sup>10</sup>

(3). Samoied Group :<sup>11</sup>—Yurak : Tawgy : Ostiak-Samoied : Yenissei-Samoied : Kamassin.

<sup>1</sup> Ahrens: "Grammatik der esthnischen Sprache revalschen Dialektes" (1853); Wiedemann: "Versuch ueber den werro-esthnischen Dialekt" in the "Mémoires de l'Académie des Sciences de St. Pétersbourg," vii. (1864); Hupel: "Ehsthische Sprachlehre" (1780).

<sup>2</sup> Sjögrén: "Livische Grammatik" (1861).

<sup>3</sup> Ganander: "Grammatica Lapponica" (1743); Friis: "Lappisk Grammatik" (1856); Lönnrot: "Ueber den Enare-Lappischen Dialekt," in the "Actes de la Société scientifique finnoise," iv. (1854); Budenz (Bezenberger's "Beiträge," iv. 1878) dissociates Lapp from Finn, and classifies the Ugrian group as follows:—(1). North-Ugrian: Lapp, Votiak and Zyrianian, Magyar, Wogul and Ostiak. (2). South-Ugrian: Tcheremiss, Mordvin, Finnish.

<sup>4</sup> Castrén: "Elementa grammatices Syrjænæ" (1844); Wiedemann: "Versuch einer Grammatik der Syrjanischen Sprache" (1847).

<sup>5</sup> Wiedemann: "Grammatik der votjakischen Sprache" (1851).

<sup>6</sup> Castrén: "Elementa grammatices Tscheremissæ" (1845); Wiedemann: "Versuch einer Grammatik der tscheremissischen Sprache" (1847).

<sup>7</sup> Wiedemann: "Grammatik der Ersa-mordvinischen Sprache" (1865); Ahlgvist: "Versuch einer Mokscha-mordvinischen Grammatik" (1861).

<sup>8</sup> Riedl: "Magyarische Grammatik" (1858); Fauvin: "Essai de Grammaire hongroise" (1870).

<sup>9</sup> Hunfálvy: "Kondai vogul nyelv" (1872).

<sup>10</sup> Castrén: "Versuch einer ostjakischen Sprachlehre" (1849), edited by Schiefner (1858).

<sup>11</sup> Castrén: "Grammatik der Samoiedischen Sprachen," edited by Schiefner (1854).

- (4). Turkish-Tatar Group :<sup>1</sup>—
- (α). Yakute.<sup>2</sup>
- (β). Uigur :<sup>3</sup> Komanian : Tchagatai :<sup>4</sup> Turkoman :  
Usbek : Kazan.
- (γ). Nogai : Kumük : Bashkir : Kirgish : Tshu-  
wash :<sup>5</sup> Karachai : Karakalpak : Mesch-  
cheryak.
- (δ). West Turkish (of Durbend, Aderbijan, Krimea,  
Anatolia and Rumelia = Osmanli).<sup>6</sup>
- (5). Mongol :—
- (α). East Mongol (Sharra, Khalkha, Sharaigol).<sup>7</sup>
- (β). Kalmuk (Shoshot or Kokonur, Dsungur, Tor-  
god, Dürbek, Aimak).<sup>8</sup>
- (γ). Buriat.<sup>9</sup>
- (6). Tungusian :—
- (α). Tunguse (Chapogire, Orotong, Nyertchinsk).<sup>10</sup>
- (β). Mantchu (and Lamute and Yakutsk).<sup>11</sup>

<sup>1</sup> Schott: "Altajische Studien" (1867-72).

<sup>2</sup> Böhrling: "Ueber die Sprache der Jakuten" (1851).

<sup>3</sup> Vambéry: "Uigurische Sprachmonumente" (1870).

<sup>4</sup> Vambéry: "Chagataische Sprachstudien" (1867).

<sup>5</sup> Schott: "De lingua Tschuwaschorum dissertatio" (Berlin).—  
See Radloff: "Die Sprachen der türkischen stämme Süd-Siberiens:  
die Dialekte der Altajer u. Teleuten, Lebed-Tataren, Schoren  
und Sojonen" (1866).

<sup>6</sup> Kasem-Beg: "Allgemeine Grammatik der Türkisch-tata-  
rischen Sprache," translated by Zenker (1848); Barker: "Read-  
ing-book of the Turkish Language, with Grammar and Vocabu-  
lary" (1854); Redhouse: "Grammaire de la Langue ottomane"  
(1846).

<sup>7</sup> Schmidt: "Grammatik der mongolischen Sprache" (1831).

<sup>8</sup> Zwick: "Grammatik der westmongolischen Sprache" (1851).

<sup>9</sup> Castrén: "Versuch einer bürjatischen Sprachlehre" (1857).

<sup>10</sup> Castrén: "Grundzüge einer tungusischen Sprachlehre" (1856).

<sup>11</sup> Adam: "Grammaire de la Langue mandchou" (1873); Von  
der Gabelentz: "Éléments de la Grammaire mandchou" (1833).

? Japanese and Loo-choo.<sup>1</sup>

XXII. Dravidian<sup>2</sup> (agglutinative):—Tamil :<sup>3</sup> Telugu :<sup>4</sup> Tulu :<sup>5</sup> Canarese :<sup>6</sup> Malayâlam :<sup>7</sup> Tôda :<sup>8</sup> Kudagu or Coorg :<sup>9</sup> Khond or Ku : Badaga : Kota : Uraon or Dhan-gar : Rajmuhâli or Mâler : Gond.<sup>10</sup>

Elu (Singhalese),<sup>11</sup> though ordinarily placed here, is rather an Aryan language. [See under XVIII. (a).]

XXIII. Kolarian (agglutinative):—Santhal :<sup>12</sup> Mundâri<sup>13</sup> (Bhomij ; Ho or Kole) : Kharia : Juang : Korwa : Kur and Kurku : Savara : Mehto.

<sup>1</sup> Hoffmann : "A Japanese Grammar," 2nd edit. (1876); de Rosny : "Premiers Éléments de la Grammaire japonaise (langue vulgaire)" (1873); Hall : "Voyage of Discovery to West Coast of Corea and the Great Loo-choo Island, with a Vocabulary of the Loo-Choo Language by Clifford" (1818).

<sup>2</sup> Caldwell : "A Comparative Grammar of the Dravidian or South-Indian family of Languages" (2nd edit. 1876).

<sup>3</sup> Graul : "Outlines of Tamil Grammar" (1855).

<sup>4</sup> Brown : "A Grammar of the Telugu Language" (2nd edit. 1857).

<sup>5</sup> Brigel : "A Grammar of the Tulu Language" (1872).

<sup>6</sup> Hodgson : "An Elementary Grammar of the Kannada or Canarese Language" (2nd edit. 1864).

<sup>7</sup> Peet : "A Grammar of the Malayalim Language" (1841).

<sup>8</sup> Pope : "A brief Outline of the Grammar of the Toda Language" in Marshall's "Phrenologist among the Todas" (1873, p. 241).

<sup>9</sup> Cole : "An Elementary Grammar of the Coorg Language" (1867).

<sup>10</sup> Driberg and Harrison : "Narrative of a Second Visit to the Gonds of the Nerbudda Territory, with a Grammar and Vocabulary of their Language" (1849).

<sup>11</sup> De Alwis : "The Sidath Sangarawa, a Grammar of the Singhalese Language" (1852); Chater : "A Grammar of the Singhalese Language" (1815).

<sup>12</sup> Skrefsrud : "A Grammar of the Santhal Language" (1873).

<sup>13</sup> Brandreth in the "Journal of the Royal Asiatic Society," x. 1 (1877), pp. 7, 8.

XXIV. Tibeto-Burman<sup>1</sup> (isolating):—

(1). Nepaul Group:—Sunwar: Gurung and Murmi:  
Magar:<sup>2</sup> Kusunda: Chepang: Pahri: Newar:  
Bhramu: Kiranti: Vâyü:<sup>3</sup> Limbu.

(2). Sikhim:—Lepcha.<sup>4</sup>

(3). Assam Group:—Dhimal:<sup>5</sup> Kachâri or Bodo:<sup>5</sup>  
Aka: Deoria-Chutia: Dophla: Miri: Abor:  
Mishmi: Singpho or Kakhyen: Naga: Mikir:  
Garö:<sup>6</sup> Pani-Koch (?).<sup>5</sup>

(4). Mûnipur-Chittagong Group:—Munipûri: Liyang  
or Koreng: Maring: Maram: Kapui: Tang-  
khul: Luhupa: Tipura or Mrung: Kuki: Lu-  
shai: Shendu: Banjogi: Sak: Kyau.

(5). Burma Group:—Burmese (Mugh or Rakheng):<sup>7</sup>  
Khyen: Kumi: Mru: Karén:<sup>8</sup> Kui: Kho:  
Mu-tse.

(6). Trans-Himalayan Group:—Gyarung: Changlo:  
Thochu: Manyak: Takpa: Horpa: Kunâwari:  
Tibetan or Bhotiya<sup>9</sup> (Sarpa: Llopaor Bhutâni).

(7). China Group:—Lolu: Mautse: Lisaw.

<sup>1</sup> Brandreth: *l. c.* pp. 9-25.

<sup>2</sup> Beames: "The Magar Language of Nepaul" (1869); Hodgson:  
"Essays on the Languages, Literature, and Religion of Nepâl and  
Tibet" (1874).

<sup>3</sup> Hodgson: "Grammar of the Vaya Language" (1857).

<sup>4</sup> See "Journal of the Asiatic Society of Bengal," vol. ix.

<sup>5</sup> Hodgson: "On the Kocch, Bodo, and Dhimal Tribes, including  
Vocabulary, Grammar, &c." (1847).

<sup>6</sup> See Robinson: "Assam" (1841).

<sup>7</sup> Judson: "Grammar of the Burmese Language" (1866);  
Chase: "Anglo-Burmese Handbook" (1852); Latter: "Burmese  
Grammar" (1845).

<sup>8</sup> Wade: "Grammar of the Karen Language" (1861).

<sup>9</sup> Csoma de Körös: "Grammar of the Tibetan Language"  
(1834); Schmidt: "Grammatik der tibetischen Sprache" (1839);

XXV. Thai or Tai<sup>1</sup> (isolating):—Siamese or Thai:<sup>2</sup> Lao:<sup>3</sup> Shan: Ahom: Khamti: Aiton: Tai-Mow or Miao-tsi dialects (China).<sup>4</sup>

XXVI. Mon-Anam<sup>5</sup> (isolating):—Mon, or Talain, or Peguan:<sup>6</sup> Kambojan:<sup>7</sup> Annamite or Cochin-Chinese:<sup>8</sup> Paloung: dialects of the tribes beyond the river Mekong.

XXVII. Khasi<sup>9</sup> (isolating):—Khasi, Synteng, Batoa, Amwee, Lakadong.

XXVIII. Chinese<sup>10</sup> (isolating):—Amoy,<sup>11</sup> Cantonese or Kong, Foochow, Punti, Shanghai,<sup>12</sup> Mandarin.<sup>13</sup>

XXIX. Corean:<sup>14</sup> (?) Gilyak.

XXX. † Lycian<sup>15</sup> (inflectional).

Jaeschke: "A short practical Grammar of the Tibetan Language" (1855); Foucaux: "Grammaire de la Langue tibétaine" (1859).

<sup>1</sup> Brandreth: *l. c.* pp. 27, 28.

<sup>2</sup> Pallegoix: "Grammatica linguæ Thai" (1850).

<sup>3</sup> See "Journal of the Asiatic Soc. of Bengal" (1837).

<sup>4</sup> Edkins: "The Miao-tsi Tribes" (1870).

<sup>5</sup> Brandreth: *l. c.* pp. 28-30.

<sup>6</sup> Haswell: "Peguan Grammar" (1876).

<sup>7</sup> Janneau: "Manuel pratique de la Langue cambodienne" (very rare).

<sup>8</sup> Aubaret: "Grammaire de la Langue annamite" (1864).

<sup>9</sup> Brandreth: *l. c.* pp. 25-27; Schott: "Die Cassia-Sprache," in the "Abhandlungen der k. Akad. der Wissensch. in Berlin" (1859). These groups from XXII. to XXVII. with their literature are treated by Cust: "The Modern Languages of the East Indies" (1878).

<sup>10</sup> Endlicher: "Anfangsgründe der Chinesischen Grammatik" (1845); Schott: "Chinesische Sprachlehre" (1857); Stanislas Julien: "Syntaxe nouvelle de la Langue chinoise" (1869); Edkins: "Introduction to the Study of the Chinese Characters" (1876).

<sup>11</sup> Macgowan: "Manual of the Amoy Dialect" (1869).

<sup>12</sup> Edkins: "Grammar of the Shanghai Dialect" (1868).

<sup>13</sup> Edkins: "Grammar of the Mandarin Dialect" (2nd edit. 1864).

<sup>14</sup> De Rosny: "Aperçu de la langue coréenne" (1864).

<sup>15</sup> Moriz Schmidt: "The Lycian Inscriptions after the accurate copies of Aug. Schönborn" (1869).

XXXI. Lesghic (inflectional):—Lesghian : Avar :<sup>1</sup> Andi : Dido : Kasikumük : Akush : (?) Kyra.

XXXII. Ude<sup>2</sup> (agglutinative).

XXXIII. Circassian (prefix-agglutinative and incorporating):—Abkhas or Absné : Cherkess :<sup>3</sup> Bzyb : Adigé.

XXXIV. Thushian (inflectional):—Thush :<sup>4</sup> Chet-chenz,<sup>4</sup> or Kistic, or Mizhdzedzhi : Arshte or Aristoiai : Ingush or Lamur.

XXXV. Alarodian (inflectional):—† Vannic,<sup>5</sup> Georgian :<sup>6</sup> Lazian :<sup>7</sup> Mingrelian :<sup>7</sup> Suanian.<sup>7</sup>

XXXVI. Malayo-Polynesian (agglutinative):<sup>8</sup>—

(1). Malayan Group :—

(a). Philippine dialects (Tagála, Zebuana, Bisaya, Pampanga, Ilocana, Bicol):<sup>9</sup> Mariana (La-

<sup>1</sup> Schiefner: "Versuch über das Avarische," in the "Mémoires de l'Académie des Sciences de St. Pétersbourg," v. 8 (1862).

<sup>2</sup> Schiefner: "Versuch über der Uden," in the "Mémoires de l'Académie des Sciences de St. Pétersbourg," vi. 8 (1863); Fr. Le-normant: "La Langue primitive de la Chaldée," pp. 424-5.

<sup>3</sup> Schiefner: "Bericht über des Generals Baron Peter von Uslar abchasische Studien," in the "Mémoires de l'Académie de St. Pétersbourg," vi. 12 (1863); Rosen: "Ossetische Sprachlehre nebst einer Abhandlung über das Mingrelische, Suanische und Abchasische," in "Abhandl. Berlin. Akad. (1845).

<sup>4</sup> Schiefner: "Versuch über die Thush-Sprache," in the "Mém. etc." vi. 9 (1856), and "Tchetschenzische Studien," in the "Mémoires," vii. 5 (1864).

<sup>5</sup> Schulz in the "Journal Asiatique," 3rd ser. ix. (1828); Fr. Le-normant: "Lettres Assyriologiques," i. 2 (1871); Sayce, in Kuhn's "Zeitschrift," xxiii. 4 (1877).

<sup>6</sup> Brosset: "Eléments de la Langue georgienne" (1837).

<sup>7</sup> Rosen: "Sprache der Lazen" (1847), in the "Abhandlungen der Berlin. Akademie." See also his "Ossetische Sprachlehre" (1845).

<sup>8</sup> Friedrich Müller: "Reise der oesterr. Fregatte Novara um die Erde: Linguistischer Theil" (1867), pp. 267, sq.

<sup>9</sup> Totanes: "Arte de la Lengua Tagala," 3rd edit. (1850); Men-trida: "Arte de la Lengua Bisaya Hiliguayna" (1818); Bergaño:

drone) Islands dialects : Molucca Islands : Timur Islands (Bima, Endeh, Solor and Allor, Sumba, Timurese, Teto, Kissa, Savoe, Rotti) : Malagasi :<sup>1</sup> Formosa dialects.<sup>2</sup>

(β). Malayo-Javanese (Malay,<sup>3</sup> Achinese, Batak, Rejang, Lampong, Javan or †Kawi,<sup>4</sup> Sunda,<sup>5</sup> Madurese,<sup>6</sup> Balinese,<sup>7</sup> Sassak, Bugis, Bouton, Makassar,<sup>8</sup> Alfurian,<sup>9</sup> Dayak [Borneo],<sup>10</sup> Kyan).

"Arte de la Lengua Pampaga," 2nd edit. (1736); Lopez: "Compendio y Methodo de la Suma de las Reglas del Arte Ydioma Ylocano" (1792); "Arte de Lengua Zebuana" (616 pp. undated; very rare); Fausto de Cuevas: "Arte nuevo de la Lengua Ybanag" (1826); San Augustin: "Arte de la Lengua Bicol" (1795).

<sup>1</sup> Kessler: "An Introduction to the Language and Literature of Madagascar" (1870); Dalmond: "Vocabulaire et Grammaire pour les Langues Malgaches, Sakalave, et Betsimitsara" (1842). See Cousins, in the "Transactions of the Philological Society," pt. 2 (1878).

<sup>2</sup> H. C. von der Gabelentz in the "Z. D. M. G." xiii. (1859); Happart: "Dictionary of the Favorlang Dialect of the Formosan Language written in 1650," translated by W. Medhurst (1840).

<sup>3</sup> De Hollander: "Handleiding bij de beoefening der Maleische taal-en letterkunde" (1856); Marsden: "A Grammar of the Malayan Language" (1812).—Van der Tuuk: "Bataksch Leesboek bevattende stukken in het Tobasch, Mandailingsch en Dairisch" (1860-2), and "Kurzer Abriss einer Batta'schen Formenlehre in Toba-dialekte," translated by Schreiber (1867).

<sup>4</sup> De Hollander: "Handleiding bij de beoefening der Javansche taal-en letterkunde" (1848); Wilhelm von Humboldt: "Ueber die Kawi-Sprache auf der Insel Java" (1836-9).

<sup>5</sup> Coolsma: "Handleiding bij de beoefening der Soendaneesche taal" (1873).

<sup>6</sup> Vreede: "Handleiding tot de beoefening der Madoeresche taal" (1874).

<sup>7</sup> Van Eck: "Beknopte Handleiding bij de beoefening van de Balineesche taal" (1874).

<sup>8</sup> Matthes: "Makassaarsche Sprackkunst" (1858).

<sup>9</sup> Niemann: "Bijdragen tot de kennis der Alfoersche taal in de Minahasa" (1866).

<sup>10</sup> Hardeland: "Versuch einer Grammatik der Dajackschen



(2). Polynesian Group:<sup>1</sup>—Samoan:<sup>2</sup> Tongan:<sup>3</sup> Maori<sup>4</sup> [New Zealand]: Tahitian:<sup>5</sup> Rarotongan:<sup>6</sup> Hawaiian:<sup>7</sup> Marquesan:<sup>8</sup> Easter Is-

Sprache" (1858); H. C. von der Gabelentz: "Grammatik der Dak-Sprache" (1852).

<sup>1</sup> Mr. Whitmee is preparing a "Comparative Dictionary and Grammar of the Polynesian Languages," to be published by Messrs. Trübner and Co., of which the "Samoan Grammar" by Mr. Pratt (2nd edit.) has already appeared. See also "United States Exploring Expedition during the years 1838-42: Ethnography and Philology," vol. vii. by Hor. Hale.

<sup>2</sup> Pratt: *l. c.* (1st edit. 1862, 2nd edit. 1878).

<sup>3</sup> West: "Ten years in South-Central Polynesia" (Grammar in App.) (1865).

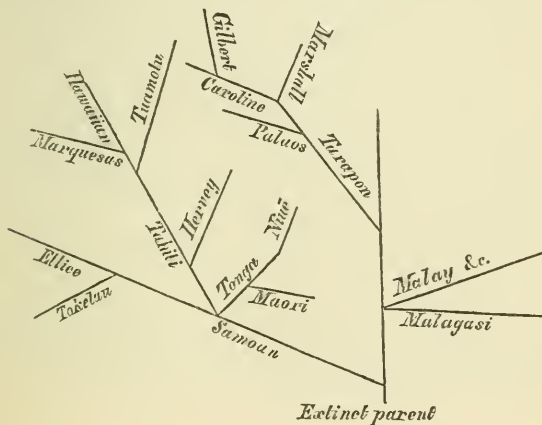
<sup>4</sup> Maunsell: "Grammar of the New Zealand Language," 2nd edit. (1862); Kendall: "A Grammar and Vocabulary of the Language of New Zealand" (1820).

<sup>5</sup> Davies: "A Grammar of the Tahitian Dialect of the Polynesian Language" (1823); Gaussin: "Du Dialecte de Tahiti, de celui des Iles marquises et en général de la Langue polynésienne" (1853).

<sup>6</sup> Buzacott: "Grammar of the Rarotongan Language" (1854).

<sup>7</sup> Andrews: "Hawaiian Grammar" (1836); Alexander: "A short Synopsis of the most essential points in Hawaiian Grammar" (1864).

<sup>8</sup> Buschmann: "Aperçu de la Langue des Iles marquises" (1843). Mr. Whitmee makes the Polynesian linguistic stem as follows:—



land: Gambier Islands: Niuē: Tokelau:  
Ellice Islands: Uvea.

XXXVII. Melanesian (agglutinative):—Dialects of Viti or Fiji, Annatom, Erromango, Tana, Mallicolo, Lifu, Baladea, Bauro, Gera or Guadalcanar, Mota, Dauru, Faté, Api, Pama, Ambryn, Vunmarama, Yehen or Yengen, Ulaua, Mara Ma-siki, Anudha, Mahaga, &c. (New Caledonia, New Hebrides, New Britain, Loyalty, Solomon's, and Admiralty Islands).<sup>1</sup>

XXXVIII. Papuan (agglutinative):—

(α). Papuan of New Guinea.<sup>2</sup>

(β). Negrito dialects of the Philippines and Semang.

(γ). (?) Dialects of the Mincopies or Andamanners.<sup>3</sup>

XXXIX. Anio of Japan,<sup>4</sup> and Kamchadal.

<sup>1</sup> See H. C. von der Gabelentz: "Die melanesischen Sprachen nach ihrem grammatischen Bau und ihrer Verwandtschaft unter sich und mit den malaiisch-polynesischen Sprachen," in the "Abhandl. der k. Sächsischen Gesellschaft der Wissenschaften," vii. and xvii. (pt. 1, 1860; pt. 2, 1873); Hazlewood: "Grammar and Dictionary of the Fiji Language" (Bau dialect), 2nd edit., edited by Calvert (undated).—Codrington: "A Sketch of Mota Grammar" (Bank's Islands) (1877); Moseley on the Admiralty Islanders in the "Journal of the Anthropological Institute," May, 1877.

<sup>2</sup> A. B. Meyer: "Ueber die Mafoor'sche und einige andere Papua-Sprachen auf New-Guinea," in the "Sitzungsberichte der k. Akademie der Wissenschaften in Wien," lxxvii. (1874), pp. 299, *sq.*; Grey and Bleek: "Handbook of African, Australian, and Polynesian Philology" (1858-62), vol. ii.; Earl: "The Native Races of the Indian Archipelago: Papuans" (1853).

<sup>3</sup> Roepstorff: "Vocabulary of Dialects spoken in the Nicobar and Andaman Islands" (1874).

<sup>4</sup> See Pfitzmaier: "Ueber den Bau der Aino Sprache," in the "Sitzungsberichte der k. Akademie d. Wissensch. in Wien," vii. (1851), pp. 382, *sq.* (published 1852), and "Kritische Durchsicht von Davidson's Wörtersammlung der Ainós" (1852).

XL. Australian (agglutinative) :—Kamilaroi,<sup>1</sup> &c., &c.  
Possibly also the † four dialects of Tasmania.<sup>2</sup>

XLI. Unclassified South American languages (poly-synthetic) :—Peschêrêh or Fuegian<sup>3</sup> (divided into Ali-kulip and Tekeenika) : Patagonian or Tehuelhet :<sup>4</sup> Puelche or Querandi (Argentine Republic and Pampas) :<sup>5</sup> Charrua : † Chibcha (language of the Muisca or Moska in New Granada) :<sup>6</sup> † Yaro and Guenoa : † Bo-

<sup>1</sup> Threlkeld: "An Australian Grammar, comprehending the principles and natural rules of the Language, as spoken by the Aborigines in the vicinity of Hunter's River, Lake Macquarie, &c., New South Wales" (1834); Ridley: "Kamilaroi and other Australian Languages," 2nd edit. (1875); Friedrich Müller: "Reise der oesterr. Fregatte Novara," iii. (1867); Hale in "U. S. Exploring Expedition, &c." pp. 479-531; Teichelmann and Schuermann: "Outlines of a Grammar, Vocabulary, and Phraseology of the Aboriginal Languages of South Australia" (1840); "Australian Languages and Traditions," in the "Journal of the Anthropological Institute," Feb. 1878.

<sup>2</sup> Milligan: "On the Dialects and Language of the Aboriginal Tribes of Tasmania," in the "Papers and Proceedings of the Royal Society of Tasmania," iii. 2 (1859); see also Lhotsky in the "Journal of the Royal Geographical Society," 1839, pp. 157-162.

<sup>3</sup> See D'Orbigny: "L'Homme américain," i. pp. 412, *sq.*; Hervas: "Catalogo delle lingue conosciute" (1784), p. 15; Laet: "Orbis novus s. descriptionis Indiæ occidentalis libri xviii." (1633), pp. 511, 516-18, 520. [The Peshêrêh or Pesheraï Indians are also called Yakanaku, and are divided into the three tribes Kamentes, Karai-kas, and Kennekas.] For a list and literature of the American languages, see the exhaustive "Literature of American Aboriginal Languages," by H. E. Ludewig, edited by N. Trübner (1858).

<sup>4</sup> Hale: "United States Exploring Expedition: Ethnography and Philology," pp. 656, *sq.* (1846); Muster: "Patagonians" (1871).

<sup>5</sup> Hale: pp. 653, *sq.* [The Puelches are divided into Chechehet, Divihet, and Taluhet.]

<sup>6</sup> Uricoechea: "Grammatica, vocabulario, catecismo i confesionario de la Lengua Chibcha" (1871); Bern. de Lugo: "Gramatica en la Lengua general del nuevo reyno llamada Mosca" (1619).

hene : † Chana : Minuane : Kasigua : 51 languages of Brazil (Adelung's "Mithridates," iii. 1. pp. 461-469) : † Payagua : † Lengua : † Enimaga : † Yakurure : Machikuy : Mataguaya : Malhalae : Pitilaga : Toba : Yarura : Ele and Betoï.<sup>1</sup>

XLII. Guaycuru-Abiponian<sup>2</sup> (polysynthetic):—(Guaycuru spoken between the Paraguay and the Pilcomayo, Abiponian in the valley of the Salado):<sup>2</sup> Mokobi:<sup>2</sup> Mbaya:<sup>3</sup> (?) Aquiteguedichaga: (?) Grato: (?) Ninaquigula: (?) Guana (Adelung's "Mithridates," iii. 1. pp. 473-477).

XLIII. † Arda:<sup>4</sup> Andoa : Shimigac (polysynthetic).<sup>1</sup>

XLIV. Araucanian or Moluch of Chili<sup>5</sup> (polysynthetic):—Picunche : Pehuenche : Huilliche.

XLV. Peruvian<sup>6</sup> (polysynthetic):—Quichua:<sup>7</sup> Ay-

<sup>1</sup> For Yarura and Betoï Grammar see Adelung: "Mithridates," iii. 1, pp. 635-47.

<sup>2</sup> Dobrizhoffer: "Historia de Abiponibus" (1784); grammars in Adelung: "Mithridates," iii. 1, pp. 498-506.

<sup>3</sup> Mbaya Grammar in Adelung: "Mithridates" (1812), iii. 1, pp. 482-488.

<sup>4</sup> According to Alcedo spoken on the Upper Napo. A "Doctrina Christiana" (Madrid, 1658) and a "Paternoster" are the only specimens left of it. For the Andoa and 17 other possibly connected languages see Adelung: "Mithridates," iii. 1, pp. 583-597.

<sup>5</sup> Havestadt: "Chilidugu, sive res Chilenses" (with grammar and dictionary), (1777); Febrès: "Arte de la Lengua general del Reyno del Chilé" (1765; 2nd edit. 1846); De Valdivia: "Arte Grammatica, Vocabulario en la Lengua de Chile" (1608); Adelung: "Mithridates," (1812), iii. 1, pp. 404-416.

<sup>6</sup> Lopez: "Les Races Aryennes de Pérou" (1872). [Unscientific].

<sup>7</sup> Von Tschudi: "Die Kechua-Sprache" (1853); Markham: "Quichua Grammar" (1864); Domingo de S. Thomas: "Arte y Vocabulario en la Lengua general del Peru llamada Quichua" (1586).

mara :<sup>1</sup> Juracares : Mayoruna : Calchaqui : Atacama : Changos : Conibos :<sup>2</sup> (?) Mochika (Puquina, and Yunka ; see Adelung's "Mithridates," iii. 1. pp. 548-551).

XLVI. Andes-languages, or Maipurian (isolating) :—

(α). Moxa :<sup>3</sup> Chiquita :<sup>3</sup> Zamuca :<sup>3</sup> Panos : Maipur :<sup>4</sup> Pacaguayra.

(β). Barré or Pareni :<sup>5</sup> Baniwa : Tariana : Chimanoo : Tikuna : Uainamben or Mauhe : Juri.

(γ). (?) Salivi.<sup>6</sup>

XLVII. Tupi-Guarani<sup>7</sup> (polysynthetic) :—

(1). North Guarani or Tupi :—Tupinaba : Tupiniquin : Tuppinamba.

(2). Chiriguano and Guarayi (West Guarani).

(3). South Guarani.

(4). Omagua.<sup>8</sup>

XLVIII. Carib<sup>9</sup> (polysynthetic) :—Carib :<sup>10</sup> Arawak :<sup>11</sup>

<sup>1</sup> Bertonio: "Arte breve de la Lengua Aymara" (1603-12); Mossbach: "Die Inkas-Indianer und das Aymara" (1874).

<sup>2</sup> See "Bulletin de la Société Géographique de Paris," 1853.

<sup>3</sup> Marban: "Arte de la Lengua Moxa" (1701); Chiquita and Zamuca Grammars in Adelung: "Mithridates," iii. 1. pp. 553-563.

<sup>4</sup> For grammar see Adelung: "Mithridates," iii. 1, pp. 619-23.

<sup>5</sup> Wallace: "Travels on the Amazon" (1853).

<sup>6</sup> For grammatical notes see Adelung: "Mithridates," iii. 1, pp. 624-627.

<sup>7</sup> Platzmann: "Grammatik der brasilianischen Sprachen" (1874); De Montoya: "Arte y Vocabulario de la Lengua Guarani" (1640); Adelung: "Mithridates," pp. 432-460; De Anchieta: "Arte de Grammatica da Lingoa mais usada na costa do Brasil" (1595).

<sup>8</sup> For grammar see Adelung: "Mithridates," iii. 1, pp. 606-10.

<sup>9</sup> Vocabulary in Davies: "History of the Carriby Islands" (1666); Raymond Breton: "Grammaire de la Langue caraïbe" (1668).

<sup>10</sup> "Dictionnaire Galibi, précédée d'un essai de Grammaire," par "M. D. L. S." (1763); Grammar in Adelung: "Mithridates," iii. 1, pp. 685-696.

<sup>11</sup> Quandt: "Arowakische Grammatik," in Schomburgk: "Reisen

Chayma : Guarauna : Tamanaque :<sup>1</sup> Cumana : Cumanagota.

XLIX. Lule<sup>2</sup> (in La Plata) (polysynthetic) :—Isiftene, Tokistine, Oristine, Tonocote : Vilela :<sup>2</sup> (?) Chumipy (in Chaco).

L. Cueva (isolating) :—Guanuca or Cocamua in Popayan : Tule : Cunacuna : Cholo : Uraba in Darien : Guaimie or Huaimie in Veraguas.<sup>3</sup>

LI. † Cibuney dialects of the Antilles<sup>1</sup> (isolating) :— (?) The Mosquito languages :<sup>5</sup> (?) Nagranda or Oroña :<sup>6</sup> (?) Chorotega : (?) Chontal : (?) Coribici.

LII. Maya (polysynthetic) :— Maya :<sup>7</sup> Huasteca :<sup>8</sup>

in British-Guyana" (1840-48); Brinton : "The Arawak Language of Guiana," in "Trans. American Phil. Society" (Philadelphia, New Ser. xiv. pp. 427, *sq.*).

<sup>1</sup> Grammar in Adelung: "Mithridates," iii. 1, pp. 656-66.

<sup>2</sup> Machoni: "Arte de la Lengua Lule" (1732); Grammar in Adelung: "Mithridates," iii. 1, pp. 510-516.

<sup>3</sup> Hervas: "Catalogo delle Lingue" (pp. 69-72); Bancroft: "Native Races of the Pacific," iii. pp. 793-95 (1875).

<sup>4</sup> See Adelung: "Mithridates," iii. 2, pp. 3, 4; De Rochefort: "Histoire naturelle et morale des Iles antilles," ii. ch. 10 (1665).

<sup>5</sup> Grammar in Bancroft: "Native Races," iii. pp. 784-790.

<sup>6</sup> Grammar in Bancroft: "Native Races," iii. pp. 791-793.

<sup>7</sup> Beltran: "Arte del Idioma Maya," 2nd edit. (1859); Gallatin in the "Trans. of the American Ethnological Society," i. pp. 252, *sq.*; Pimentel: "Cuadro descriptivo y comparativo de las lenguas indigenas de Mexico" (1862), ii. 1; Ruz: "Silabario de Maya" (1845); Squier: "States of Central America" (1858); Brasseur de Bourbourg: "Dictionnaire, Grammaire et Chrestomathie de la Langue Maya" (1872); De Rosny: "L'interprétation des anciens Textes Maya" (1875).

<sup>8</sup> Gallatin: *l. c.* pp. 276, *sq.*; Pimentel: *l. c.* i. 3; De Olmos: "Grammatica" (1560); De Charencey: "Le Pronom personnel dans les Idiomes de la famille Tapochulane-Huastèque" (1868), and "Recherches sur les Lois phonétiques dans les Idiomes de la famille

Quiche :<sup>4</sup> Kachiquel :<sup>1</sup> Zutuhil :<sup>2</sup> Poconchi, or Pokomam :<sup>3</sup>  
Mame or Zaklohpakap.<sup>3</sup>

LIII. Mexican (polysynthetic) :—

(1). † Nahuatl :<sup>4</sup> Aztec :<sup>5</sup> Niquiran : Tlaskalteck.

(2). Sonorian :<sup>6</sup>—

(α). Cahita : Cora : Tepeguana : Tarahumara.

(β). 'Opata : Heve (or Endeve) ;<sup>7</sup> Tubar : Yaqui :  
Tejana : Ahome.

(γ). Pima, or Nevome :<sup>8</sup> Papago.

(δ). Kizh :<sup>9</sup> Netela :<sup>9</sup> Cahuillo :<sup>10</sup> Chemahuevi : Kechi.

Mame-Huaxtèque" (1872); Bancroft: *l. c.* iii. pp. 779-781; Brasseur de Bourbourg: "Grammaire de la Langue Quiché-espagnole-française, mise en parallèle avec ses deux Dialectes Cakchiquel et Tzutuhil" (1862), and "Popol Vuh, le livre sacré et les mythes de l'antiquité américaine, avec les livres héroïques et historiques des Quichés" (1861).

<sup>1</sup> Flores: "Arte de la Lengua Kakchiquel" (1753).

<sup>2</sup> Brasseur de Bourbourg: "Grammaire de la Langue Quiché" (1862).

<sup>3</sup> Larios: "Arte de la Lengua Mame" (1697); Gallatin: *l. c.* pp. 269, *sq.*; Adelung: Poconchi Grammar in Adelung: "Mithridates," iii. 2, pp. 6-13; Bancroft: *l. c.* iii. pp. 764-66.

<sup>4</sup> De Olmos: "Grammaire de la langue Nahuatl" (1547), edited with notes by Rémi Simeon (1875).

<sup>5</sup> Carochi: "Arte de la Lengua Mexicana" (1645); De Arenas: "Guide de la Conversation en trois Langues, français, espagnol et mexicain" (1862); De Charencey: "Notice sur quelques familles de Langues du Mexique" (1878).

<sup>6</sup> Buschmann: "Die Sonorischen Sprachen," in the "Abhandlungen der k. Akademie der Wissensch. in Berlin" (1863, *et seq.*); Grammars in Bancroft: "Native Races," iii. ch. viii.

<sup>7</sup> Buckingham Smith: "Grammatical Sketch of the Heve Language" (1862); 'Opata grammar in Bancroft: *l. c.* iii. pp. 702-4.

<sup>8</sup> B. Smith: "Grammar of the Pima" (1862), in Shea's "Library of American Linguistics," v.

<sup>9</sup> Buschmann: "Die Sprachen Kizh und Netela" (1856).

<sup>10</sup> "Pacific R. Reports," vol. ii. (1855).



(ε). Shoshone, or Snake Indian or Maradiço dialects :<sup>1</sup> Bannack : Shoshokee : Comanche : Moqui : Utah : Pah-Utah or Paduca.

LIV. Isolating languages of Mexico [belonging probably to several different families] :—

Othomi or Hia-hiu.<sup>2</sup>

Totonak.<sup>3</sup>

Tarasca.<sup>4</sup>

Matlazinca or Pirinda.<sup>5</sup>

Mixtek<sup>6</sup> (Tepuzcolana, Yanguistlan, Cuixlahuac, Tlaxiaco, &c.) : Chocho or Cholo.

Zapotek or Oajaca :<sup>7</sup> † Zacapulan : † Zacatek.

Mixe.

Mazahua.

Huave.

Chiapanek.<sup>8</sup>

Pame (with 3 dialects).

<sup>1</sup> "Trans. of American Ethnol. Soc." vol. ii.; Schoolcraft: "Indian Tribes," vols. ii. iv. (1851-5).

<sup>2</sup> Naxera: "De lingua Othomitorum dissertatio" (1835); Piccolomini: "Grammatica" (1841); "Éléments de la Grammaire Othomi, traduits de l'espagnol" (Paris, 1863).

<sup>3</sup> Bonilla: "Arte de la Lengua Totonaca" (1742); Pimentel: *l. c.* i. pp. 221, *sq.*

<sup>4</sup> Basalenque: "Arte de la Lengua Tarasca" (1714); Pimentel: *l. c.* i. pp. 269, *sq.*; Bancroft: *l. c.* iii. pp. 744-46.

<sup>5</sup> Pinelo: "Épitome" (Madrid, 1737-8); Grammar in Bancroft: *l. c.* iii. pp. 747-8.

<sup>6</sup> De los Reyes: "Arte de la Lengua Mixteca" (1593); Bancroft: *l. c.* iii. pp. 749-53.

<sup>7</sup> Cueva: "Arte de la grammatica de la Lengua Zapoteca" (1607); Bancroft: *l. c.* iii. pp. 754-6.

<sup>8</sup> De Cepeda: "Arte de las Lenguas Chiapa, Zoque, Celdales, y Cinacanteca" (Mexico, 1560).

LV. Unclassified Pueblo dialects (isolating):—Zuñi:<sup>1</sup> Queres (and Kiwomi): Jemez: Tezuque: Tegue: Huraba dialects.

LVI. Yuma (polysynthetic):—Cuchan: Mahao: Hahwalco: Yampaio: Cocopah: Puemaja or Camoye: Mojave: Diegueño.<sup>2</sup>

LVII. Unclassified Californian languages (polysynthetic):—

- (1). Cochimi dialects.
- (2). Pericu dialects.<sup>3</sup>
- (3). Guaicuri dialects.<sup>4</sup>
- (4). Pomo dialects.<sup>5</sup>
- (5). Meidu and Nesheeman.
- (6). East Sacramento.
- (7). West Sacramento.
- (8). Runsien.<sup>6</sup>
- (9). Eslene.
- (10). Tatche.<sup>7</sup>
- (11). San Miguel.
- (12, 13, &c.). Yakon, Klamath, Euroc, &c.

LVIII. Selish (polysynthetic):<sup>8</sup>—

- (1). Kaitlen: Billikūla (British Columbia).

<sup>1</sup> Vocabulary in "Pacific R. Report," vol. ii. (1855). See Bancroft: "Native Races," iii. pp. 682-3.

<sup>2</sup> See Bancroft: *l. c.* iii. pp. 684-5.

<sup>3</sup> Clavigero: "Storia della California," i. pp. 110, *sq.* (1789).

<sup>4</sup> Grammar in Bancroft: *l. c.* iii. pp. 688-90.

<sup>5</sup> Grammar of the Gallinomero dialect in Bancroft: *l. c.* iii. pp. 644-6.

<sup>6</sup> Grammar of the Mutsun dialect in Bancroft: *l. c.* iii. pp. 655-6.

<sup>7</sup> Tatché Grammar in Bancroft: *l. c.* iii. pp. 656-8.

<sup>8</sup> "Contributions to North American Ethnology, in "U. S.

- (2). Nanaimūk : Kowitsin : Songhu : Soke (Vancouver's Island).
- (3). Kowlitz : S'klallam : Tsihális : Kwainaūtl' : Kwilehiūt.
- (4). Niskwalli :—
- (a). Skwanksnamish : Kwulseet (Skokomish.)
- (b). S'hotlmamish : Skwai-aitl' : Sahewamish : Stehtsasamish : Sawamish : Nū-seht-satl'.
- (c). Niskwalli *proper* : Segwallitsū : Stailaku-mamish : Skwalliahmish.
- (d). Puyallupahmish : T'kwakwamish : S'homamish.
- (e). Sukwamish : Samamish : Skopamish : St'kamish : Sk'tehlmish.
- (f). Snohomish.
- (g). Snokwalmū : Stoluts-whamish : Sk'tahle-jum : Skihwamish : Kwehtl'mamish.
- (h). Yakama.<sup>1</sup>
- (i). Skagit : Kihiallū : Towah-hah : Nu-kwat-samish : Smali-hū : Sakū-mehū : Skwonamish : Miskai-whū : Swinamish : Miseekwigweelis.
- (j). Lummi : Samish : Nūk-sahk.

LIX. Chinūk or Tsinūk<sup>2</sup> (polysynthetic) :—Clatsop : Clatlascon or Wasco : Wakaikam. Chinook jargon.<sup>3</sup>

Geographical and Geological Survey of the Rocky Mountain Region," i. (1877), pp. 241, *sq.* ; Mengarini : "Grammatica linguæ Selicæ" (1861).

<sup>1</sup> Pandosy : "Grammar and Dictionary of the Yacama Language" (1862), in Shea's "Library," vol. vi.

<sup>2</sup> Grammatical Notes on the Watlala Dialect in Bancroft : "Native Races," iii. pp. 628-9.

<sup>3</sup> "Dictionary of the Chinook Jargon, to which is (*sic*) added numerous Conversations," 6th edit., published by S. J. M'Cormick, Portland, Oregon.

LX. Sahaptin or Nez-percées<sup>1</sup> (polysynthetic):—Taitinapan : ? T'likatat : ? Walla-walla.

LXI. Nūtkā or Yucuatl<sup>2</sup> (polysynthetic):—Makah : Tlaoquatsh.

LXII. Appalachian (Florida) (polysynthetic):—Natchez<sup>3</sup>: Muskogee or Creek Indian : Choctaw<sup>4</sup> : Cherokee (Cheroki) or Chilake.<sup>5</sup>

LXIII. Pawnee (Pani) or Riccaree<sup>6</sup> (polysynthetic).

LXIV. Dakota (Dacotah), spoken by the Sioux or Issati (polysynthetic):<sup>7</sup> Iowa or Sac:<sup>8</sup> Winnebago : Osage.

LXV. Iroquois (polysynthetic):—Onondago:<sup>9</sup> Seneca : Oneida : Mohawk : Cayuga : Tuscarora : Nottoway.

<sup>1</sup> "Contributions to N. A. Ethnology" (1877); Bancroft: "Native Races," iii. pp. 621-5.

<sup>2</sup> Vocabulary in "American Ethnology," vol. ii.; grammatical notes in Bancroft: *l. c.* iii. 610-12.

<sup>3</sup> Brinton: "On the Language of the Natchez," in the "Proceedings of the American Philosophical Society," xiii. (5th Dec. 1873).

<sup>4</sup> Byington: "Grammar of the Choctaw Language" (1870), edited by Brinton.

<sup>5</sup> Jonathan Edwards: "Observations on the Language of the Muhhekaneew Indians," edited by Pickering (1823); "Cherokee Primer" (Park Hill, Arkansas, 2nd edit. 1846). For the native syllabary invented by Segwoya (George Guess) in 1820, see Faulmann: "Das Buch der Schrift" (1878), p. 12.

<sup>6</sup> See W. Matthews: "Ethnography and Philology of the Hidatsa Indians" (1877). [Classed with the Caddo of Texas by Latham.]

<sup>7</sup> Riggs: "Grammar and Dictionary of the Dacota Language" (Smithson. Inst.) (1851); H. C. von der Gabelentz: "Grammatik der Dakota-Sprache" (1852); Pond: "Dakota Reading-book," (1842).

<sup>8</sup> Hamilton and Irwin: "An Iowa Grammar, illustrating the principles of the language used by the Iowa, Otoe, and Missouri Indians" (1848).

<sup>9</sup> Shea: "Dictionnaire Français-Onontaguè" (with grammar), in Shea's "Library of Amer. Linguistics," i. (1859).

LXVI. Algonquin<sup>1</sup> (polysynthetic):—Cree:<sup>2</sup> Ottawa: Ojibway or Chippeway<sup>3</sup> (4 dialects): † Mohican, or Mohegan, or Pequot: Micmac or Miramichi (including Acadian and Gaspesian):<sup>4</sup> Shawnee: Blackfoot: Leni-Lenapé or Delaware: Abenaki: † Narragansets:<sup>5</sup> † Natick or Massachusetts.<sup>6</sup>

LXVII. Athapaskan or Tinnē<sup>7</sup> (polysynthetic):—

- (1). Athapaskan proper, or Chippewyan (dialects of the Hare, Dogrib, Yellow-knife, and Coppermine Indians): Sarsee: Tacallie.
- (2). Tinnē:—Qualhioqua: Owillapsh: Tlatskanai: Umkwa: Tütüten: Hūpah.
- (3). Apache:<sup>8</sup> Navajo: Lipanes.

<sup>1</sup> Fr. Müller: "Der grammatische Bau der Algonkinsprachen" (1867); Cf. Du Ponceau: "Mémoire sur le Système grammatical des Langues de quelques nations indiennes de l'Amérique" (1838), pp. 207, 57.

<sup>2</sup> Howse: "Grammar of the Cree Language" (1805). [For the native syllabary of the Crees and Tinnehs, see Faulmann: "Das Buch der Schrift," p. 11.]

<sup>3</sup> Schoolcraft: "Ethnological Researches concerning the Red Man of America," iv. pp. 385-396; Edwin James: "Chippeway First Lessons in spelling and reading" (undated); Baraga: "A Theoretical and Practical Grammar of the Otchipwe Language" (1850).

<sup>4</sup> Maillard: "Grammar of the Micmac Language" (1864).

<sup>5</sup> Roger Williams: "A Key to the Languages of America" (1643).

<sup>6</sup> John Eliot: "The Indian Grammar Begun," reprinted by Pickering, in Second Ser. of "Collections of the Mass. Hist. Soc." (1832), ix. pp. 223-312, and i.-liv.

<sup>7</sup> Buschmann: "Der athapaskische Sprachstamm" (1856), and "Ueber die Verwandtschaft der Kinai-Idiome mit dem grossen Athapaskischen Sprachstamme," in the "Monatsberichte d. k. Akad. d. Wissensch. in Berlin" (1854), pp. 231, 57. [The Tinnehs have a native syllabary.]

<sup>8</sup> Grammar in Bancroft: *l. c.* iii. pp. 596-601.

- (4). Tinneh or Atnah dialects in Alaska :—3 Western :  
 7 Eastern : 10 Kutchin dialects (2 extinct).<sup>1</sup>  
 [Tinneh or Atnah is called Kolshina by the  
 Russians.]

LXVIII. T'linket<sup>2</sup> (polysynthetic) :—

- (1). Yakūtat.  
 (2). Chilkāht-kwān : Sitkā-kwān : Stākhin-kwān.  
 (3). Kygāhni.  
 (4). Nass : Chimsyān.<sup>3</sup>  
 (5). Kolush.<sup>4</sup>

LXIX. Aleutian or Unūngūn<sup>5</sup> (polysynthetic) :—

- (α). Eastern or Unalashkan.<sup>6</sup>  
 (β). Western or Atkan.

LXX. Eskimo (Esquimaux) or Innuīt<sup>7</sup> (polysynthetic) :—

- (1). Western Eskimo (N. W. America and North-East Asia) :—(a). West Mackenzie Innuīt ; (b). Western Innuīt : (c). Fishing Innuīt : (d). South Eastern Innuīt.<sup>8</sup>

<sup>1</sup> "Contributions to North American Ethnology," vol. i. pp. 24-40 (1877).

<sup>2</sup> "Contributions to N. A. Ethnol.," p. 40, pp. 111-114 (Grammar by G. Gibbs), pp. 121, *sq.*

<sup>3</sup> "Contrib.," &c. pp. 155-6.

<sup>4</sup> Buschmann : "Die Pima-Sprache und die Sprache der Kolooschen" (1857).

<sup>5</sup> Wenjaminoff : "Opyt grammatiki Aleutsko-lisjevskago jazika" (S. Petersburg, 1846); "Contributions to North Amer. Ethnol.," pp. 22-24.

<sup>6</sup> Grammatical Notes in "Contributions," &c., pp. 115, 116.

<sup>7</sup> Kleinschmidt : "Grammatik der grönländischen Sprache" (1851).

<sup>8</sup> "Contributions to N. A. Ethnol." pp. 9-24 ; Grammatical Notes in Bancroft : "Native Races," iii. pp. 576-77; Veniaminoff : "Ueber die Sprachen der russischen Amer." in Erman's "Archiv," vii. i. pp. 126, *sq.*

(2). Eastern Eskimo or Greenlandish or Karali.

(3). Arctic Highlanders.

LXXI. American Chukchi.<sup>1</sup>

LXXII. Asiatic Chukchi and Koriak (agglutinative).<sup>2</sup>

LXXIII. Yukhagir or Andondommi (agglutinative).<sup>3</sup>

LXXIV. Yenissei-Ostiak and Kott (Khotowski) or Kanski (agglutinative).<sup>4</sup>

LXXV. Unclassified island-languages :—

(1). Mergui Archipelago languages.

(2). (?) Andaman languages. [See under XXXVII.]

(3). Nicobar languages,<sup>5</sup> &c. &c. &c.

LXXVI. Micronesian (agglutinative) :—Gilbert Islands :<sup>6</sup> Ponape :<sup>7</sup> Ladrone : Yap : Marshall Islands (Ebon) : Tobi.

<sup>1</sup> "Contributions," &c., pp. 12-14.

<sup>2</sup> Radloff in "Mémoires de l'Académie impériale des Sciences de St. Pétersbourg," vii. pp. 382, *sq.* (1851).

<sup>3</sup> Schiefner in the "Bulletin de l'Académie impériale des Sciences de St. Pétersbourg" (1859).

<sup>4</sup> Castrén: "Versuch einer jénissei-ostjakischen und kottischen Sprachlehre" (1858).

<sup>5</sup> De Roepstorff gives a vocabulary of five dialects (Calcutta, 1875).

<sup>6</sup> Hale in "United States Exploring Expedition," 1838-42, vol. vii.

<sup>7</sup> Gulick: "Grammar and Vocabulary of the Ponape Language," in the "Journal of the American Oriental Society," x. (1872).



## CHAPTER VII.

### THE INFLECTIONAL FAMILIES OF SPEECH.

“Si nous connaissons la langue des Aryas telle qu’elle existait vers le moment de leur dispersion finale, et sans doute déjà divisée en dialectes, nous pourrions y retrouver avec beaucoup de sûreté l’histoire de leur développement antérieur dans ses phases successives.”—PICTET.

PROPHETS and preachers have never been weary of denouncing the innate vanity and deceitfulness of the human heart, but their success hitherto has been but scanty. It is difficult, if not impossible, to see ourselves with the eyes of others, to measure truly our own importance and that of the society in which we live. It is only the historian of a later age that can calmly and impartially trace the causes and effects of the events which have marked a particular era ; the actors themselves, as well as those who live near the same epoch, behold everything through a blurred and distorted medium, wherein the true proportions of things are altogether lost. The greatest of thinkers have never been able to free themselves wholly from the prejudices and habits of their time : Aristotle could not conceive of a state of society in which slavery did not exist ; and Lord Bacon, like his contemporary Raleigh, still retained a lingering belief in astrology, even saying that “comets without doubt have power over the gross and mass of things.” We are apt

to fancy that the culture and civilization of modern Europe are superior to those of any other age or of any other part of the world; the Anglo-Indian calls the descendants of Manu and Vikramaditya "niggers," and a great English poet has declared: "Better fifty years of Europe than a cycle of Cathay." It is hard to remember that ours is not the only civilization the world has seen; that in many things it falls short of that of Athens, or even those of ancient Egypt and Babylonia, or modern Japan; and that we are not the best judges of our own deservings.

The spirit of vanity has invaded the science of language itself. We have come to think that not only is the race to which we belong superior to all others, but that the languages we speak are equally superior. That inflection is the supreme effort of linguistic energy, that it marks the highest stage in the development of speech, is regarded as a self-evident axiom. The Greek and Latin classics have formed the staple and foundation of our education, and if we have advanced beyond them, it is generally to the study of Hebrew or Sanskrit, themselves also inflected tongues. The inflected Aryan languages, whether living or dead, have formed our canons of taste, and our judgment of what is right or wrong in the matter of language. Even the grammars of our own English speech have been forced into a classical mould, and been adorned with tenses and cases, if not genders. The belief that whatever is unfamiliar must be either wrong or absurd, exercises a wider influence than is ordinarily imagined. Everything has tended to make the European scholar see in an inflected language the normal

type of a perfect and cultivated tongue. The dialects he speaks or studies are mostly inflectional ones, and even should he be acquainted with languages like Chinese or Basque, which belong to another class of speech, the acquaintance has seldom been made in the earlier and more impressionable years of life.

But there is a further reason for the widespread opinion that an inflectional language must necessarily rank before all others. The founders and cultivators of comparative philology were Germans, who spoke therefore one of the most highly inflected languages of modern Europe. The vanity of race and education was thus supplemented by the vanity of nationality and custom. The great Grimm, it is true, recognized the superiority of grammarless English, and even urged his countrymen to adopt it, but it is needless to say that he met with no support. It was just the "poverty" and want of inflections which characterize modern English, that seemed to indicate its degenerate and imperfect nature. If great works had been produced in it, this was in spite of its character, not by reason of it. The prejudices of a classical education were still strong; the literature of a language was confounded with the language itself, and the fallacy maintained that because certain writers of Greece, or Rome, or Judea were models of style, the languages in which they wrote must be models too. Comparative philology has had a slow and laborious task in rooting up these false notions, and laying down that whatever may be its form, that language is best which best expresses the thoughts of its speakers. Language is an object of study in and for itself, not because of the books that may have been composed in it, and

it not unfrequently happens that some of the most precious of its secrets are to be discovered in jargons the very names of which are almost unknown. It is not in Greek or Latin or Sanskrit that we shall find the answers to many of the most pressing questions of linguistic science, but in the living dialects of the present world. The antiquarian study of language is no doubt indispensable to a historical science like glottology; but this antiquarian study must be preceded, corrected, and verified, by a study of the pronunciation and usages of actual speech. Comparative philology rests upon phonology, and in phonology we must begin with the known sounds of living language.

Just as the type of physical beauty differs among the various races of the earth, so, too, does the type of literary excellence. The Chinaman finds more to admire in the language and style of his classics than in those of Plato or Shakspeare, and Montezuma would probably have preferred an Aztec poem to all the works of Æschylus or Goethe. If we are to decide between the rival claims of different forms of speech to pre-eminence, it must be upon other grounds than the excellency of the literature belonging to them; and we have already seen in a previous chapter how seriously it may be doubted whether, after all, an inflectional language stands on a higher level than an agglutinative one.

The number of known inflectional families of speech is not large, though the literary and historical importance of two of them far exceeds that of any other group of languages. Passing by Hottentot, the inflectional character of which, though maintained by Bleek and

Lepsius, is denied by Friedrich Müller, all the inflectional languages of which we know are confined to Western Europe and the basin of the Mediterranean. South of the Caucasus comes Georgian, the leading representative of the so-called Alarodian family, to which the dialect of the cuneiform inscriptions of Van may have belonged. It is just possible that the extinct language of the Lykian inscriptions is to be included in this family, though Savelsberg and others would connect it with the Indo-European group, and especially with Zend. Neither roots nor grammatical forms, however, seem to permit this; and it is for the present safest to regard the ancient Lykian as, like the Etruscan, a relic of an otherwise extinct family of speech. South of Georgia, again, comes the domain of the Semitic languages which once extended from the Tigris to the Mediterranean, and from the Tauros and Zagros ranges to the Indian Ocean and Abyssinia. Probably the Old Egyptian of the monuments, which goes back to between 4000 and 5000 B.C., along with its daughter, Coptic, must be considered as remotely connected with the Semitic group, as well as the so-called Sub-Semitic dialects of northern Africa, Berber, Haussa, &c. The larger part of Europe, together with India, Persia, and Armenia, is occupied by the Aryan family which has now scattered its colonies over the whole world. In fact, modern emigration is almost wholly confined to Aryans, Jews, and Chinese.

The Aryan or Indo-European family has been baptized with a variety of names. "Indo-European" is perhaps the one in most favour, and the chief objection to it is its length. "Indo-Germanic," the term chosen by Bopp, has

now a wide circulation among German scholars, "for no other assignable reason," says Prof. Whitney, "than that it contains the foreign appellation of their own particular branch, as given by their conquerors and teachers, the Romans."<sup>1</sup> "Sanskritic" has also been proposed, but is now universally discarded, as giving undue prominence to a single representative of the family. "Japhetic," modelled after "Semitic," is still occasionally used; it is, however, thoroughly objectionable, as the so-called "ethnological table" in Genesis is really geographical, and the descendants of Japhet do not cover the different branches of the Aryan group. "Caucasian" is another term, which has been immortalized by Tennyson; but the term originated rather with the physiologists than the philologists, and is in no way applicable, since none of the Caucasian tribes, with the single exception of the little colony of the Iron or Ossetes, belong to the Aryan race. Iron is but a form of Aryan, a name which is due to Prof. Max Müller. In the Rig-Veda, "*ârya* occurs frequently as a national name and as a name of honour, comprising the worshippers of the gods of the Brahmans, as opposed to their enemies, who are called in the Veda *Dasys*."<sup>2</sup> The word is a derivative from *arya*, perhaps "ploughman" or "cultivator," which is applied in later Sanskrit to the Vaiśyas or "householders" of the third caste. The great recommendation which "Aryan" possesses is its shortness, and since it has been widely adopted it is the term which is generally used in the present work. It must not be forgotten,

<sup>1</sup> "Life and Growth of Language" (1875), p. 180.

<sup>2</sup> Max Müller: "Lectures," i. (8th edition), p. 275.

however, that the term is really of Sanskrit origin, and therefore more applicable to the Asiatic branch of the Indo-European family than to its European branch. It is on this account that certain French scholars, while adopting Chavée's "Aryaque" as a designation for the whole family, confine "Aryan" to its eastern members, making it include both Indic and Iranian. On the other hand, Prof. Max Müller may be right in seeing the word in *Aria*, the old name of Thrace, as well as in the German *Arii*, near the Vistula, whose name, however, Grimm would connect with the Gothic *harji*, "army."

A glance at the genealogical table in the last chapter will show that the Aryan family must be subdivided into East Aryan or Indo-Iranian and West Aryan or European, the first branch comprising Indian (Sanskrit, Prakrit, Hindi, &c.) and Persian (sometimes called Iranian), the second Greek, Italic, Keltic, Slavonic, Lithuanian, and Keltic. Hübschmann would place Armenian and Ossetic between these two groups; Friedrich Müller, on the contrary, makes them Persian dialects. The main difficulty in the way of Hübschmann's view is that the cuneiform inscriptions of Assyria show no indications of any Aryan settlers in Armenia or the Caucasus before the eighth or seventh century B.C., even the Aryan Medes, like their brethren the Persians, not advancing so far to the west as Media Rhagiana until the ninth century B.C. It is, of course, quite possible that the Armenians may have crossed the Caucasus in the wake of the Scythians, but Fick seems to have proved that the Scythic words preserved by the classical writers belong to the European, and not to the Iranian branch of the Aryan



family. The scanty relics of the Aryan languages of Asia Minor found in inscriptions and the glosses of Greek grammarians belong to the Western division of the family, and thus bear out the old traditions which made Lydians, Carians, Mysians, and Phrygians brethren one of the other, which derived the Mysians from Thrace, and saw in the Phrygians the Thracian Briges. The Halys formed the eastern boundary of Aryan domination in Asia Minor; the country beyond was possessed perhaps by Alarodians, certainly by tribes not of the Aryan stock.

At the head of the Indian group of dialects stands Sanskrit, the classical language of Hindustan and its sacred books, which though long since extinct, is still spoken by the Brahmans as Latin was in the Middle Ages. We must distinguish, however, between Vedic Sanskrit and classical Sanskrit, the older Sanskrit of the Veda differing in many respects from the later Sanskrit of the Hindu epics. Thus the second and fifth lines of the first hymn of the Rig-Veda end with the words *vakshati* and *gamat*, forms unknown to classical Sanskrit, but corresponding to the Greek sigmatic and "second" aorists conjunctive ( $\tau\acute{\upsilon}\psi\eta(\tau)$  and  $\tau\acute{\upsilon}\pi\eta(\tau)$ ), from the roots *vach*, "to speak," and *gam*, "to go." So, too, the old modal forms of the aorist disappear in the post-Vedic language, with the exception of the precative or benedictive,<sup>1</sup> as well as the augmented preterite, which Delbrück has compared with the Homeric pluperfect, while post-

<sup>1</sup> The benedictive is really the optative of the simple aorist in the parasmaipada or active voice, and of the sigmatic aorist in the âtmanepada or middle voice.

Vedic Sanskrit introduces a new tense in the shape of the first future *bhavitâsmi*, a compound of the noun *bhavi-tar* and the substantive verb *asmi*.

Both Vedic and post-Vedic Sanskrit were poor in vowels, possessing only *a*, *i*, and *u* long and short, with the diphthongs *e*, *ai*, *o*, and *au*, and the linguals *r* and *l*; on the other hand, they were rich in consonants, among which the "cerebral" or linguo-dental *t* and *d* are usually supposed to have been borrowed from the Dravidian tongues.<sup>1</sup> The euphonic laws are strict and delicate, the final sounds of a word being affected by the initial sounds of the word following according to precise and well-observed rules. The syntax is comparatively simple, composition taking its place, especially in the later period of the language. The grammatical forms, however, are very full and clear, and it is to them that Sanskrit mainly owes the high position that it has occupied in the comparative study of Aryan speech. It has often preserved archaic forms that have been obscured elsewhere, though it must not be forgotten that this is by no means invariably the case; Greek and Latin, for instance, are sometimes more primitive than the old language of India. The declension is especially complete, preserving the dual as well as a locative and an instrumental. Other cases, however, which must have been once possessed by the parent-speech, have either disappeared or left faint traces behind them; thus we have the secondary abla-

<sup>1</sup> Such is still Bishop Caldwell's opinion in the 2nd edition of his "Comparative Grammar of the Dravidian Languages" (1875), but it must be remembered that these consonants are possessed by the Aryan Pashtu of Afghanistan, west of the Indus.

tives *mat-tas*, "from me," *twat-tas*, "from thee," like the Latin *peni-tus* and *radici-tus*, where Prof. Max Müller has shown that the forms *mat* and *twat* are merely stems.<sup>1</sup> The Sanskrit alphabet, known as the Devanāgarī or "divine writing," was introduced into India from the West, and is probably based on an Aramean original; as the first inscriptions composed in it are not older than the third century B.C., it is plain that the *Yavanānt*, or "writing of the Yavanas,"<sup>2</sup> of Paṇini must refer to a different and now forgotten mode of writing. The word *Sanskṛita* means "put together," or "perfect," as distinguished from *Prākṛita*, "derived from a model," that is to say, "secondhand" or "vulgar," *prākṛita* being the name assigned to the current language of the people at a time when the Sanskrit was rapidly becoming extinct, or was confined to the literary and priestly classes. The Prākṛit dialects followed upon Sanskrit just as the Romanic dialects of Europe followed upon Latin, and the inscriptions of the Western caves, as well as the language of the lower orders in the plays, prove that they had already taken the place of the classical tongue two or three hundred years before the Christian era. One of the Prākṛit dialects, the Pāli of Magadha or Behār, in north-eastern India, was transported by Buddhist missionaries to Ceylon, and there became the sacred language of the new faith.<sup>3</sup> Pāli, now dead like Sanskrit

<sup>1</sup> Fleckeisen's "Jahrbücher" (1877), p. 702.

<sup>2</sup> Max Müller disputes the view that this means the "writing of the Greeks," in "History of Ancient Sanskrit Literature," pp. 520, 521.

<sup>3</sup> This is the tradition of the Southern Buddhists themselves, but Pāli differs considerably from the Magadhi of the Prākṛit gram-

itself, shows in some respects a marked superiority over the Prakrits of the plays, and has certainly been less affected by phonetic decay than most of its sister idioms. The three Sanskrit sibilants, however, have been merged in one, the vowel *ri* has disappeared, being mostly replaced by *a*, the long vowels have been frequently shortened, the dual and dative are lost, and all words must end either in a simple or in a nasalized vowel. The modern Aryan languages of India have developed out of the other Prākrits, and in their present form are considered not to go back further than the tenth century. Bengāli and Assamese retain many features of Sanskrit; Sindhi and Gujarāti in the north-west, Nepāli and Kashmiri in the north, Hindi in the centre, and Marāthi in the south, are all more or less changed from the primitive type. Hindi is merely the modern form of Hindui, a language which was much cultivated during the Middle Ages of recent Hindu literature, while Hindustāni or Urdu, the language of the "camp," is Hindi mixed with Arabic and Persian—in fact, a *lingua franca* which grew up at the time of the Mahommedan invasion in the eleventh century. The chief characteristic of these

marians. Kern ("Over de Jaartelling der zuidelijke Buddhisten," 1873) believes it to be an artificial language based on some undetermined Prākrit dialect; Pischel ("Academy," 1873, p. 397, *sq.*) maintains that Pāli was the popular Magadhi, the Magadhi of the grammarians and playwrights being an artificial jargon. Westergaard ("Indbydelsesskrift til Kjöbnhavns Universitets Aarsfest," 1860) has pointed out that Pāli is almost identical with the language of an inscription of A'soka, set up near Ujjayinî (Girnar in Guzerat), and he and Kuhn hold it to represent the dialect spoken in Mālava in the third century B.C., and brought to Ceylon by the Buddhist apostle Mahendra.

modern dialects is their analytical tendency, even the plural being expressed by particular suffixes, while on the phonological side they incline towards assimilation, the change of *y* to *i* and *r* to *d*, and the substitution of the simple aspirate *h* for the aspirated explosives *kh*, *ph*, and *th*.

Among these neo-Hindu dialects must be included the Rommany of the Gipsies, who seem to have penetrated into Europe in the twelfth or thirteenth century of our era. Miklosich has endeavoured to trace their line of march by a careful examination of their vocabulary, and concludes that they must have passed successively through Persia, Armenia, Greece, Rumania, Hungary, and Bohemia, whence they scattered themselves towards Germany, Poland, Russia and Scandinavia, Italy and Spain, England and Scotland.<sup>1</sup>

Recent researches, and more especially the decipherment of early inscriptions, have obliged us to add the Sinhalese or Elu of Ceylon, in which the commentaries on the Buddhist canon were first written, to the Indian branch of the Aryan languages. According to Mr. Rhys Davids,<sup>2</sup> "it is based on the dialect spoken by the colony from Sinhapura in Lâla, on the west coast of India, who drove into the remote parts of the island the former inhabitants, borrowing very little indeed from their language. Later on the Sinhalese derived their religion and literature from the opposite side of India, but in

<sup>1</sup> "Ueber die Mundarten und die Wanderungen der Zigeuner Europas," Th. 2 (1873).

<sup>2</sup> "Annual Address of the President of the Philological Society" (1875), p. 73.

dialects akin to their own." Sinhalese possesses the linguals *ṭ* and *ḍ*, has lost all gender except in the pronouns and names of living things, all case-endings for adjectives, and many for nouns, as well as the person-endings of the verb, expresses number and case by postfixes, different postfixes being used for the plural of animate and inanimate beings, as in Persian, and has borrowed a large number of Sanskrit words.

West of the Indus is the Pashtu or Pakhtu of the Afghans, the descendants probably of the Paktyes of Herodotus, which has long been considered to belong to the Iranian group, but since Dr. Trumpp's labours must be classed among the Indian dialects. It forms a stepping-stone, as it were, between the Indian and Iranian divisions, partaking to a certain extent of the features of both, but with predominant Prâkrit characteristics. Like Sindhi, it has borrowed from its Iranian neighbours a whole system of pronominal suffixes. The language is also known under the names of Patan and Siyâh-Push.

In a small triangle to the extreme north of Afghanistan, with Badakshan on one side and Kashmir on the other, lies Dardistan, the country of the Dards, among whom Dr. Leitner has discovered a number of interesting dialects. The principal of these seems to be the Shinâ, a name sometimes applied to the whole Dardu group; among the others may be mentioned the Arnyiâ, the Khajunâ, the Ghilgiti, the Astori, and the Kalâsha-Mânder. Dard probably holds much the same position as Pashtu, being an Indian rather than an Iranian language. The present tense of the substantive verb in Arnyiâ is conjugated *asûm, asûs, asûr, asûsi, asûmi, asuni*;

the aspirated explosives are generally preserved instead of being changed into *h* as in the Prākritis ; and the past tense—at all events in Kalāsha—preserves the initial augment (as in Sanskrit and Greek).

We now come to the Persian or Iranian group, the most nearly akin to Sanskrit of all the Indo-European languages, and forming with the Indian dialects the Eastern or Asiatic branch of the family. In some respects, as in the retention of the old ablative in *at* or the preservation of the diphthong *au*, *ao*, Persian is more archaic than Vedic-Sanskrit. Its literary monuments, however, are of more recent date ; the oldest parts of the Zend-Avesta, the Bible of the Zoroastrian faith, being younger than the hymns of the Rig-Veda and belonging to an age when a portion of the Aryan community had broken with the polytheistic religion of their brethren, and under the conduct, it may be, of an individual prophet, had turned back from the Punjab to the mountains of the north-west. But we have one great advantage in studying the Iranian group, and that is our opportunity of tracing the history of the language through successive and long-continued periods. We may divide this history into five periods, represented by Zend, Old or Achæmenian Persian, Huzvâresh or Pehlevi, Parsi, and Neo-Persian.

The first knowledge Europe obtained of Zend and the Zend-avesta was due to the enthusiasm of a Frenchman, Anquetil Duperron, who, without means, and in the face of great hardship, learnt the language from some Parsi priests at Surat, and returned to France in 1762 with over a hundred MSS. These enabled Eugène Burnouf



to correct the attempt of Duperron to translate the Zend-avesta from a modern Persian translation, as well as the faulty and uncritical teaching of the language he had received from the Parsi priests. Burnouf must be regarded as the true founder of Zend philology.

Now Zend was the language of the ancient Persian Zoroastrians, or worshippers of Ormazd, in eastern Iran, and consequently the language in which their sacred books were composed. All that has come down to us of the latter are the four books—the Ya'sna, the Vispered, the Yashts, and the Vendidad—which make up the present Bible of the Zoroastrian or Parsi community, the last of them giving a legendary account of the early migrations of the Iranian tribes. The modern Parsis regard *avesta* as meaning the text, and *zend* as the Pehlevi commentary; but this is certainly wrong, and Prof. Haug would explain the first by a hypothetical *âvista*, "what is notified," from *â-vid*, the second being usually taken as a corruption of *sainti*, "knowledge," the Sanskrit *jānti* (γῶσις). Dr. Oppert is probably right in thinking that neither *zend* nor *avesta* belonged to the dialect of eastern Iran, but are identical with two words (*sandi* and *âbastâyā*) which occur in the cuneiform inscriptions of western Persia, and mean respectively "prayer" and "law." At any rate, the great inscription set up at Behistun by Darius Hystaspis, commemorates his restoration not only of the Zoroastrian faith after its overthrow by the Turanian Magi, but also of the text and commentary of the Zend-avesta itself, which had been neglected or proscribed. In a passage, unfortunately defaced in the Persian original, but preserved in the Protomedic

version, we find, according to Dr. Oppert's version :—  
 "And Darius the king says : I have made also elsewhere  
 a book in the Aryan language, that formerly did not  
 exist. And I have made the text of the Divine Law  
 (*Avesta*), and a commentary of the Divine Law, and the  
 prayer, and the translation. And it was written, and I  
 sealed it. And then the ancient book was restored by  
 me in all nations, and the nations followed it."<sup>1</sup> In fact,  
 Darius describes himself as acting like another Ezra of  
 the Jewish tradition, and there can be little doubt  
 that additions were made to the book at this time. In-  
 deed, we can clearly distinguish fragments of varying  
 antiquity in the portions that have been preserved. The  
 Gâthâs, certain obscure hymns in the Ya'sna, are older  
 than any other part of the Zend-avesta, in spite of Prof.  
 de Harlez's doubts ;<sup>2</sup> they are quoted or referred to in  
 all other parts, and stand to the latter in much the same  
 relation as the Rig-Veda stands to the later Vedic and  
 Brâhmanic literature. The dialect of the Gâthâs differs  
 slightly from that of the remaining Zend writings, pos-  
 sibly because it is earlier, possibly because it was spoken  
 in the highland regions. However this may be, both  
 dialects are included in the Zend, the oldest form of  
 Persian speech to which we can go back. As Zend was  
 the language of eastern Iran, bounded by Sogdiana on  
 the north, by Hyrcania on the west, and by Arachosia  
 on the south, it is frequently called Bactrian or Old Bac-  
 trian. It seems to have lingered on till the Greek period,

<sup>1</sup> "Records of the Past" (1876), vii. p. 109. Dr. Oppert has omitted the words "by the favour of Ormazd," which introduce the king's assertion.

<sup>2</sup> *Avesta* : "Livre sacré des Sectateurs de Zoroastre" (1875-6).

and thus to have been a contemporary of the Old or Achæmenian Persian which was spoken in the west.

The latter dialect has been recovered from the cuneiform monuments of Darius Hystaspis and his successors, the key to which was first found by the genius of Grotefend. In some points Old Persian is less removed from the primitive Aryan than is Zend; generally speaking, however, the contrary is the case. The cuneiform alphabet of forty characters in which the inscriptions are written was obtained in a very ingenious manner from the complicated syllabary of Assyria and Babylon, apparently under the direction of Darius himself. It fell into disuse, however, almost before a century had passed. What kind of writing was used by the eastern Iranians before the time of Darius it is impossible even to conjecture.

Pehlevi or Huzvâresh is known to us by translations of the Zend-avesta, a treatise on cosmogony called the "Bundehesh," and the coins and inscriptions of the Sassanian dynasty (A.D. 226-651), and seems to have been the language of the western district of Sevâd, though subdivided into the two dialects of Chaldeo-Pehlevi and Sassano-Pehlevi. Not only its vocabulary, but even its grammar has been invaded in a most extraordinary way by Semitic influences, and if we are to suppose that the language we find in books and inscriptions was ever spoken beyond the limits of a Court circle, we shall have to admit the possibility of a mixed grammar. It seems most probable, however, that the mixture was to be found rather in the writing than in the spoken language; at all events the Huzvâresh translation of the Avesta was read by substituting Iranian for Aramean

expressions, Iranian terminations being added in the MSS. to Semitic words. While this curious idiom was being cultivated in the west, another idiom, Parsi or Pâzend, had grown up in the east, and was perpetuated in India by the Guebres, or fire-worshippers, who fled from Mahomedan persecution to Guzerat. Parsi differs but slightly from the language of Firdusi, the great epic poet of Persia, whose "Shahnámeh" or "Book of Kings," commemorating the past glories of Aryan Persia, was composed about 1000 A.D. With Firdusi the history of modern Persian begins; in his hands it is a pure Aryan dialect, free from foreign admixture; but by slow degrees it incorporated an increasingly large Semitic element until its dictionary became half-filled with Arabic words. Neo-Persian resembles English in the simplicity of its grammar; it has even rid itself of any distinction of gender in the third personal pronoun, while the idea of the genitive is expressed by the vowel *i*, a remnant of an old relative; the language, nevertheless, is melodious and forcible, and Persian poetry takes a high rank. Of course, the literary dialect of modern Persia is only one out of many; among the provincial dialects the best known is perhaps that of Mazenderan.

But we have not yet finished our survey of the languages belonging to the Iranian section of Indo-European speech. There still remain the Kurdic dialects, of which the chief are the Kurmanji between Mosul and Asia Minor and the Zaza, the Beluchi of Beluchistan, and the dialects of the Lurs (Bashiari and Faïli), of the Tâts in the south-east of the Caucasus, and of the Iron or Os-

setes in the same neighbourhood. Ossetian is divided into a great variety of *patois*, and is closely connected with the Armenian, which along with it, must be excluded from the Iranian group, if Hübschmann's opinion is right. The classic period of Armenian begins with the formation of the alphabet by Mesrop in the fifth century of our era, and the works of Moses of Chorene, Lazar of Pharp, Eznik of Kolb, and others. The literary dialect declined in the eleventh century, when the local *patois* began to take its place. A leading phonetic feature of Armenian is the change of the hard into the soft explosives, and of the soft into the hard ones, while original *p* becomes *h* (as in *hayr*=*pater*). Three new tenses—a perfect, a pluperfect, and a future—have been created in the verb by the help of participles.

We must now pass at a leap to the westernmost of all the Aryan languages, that still spoken by the Kelts of Wales, Brittany, Ireland, and the Scotch highlands. Cornish became extinct only in the last century, and Manx may even now be occasionally heard in the Isle of Man. The ancient Gaulish or Gallic disappeared wholly from France before the inroads of Latin and Teutonic, leaving behind it only some twenty or thirty half-deciphered inscriptions in Roman characters; but its utter disappearance must have been subsequent to the time of Sidonius Apollinarius, who congratulates Ecdicius, his brother-in-law, on inducing the Arvernian nobility to give up the use of the Keltic language.<sup>1</sup> The Breton or

<sup>1</sup> "Quod sermonis Celtici squamam depositura nobilitas, nunc oratorico stylo, nunc etiam camænalibus modis imbuebatur," "Epist." 3. iii.

Armorican of Brittany was a subsequent importation, derived from the Britons of Cornwall and South Wales, who were led there by Maximus in the fifth century, or afterwards driven out of their country by the Saxon invaders. The Keltic tongues are generally divided into Kymric, comprising Welsh, Cornish, Breton and Gaulish, and Gaelic or Goidelic, which includes Irish or Erse, Scotch Gaelic (also called Erse), and Manx. This division, however, is founded on the supposed fact that Kymric and Gaulish agree in changing *c* (*qu*) into *p*, and since the supposed fact turns out not to be a fact at all, Welsh preserving the original velar guttural on its inscribed stones up to the seventh century, Prof. Rhys has proposed a new classification of the Keltic race into insular and continental. The Gauls of the Continent had transformed their *k*'s into *p*'s centuries before their kinsmen in Britain did so, and if we find local names of Keltic origin in the south of England which contain *p* instead of *k*, this is to be accounted for by the Gaulish conquest and occupation of this part of our island to which Cæsar is a witness.<sup>1</sup> There was a time when a Keltic-speaking people inhabited parts of Switzerland, the Tyrol, and even the country south of the Danube, as may be proved by the evidence of local names, as well as those of certain plants of Dacia described by the physician Dioskorides; but it has left but little trace behind, and like the rest of the Keltic family, been pressed westward by the stronger tribes from the east. The Kelts of Gaul, however, took their revenge by military expeditions southward and

<sup>1</sup> See Rhys: "Lectures on Welsh Philology" (1877), pp. 19 *sq.*

eastward, among which the two most celebrated are those led by the Brennus or "king" (Welsh *brennin*) when Rome was destroyed B.C. 390, and Delphi threatened a hundred years later. Unsuccessful in Greece, the Gauls settled in some places on the Thracian coast, while a much larger colony crossed into Asia Minor, and there occupied the district called Galatia after them. The Galatian language survived down to the days of St. Jerome.

The Keltic dialects are distinguished by a regular mutation of the initial consonants, as it is termed, the final letters of one word influencing, as in Sanskrit, those of the following word. But their grammar also displays certain features which seem to indicate the action of a non-Aryan influence at a time when the Aryan Kelts were in close contact with the earlier populations of western Europe. Prof. Rhys has suggested the possibility of seeing Basque or "Iberian" influence in the incorporation of the pronouns between the Irish verb and its prefixes, a phænomenon that appears exceptionally in Welsh, as well as in the Breton verb *to have*. The differentiation of the verb and noun, again, which had been effected at an early time in Aryan, has been partly effaced in Welsh, as though the latter language had come into contact with one in which the verb and noun were not distinguished; while the inflection of the Welsh prepositions (as *erof*, "for me," *erot*, "for thee"), and of the substantive *yr eiddof*, "my property," *i. e.* "mine," reminds us strongly of Magyar usage. It is remarkable that we find a mixture of two very distinct races among all Keltic-speaking peoples; the first, generally called "Iberian" by physiologists, being short and brachy-



phalic with black eyes and hair, and the second, the pure Keltic, being, on the contrary, tall and fair with long skulls, light hair, and blue eyes.

Excepting glosses of the eighth century, and a few inscriptions of still earlier date, Welsh literature begins with the revival in the eleventh century, when such of the older poems as had been preserved were modernized in language, and a large number of additions were made to them and ascribed to the traditional names of Aneurin, Taliessin, and other bards. The best part of the literature belongs to the next two centuries, when among other productions the Triads and a number of chronicles were composed.

The oldest literary relic of Cornish is a glossary entitled "*Vocabula Britannica*," of the twelfth or thirteenth century.<sup>1</sup> The only remarkable specimen of Cornish literature, however, is a Passion-play of the fifteenth century, which is full of English loan-words.<sup>2</sup>

In Breton we have the chartularies of the monasteries of Rhedon and Landevin, dating from the tenth and eleventh centuries,<sup>3</sup> the "*Buhez Santez Nonn*," or "*Life of Saint Nonna*,"<sup>4</sup> of the fourteenth century, and a few other works. The "ancient" Breton poems given by Villeneuve in his "*Barzaz Breiz*" have unfortunately been proved to be as modern as the "*Bepred Breizad*" or "*Toujours Breton*" of M. Luzel.

<sup>1</sup> Marked Vesp. A 14 in the Cotton Collection in the British Museum, and edited in Norris's "*Cornish Drama*," vol. ii.

<sup>2</sup> Edited by Whitley Stokes in the "*Transactions of the Philological Society of London*" (1862).

<sup>3</sup> See Courson's "*Histoire des Peuples Bretons*" (1846).

<sup>4</sup> Edited by Legonidec (1837).

Irish literature is perhaps the oldest and most important of any produced by a Keltic people. Glosses of the eighth century, ecclesiastical and poetical literature, tales and chronicles such as the famous "Annals of the Four Masters," are among the works that may be mentioned. The "Book of Kells," now preserved in the Library of Trinity College, Dublin, and written in Latin, is the most exquisite example in the world of that minute and intricate style of illuminating for which the Irish monks were especially esteemed. In the earlier part of the Middle Ages, indeed, Ireland, "The Isle of the Saints," was regarded as a centre of light and intelligence, and it was not without reason that Charlemagne made "Clement the Scot" head of the Palatine School, and established another Irishman, John of Mailros, at Pavia. A considerable number of early inscriptions have been discovered in Ireland, written in the so-called Ogham characters, which are also met with in Wales and England. Prof. Rhÿs has attempted to show, with fair success, that the Ogmic alphabet was primarily derived by the Kymric Kelts from a Teutonic people, and afterwards passed on to the Kelts of Ireland.<sup>1</sup>

Scotch Gaelic is the most corrupt of all the Keltic tongues, and its pronunciation bears but a very faint resemblance to its spelling. Its chief literary interest is connected with the Ossianic controversy, which is still far from being completely settled. The Dean of Lismore's book, however, compiled about 1530, and containing popular poems relating to Fingal the Finn, some of which are ascribed to Ossian, make it clear that

<sup>1</sup> See his "Lectures on Welsh Philology" (1877).

Macpherson had genuine materials before him, however much he may have improved upon his originals. His "Ossian," indeed, would never have had the success it obtained had it not breathed, to a certain extent, the spirit of the eighteenth century. Various minor poets have arisen among the Scotch Highlanders during the past two hundred years, and specimens of their productions are given in English verse by Prof. Blackie in his "Language and Literature of the Scottish Highlands" (1876), where he also sums up the history and present position of the "Ossianic question."

Wherever the Kelt has gone he has been followed by the Teuton, and little by little has had to make way before his stronger and more stolid supplanter. The Teutonic group includes also the Scandinavian, and it is not difficult to form a hypothetical grammar and dictionary of the language once spoken by the common ancestors of Germans and Norsemen. Both, in fact, are branches of a single stem. We may divide the Teutonic family into four groups—the Gothic, the Norse, the Low German, and the High German, their chief features being the adaptation of the *Ablaut* or change of vowel in the verbal conjugation to express the distinction between present, past, and participle (as in *sing, sang, sung*). Gothic or Mæso Gothic represents the first group of which we have literary record, and in some respects, such as the simpler character of the vocalism, the cases of the noun, and the dual of the verb, it shows more signs of archaism than its sister dialects. Our knowledge of Gothic, however, is almost entirely confined to the fragments that remain of the Gothic version of the Bible made by the

Arian bishop Wulfila or Ulphilas in Mæsia (born A.D. 318, died 388). His parents had been carried captive from Cappadocia by Gothic invaders, and after converting large numbers of the Goths to Christianity, he and his converts had to escape into Roman territory shortly before Constantine's death. It says much both for the difficulties he must have encountered, and for his own practical sense, that he refused to translate the books of Kings on the ground that the Goths were already too fond of war and bloodshed. The famous "Codex argenteus," now preserved at Upsala, is the main authority for the text of his Bible, of which all that is left are considerable portions of the Gospels, the Epistles of St. Paul, and fragments of a Psalm, of Ezra, and of Nehemiah. Excluding a mutilated calendar, and two short documents from Naples and Arezzo, this constitutes all the materials we have for a study of the Gothic tongue. The language seems to have died out in the ninth century. Its phonetic system agrees with that of the Low German, and not of the High German group.

Norse is represented by Icelandic and Norwegian, Danish and Swedish, the two first forming the East Scandinavian section, the two latter the West Scandinavian. Icelandic, thanks to its isolation, has changed but little since its importation into the island in the ninth century, and is practically identical with the Old Norse, the Dansk of the Skalds or poets, and the Court dialect of all the Scandinavian nations as late as the eleventh century. The East Scandinavians had advanced along the Bothnian Gulf, driving out the Finnic population they found there, while the western branch crossed over

from the continent to the Aland Islands, and from thence to the southern coast of the peninsula. The two Runic alphabets of sixteen and twenty-four letters, both derived according to the usual view from the Latin capitals, were chiefly used by the Scandinavian tribes, though not unknown to the other members of the Teutonic family, and the earliest Runic inscriptions yet found cannot be much later than 200 A.D.<sup>1</sup> The stones of the prehistoric tumulus of Maeshow in the Orkneys are still scored with the runes of Norse marauders, who broke into it in search of treasure about 1150, and they let us see how widely spread a knowledge of this mode of writing must have been among the people. But the old poetry of the Skalds, including short songs (*hliod* or *quida*) on the deeds of the gods and heroes, was first collected and committed to writing in Iceland in the twelfth century. This collection of mythic poems goes by the name of the "Edda" or "Great-Grandmother," and is ascribed to Saemund Sigfusson (died 1133). The younger, or prose "Edda," was the work of Snorri Sturluson, who died in 1241, and consists of three parts—the mocking of Gylfi, the speeches of Bragi, and the Skalda, a sort of Norse "Ars Poetica." The poetical language described in the Skalda was as artificial as that of the Arabs; objects were to be called by a variety of epithets, some obvious, some far-fetched, but seldom by their proper names, and the accumulation of synonyms accordingly became im-

<sup>1</sup> See Wimmer: "Runeskiftens Oprindelse og Udvikling i Norden" (1874). Mr. Isaac Taylor, however, seems to have proved that the runes were derived from an Ionic Greek alphabet of the sixth century, B.C. See his work on the "Alphabet" (1879).

mense. Thus an island could be called by 120 different words, and a sword by nearly as many. This poetical dialect made free use of foreign words, and we find a poem called the "Alvíssmal" (or "Speech of the Allwise"), preserved in the Old Edda, assigning the Low German *biórr* ("beer") to the Æsir or gods, while the Norse *ol* or *ale* belongs to the language of men. It is hardly necessary to refer to the curious parallel and illustration this affords of the similar distinction drawn in Homer between the languages of "gods" and "men." The literary era of Iceland lasted till its conquest by Hacon VI. of Norway, and we owe to it the larger number of the Sagas, such as the story of the "Burnt Njal," or of "Grettir the Strong," which have recently attracted so much attention. The oldest monuments of Danish literature mount back to the thirteenth century, and among them we may perhaps include the Latin History of Saxo Grammaticus, embodying a number of ancient myths; modern literary Danish has grown out of the Zeeland dialect of the sixteenth century. Swedish and Lithuanian are the only two Aryan languages which have retained any traces of the original musical accent, and the number of vowels and diphthongs possessed by Old Norse is a proof of the delicate character of its organization.

The Low German family is especially interesting to the Englishman, whose own language belongs to it. Anglo-Saxon, that is, the three slightly varying Anglian, Kentish, and Saxon dialects,<sup>1</sup> was spoken by a mixture

<sup>1</sup> "The Anglian was characterized by a special tendency to throw off final *n*, and by a frequent use of the weak ending *u(u)*."

of tribes from the north of Denmark and the whole coast of the German Ocean, and in spite of successive deposits of Danish, Norman-French, and Latin, has remained the kernel and essence of the English language up to the present day. The tribes who remained at home were afterwards termed Frisians, their oldest literary remains being some legal documents of the thirteenth century. The Frisic subdialects are very numerous, notwithstanding the smallness of the population that speaks them, but they have suddenly sprung into notoriety of late in consequence of the curious forgery known as "The Oera Linda Book," which professes to have been composed in the year 559 B.C. The earliest English or Anglo-Saxon production is the epic of Beowulf, of the seventh century, portions of which still breathe a pagan spirit; but it may have been composed on the continent. The literary dialect of Anglo-Saxon was destroyed by the Norman Conquest, and the period that followed—sometimes termed Semi-Saxon—was characterized by a struggle between the local dialects and Norman French. With the middle of the thirteenth century begins a new stage in the history of our speech, which for the sake of convenience may be called Early English; then comes Middle English, the Court dialect of Chaucer and his followers, succeeded by the Modern English of Elizabeth and our own day. Besides Frisic, Anglo-Saxon claims

Kentish and Saxon agreed in the absence of these features. Saxon was distinguished both from Anglian and Kentish by its *æ* for *é*. Kentish, finally, was separated from the others by its occasional *ei* for *eg*." Sweet: "Dialects and Prehistoric Forms of English," in the "Transactions of the Philological Society of London," 1876 (p. 19).



close relationship with the Old Saxon of the south between the Rhine and the Elbe ; indeed, from the second to the fifth centuries the three groups of dialects, Frisic, Anglo-Saxon, and Old Saxon, probably formed but a single language, which differed chiefly from the extant Old Saxon in its preservation of the diphthong *ai* and of the thematic *i* and *u*.<sup>1</sup> The most important relic of this Old Saxon tongue is the Christian poem of the "Héliand," or "Saviour," preserved in two MSS. of the ninth century.<sup>2</sup> Its modern representatives are the Low German proper, or "Platt Deutsch," spoken in the lowlands of northern Germany, and the Netherlandish, divided into its two dialects of Dutch and Flemish. Flemish was once the Court language of Flanders and Brabant, but has had to yield its place to the Dutch.

High German, with all its dialects, is the language of the greater part of modern Germany. Its history falls into three distinct periods. The Old High German period can be traced back to Charlemagne and the oaths of Strassburg, preserved in the "Annals" of Nithard,<sup>3</sup> and may be divided into Frankish, Alemanno-Swabian, and Austro-Bavarian. From the twelfth century onwards the vowel endings tend to disappear, and the language enters upon its second or Middle High German stage. This is the period of the redaction of the Nibelungen Lied and of the great Minnesingers, Walther von der Vogelweide, Wolfram von Eschenbach, and Tanhûser. The Court

<sup>1</sup> Sweet : *loc. cit.* p. 27.

<sup>2</sup> Edited by Schmeller : "Héliand : Poema Saxonicum Sæculi noni" (1830).

<sup>3</sup> Edited by Pertz (1839), pp. 38, 39.

dialect was based on that used in Suabia. Early in the sixteenth century New High German took its rise in the Chancelleries, and through the influence of Luther, who had adopted it in his translation of the Bible, gradually became the standard of educated speech.

We must now turn to the Letto-Slavic languages, which, like the Keltic on the west, have been perpetually pushed back by the more vigorous and encroaching Teutonic. Old Prussian is extinct, like the Slavonic tongues of German Austria, and it is somewhat remarkable that both the capitals of modern Germany—Berlin and Vienna—stand on ground that was once Slavonic. The Lettic and Slavonic groups bear much the same relation to one another as the Scandinavian and German, but the first, though confined to a comparatively small district, is decidedly the more archaic, and nearest the primitive Aryan speech. In certain points Lithuanian grammar is of an older type than even that of Sanskrit—*essi*, “thou art,” for instance—but in most respects the converse is the case. So far as the conjugation is concerned, Lithuanian is far inferior to the oldest known Slavonic. This is Church Slavonic or Old Bulgarian, once spoken from the Adriatic to the Danube and Black Sea, and still the liturgical language of the orthodox Slav. Owing to slight changes inevitably introduced into it in the course of time, this Church Slavonic may be classified as Old and New. It was the language into which the Bible was translated by the brothers (Constantine) Cyrillus and Methodius in the ninth century, the oldest copy of the translation being the Gospel of Ostromir, 1056 A.D. The Greek alphabet was modified by Cyrillus to suit the

peculiarities of Slavonic pronunciation, but the Slavs belonging to the Latin Church rejected this in favour of another called Glagolitic. The modern dialects of the Slavonic family are the Russian, the Ruthenian or Little Russian, the Polish, the Czech (Chek) or Bohemian, the Slovak, the Slovenian, the two Sorabian idioms, also called Wendic and Lusatian, the Bulgarian, and the Servo-Croatian. Russian (or Great Russian) is characterized by the same phonetic and grammatical complexity as the sister Slavonic tongues, and its power of forming agglutinative compounds has often been noticed. Thus the two words *bez Boga*, "without God," can be fused into a single whole, from which, by the help of an adjectival suffix, *bezbozhnŭŭ*, "godless," can be formed; from this, again, the noun *bezbozhnik*, "an atheist," then the denominative verb *beznozhnichat*, "to be an atheist," with a whole crop of derivatives, including the abstract *bezbozhnichestvo*, "the condition of being an atheist," from which we finally get the barbarous compound *bezbozhnichestvovat*, "to be in the condition of being an atheist." Participles, too, have replaced the aorist and imperfect, which have also been lost in Ruthenian, though retained in Servian and Bulgarian, and in this change we may perhaps trace the influence of those Tatar tribes whose blood enters so largely into that of the modern Russian community.

Ruthenian or Rusniak occupies a large part of southern Russia, comprising Kiev, the ancient capital, and is also spoken over a considerable portion of Galicia. Its literature is chiefly national and traditional, like that of Russian proper, which has shown signs of activity and

originality only since the age of Lomonosov (1711-1760). Ruthenian differs from Russian in several points, among which may be mentioned the loss of the present passive participle and the possession of infinitives with diminutive endings. A far more cultivated tongue is the Polish, which has a literature reaching back to the end of the tenth century. This, however, was for the most part in Latin; a strictly native literature cannot be said to commence before the fourteenth century. Polish is divided into a variety of dialects, which Russian and Prussian despotism have been doing their best to stamp out, but it may be considered as still spoken by about ten millions. Words (foreign importations excepted) are accented on the penultima, in contrast to Czech and Sorabian, which accent the first syllable, while in Russian, Ruthenian, Slovenian, and Croato-Servian, the accent may fall on any part of the word. The consonants when in combination undergo considerable modification. Czech and the closely allied Slovak are spread over the whole of Bohemia, except a strip on the west and north, the greater part of Moravia and the tract to the south of Poland, and are the dialects of about 6,500,000 people. The earliest Bohemian documents go back to the eighth century, the first records being the MSS. of Královdor or Könighof, and Zelenohora (Grünberg) discovered in 1817, which belong to the period of the conversion of the country to Christianity, and embody a number of interesting myths. Up to the Hussite war, Bohemian literature was much in advance of that of any of its Slavonic neighbours; it is only since the close of the last century that it has been again revived. The language has

changed considerably since it first comes before us in the eighth century, the old imperfect and aorist have disappeared, and phonetic decay has been somewhat active. Among the vowels at present possessed by it may be noticed the vocalic *r* and *l*, always short in Czech, but often long in Slovak, which give its words, when spelt, a strange appearance. A reform in the orthography of the language was completed in 1830 by substituting Roman for Gothic letters, and the Polish and German *w* has subsequently been discarded for the Latin *v*.

Sorbian or Sorabian is distinguished into two dialects, High Lusatian and Wendic, or High and Low Sorabian. The district in which it is spoken is now reduced to small dimensions watered by the Spree, and lying partly in Prussia, partly in Saxony. Its literature is insignificant, in spite of a literary society founded in 1845 to revive and cultivate it, and its first printed book is a work of Catholic devotion, published in 1512. Servo-Croatian, or Illyrian, on the other hand, has of late been taking a somewhat prominent position. The countries over which it extends—Serbia, Bosnia, Herzegovina, Montenegro, Slavonia, Croatia, and part of southern Hungary, have been made notorious by the events of the recent Turkish war. Istria and Dalmatia are also included in its domain, and though the dialects spoken over this large tract of country are necessarily numerous they may be divided into three main groups:—the Servian, the Dalmatian, and the Croato-Bosnian. The three groups are characterized by the different pronunciation of a vowel originally *é*, which at Belgrade remains *é*, while at Agram it appears as *i*, and in Cattaro as *yé* or *iyé*. Servian literature was

practically founded by Vouk Stephanovitch Karajich at the beginning of the present century, though the east Servian dialects can boast of documents at least five hundred years old, and the west Servian of records that date from the twelfth century, while the admirable literature of Ragusa goes back to the sixteenth. But it is the *Pesma* (*Pisma*) or ballad, which characterizes the native and national literature of Servia. Many of the ballads are quasi-historical, and of great age, and Kapper, in 1851, united a portion of them relating to the same mythical cycle in a long Epic, and so created a Servian Homer. A large number of Turkish and French words have found their way into the modern dialect, but the old aorist and imperfect have been retained (*bih* = "fui," *bijah* = "eram"), while a perfect has been formed by means of a participle, as *sam bio*, "I have been."

Slovenian is spread over southern Carinthia and Styria, as well as Carniola and a part of northern Istria, and is the native tongue of more than 1,200,000 persons. It is very closely connected with Servo-Croatian, and may be classed with the latter under the general name of Illyrian. Its literature begins with the sixteenth century, and it is the native dialect of the great Slavonic philologist, Miklosich. Last of the living Slavonic languages comes Bulgarian, spoken north and south of the Balkans by about 6,000,000 persons, a large part of whom, however, are Ugrian Huns by descent. The adoption of a Slavonic language by a race, whose skulls still belong to the Finnish type, according to Virchow, is an interesting illustration of the small relation that exists between philology and ethnology. The fact explains the attenu-

ated condition of Bulgarian grammar when compared with that of other Slavonic tongues, as well as the post-position of the article which it shares with Wallach and Albanian. The vocabulary also is full of Turkish, Greek, Albanian, and Rumanian words. Some efforts have been made of late years to introduce schools and a taste for literature into the country. Like Servo-Croatian, Ruthenian, and Russian, Bulgarian has lost the dual in the verbal conjugation possessed by Church Slavonic; on the other hand, in agreement with the other Slavonic languages, it has a "compound declension" in which the adjective is made definite by postfixing the pronoun *i*. Thus in Servian *rast visok* means "a lofty oak," *visoki rast*, "the lofty oak." The same form of declension is also met with in Lithuanian, and we may even compare the difference between the terminations of the German adjective, when standing alone or preceded by the article. It may be added that a Servian writer, Danitchitch, has lately proposed the following classification of the Slavonic tongues, on purely phonetic grounds:—

Primitive Slavonic	{	{ Polish and Polabish	
		{ Czech and Sorabian	
		{	{ Ruthenian
		{	{ Russian
		{ Church Slavonic	{ Bulgarian
		{ Slovenian	
		Servo-Croatian	

There are various other conflicting schemes, however, and the "primitive Slavonic" is probably a figment of the philological analyst, the several Slavonic languages



being the relics of co-existing dialects which existed from the beginning. Many of these dialects have of course perished, among them being the Polabish or old dialects of the Slavonians of the Elbe, whose literary remains belong to the beginning of the last and the end of the preceding century.

The Lettic group comprises the two living dialects of Lithuanian and Lettish spoken by a population of nearly three millions on the south-east coast of the Baltic and in Courland and Covno, and the extinct dialect of Old Prussian once dominant between the Vistula and the Niemen. The latter is only known to us from documents of the fifteenth and sixteenth centuries, the most important being a translation of the German Catechism printed in 1561, and a German-Prussian vocabulary of more than 800 words compiled in the fifteenth century, and lately edited by Nesselmann.<sup>1</sup> Lettish may be described as Lithuanian in a later stage of development, its accentuation, for instance, being invariably on the first syllable and not movable as in Lithuanian. It is usually divided into High and Low Lettish, the last being again subdivided into north-west Kurish or Tahmish, and the Middle dialect on which the common literary language is based. Lithuanian was similarly divided by Schleicher into High and Low, distinguished by the change of *tj* and *dj* into *cs*, and *dž* in the former; but this division has been successfully attacked by Kurschat,<sup>2</sup> who pro-

<sup>1</sup> "Ein deutsch-preussisches Vocabularium aus dem Anfang des 15 Jahrh." (1868). See Pott in the "Beiträge zur vergl. Sprachf." vi.

<sup>2</sup> "Wörterbuch der Litauischen Sprache," p. viii. (1870).

poses to call the dialect of the extreme south of Prussian Lithuania (the common literary language) High Lithuanian, while a somewhat widely divergent dialect spoken in the north a few miles below Memel might be termed Low Lithuanian. Lithuanian literature consists in large measure of *dainas*, or "national songs," and prose tales, and it also boasts of one poet, Christian Donaleitis (1714-80), whose poem of "The Seasons" in 3,000 lines possesses considerable merit. Lithuanian phonology agrees strikingly in some respects with that of the Indic branch, *sz* (= *sh*) answering to I-E. *k*, Sansk. 's, Zend *ç*; *k* to I-E. *kw*, Sk. *ch*, Zend *k*; *ž* (= French *j*) to I-E. *g*, Sk. *j*, Zend *z*; and *g* to I-E. *gw*, Sk. and Zend *g* (*j*). These sounds have undergone further modification in Lettish, where *k* and *g* have become *c* (= *ts*) and *dz* before the soft vowels, as in *celt*, "to lift," Lith. *kēlti*, and *sz* and *ž* have become *s* and *z*, as *sirds*, "the heart," Lith. *szirdis* or *zeme*, "the earth," Lith. *zēme*. Lithuanian has preserved the dual as well as the various case-endings in the noun and the present and future tenses in the verb. A new perfect and imperfect, however, have come into existence, the latter being a compound tense formed by the help of the auxiliary *to do*.

We must now pass on to another and very important branch of the Aryan family, the Greek, or Hellenic. In no other of the allied languages has the vowel system been developed with such perfection and adapted to the expression of grammatical forms. In fact, the Greek of the historic period is characterized by a sensitive euphony, a plastic clearness, and a logical consistency. It is difficult to know how far to the north dialects belonging to

the Hellenic stem may have extended: Thessalian was regarded as a rude *Æolic* dialect, Macedonian was still further removed from classical Greek, and Thracian seems to belong to another stock. At the same time the scanty remains that have been left of the Phrygian language in inscriptions and glosses prove the latter to have been Hellenic, and the Phrygians traced their descent from the *Briges* or "Freemen" of Thrace. The other Aryan languages of Asia Minor, Mysian, Lydian, and probably Karian, must also, it would appear, be classified as Hellenic. If any trust can be put in the translations proposed by Gompertz for the inscriptions in Cypriote characters on the terra-cotta whorls found by Dr. Schliemann at Hissarlik, a language almost purely Greek would have been spoken in the Troad at an early period. However that may be, within Greece itself and the islands and colonies adjacent three main dialects were considered to exist—Doric, Ionic, and *Æolic*. Doric was spread over the Peloponnesus, Megara, Crete, Rhodes, and the colonies of Sicily, Libya, and Southern Italy. The Doric "accent" was especially strong in Laconia. Ionic must be divided into Old Ionic, New Ionic, and Attic, and while Doric was pre-eminently the dialect of landmen and mountaineers, Ionic was the dialect of sailors and merchants. Its centre was the *Ægean*, on either side of which it was spoken in Attica and Ionia, where there were four local varieties according to Herodotus.<sup>1</sup> Old Ionic has been preserved in many of the forms and phrases of the Homeric poems, and is distinguished from New Ionic by its more archaic cha-

<sup>1</sup> i. 142.

racter, preserving the primitive long vowels for instance, which become short in New Ionic, as in  $\nu\acute{\epsilon}\omicron\varsigma$  instead of  $\nu\tilde{\eta}\omicron\varsigma$  (=  $n\acute{a}vas$ ), or the old genitive termination in  $-οιο$ , which subsequently passed through  $-οο$  into the contracted  $-ου$ . Attic stands midway between Old and New Ionic in the matter of conservative tendencies; thus the loss of the digamma in  $n\acute{a}vas$  is compensated by the lengthening of the second vowel ( $\nu\acute{\epsilon}\omega\varsigma$ ), which is never made short. Æolic was, perhaps, the most widely used of the Greek dialects, and may be classified as Æolic proper, Bœotic, and Thessalian. It was the dialect of Lesbos, Cyprus, Thessaly, Bœotia, Elis, and Arcadia, though the last two are made Doric by Westphal.<sup>1</sup> The form it assumed in Cyprus has recently been disclosed to us by the decipherment of the Cypriote syllabary, and is particularly interesting, its main features being the amalgamation of the article with the initial vowel of the next word and the preservation of the digamma ( $\upsilon$ ), which was elsewhere lost early, as well as of the yod ( $\gamma$ ). Besides these dialects there was also an artificial epic dialect, based partly on Old Ionic, partly on New Ionic, and resulting from the recitation of half-modernized epic poems by clans of rhapsodists who frequently used archaic words and forms wrongly or created others by false analogy. The epic dialect of Homer and the other fragments of

<sup>1</sup> "Vergleichende Grammatik der indogermanischen Sprachen," i. p. 48. See, however, Gelbke and Schrader, in Curtius' "Studien," ii. 1, x. (1869, 1878), who show that Arcadian occupies a middle place between Lesbo-Cyprian and Thessalo-Bœotian. Elean must be classed with Arcadian, though after the fifth century B.C. it is much affected by Laconisms, and from the first had a remarkable predilection for the vowel  $\alpha$ .

the epic cycle, together with that of such later imitators as Apollonius Rhodius, is a kind of tessellated pavement in which the whole history of the poems is reflected. Thus such stray Æolisms as *πίσυρες*, *φῆρ*, *ζάθεος*, *αἰσυμνήτης*, *ἄμυδις*, *Θερσίτης* confirm the tradition that the home of epic verse was in Æolian Smyrna and the neighbourhood of the Trojan plain, whence it was handed on to the Court poets of the Ionian cities. The intermixture of Old and New Ionic forms, the use of the same word now with the digamma and now without, the sporadic appearance of *γod* (as in *θεὸς γῶς*), or of a long *-α* in the neuter plural, the co-existence of two or three different forms characteristic of successive stages in the growth of the language (as the genitives in *-οιο* for *-οσγιο*, *-οο*, and *-ου*, or the dative plural with and without *-ι*), are among the many indications of the length of time during which the lays were orally handed down, and so reflected the several changes undergone by the living speech. The false forms, such as *εἰείσατο* from *εἶμι* with a digamma, or *ἔλλαβε* and *ἔμμαβε* with a double consonant, the mistaken meanings attached to words preserved in some ancient formula or epithet, the extension given to an assumed "poetic licence," all show the artificial character which the poetical language gradually assumed. The Atticisms which occur on every page, and caused Aristarchus to consider Homer as an Athenian, as well as words and phrases which seem to belong to the Periklean era, are witnesses to more than one Attic recension after the poems had been transferred to the mainland of Europe. And lastly, the few forms which bear the impress of the Alexandrine age testify to the harmonistic labours of the critics of Alexan-

dria, who sought to remove contradictions and inconsistencies by expunging whole passages or introducing trifling corrections. But the epic dialect, such as we have it, was essentially a creation of the Ionian mind; it grew up among the Æolian and Ionic settlers in Asia Minor, who had fled from the Dorian invaders of the Peloponnesus; it recorded their glories and their hatreds, and with the exception of a single line in *Odyssey* (xix. 177), there is as little trace of the Dorian name as there is of the Dorian dialect.

This Dorian dialect, however, as befitted the idiom of uncorrupted mountaineers, is the most conservative of all the Greek dialects. Thus it preserves the digamma, as well as the primitive dental, which had become a sibilant in the other dialects, as in *δίδωτι* (= *δίδωσι*), *τύπτουτι* (= *τύπτουσι*), *ῥηματι* (= *εἴκοσι*); while the accent of the aorist *ἐτύπον* embodies the fact that the last syllable has been shortened by losing a final consonant (*ἐτύποντ*). Next to Doric, Old Ionic and Attic exhibit the most archaisms. The Homeric and Hesiodic literature bear witness to the comparatively late date at which the digamma became extinct in the Ionic dialect, though only one Ionic inscription with this letter has yet been found (in Naxos), and the legends scratched on the granite colossi of Abu-Simbel by the Ionian mercenaries of Psammitichus (probably B.C. 650) show no sign of its existence. Except in the matter of the digamma, which was retained up to a comparatively late date, Lesbian Æolic has gone furthest in the path of phonetic and grammatical change. Even the accent has been uniformly thrown as far back as possible. However, the

verbs in *-μι* were more numerous than in the sister-idioms, *φίλημι* for example answering to the ordinary *φιλέω*, but most of these are of late formation though modelled after an ancient pattern.

It has been the fashion to class Greek with Latin, and even to constitute a hypothetical Helleno-Italic or "Pelagic" language from which the dialects of Greece and Italy have been supposed to have sprung. But such a theory is but the echo of the effete prejudices and beliefs of pre-scientific "philology." Greek and Latin were generally the only dead languages taught and known, and where Hebrew did not come into competition it was imagined that everything must be derived from Greek. Not only were the two classical tongues thought to be intimately bound together, but it was further laid down that Latin was but a dialect of Greek, a sort of corrupt Æolic in fact. It is no longer possible to believe that the relation between Greek and Latin is especially close. Latin gravitates rather towards the Keltic languages, where, as in Latin, we find a passive in *-r*, and a future in *-b*, while Greek is much more nearly related to Asiatic Zend. Alone in Greek, Zend, and Sanskrit has the augment been preserved; the comparative in *-τερος*, the *alpha privative*, the *μη* (*mâ*) prohibitive, and the voiceless aspirate, all find their analogues in Zend; while, as Prof. Max Müller points out, there are striking resemblances between the lexicons of Greek and Zend. Thus the Greek *στόμα*, *πλειστος*, *ἀνά*, *οἶος*, *γέρας*, *δέμις*, *οἰκονδε* answer to the Zend *çtaman*, *fraēsta*, *ana*, *āēva* ("one"), *garañh* ("reverence"), *dâmi* ("creation"), *vaēçmen-da*.<sup>1</sup>

<sup>1</sup> "Chips," iv. p. 249.



On the other hand, Greek stands in marked contrast to Latin as regards phonology. While Greek preserves the vowels, Latin preserves the consonants, and the aspirated tenues, *χ*, *θ*, *φ*, become in Latin the simple *h* and *f*. Equally opposed is the verbal conjugation where Latin has dispensed with a large number of the old tenses and supplied their place with new compounds. By way of compensation the Greek declension is poorer than the Latin, in spite of its retention of the dual and use of the archaic endings *-θε(ν)* and *-δε*.

The loss of consonants, *υ*, *γ*, *σ*, &c., has been the chief cause of the phonetic changes of the Greek language. The rule that drops *s* between two vowels has been especially prolific of change. So also has been the disappearance of *γ*, which, when coming after a dental, has given rise to *ζ*. The grammatical terminations, again, have been strangely transformed by the rule which forbids a word to end in any consonant save *ν*, *ρ*, *σ* (and in two cases *κ*). The decay of the final consonants was, however, but slow, and the late date at which the final nasal of the accusative disappeared may be judged of by the preservation of the vowel *α*, as in *φέροντα*, a nasal preventing any modification of a preceding *alpha*. In the declension, the locative has taken the place of the dative, as *ποιμέν-ι*, *ναῦ-σι*, *πόσ-σι* (= *πόδ-σι*),<sup>1</sup> and the instrumental ending is preserved in the Homeric *ναῦ-φι(ν)*. In the verb the old middle or intransitive voice has been retained, which has been lost in Keltic and Letto-Slavonic, and has left but few traces in Latin. Though

<sup>1</sup> *-σι* is a compound of the two locative endings *-σι* and *-ι*, and stands for *σιι*.

capable in an eminent degree of forming compounds, Greek has remained free in this respect from the extravagances of Sanskrit, and its syntax has reached a high level of development.

Political and literary reasons made Attic the standard dialect of Greece, and in the hands of the Alexandrian writers it became the *κοινή διάλεκτος*, or "common language," of the Greek world. But outside the literary coterie and such University cities as Athens or Alexandria, this "common language" changed considerably, and we have only to compare the Greek of the New Testament with that of Plato or Thucydides to see how great the change could be. The transference of the capital of the Roman Empire to Constantinople, and the mixture of nationalities which took place there, gradually produced the Byzantine Greek of the Middle Ages, out of which grew modern Greek or Romaic, properly applied to the educated dialect of Greece at the time of the war of independence. By the side of this stood a large number of local varieties, amounting, it is said, to as many as seventy,<sup>1</sup> one especially, the Tzakonian of the Morea, differing from the literary language in a very marked degree.<sup>2</sup> Some of these dialects have now disappeared, but several still remain, especially in the islands, and to such an extent does dialectic variation still proceed that in Lesbos "villages distant from each other not

<sup>1</sup> Stoddart: "Glossology," p. 33. But see above, p. 204.

<sup>2</sup> An exhaustive grammar and vocabulary of this dialect, in three volumes, is being prepared by Dr. Deffner. The vocabulary will contain 6,000 words, with examples. Many of the words and phonetic peculiarities of the dialect go back to the "Laconisms" recorded by Hesychius and other ancient lexicographers.

more than two or three hours have frequently peculiar words of their own and their own peculiar pronunciation.”<sup>1</sup> The educated dialect, however, was but slightly removed from the Attic Greek of classical times, and the leaders of Greek literary fashion have found it possible with the aid of schools and newspapers to weed “Romaic” of modern forms and idioms, to restore old cases, tenses and words, and in short to revive classical Greek. This revival is one of the most curious linguistic facts of the present century; even the dative has been recovered, and the infinitive in *-ειν* is being substituted for the periphrastic *νά* (= *ἴνα*) with the conjunctive, which had long taken its place. The conjugation, nevertheless, still displays an analytic tendency, the dual has disappeared, and the pitch-accent has been changed into a stress-accent, causing the accented syllable to be long and the unaccented one to be short. Modern Greek pronunciation, moreover, is very far removed from that of classical times; *iotacismus* is predominant, reducing vowels and diphthongs to the common sound of *i*, while the aspirated consonants have become surds.<sup>2</sup>

One group of Aryan speech is still left for notice. The numerous Romanic tongues which trace their descent from the language of Rome make the Italic group one of special importance. These tongues not only have a continuous history of their own, but we can also trace them

<sup>1</sup> Max Müller : “Lectures,” i. p. 52 (8th edition).

<sup>2</sup> A Greek dialect is spoken in eight small towns in the neighbourhood of Otranto and Lecce. It changes *χ* into *h*, as in *homa* or *huma* for *χῶμα*, reminding us of the replacement of the guttural aspirate by the simple aspirate in Latin. See Morosi : “Studij sui Dialetti Greci della terra a’ Otranto” (1870).

back to a well-known fountain-head. They enable us to verify or correct our attempts to restore the parent-Aryan by a comparison of the derived languages, as well as to study the laws of letter-change in actual, living speech. But Latin, the language of Rome, was but one out of many Italic dialects. Putting aside the non-Aryan Etruscan, we find in Italy two great stocks, the Iapygian and the Latino-Sabellian. The Iapygian is represented by the inscriptions of the ancient Messapia in the south, which are as yet but partially deciphered. They suffice to show, however, how distinct their language is from the other Aryan dialects of Italy; the genitives in *-aihi* and *-ihi*, the use of aspirated consonants, and the avoidance of *m* and *t* at the end of words, connect it rather with the Greek than with the true Italic stock. The latter falls into two branches, the Latin and the Umbro-Samnite, comprising the idioms of the Umbrians, Sabines, Marsians, Volscians, and Samnites or Oscans. Oscan, which is chiefly known to us from the inscriptions on the bronze tablets of Agnone<sup>1</sup> and Bantia,<sup>2</sup> and the Abella Stone,<sup>3</sup> was spoken in Samnium and Campania, and is, on the whole, the most conservative of the Italic dialects; while Umbrian, on the other hand, the language of the north, has suffered more than any other from the action of phonetic decay. Our knowledge of Umbrian is principally derived from the bronze tablets known as the Eugubine Tables, discovered at Gubbio, the ancient

<sup>1</sup> Found at Fonte di Romito in 1848.

<sup>2</sup> Found at Oppido, on the borders of Lucania, in 1793.

<sup>3</sup> Used as a doorstep till noticed by Prof. Remondini in 1740, and removed to the museum of Nola.

Iguvium, in 1446, in a subterranean chamber. They relate to the twelve sacrifices and liturgies to be performed in honour of the twelve gods by various guilds. Both Umbrian and Oscan differ from Latin in substituting *p* for *qu* (*kw*), as in *pis* for *quis*, in replacing *k* before *t* by a strongly pronounced aspirate, as in *Ohtavis* for *Octavius*, and in changing aspirated tenues to *f* in the middle of a word where Latin has *b*, as in *tefe* (*tibi*), *sifei* (*sibi*). Umbrian also developed a peculiar *r* out of an original *d*, and invented a new character to denote it; thus *runum* answers to the Latin *donum*; *ꝛere* to the Latin *dedit*. It tended to omit vowels altogether, and to reduce diphthongs to simple vowels even more than Latin, while the terminations fell into the utmost disorder. Oscan, on the contrary, preserves the diphthongs and retains the organic *a* where Latin has *i*, as in *anter* by the side of the Latin *inter*; it avoids the change of *s* to *r* between vowels, as well as the assimilation of sounds; *kenstur*, for instance, corresponds with the Latin *ensor* for *cens-tor*. Both in Oscan and Umbrian the genitive of nouns in *-a* is *-as*, that of nouns in *-us*, *-eis* and *-es*, while the locative is retained, and the dative plural in *-bus* discarded. Much use, too, is made of the old infinitive in *-um*, and whereas the Latin future has had recourse to the auxiliary *fu*, the Oscan *her-est*, "he will take," preserves the old sigmatic form. As Mommsen observes, the relation between Latin and Osco-Umbrian may be compared to that between Ionic and Doric, Oscan and Umbrian differing from one another much as the Doric of Sicily differed from the Doric of Sparta. But whether Latin, Oscan, or Umbrian, all the Italic

languages agreed in throwing back the accent as far as possible, and thus losing all trace of the primitive Aryan accentuation.

The history of Latin itself may be grouped into three periods,—that of Old Latin, down to the Second Punic war; that of classical Latin, which gradually became the artificial dialect of a select literary coterie; and that of Neo-Latin, the language of the people under the Empire, out of which sprang the Romanic idioms of mediæval and modern Europe. Classical Latin broke down the diphthongs into simple vowels (*jus* for *jous*, *unus* for *oinus*, *plures* for *ploueres*, *civis* for *ceivis*), reduced short *ũ* to *i* (*optimus* for *optũmus*, *regimus* for *regũmus*), changed *o* to *e* (*verto* for *vorto*) and *e* to *i* (*navem* for *navim*), and extended the transformation of *s* into *r* (*arbor* for *arbos*), and of initial *f* into *h* (*hordeum* for *fordeum*). *D* occasionally appears as *l*, as in *lacrima* for *dacrũma*, *odor* for *olor* (*olere*), and initial *dv* becomes simply *b* (*bonus*, *bis* for *duonus*, *dvīs*). The old ablative in *-d*, which long kept its place in official documents, lost its characteristic consonant, and *sententiad* or *oquoltod* had to become *sententia* and *oculto*, the locatives in *-i* (*humi*, *Romai*) were confounded with the ablative or the genitive, and the old dative in *ẽ* (*-ĩ*) as in *populoĩ*, *Romaiĩ*, or *ceivci*, was worn away to *populo*, *Romae*, *civi*. The only traces of the dual are to be found in *duo*, *octo*, and *ambo*, and of the first person-ending of the present active in *sum* (*possum*) and *inquam*. The verb, in fact, was thoroughly disorganized, new analytic tenses were introduced, formed by the help of auxiliaries, the middle voice almost wholly disappeared, and a great extension of use

was given to the supines and gerunds. Here and there, it is true, a reduplicated perfect was left; but its place was more usually taken by a new compound of the stem with the substantive verbs *sum* and *fuo*, as in *scrip-si* and *ama-vi* (*ama-fui*), and this compound was again combined with a compound tense of the substantive verb—as *scripsissem* (= *scrip-si-es-sem*) or *amav-issem*—to form fresh tenses. Other tenses—the imperfect and future—were created by means of the auxiliary *fuo*, just as in Keltic, where the Old Irish *carub* answers to *amabit*, and confutes the view first started by Scherer,<sup>1</sup> that the formative of Latin tenses was the stem *dha* (as in the Teutonic *lov-(d)ed*), since a Keltic *b* cannot come from an earlier *dh*. Like Keltic, too, Latin developed a curious passive in *r*, which was long considered as a reflective voice formed by the pronoun *se*, just as in Letto-Slavic, where the Lithuanian *dývy-jũ-s*, the Church Slavonic *divlja-se* answers to the Latin “mirror,” or in Old Norse where the middle is formed by the suffix *-sk*, that is, the reflective pronoun *sik*, “self.” But though we might bring the Latin *amor* from *amo-se* through an intermediate *amo-re*, it is impossible to do so in Old Irish or Welsh, where *s* does not change to *r*, and for the present, therefore, the origin of the characteristic of the Latin passive must remain unexplained.<sup>2</sup> Several tenses of the

<sup>1</sup> “Geschichte der deutschen Sprache,” p. 202.

<sup>2</sup> The Latin passive *r* appears also in Vedic forms, like the 3rd pl. imper. active *'se-r-atam*, from *'si*, and Fick and Bezzenger suggest that it is further found in the Greek *δῆϛ-ρ-ο*, a 2nd sing. imperative, as compared with the plural *δῆϛτε* (Bezzenger's “Beiträge,” ii. 3, p. 270). In *amaris*, for *ama-r-is*, it is suffixed to the verbal stem, and not to the person-endings, as in the Sanskrit and



passive, however, were formed upon the analytic principle, the substantive verb being used with the participle active, while in both active and passive the optative and conjunctive and even future were confounded together.

The analytic tendency displayed in the Latin verb has been carried out in the Neo-Latin or Romance languages. The "vulgar" Latin of the people necessarily differed slightly in the different parts of the Empire; the further removed a province was from the capital, the greater was the chance of change in the dialect spoken in it, and the greater also the influence likely to be exercised upon it by neighbouring languages.<sup>1</sup> Out of these varieties of provincial Latin have grown the modern Romance idioms—Italian, Spanish, Provençal, French, Portuguese, Rumansch and Wallachian or Rumanian. They all agree in one point, that of retaining the accented syllable of the Latin word, but while Italian and Spanish, geographically the nearest to the old language of Rome, have made but few changes in the form of the vocabulary, French has distinguished itself by the desire it has shown of throwing away as many unaccented syllables as possible, and of thus suppressing vowels and consonants alike. No doubt the process was aided by the Frankish conquest; numberless Teutonic words have made their way into the French dictionary, and French idiom has been largely affected by that of Germany. Thus the French *avenir*, that is, *ad venire*, has been formed after

Greek words just mentioned, and it is possible that the attachment of it to the full forms of the indicative, in order to denote the passive, was due to the false analogy of the imperative *ama-re*.

<sup>1</sup> See Schuchardt: "Der Vokalismus der Vulgärlateins" (1866-8).

the analogy of the German *zukunft*, literally "to come ;" *contrée*, that is (*terra*) *contrata*, is the result of the association of the German *Gegend*, "country," and *gegen*, "against," and *avaler*, from *ad vallem*, is a slavish translation of *zu Thal*. But there is another respect in which French and Provençal separate themselves from Italian and Spanish. The declension in the two latter tongues has altogether disappeared in the earliest monuments to which we have access, whereas in French and Provençal the relics of the old declension were preserved up to the thirteenth century, resulting, as M. Littré has remarked,<sup>1</sup> in a semi-synthetic syntax. Old French distinguished between the nominative and the accusative, which were *li chevaux* and *le cheval* in the singular, and *li cheval* and *les chevaux* in the plural, where the final *-s* preserves the *-us* and *-os* of the Latin noun. French and Provençal, however, are not the children of a common Neo-Latin language. They are independent dialects which have grown up on Gallic soil out of the provincial Latin once spoken there, and modified by the influence of foreign tongues. Both dialects, it is true, supplanted an earlier Keltic idiom, but the number of Keltic words that have crept into their vocabularies is singularly small.

Latin, as spoken in Gaul, had a strong affection for diminutives, a characteristic which may have been of Keltic origin. At all events, Irish shows this tendency in a marked way, as in *sanctan*, "saint-ikin," corrupted into "St. Anne," or *squireen*, from the borrowed *squire*. The same tendency, however, is found in a good number of languages in which the Court dialect has become that of

<sup>1</sup> "Dictionnaire de la Langue française," i. p. xlvi. (1863).

the people, and we have the German Swiss turning everything into a diminutive, down to *Kaisar Karli*, and the Italian using *sorella* as a substitute for *soror*. Indeed, we have only to look at Diez's Dictionary to see how fond the provincials must have been of diminutives throughout the Roman world. We also find them making great use of neuter adjectives, like *viaticum* (*voyage*), or *ætaticum* (*âge*), instead of the simple substantives, and employing words different from those in ordinary use in the classical speech. Thus *villa* (*ville*) took the place of *urbs*, *bucca* (*bouche*) that of *os*, *basiare* (*baiser*) that of *osculari*, *cambiare* (*changer*) that of *mutare*, *andare* (*aller*) that of *ire*. Had it not been for a few lines of Horace and Juvenal we should never have known of the existence of *caballus* in literary Latin of the golden age, and yet *caballus* (*cheval*) has entirely ousted *equus* from the languages which boast of their descent from it. In the eighth century French was still the *lingua romana rustica* in which the clergy preached, and the glosses found by Holtzmann (in 1863) at Reichenau in a MS. of the year 768, present us with words like *cabanna*, *linciolo*, *manatces* as the equivalents of the Latin *tugurium*, *sindones*, *minas*. The oaths of Strassburg (A.D. 842) preserved by Nithard<sup>1</sup> are the next oldest specimens of French, the *langue d'oïl* as it came to be called. With the *Cantilène de Sainte Eulalie* begins the golden age of the Old French tongue, and of the epic poetry, the best example of which is the *Chanson de Roland*. It was with snatches from this poem that the *trouvère* Taillefer encouraged the Norman soldiers at the battle of Hastings. With the *Sire de Joinville* the

<sup>1</sup> "Historiarum," iii. 5 (edit. Pertz, 1839).

language entered upon a new stage of development. The *langue d'oïl* had four principal dialects, corresponding with the principal political centres, and still preserved in the modern *patois*. These four dialects were the Burgundian, the Norman, the Picard, and the French of the Isle of France, the present representative of which differs scarcely at all from the Burgundian. The three first-named dialects differ chiefly in the vowels, as the following table will show :—

Norman.	Picard.	Burgundian.
e	oi, ai, ie	oi, ai, ei, ie
ei	oi, ai	oi, ei, ai
u	o, ou, eu	o
ui	i, oi, oui	ui, oi, eui, oui. <sup>1</sup>

All three dialects have contributed towards the formation of modern French, *pois* (*poids*) and *attacher* for instance coming from Burgundy, *peser* and *attaquer* from Normandy and Picardy. The Norman preference for *u* has been perpetuated in the sound indicated by the spelling of such English words as *colour* or *courage*.

Provençal or the *langue d'Oc*, the language of the *troubadours*, is the language of southern France, and includes not only the dialect of Provence proper, but the dialect also of Languedoc, Limousin, Auvergne, Gascony, and part of Dauphiny, to which it is advisable to add further the Catalanian now spoken in Catalonia, Valencia, and the Balearic Islands, and once used throughout the territory of Aragon. Its westernmost sub-dialect, the Gascoun of Bayonne, may still be heard in the village of Anglet.<sup>2</sup> In some respects Provençal throws light on

<sup>1</sup> Burgundian also changes the nasal into *g*, as in *juig*, for *juin*.

<sup>2</sup> For a specimen of this dialect, see "Poésies en Gascoun," by

the grammatical forms of its northern neighbour; thus the origin of the French *dirai*, from *dicere habeo*, is fully shown by the Provençal future *dir vos ai*, "je vous dirai," which also suggests an explanation of the incorporation of the French pronouns. The earliest Provençal poem, the Song of Boëthius, is not older than the tenth century, but the best literature of mediæval Europe grew up with the brilliant but shortlived civilization of Provence, which the Church stamped out by fire and sword. The Albigensian Crusades prevented the Provençal from obtaining the place afterwards held by the more fortunate Italian and French.

The oldest written monuments of Italian do not reach back beyond the twelfth century. In fact, literary Italian was the creation of Dante, who adopted it from the splendid Court of Frederick II., that precursor of the Renaissance, in whom the Papacy instinctively felt that it had a deadly foe. Already Frederick himself and his Chancellor, Pietro della Vigna, had composed their poems in it, and from the mouth of Dante it passed to his Florentine countrymen and became the native tongue of Tuscany. In his treatise "*De Vulgari Eloquentiâ*," Dante reviews all the dialects of his country, reckoning fourteen in all, and dividing them into Eastern and Western. The more scientific division of modern days arranges them in three groups—northern, central, and southern, the first comprising Genoese, Piedmontese, Venetian, Æmilian and Lombard; the second Tuscan, Roman, and Corsican; and the third, Neapolitan, Calabrian,

P. Th. Lagravère (Bayonne, 1865), and "*Poésies Gasconnes*," by J. Larrebat (Bayonne, 1868).

Sicilian, and Sardinian. Most of these dialects differ very widely from the classical Italian ; Sicilian, for instance, reads like a new language, and in the *Chiaja* of Naples there are few travellers who would recognize the *Piana* of Tuscan speech.

Spanish departs more widely from Latin in both phonology and vocabulary than any other of the Romanic languages, but its grammatical forms are regular, and when once the phonetic rules of the language are known, its similarity to the parent-tongue will strike the most careless student. It is probable that the changes in the phonology may have been due to Arabic influence, as the changes in the vocabulary certainly have been. Spanish has driven Catalanian from Aragon, and is even now making way against Basque in the north ; it is peculiarly the dialect of Castile, and the Andalusian of the south differs from it in many respects. The oldest relics of Spanish are scattered through the pages of St. Isidore of Seville, in the seventh century ; its earliest text, however, belongs to the middle of the twelfth.

Portuguese, together with Gallician, approaches French in several particulars more nearly than it does Spanish, though on the whole it must be classed with the latter. It has lost the initial *l* of the article, and, in addition to the Arabic words it contains in common with Spanish, it possesses also a number of French words, which it is supposed were introduced under Henry of Burgundy at the close of the eleventh century.

In the isolated valleys of the Rhætian Alps is to be found another Romanic language, the Rhætian, or language of the Grisons, with its two dialects, the Romansch or Ru-

monsh spoken by the Protestants of the Engadine, and the Ladin (Latin) spoken by the Roman Catholics of the Oberland. A religious literature of the sixteenth century exists in Rumonsh, but otherwise the literary productions of the language amount almost to nothing. Ascoli has lately shown<sup>1</sup> that this Rhætian idiom is allied to two others which have been erroneously classed with Italian—the dialect of Friuli used by more than 400,000 persons in Italy on the banks of the Tagliamento, and in Austria as far as Göritz, and the dialect of the Adige in the Austrian Tyrol spoken by about 90,000 people. A few short inscriptions of the twelfth century belong to the dialect of Friuli.

The last remaining of the Neo-Latin tongues is the Wallach or Rumanian of the far east. The Români, as they call themselves, derive it from the Latin introduced by the Roman legionaries into Dacia, when the country was made a province by Trajan in A.D. 107. It is spoken in Rumania and Moldavia, as well as in parts of Hungary, Servia, Transylvania, Bessarabia, and even as far south as Thessaly. The Danube divides it into two branches, the northern or Daco-Rumanic, and the southern or Macedo-Rumanic, the latter of which abounds with Albanian and Greek words. Both dialects, however, have borrowed largely from the Slavonic, and it is possible that they may also contain some fragments of the old Dacian vocabulary, of which our only information is derived from the botanical names given by Dioskorides. Mussafia has shown<sup>2</sup> that the Latin vowels have undergone two

<sup>1</sup> "Archivio Glossologico Italiano," i. (1873).

<sup>2</sup> "Zur romänischen Vocalisation" (1868).



main modifications, tonic *e* and *o*, on the one side, becoming the diphthongs *ea* and *oa*; other vowels, on the other side, acquiring a semi-nasal sound. We have already alluded to the postposition of the definite article, as in *omul* (*homo ille*), "the man," which Rumanian shares with the neighbouring Albanian and Bulgarian. The term Wallach, it may be observed, is the German *Walsch* (*Welsh*) or "foreign," a name given to them by their Teutonic neighbours.

One more language of the Aryan family now remains for review. This is the Skipetár ("Highlander") or Albanian, the linguistic position of which is still unsettled. There is little doubt, however, that it belongs to the Indo-European stock, and the opinion has often been hazarded that it represents the ancient Illyrian or Thrako-Illyrian whose territory it occupies. A recent writer<sup>1</sup> has even connected it with the ancient Pelasgic—that delight of ethnological paradoxers—and sought to explain the early proper names of Greece by means of it; but his attempt cannot be pronounced successful. The vocabulary contains a large number of borrowed words, especially Greek, and certain phænomena seem to indicate that it bears a closer relation to Greek than to any other member of the Aryan family.

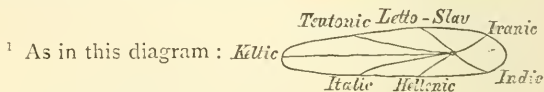
This Aryan family of speech was of Asiatic origin. Dr. Latham,<sup>2</sup> indeed, would make it European, and Poesche has lately advocated the same view with great ability;<sup>3</sup> but there are few scholars who have followed

<sup>1</sup> Benlów: "La Grèce avant les Grecs" (1877).

<sup>2</sup> In his edition of the "Germania" of Tacitus, p. cxxxvii.

<sup>3</sup> "Die Arier" (1878).

them. Their theory rests upon a confusion of language and race. Poesche assumes that the Aryan languages were the product of the white race, whose colour was due to the albinism caused by a long residence in the marshy country between the Niemen and the Dnieper. But this is begging the whole question. For anything we know, the parent-Aryan may have been the language of a race essentially different from that to which we belong; indeed, it is highly probable that it was spoken by more than one race. We may appeal by way of illustration to the Latin of the fifth century, used as it was by varying nationalities and different races. But comparative philology itself supplies us with a proof of the Asiatic cradle of the Aryan tongue. Linguistic change greatly depends upon geography; the nearer a dialect is to its primary centre, the less alteration we are likely to find in it. Now, of all the Aryan dialects Sanskrit and Zend may, on the whole, be considered to have changed least; while, on the other hand, Keltic in the extreme west has changed most. Hence Pictet made the Aryan mother-country a point within an ellipse, close to Indic and Iranian on the one side, and at varying distances from the languages of Europe on the other.<sup>1</sup> Hovelacque, however, suggests that the point might have been eastward even of the Indic and Iranian groups, and towards the Chinese frontier.<sup>2</sup> This, too, is virtually the view of Johann Schmidt, who derives the several Aryan languages from dialects of the



<sup>2</sup> "La Linguistique," p. 344.

parent speech, each of which lay further to the westward of the hypothetical centre the more it had departed from the character of the primitive tongue.<sup>1</sup> Mr. Douse, on the other hand, in tracing the phænomena of Grimm's law back to the original dialects of the parent-speech, would rather make Low German, High German, Letto-Slavic and Classical, the latter including Sanskrit, Zend, Greek, and Latin, merely neighbouring dialects grouped round a single centre, from which we may imagine them to have radiated.<sup>2</sup> In default of other evidence, it is best to abide by the current opinion, which places the primæval Aryan community in Bactriana on the western slopes of Belurtag and Mustag, and near the sources of the Oxus and Jaxartes. Here, at all events, is the *Airyancm vaéjô*, "the Aryan seed," of the first chapter of the Vendidad, where Ahuramazda tells Zarathusta was his first creation, and whence the Aryans advanced towards the south-west through fifteen successive "creations" or countries. It is true that this legend is at most a late tradition, and applies only to the Zoroastrian Persians; the geography, however, is a real and not a mythical one, and the position assigned to the first creation agrees with the little that comparative philology has to teach us about the early Aryan home. Thus we know that it was a comparatively cold region, since the only two trees whose names agree in Eastern and Western Aryan are the birch<sup>3</sup> and the pine,<sup>4</sup> while winter was familiar with its snow and ice.

<sup>1</sup> "Die Verwandtschaftsverhältnisse der I-E. Sprachen" 1872).

<sup>2</sup> "Grimm's Law; a Study," p. 96 (1876).

<sup>3</sup> Skt. *bhurjja*, Old H. G. *birca*.

<sup>4</sup> Skt. *phītu-dārus*, Greek *πίτυς*, Lat. *pinus*.

It was a region, moreover, in which gold, silver, and bronze were procurable, and Gerland<sup>1</sup> has pointed out that the universal Aryan myth embodied in the wanderings of Odysseus presupposes the existence of a large lake or sea near the first dwelling-place of the Indo-European family. But a comparative study of the lexicon proves that though the primitive Aryans were acquainted with salt, crabs and mussels, and boats with rudders, these latter were of a very rude description and only fitted for lakes and rivers, while the absence of a common name for the "oyster" or "the sea" in Eastern and Western Aryan is a fact of some significance. Humboldt believed that the sea of Aral is the remains of a great inland lake which once included the Caspian and the Euxine, and this belief has been confirmed by recent researches.<sup>2</sup> We may therefore picture the tribes which used the parent-Aryan speech as living on the slopes of the Hindu-Kush, in the high central tableland of Asia, and watching the sun as it set evening after evening behind the waters of a great inland sea. It was this inland sea with the desert that lay to the south of it which cut the Aryans off from communication with the civilized races of Elam and Babylonia, and forced the first emigrants to the west to push their way through the steppes of Tatory and the pass of the Ural range. As has been already noticed, the parent-speech was no undivided, uniform tongue; like the provincial Latin that developed into the Romanic languages of modern Europe, it was split up

<sup>1</sup> "Altgriechische Märchen in der Odyssee" (1869).

<sup>2</sup> See Spörer, in Petermann's "Mittheilungen" (1868-72), and "Nature," May 20th, 1875.

into dialects, each with its own peculiarities, which have been perpetuated in the derived idioms, or even associated in the same idiom, like the peculiarities of the Old French dialects in the Parisian French of to-day. Thus M. Bréal<sup>1</sup> observes that while the words which signify "heart" presuppose a stem *ghard* in the languages of Asia, they presuppose a stem *kard* in the languages of Europe, though the compound '*srad-dhâ*, whence the verb '*srad-dadhâmi*, the Latin *crê-do*, shows that the stem *kard* itself is not a stranger to the Asiatic idioms. The variant forms, again, of *ἄρα* and *dvâr*, or the coexistent demonstratives *sa(s)*, *ta(s)* testify to the same fact. Artificial language alone is free from dialectical variety, and the older and more barbarous a community the greater will be the number of the dialects it speaks.

No written record has come down to us of this primitive Aryan settlement, where the languages of Europe first began to be formed, it may be, some five or six thousand years ago. But a fuller and truer history of its life and thought than could be given in any written record may be read in the archives of speech. By comparing the dialects of Europe and Asia, we can learn what words were already formed and used before the period of Aryan migration set in. Where we find the same fully-formed word with the same meaning in both Greek and Sanskrit, or German and Zend, we are justified in believing that it existed before the separation of the Aryan family, and that the object or idea it denoted was already familiar to our linguistic forefathers. In this way we can restore

<sup>1</sup> "La Langue indo-européenne," in the "Journal des Savans," Oct. 1876. See above, p. 20. (Vol. II.).

the civilization and history of the parent community, can discover its mode of living, can reproduce its experiences, can trace its habits and beliefs. But we cannot prove a negative : we cannot, that is, infer from the absence of the same word in the same sense in both Eastern and Western Aryan that the idea or object signified was unknown before the period of migration ; it might have been known, yet lost or forgotten, during the long years of wandering. Greek and Sanskrit both possess the same term for "razor," *kshuras*, ξυρόν ; nevertheless Varro asserts that shaving was not practised at Rome before the third century, B.C.,<sup>1</sup> and the assertion is confirmed not only by the peculiar Latin name of the razor (*novacula*), but also by the fact that the small crescent-shaped razors so plentifully met with in the islands of the Greek archipelago, in Attica, Bœotia, in many parts of Etruria, and even north of the Alps, have never been found in the cemetery of Alba Longa, or in any other of the oldest Italic tombs. Nor, again, must we forget the possibility that words which look of native growth may really have been borrowed, or that borrowed words may exterminate native ones. In Gaelic, *pascha* and *purpura* have become *caisg* and *corcur*, through the analogy of the general law that represents the Kymric *p* by the older *c* (*kw*) ; and few of those who speak of *pansy* or *dandelion*, remember that they are the borrowed French *pensée* and *dent de lion*. On the other hand, the Basque terms for "knife" are all loan-words—*ganibeta* from the French *canif*, and *nabala* from the Spanish *nabaja* (*novacula*) ; yet we cannot suppose the Basques to have been ignorant of any

<sup>1</sup> "De Re Rustica," ii. 11.

cutting instruments whatever, and Prince L-L. Bonaparte has discovered the native word *haistoa* in an obscure village. How important these cautions are is evidenced by the fact that Fick, to whom we owe above all others the restoration of the primitive Aryan dictionary and civilization,<sup>1</sup> has from time to time argued as if the absence of a common term in east and west Aryan necessarily implied that a particular object was unknown to the parent-speech, or has accepted words as native because they conform to the phonetic peculiarities of the language, and have undergone the regular action of Grimm's law. Bearing in mind, therefore, that our picture of the primitive Aryan community can never be complete, that we can never know how many further details have still to be filled in, let us see how it comes before us in the pages of Fick's "Comparative Dictionary."

Like the language, the civilization of the community was highly advanced. Man was *manus*, "the thinker," and the society in which he lived was strictly monogamous. The family relations, indeed, were defined with the severest precision, and there were separate words for a wife's sister (*syâlî*), and the wife of a brother (*yâtaras*, εὐάταρες, *janitricæ*). The father, at the head of the family, exercised the same *patria potestas* as we find existing at a later day among the Romans; he was the *patis*, πόσις, or "lord" of the household, just as the wife was the *patnî*, ποτνία, or "mistress." The community itself was but a

<sup>1</sup> In his "Vergleichendes Wörterbuch der indogermanischen Sprachen" (3rd edit. 1875-6), and "Die ehemalige Spracheinheit der Indogermanen Europa's" (1873).



large family, governed on the same principle as the family, by the *vi'spati*, or "head of the clan." The *vi'spati*, again, seems to have been under the *râgan*, or "king," who was assisted by a body of councillors consisting of the *pataras*, or "fathers" of families. The community, however, resembled the Slavonic *mir*, or the village communities of India, whose constitution has been explained to us by Sir Henry Maine. Like the Keltic clan, it was a *γένος* or *ve'sas* (οἶκος), holding in common the pasturage and other lands, which were redistributed among its members from time to time. These members, nevertheless, had separate possessions of their own (*ap-nas*, ἄφνος, *res*), consisting of the house with its court, its goods, and its cattle. The king or chief, too, had a special residence (*rêgia*) and domain (τέμενος), "cut off" from the property of his neighbours. The house (*damas*) was no mere tent or cave; it was built of wood, with a thatched roof, and was entered by a door, not by the half-underground passage of the Siberians. But the community itself was but part of a larger whole—the *vastu* (ἄστνυ),<sup>1</sup> *puris*<sup>2</sup> (πόλις), or "township;" and these townships were connected with one another by roads (*panti*), along which pedlars travelled with the wares of trade. Naturally such an organized community had its settled customs or laws (*dhâman*, θέμα), like the Homeric θέμιστες, or "dooms," laid down (*dhâ*) by qualified judges, and accepted as precedents for the future. "Justice" was *aivā*, "the path" of right, from *i*, "to go;" right itself was *yaus* (*jus*), that which a man is "bound" to, from *yu(g)*, "to join;" punishment (*kai-na*) was inflicted only after inquiry

<sup>1</sup> Root *vas*, "to dwell."

<sup>2</sup> Root *pur* (*ple-o*), "to fill."

(*quæ-rere*), and the accused was called upon to provide sureties, those who “knew” him (*guâ-tar*). The community contained free men only; slavery as yet did not exist, and free labourers worked for hire (*misdha*, *μισθός*).

Aryan religion was simple, but, like the community, already organized. It consisted in a worship of natural objects and phenomena, more especially of the sun and dawn, and other bright powers of day. But it must be called henotheistic, rather than polytheistic; out of the many gods he believed in, the worshipper prayed to one only at a time—he had not yet room in his thoughts for two co-existing deities. The gods ruled and guided the universe; they were immortal, all-powerful, and holy, dwelling like a human family on an Olympus of their own with the *dyauspitar* (*Diespater*) or “father of heaven” at their head. Of this father, who was himself but the “bright” sky, the stars and moon were conceived as the sons and daughters;<sup>1</sup> it was not until the old theology had begun to yield to the nature-myths of a later age that they became the myriad eyes of Argos, the “brilliant” one. Of this later mythology, the hymns already addressed to the gods were a fruitful seedplot; they were, too, the basis of a liturgy, fragments of which were carried away by the various bodies of emigrants. In these liturgical forms the gods were praised as “givers of good things” (*dâtaras vasuâm*), were prayed “to show kindness” (*vâram bhâr*, ἤρα φέρειν), and asked to bestow “good courage” or “sense” (*ménos hÿ*, Zend *vohu manañh*) and “undying renown” (*śravas akshitam*, κλέος ἀφθιτου). In

<sup>1</sup> Compare the Vedic *duhitar divas* used of the Dawn and other goddesses with the Homeric *θυγάτηρ Διός* and *κούραι Διός αἰγιόχοιο*.

addressing them, the worshipper had to face the rising sun, with his right hand to the south; hence the Skt. *dakshina* (*dakshinâ*, the *Deccan*), the Welsh *dehau*, and Old Irish *dess*, all mean at once "right hand" and "south;" it is only in the Ghilghiti of Dardistan that the right hand is synonymous with the "north."

But besides these bright and favourable gods, there were the evil spirits of night and darkness, whose symbol, the snake, lurked during the day in the coverts of the woods. Night itself was the demon Aj-dahâka (Astyages, Zohak), "the biting snake," ever contending with daylight for the possession of the world, but ever worsted in the struggle. It was during his hour of apparent victory that ghosts and vampires prowled about, and witchcraft could work its evil will. At such a time, the Aryan felt a consciousness of sin, which he expressed in words like the Sanskrit *agas*, "transgression," Greek *ἄγος*, "guilt;" and sought for forgiveness in penance and self-mortification (compare the Skt. *'sramana*, "an ascetic," and Irish *craibdech*, "pious," *craibhdhigh*, "people who mortify the flesh").<sup>1</sup>

Cattle formed the basis of material existence. In the possession of herds and flocks (*paśu*, *pecus*) lay the chief wealth of the Aryan community, which had "sheep-walks" and pasture grounds (*agra*, *ager*), stables and sheep-cotes, fields and pigsties. The horse was domesticated; indeed, it is probable that the horse, which the Accadians of Chaldea called "the animal of the East," was first tamed by the primitive Aryans. It was not, however, used for riding, but only, like the ox, for draw-

<sup>1</sup> Rhÿs: "Lectures on Welsh Philology," p. 13 (1877).

ing carts. The other domesticated animals were oxen, sheep, goats, swine, and dogs; geese and bees were also kept, though beehives were not yet invented, and the honey was made into mead (Skt. *madhu*). But milk from the cow, sheep, and goat was the chief drink; and flesh was eaten when baked or roasted. To eat raw flesh was the sign and characteristic of the barbarians (*âmâdas*, ἄμοσφαροί). Apples also were eaten, and black broth or hodgepodge (Skt. *yîsha*, Lat. *jus*, Greek ζωμός, Old Slav. *jucha*, Welsh *uwod*, from *yu* "to mix") formed a principal staple of food. Leather was tanned, and wool shorn and woven, for though linen was also known it is probable that dresses were mostly made of these materials. The hunter had the bear, wolf, wild duck, hare, otter, and beaver to pursue or trap; crabs and mussels were collected for food, and mice and vermin were already a household plague. Quails and ducks were further eaten, and the future was divined from the flight of birds, especially the falcon.

The Aryans, however, were mainly a pastoral people. Agriculture was still backward, though two cereals at least were grown—one represented by the Skt. *sasya*, Zend *hahya*, "corn," and Welsh *haidd*, "barley;"<sup>1</sup> and the other by the Skt. *yavas*, Lithuanian *javai*, Greek ζεία, "spelt" (Old Irish *eorna*, "barley"). We may infer that the latter grain was the one most cultivated from the old Homeric epithet of the earth, *ξείδαρος*, "spelt-giving." A kind of rude plough was in use; hay was cut with the

<sup>1</sup> Rhÿs: "Lectures on Welsh Philology," p. 9 (1877). Dr. Whitely Stokes refers to Pliny N. H. xviii. 40: "Secale Taurini sub Alpibus (*s*)*asiam* vocant."

sickle (*raṭā*), and the grain was ground in the mill, and baked into bread. Straw was collected for winter employment, or for roofing the house; and a few garden herbs were grown. Salt, too, was used as an article of food; and the year was divided into the three seasons of spring, summer, and winter, while the moon received the title of "measurer," from the lunar month, by means of which time was reckoned. The dress of the Aryans shows that their country was far from being a warm one. It consisted of tunic, coat, collar, and sandals, made of sewn and woven wool or leather.

Gold, silver, and bronze were the three metals known, though implements of stone still continued in use; and even after their arrival in Europe, we find the Teutonic Aryans naming the "dagger" *seahs*, from the "stone" (Lat. *saxum*) of which it was made. Smelting and forging were carried on by a special class of smiths (*takshanas*), who occupied a high position, as in most primitive communities, and were even sometimes supposed to possess supernatural powers. The axe seems to have been the chief weapon, but the sword (Skt. *asi*, Lat. *ensis*) and bow were also employed; and wars appear to have been frequent.

Surgery and medicine were in their infancy,<sup>1</sup> charms being mainly relied upon as a means of cure; and two diseases at least had received names—the tetter (*dardru*) and consumption (*skaya*, *skiti*). Boats fitted for lakes and rivers had been invented; and the numerals on the decimal system were known, and named, at all events, up to one hundred. Baked, and not merely sun-dried, pot-

<sup>1</sup> Compare Latin *medeor* and Zend. *madhaya*.

tery was in daily use, consisting of vases, jars, pots, and cups, some of which had a pointed end to drive into the ground. Since several words exist denoting painting and motley colours, we may infer that this pottery was sometimes ornamented. Painting, however, was not the only art the germs of which had already shown themselves. Music, too, was already developed; and the Sanskrit *tanti*, "a chord," and *tata*, "a stringed instrument," answer to the Greek *τόνος*, "a chord," and the Welsh *tant*, "a musical string," plural *tannau*, "a harp."

Even the names by which these old Aryans called one another were organized into a system. Fick has shown<sup>1</sup> that every proper name was a compound of two words, neither more nor less. Thus we might have *Deva-'sruta*, "heard by God," in Sanskrit, *Θεό-δωρος* in Greek, *Hari-berht* in Old German, *Mils-drag* in Servian, *Cyn-fael* in modern Welsh. The number of names, however, by which a child might be christened was limited; and many of them could be doubled by putting the first element last—*Deva-'sruta* for instance, being changed into 'Srutadeva, *Θεό-δωρος* into *Δωρό-θεος*. The second part of the name might be contracted so as to be hardly recognizable; thus in Greek 'Αντί-γονος becomes *Αντίγων*, *Κλεο-πάτηρ* *Κλῶπας*, and Baunack has proved that the Kretan *Θίβος* stands for *Θέο-βουλος*.<sup>2</sup> After the separation of the Aryan family, a good many shorter names were formed out of the old ones by omitting one of their two elements, and using the remaining element by itself, with or without a special termina-

<sup>1</sup> "Die griechischen Personennamen" (1874).

<sup>2</sup> Curtius' "Studien zur griechischen und lateinischen Grammatik," x. 1 (1877), pp. 83-88.

tion, as in the Sanskrit Datta from Deva-datta, or the Greek Νίκιας, Νίκων from Νικό-μαχος, Νικό-στρατος, or the like. The Latin proper names fall outside the Aryan system, and are based on an entirely different method, which is probably due to Etruscan influence.<sup>1</sup>

Such, then, was in brief outline the civilization of the early Aryan community, and it will be seen that it was no mean one. Still following Fick, we may trace the Western Aryans after their departure from their old home, making their way along the northern shores of the Caspian and the inhospitable plains of Russia<sup>2</sup> to a region between the Baltic and the Black Sea, but westward of a line drawn from Königsberg to the Crimea, as is shown by the common possession of a name for the beech by the European dialects. Here, it would seem, they settled for a while, before again breaking up and turning now to the west to become Kelts or Teutons, now to the south to become Italians and Greeks. The European dialects have certain marked features in common; such as the possession of *e* and *l*, where the Asiatic dialects have *a* and *r*, and a present-stem formed by the suffix *-ta*. If we compare their vocabularies together we shall gather some idea of the progress that had been made since their separation from their eastern kindred. Family relationships have become more closely defined; there are names now for the grandfather, the sister-in-

<sup>1</sup> At any rate the Latin name-system is the same as the Etruscan, and we now know that certain proper names are of Etruscan origin, Aulus, Aulius, or Avilius, for example, being the Etruscan *Avile* or *Avle*, from *avil*, "life."

<sup>2</sup> See Sayce: "Principles of Comparative Philology" (2nd edition), pp. 387-94.



law, and the sister's son, and terms of affection for old people, such as *anâ* (*anus*), and *amâ* (*amita*), "grandmother," but not, it would appear, for father and mother. An advance may be noted, too, in civil relations; the community now called *tauta* (Goth. *thiuda*) has become more compact, and a conception has been formed of the citizen or "civis," as opposed to the "stranger" or *hostis*. The members of the same community are necessarily friends, but it requires a special act to enter into friendly relations with the member of another community, and be to him a "host" (*hospes*, Old Slav. *gos-podŕ*). We find a new term for "law," *lex*, A-S. *lagu*, "what is laid down," and there are further words for "pound" and "steal." If the Greek had nothing corresponding to *lex*, *hospes*, *hostis*, *civis*, it is not that he lacked the ideas denoted by these words, or had separated earlier than the rest of his European brethren from the old stock, but because his intercourse with the east and his maritime pursuits kept the relations of civil life in a constant state of mobility, and displaced old terms by new ones, such as βασιλεύς, γάναξ, θεός, ἱερεύς. But it was their introduction to the sea that brought the European Aryans their largest increase of knowledge and experience. Not only were better boats built, and the sea itself named from its "barren" nature (*marî*), but sea animals—such as the lobster, the oyster, and the seal—were caught and named. New plants on the land, too, became known—the elm, the alder, the hazel, the oak, the Scotch fir, the vine, the willow, the beech, and the nettle, as well as new animals—the stag, the lynx, the hedgehog, and the tortoise, and new birds—the thrush and the crane. The duck, perhaps, was

added to the list of domesticated animals, and a great improvement took place in agriculture, the old pastoral life passing into an agricultural one. We now have cultivated fields, with millet (*μελίμη*), barley (*κριθή*, *hordeum*), oats (*αvena*), and rye (Old Slav. *pyro*) ; forks, seed-sowing, harvesting, and harrowing. Peas, beans, poppies, rape, onions, and possibly hemp were also grown, and, as Fick acutely remarks, bread of an inferior sort was baked, which afterwards gave way to better sorts, and so occasioned the loss of its common European name. Yeast, too, made its appearance, together with glue and pitch ; leather work was improved ; hurdles and wicker-work began to be made, and the stock of tools and weapons was enlarged by the addition of hammers and knives, shields, spears, and lances.

It was left to each branch of the European family to improve upon the heritage it had received. The dictionary of every separate language is filled with words of peculiar form and meaning, bearing witness to the extent to which this improvement was carried out. In Greek, for instance, we find new terms in abundance. Even the deity has received a fresh name, since in spite of every effort that has been made to connect the Greek *θεός* with the common Aryan term that we meet with in the Latin *deus*, it still stands obstinately alone, and favours the view of Herodotus and Rödiger<sup>1</sup> that the Greek looked upon his gods as "the placers" or "creators" of that divinely arranged universe to which he afterwards gave the name of *κοσμός* or "order." With the Greek, too, individualism reached its highest point ;

<sup>1</sup> Kuhn's "Zeitschrift," xvi. pp. 158, 57.

oriental monarchy and Hellenic despotism were not far removed from one another, and consequently we need not be surprised at finding such peculiar Greek words as βασιλεύς, φάναξ, and τύραννος, or that τύραννος was of Asiatic origin, and φάναξ the title of the Phrygian kings. Strength and holiness, again, seemed to the Greek closely allied, and ἰερός (Skt. *ishiras*), which still retains its old meaning of "strong" in such Homeric formulæ as ἰερόν μένος, came to signify "sacred," and so gave a name to the sacrificing priest. The Athenian δῆμος goes back to the root *dā*, "to divide," and bears witness to a time when there was still a communal division of land among the Ionians, while the ἀγγελία and ἡλιαία (ἁλία) were the invention of a race which laid special emphasis on the gift of eloquence. Νόμος, "law," may indeed be older than the Hellenic age, but in its extension to denote the common thought of men (νομίζω) or the currency ordained by custom (νόμισμα), it is certainly altogether Greek. Nor did the Greek pantheon and mythology escape the influence of the Semitic stranger. Aphrodite is as much Phœnician as Indo-European in her attributes, and the myth of Adonis has now been tracked back to the epics of primæval Babylonia.

It is obvious, however, that we cannot be too careful in determining the relative amount of civilization possessed by the fragments of the Aryan family as they successively broke off from the larger community. We may find a particular word, for instance, common to all the European dialects, and not occurring in the Asiatic ones; and yet this need not prove that it was unknown before the westward emigration, since the Eastern Aryans

may have once had it, but displaced it subsequently by another word. On the other hand, as Ascoli has observed,<sup>1</sup> a derivative of the same form and meaning may develop independently in two distinct languages. Are we to suppose that the Sanskrit *ad-ana-m* and Greek *ἐδ-ανό-ν* go back to the period of Indo-European unity or sprang up independently in the two idioms, or that the Sanskrit *a-svapna-s*, the Greek *ἄ-πνο-ς*, and the Latin *in-somnis* could not have been formed independently in all three tongues? We may easily go too far in our attempt to restore the past history and civilization of a group of languages, and forget the possibilities of which the strict method of science bids us take account.

The reconstruction of the history of Aryan grammar is a safer task than the reconstruction of the history of its civilization. The same root may yield a derivative of the same form and meaning in two languages independently; but we are justified in holding that this could never be the case with grammatical forms. If we find *asmi* in Sanskrit and *esmi* in Lithuanian serving to express the first person singular of the present tense of the substantive verb, the reason must be that they are both relics of a time when the ancestors of the Hindus and the Lithuanians lived together, and spoke a common tongue. Now, just as a comparison of words has enabled us to sketch the history of Aryan civilization, so, too, a comparison of grammatical forms will enable us to sketch the history of Aryan grammar.

It has been pointed out in a former chapter that Aryan accent originally fell mostly on the last syllable, or rather

<sup>1</sup> "Studij critici," ii. p. 10.

on the element which denoted the place occupied by a word in a sentence. As in course of time the accent was thrown back, these final syllables, the symbols of flexion, became affected by phonetic decay, and tended to disappear. The more modern an Aryan language is, the less traces does it exhibit of flexion; what was once synthetic becomes analytic. The parent-Aryan was a highly inflected tongue; its later history and modifications are a record of a perpetual loss of flexion and the growth of other modes of grammatical expression. The primitive noun possessed a number of different cases and case-terminations, which came, however, to be limited now to one, now to another case. The same case could be denoted by different terminations; the genitive, for instance, was represented by at least three forms, *-sya* (as in the Sanskrit *śīva-sya*, Homeric  $\delta\eta\mu\sigma(\sigma)\iota\omicron$ ), *-as*, *-is*, *-os* (as in  $\mu\acute{o}\upsilon\sigma\alpha\varsigma$ , *generis*) and *-i* (as in *domini*). A large number of Sanskrit nouns have eight cases with different terminations in the singular, three in the dual, and six in the plural; of these Latin preserves only six (and with the locative seven), while Greek reduces them to five, though the latter language makes occasional use of other old cases in *-θεν* and *-δε*, which must have existed in the parent-speech, though scanty traces of them are left in the sister-dialects. The six Latin cases were still further diminished in course of time in some of the declensions; owing to the loss of the final dental of the ablative, the dative and ablative singular came to coincide in the second declension, while a similar confusion was occasioned between the genitive and dative in the first declension. So, too, in certain Sanskrit nouns the geni-

tive and ablative singular assumed the same form, while, as we have seen, only two out of the six Latin cases survived in Old French, and even these have disappeared in the modern language. In Sanskrit, again, the meanings of the cases interchange to a large extent, and Prof. Ludwig has sought to trace the origin of this confusion, or rather indefiniteness, of sense to the Rig-Veda. Price or value is denoted by the instrumental in Sanskrit, by the locative and ablative in Latin, and by the genitive in Greek and Lithuanian; the moment of time at which an event happens by the instrumental or locative in Sanskrit, by the dative in Greek, by the ablative in Latin, and by the locative in Lithuanian; while the absolute construction is expressed in Latin by the ablative; in Sanskrit by the locative, genitive, and ablative; in Greek by the genitive; in Lithuanian and Old English by the dative, and in modern English by the nominative. The same grammatical relation may be regarded from different points of view according to its position in the sentence; and hence the fluidity of signification which we seem to find in the cases of the primitive Aryan speech, as well as the number of terminations or flections by which they were symbolized.

Modern research has confirmed the reality of the distinction drawn by the Sanskrit grammarians between the strong and the weak cases, the strong cases being the nominative, accusative, and vocative. The nominative, symbolized by the suffix, represented the subject whether active or passive, no distinction being made between the two cases as in some languages, the Eskimaux for example. Here a noun receives a "subjective

affix" if it denotes the possessor and the agent, a neutral affix if it is followed by an intransitive verb. Thus *tekhiania-p takuvā* is "the fox saw him," *tekhiania-q takuvā*, "the fox was seen by him." The suffix *-s*, however, was mostly confined to masculine nouns; feminines were provided with other suffixes, and neuters were really objective cases without any proper nominative. The accusative, marked by *-m* (and *-as*), expressed the object towards which the action of the verb travels, and wherein it finds rest; and since there might sometimes be a double resting-point, that is to say a double object, we find verbs used with two accusatives. Thus the Greek might say *διδάσκω τὴν μουσικὴν σε*, which we can translate, without change of syntax, "I teach you music." Hence the use of the so-called accusative of limitation, as in *δεδεμένος τούς πόδας*, "os humerosque deo similis," so absurdly explained by classical "philologists" as dependent on *κατὰ* or *secundum* "understood," the true explanation being that the accusative is here the final object by which the movement of the thought is limited. Hence, too, the "accusative of motion," the end or place towards which the action is directed being naturally expressed by the objective case. Both nominative and accusative were primarily abstracts, masculines in *-s* alone excepted, and their formatives continued to mark abstracts to the last.<sup>1</sup> The vocative was the mere stem, or more properly the noun deprived of the *-s* of the nominative, and with its accent withdrawn from its final syllable.<sup>2</sup>

<sup>1</sup> See above, p. 413.

<sup>2</sup> This frequently resulted in shortening the termination, *e. g.* *νίμφᾶ*, *δέσποτᾶ*, or in thinning the vowel, *e. g.* *ἵππε* from *ἵππο-*. Cases



The reason of this was twofold ; in raising the voice to call another, the accent falls rather on the beginning than on the end of a word, and where there was no suffix there was no necessity for accentuating the last syllable. It was only the confused linguistic instinct of later days that employed the nominative for the vocative as in *φύλαξ*, but how easy the transition was may be seen from such passages as : "Equitem, Messapus, in armis Et cum fratre Coras, latis diffundite campis,"<sup>1</sup> or "Semper celebrare donis, Corniger Hesperidum fluvius regnator aquarum."<sup>2</sup>

Among the weak cases the genitive is the most important. We saw, when we were dealing with the morphology of speech, how it has grown out of an adjective used adverbially, that is to say, as a crystallized case, though it is true that it is difficult to explain the genitives in *-as* and *-i*. According to Prof. Friedrich Müller,<sup>3</sup> the genitive is symbolized by the vowel, not by the sibilant, *vâk-a-sa* (*vocis*) being the original genitive in contradistinction to the nominative *vâk-sa* (*vox*). Certainly the suffix of the genitive plural *-âm* (= *a+am*) shows no sign of the sibilant, which only appears (in *-sâm*) where the genitive singular ends in *-sya* ; but it must be remembered that we have no proof that either the genitive *-as* or the nominative *-s* was ever followed by a vowel. In the partitive use of the genitive, as it is termed, the genitive merely expresses like *ἄνα* for *ἄνακτ*, *παῖ* for *παῖδ*, are due to the Greek rule of not ending a word with any consonants except semi-vowels.

<sup>1</sup> Verg. *Æn.* xi. 464.

<sup>2</sup> Verg. *Æn.* viii. 77.

<sup>3</sup> "Grundriss d. Sprachwissenschaft," i. p. 119 (1876).

the relation between the whole and the part ; what that relation is, is left to be supplied by the mind. The genitive is really an attributive case, being to the substantive what the object is to the verb, defining its meaning and limiting its application. Hence its employment in Greek with verbs of feeling, hearing, and the like, where it denotes the part of which there is perception.

The dative seems to imply primarily a reference of one object to another, just as the ablative implies the removal of one object from another ; the locative its indwelling in another, and the instrumental its employment through another. All these cases, therefore, would have originally been local in their application ; their temporal and modal uses being derivative and later.<sup>1</sup> The dative expresses the second or further object towards which the body inclines ; hence we find it denoting the "remoter object," as well as the person interested in the fact stated. The "ethical dative," in short, over which grammarians have expended so much needless admiration, merely represents another person viewed as a second object. If the Roman said *noces tibi, irascor tibi*, it was only because the person addressed was the further object of thought to whom the first object, "hurt" or "anger," was extended. The dative is thus an attribute of an attribute, standing in the same relation to the object that the object does to the verb, or the genitive to the substantive. In Greek it has become confounded with other cases, the locative and the instrumental, but in Latin it has fairly maintained its separate individuality, though the progress of decay has caused it to amalga-

<sup>1</sup> See Hübschmann : "Zur Casuslehre" (1875), pp. 131, *sq.*

mate with the genitive singular and ablative plural of the first declension, and with the ablative singular and plural of the second and third. In this respect Latin resembles Vedic Sanskrit in contrast with the classical Sanskrit of a later period, both Latin and Vedic Sanskrit using the dative to express the purpose of an action, that towards which we look when doing it. We may say "exitio est mare nautis," since *nautis* is the "ethical" dative dependent on *exitio*, and *exitio* is the final result of the sea so far as sailors are concerned. It is noticeable that none of the other Aryan languages employ the dative in this way. In the infinitive, again, we have a crystallized dative, not a locative, as has been sometimes asserted. The Vedic *dâtvâne*, "for giving," "to give," answers to the Greek *δοῦναι* (*δοῦναι*), *jêshc*, "to conquer," to *λῦσαι*, *vayodhai*, "to live," for *vâyas-dhai*, to *ψεύδεσ-θαι*, just as *jîv-âse* does to the Latin *amare* (*ama-se*), where the final vowel was once long, as in *feri* (*fesei*).<sup>1</sup> Our own analytic infinitive "to give," is but a translation of the Anglo-Saxon dative *gifanne* ("dare"), whence the Old English form is *-en* or *-an*, which came to be spelt *-ing* or *-inge* in the fifteenth century, and so to be confounded with the present participle in *-ing* for an earlier *-ende*, as well as with nouns in *-ung*, which afterwards became *-ing*. Modern English also lets us see how readily a case can lose all its real relation to the rest of the sentence and be crystallized into an "absolute" form. We say "to err is human," with as little compunction or recollection of the original meaning of the preposition as the old Roman had of the primitive force of "errare est

<sup>1</sup> Max Müller : "Chips," iv. pp. 49-63.

humanum." In Greek the infinitive can even be declined with the article through all the cases of the noun. The dative, however, was by no means the only case which was hardened and stereotyped into an infinitive or verbal noun. Thus we have the accusative, as in the Sanskrit *dātum*, "to give," Vedic *yámam*, "to get," identical with the Latin supine, the instrumental, as in the Vedic *vidmánā*, "by knowledge," the genitive, ablative, and locative, as in the Vedic *vilikhas*, "to draw," *átridas*, "to strike." *dríśi*, "to shine," and even the bare stem formed by the suffixes *-man* or *-van*. The latter is the source of the common Greek infinitive of the present active, *φέρειν*, when compared with the Æolic *φέγγνν*, and Doric *φέρεν*, pointing to an original *φερε-(φ)εν*.<sup>1</sup> Hence the nineteen Homeric aorist infinitives in *-έειν*, like *πιέειν*, *είσιδέειν*, are formed by false analogy from contracted verbs in *-έω*, and indicate a late and artificial stage of language. From the suffix *-man* come the Homeric infinitives in *-μεν*, found only, however, after a short vowel with the single exception of *ξενονῦμεν*, as well as the ten aorist infinitives which terminate in *-εμεν*.

The locative was distinguished from the dative by a lighter ending, *οἴκοι* in Greek instead of *οἴκωι*, *rurì*, *Romā-ī* in Latin instead of *patrei*, *Romā-ī*. So in Sanskrit we find *navi*, "in a ship," instead of *nave*, "to a ship," *'sive* (*'siva + ī*) instead of *'sivāya*, though feminine bases in *-a* have another locative ending in *-ām*, which Dr. F. Müller would derive from an earlier *-ans* (as in the pronoun *ta-sm-is* for *ta-sm-ins*), and that again from *-ant*. The loss of the locative or its confusion with other cases

<sup>1</sup> Curtius : "Das Verbum," ii. p. 110.

in so many Aryan dialects, is but an illustration of the progress language is ever making from the material to the more abstract ; the idea of space tends continually to be supplanted by those of time and manner.

The ablative is found with more than one termination, *-ās*, *-dhas* (as in the Greek *ὀρθρονό-δε[ν]*), *-tas* (Latin *cælitus*), and *-ad* or *-d*, the last being the most common. The dental was long in disappearing from Latin ; *gnaiwod* occurs on the tombs of the Scipios, and legal documents embodying old formulæ, and the adverb *antidhac* (*ante hac*) bore witness to its former existence. A considerable number of the adverbs and adverbial prepositions, indeed, were merely old ablatives ; *facillumed* is found in the senatorial decree concerning the Bacchanalian orgies, and the Greek *ταχέως* or *ῶς* stand for *ταχέως* and *γῶτ* (or *kwât*). The so-called accusatives of the personal pronouns, *med*, *ted*, *sed*, which are met with in Old Latin, have been shown by Prof. Max Müller to be really bases, which reappear in the Sanskrit *mat-tas*, *twat-tas*.<sup>1</sup> The ablative disappeared at an early period from the Teutonic idioms as in Greek ; in Latin it took the place of the instrumental, and denoted the instrument or agent, though *ab* was generally employed where living persons were referred to. This instrumental use was easily derived from its employment to express *origin*, a secondary sense which grew out of its first signification of removal from a place or object, but which caused it to be supplanted in Greek by the genitive. From its instrumental use came its employment to represent the

<sup>1</sup> Fleckeisen's "Jahrbücher" (1876), pt. 10.

manner of an action, while its employment to denote comparison most probably comes immediately from its radical meaning, *mclior mcd* being literally "better away from me," that is to say, "when I am removed," or discounted. Similarly, in Hebrew, comparison may be indicated by the preposition *min*, "away from." That the "comparative" use of the ablative was known to the undivided Aryans seems clear from the fact that it is common to Sanskrit and Latin as well as Old Greek (c.g. κρείσσων ἔμεθεν).

The instrumental, like the ablative, was symbolized by several different terminations, relics of which have survived here and there. The most usual is *-â* (at least in Sanskrit), but we also find *-bhi* (as in the Latin *mihî, tibi, sibi, ibi (qu)ubi*, and old Greek βίηφι), *-sma* or *-smi* and *-ina*. The first termination may be detected not only in the Greek ἄμα, τάχα, ἀνά, παρά, ἅντα, πάντα, but also in the Early English *forthî* and *forhwêl*, where *thî* and *hwêl* are instrumentals of *thc* and *whc*. Mr. Peile notes that *forwhy*, "because," occurs in the old version of the 100th Psalm, in which the line "Forwhy the Lord our God is good" is often erroneously printed as a question.<sup>1</sup> The suffix *-bhi* is found in combination with a second suffix in the dual *nau-bhy-âm*, and the plural *nau-bhi-s* and *nau-bhy-as* (*navi-bus*), as well as in the singular dative *tu-bhy-am* ("tibi"), and we may see how little *â priori* reason there can have been for setting it apart to denote a special case from its appearance as a mere derivative suffix in words like the Sanskrit *garda-bha-s*, "an

<sup>1</sup> "Philology Primer" (1877), p. 109.

ass," *vṛisha-bha-s*, "a bull," or the Greek ἔλα-φο-ς, ἔρι-φο-ς, κρότα-φο-ς, or κρομφή.<sup>1</sup> The same suffix marks the dative and locative in Old Slavonic. Misled by the preposition *abhi* or *ābhi*, our *of*, the Latin *ab*, the Sanskrit grammarians separated the plural *-bhis* from its stem in the Pada-text of the Rig-Veda; but this error was more venial than the attempt of Ennius to harmonize matter and metre in his famous line "cere-comminuit-brum."<sup>2</sup> The use of the instrumental has been widely extended in Sanskrit, as also in Lithuanian, which has so many affinities with Eastern Aryan. Lithuanian, indeed, employs it to denote an idea cognate to that of the verb, like the cognate accusative in Greek or Latin, as well as predicatively after a verb of being where in Latin we have a dative. The Latin ablative of description (as in "vir animo magno") is also replaced in Lithuanian by the instrumental; but in this case Lithuanian seems to have preserved the primitive Aryan usage, as it has certainly done in its employment of the instrumental in a sociative sense. It is possible that the instrumental and sociative were once distinct cases as they still are in Finnic or Ugrian, but it is more probable that the sociative meaning only gradually developed out of the instrumental one. "To strike with a sword," or "to go with a ship," may be equally regarded as instrumental or sociative.

We have seen in a former chapter that the dual is

<sup>1</sup> Bergaigne: "Mémoires de la Société de Linguistique de Paris," ii. 5; Curtius: "Zur Chronologie der indogermanischen Sprachforschung," p. 79; Jahn's "Jahrbücher," 60, p. 95.

<sup>2</sup> Such freaks do not even imply that the termination was felt to be separable from the stem, since in *cerebrum* the stem is *ceres* (Sansk. *'siras*), *sr* becoming *br* in Latin.



older than the plural, and that the survival of the dual into the undivided Aryan epoch, and even into the classical age of Hindustan and Greece, shows how hard it is for linguistic forms to die in a settled language even when there is no longer any need or meaning for them. Its various cases, however, were less and less used, and hence many of them came to be lost or confounded together. In Sanskrit three distinct forms only were preserved, in Greek only two, while the scanty relics of the dual in Latin present us with but a single case.

We need not dwell upon those crystallized cases, the adverbs, and the prepositions which have grown out of them. The genitive *πάρος*, the locative *παράι*, the instrumental *παράά*, or the ablative *apud*, all tell their own tale. Even in Homer, as in our own modern English, we may watch the passage of the adverb into a preposition. There is but a short step between using *εἰς* as an adverb, the object being governed by the verb as in *αὐτοὺς δ' εἰσῆγον θεῖον δόμον* (Od. iv. 43), and turning it into a veritable preposition,<sup>1</sup> or between saying in English "what he told us of" and "of what he told us."<sup>2</sup>

We can trace the history of the verb with far greater completeness and certainty than we can the history of the noun. The history of the noun is one of continuous decay. We may catch glimpses, indeed, of a time when the cases were not as yet sharply defined, when the stem could be furnished with a number of unmeaning suffixes,

<sup>1</sup> See Hoffmann : "Die Tmesis in der Ilias" (1857-60).

<sup>2</sup> Penka, in his "Nominalflexion der indogermanischen Sprachen" (1878), gives a useful review and criticism of the different theories that have been held as to the origin and meaning of the Indo-European cases, but his own views on the subject are retrograde.

and when these suffixes could be used indifferently to express the various relations of the sentence. But long before the age of Aryan separation, the several relations in which a word might stand within a sentence had been clearly evolved, and certain terminations had been adapted and set apart to denote these relations. The creative epoch had passed and the cases and numbers of the noun had entered on their period of decay. But with the verb it was quite otherwise. Here we can ascend to a time when as yet an Aryan verb did not exist, when, in fact, the primitive Aryan conception of the sentence was much the same as that of the modern Dayak. Most verbs presuppose a noun, that is to say, their stems are identical with those of nouns. The Greek *μελαίνω* for *μελάν-γω* presupposes the nominal *μελαν* just as much as the Latin *amo* for *ama-γο* presupposes *ama*.

So, again, the Latin *parturio* comes from the suffix *-tor*, *-tar*, which plays so large a part in Aryan inflection. Perhaps the truest account that can be given of the relation between verb and noun is that both go back to the same stems, but that the verb is of later origin than the noun. Indeed, the verb has no special classificatory suffixes of its own; those which it possesses are all borrowed from the noun. The so-called root-verbs, like the Sanskrit *ad-mi*, which affix the personal ending to the bare root, are more probably decayed relics of older and longer forms than primitive verbs. What characterizes the verb are its inflections, and these inflections may for the most part be resolved into affixed personal pronouns. In Old Egyptian *meh-a* is "I fill," *per-a*, "my house," where no formal distinction can be drawn between the

verb with its pronominal affix and the noun with its possessive; in Magyar *vár-om* is "I await him," *nap-om*, "my day;" and so, too, the ancient Aryan *bhara-mi* probably served equally well for "I bear," and "my bearing." But there was this important difference between the Aryan and the Magyar or Old Egyptian forms: in Aryan the pronoun was attached to a stem, and this stem might embody more than one suffix.

The precise way in which the personal pronouns came to be affixed to these stems we do not know. Judging from the analogy of other languages we should expect to find them affixed rather to a participle or a noun than to a stem, and this participle or noun moreover constituting of itself the third person singular and plural. But the Aryan dialects have always shown a strong tendency to compound words by dropping the flexion of the first and leaving only the stem; possibly this was due to the loss of the accent on the flexion-ending, which was primitively accented. Up to the last a new compound demanded but a single flexion or relational affix; the Greek had to pronounce *ῥοδοδάκτυλος*, the Roman *calc-flo*, just as we ourselves instinctively say *mouse-trap* and not *micc's trap*. When the Latin language began to form fresh compound tenses by the help of the substantive verbs, it reduced the principal verb to its mere stem or even root, creating forms like *amavi* (*ama-fui*), *amabo* (*ama-fuo*), *rexī* (*reg-(e)si*). Hence we may perhaps infer that when the parent-speech had come to weld noun and pronoun so closely together as to form but a single idea, the distinctive termination of the noun disappeared, and the stem alone remained with the pro-

noun affixed to it. However that may be, *bharâ-mi*, τίθη-μί, originally signified nothing more than "bearing of me," "placing of me," the length of the thematic *â* in *bharâ-mi* showing that it represents the European *ō*, the *a*<sup>2</sup> of Brugman and De Saussure. The weakening of *ma* to *mi* may be due to the same striving after differentiation that makes the Hungarian write *nap-om*, "my day," but *var-ok*, "I wait;" at all events it is hard to admit the theory which derives the personal pronouns from the verbal terminations. It is interesting to observe that the objective form of the first personal pronoun is used; the speaker had not yet come to regard himself as a subject, and the nominative *agham* (*ego*) was not yet in existence.

From the first the Aryan verb seems to have denoted time as well as mood and relation. Its first two tenses represented the one a momentary action, the other a continuous or completed action. The meaning expressed by each was fitly symbolized by the bare stem or root and reduplication. Out of the first tense grew what is termed the second aorist in Greek, of which ἔ-λιπο-ν is a type; out of the second the perfect. But the perfect soon assumed a variety of forms and covered a variety of significations. The full reduplication of the root might be contracted into a broken one by phonetic decay; *tud-tud*, for instance, might become *tutud*. Or it might be replaced by a lengthened vowel, just as *fēci* in Latin stands for an earlier *fēfēci*; and thus *lip-līp*, perhaps, passed into λειπ-. The ideas, again, which could be represented by reduplication were numerous. Not only might it mark past time or continuous action, it could equally express

completion, intensity, desire, or causality. Thus the Scotch *gang*, Gothic *gagga*, is almost the sole remnant of a reduplicated perfect left in the Teutonic languages; reduplication characterizes intensives and desideratives in Sanskrit; and the Greek  $\beta\iota\text{-}\beta\acute{\alpha}\omega$  or Latin *sīdo* for *sĕ-sĕdo* have a causal force. The idea of continuous action moreover involves not only that of completion, but what seems quite opposed to it, that of present action as well. The present is divided from the perfect by a narrow and shifting line; to *have* been doing a thing does not exclude the possibility of still *doing* it. In Greek  $\eta\kappa\omega$  is a perfect and  $\acute{\alpha}\delta\alpha$  a present; and the Latin use of *cæpi* or *memini* need not be referred to. The present, accordingly, was developed side by side with the perfect, and like the latter required reduplication to show that the idea was to be dwelt upon. Greek presents like  $\delta\acute{\iota}\delta\alpha\mu\iota$  are among the oldest relics of the grammar, though the reduplicated vowel has been changed to distinguish the present and perfect tenses.

With the creation of a present tense, a new verbal stem was called into existence. While the simple stem or root was left to the aorist and the reduplicated perfect, a stem with lengthened vowel seemed requisite to denote present time. Hence the number of reduplicated presents tended constantly to decrease, while those with augmented vowels tended to increase. Simultaneously new stems were taken up from among the nouns, and the person-endings were attached to roots furnished with the classificatory suffixes *nu*, *na*, *ta*, and *ya*. Sometimes two or more suffixes were combined together, and a time came when almost any noun-stem might be turned into a verb

by affixing *ya*—itself a nominal suffix—and the person-endings.<sup>1</sup>

Meanwhile the aorist had undergone a change. A short vowel, the so-called temporal augment, was prefixed to it, the origin and explanation of which have been a sore puzzle. Buttmann and Pott suggested that it was a case of broken reduplication; Hoefler identified it with the Teutonic *ga-*, *ge-*; Benfey made it the instrumental of a pronominal stem *a-*, used like *sma* in later Sanskrit to denote past time. Then Bopp made a second guess, and supposed it might be the same as the privative *a*, or rather *ana*, “he does it not (now)” being equivalent to “he did it.” After Scherer’s attempt to explain it from *a*, “in the neighbourhood of,” Bopp’s third suggestion that it might be the pronoun *a* in the sense of “that” or “there” was adopted by Schleicher and Curtius, but this suggestion too was far from satisfactory. Whatever may have been its origin, the use of the temporal augment was soon extended and a new tense, the imperfect, formed from the present-stem on the model of the aorist. One result which the augment had was to modify the person-endings. The increased weight of the word at the beginning was compensated by lightening it at the end, and the final vowels of the suffixed pronouns, and sometimes even the pronouns themselves, altogether disappeared. In this way a secondary set of person-endings was created

<sup>1</sup> This is the usual theory. But Fick has gone far to show that the long stem of the present is the primitive one, out of which the shortened aorist-stem has grown through a shifting of the accent from the stem-syllable to the final syllables of the tense (Bezenberger’s “Beiträge,” iv. 1878). Benfey was the first to notice that the aorist is an old imperfect.

which characterized the past tenses quite as much as the augment. While the primary endings remained *mi, si, ti*; *vas, thas, tas*; *mas, ta, nti*, the secondary endings were *m* (*n, -*), *s, t* (-); *va, tam* (των), *tâm* (την); *ma* (*mas*), *ta* (*te*), *n*, (*us*).<sup>1</sup>

But new ideas presented themselves, and new forms were needed to express them. Composition has always been a favourite process to the Aryan mind, and nothing is easier than to put two verbs together when we want to denote a compound verbal idea. This is what the Semites did; and this, too, is what the modern Greeks did when they said θέλωμεν ἢ ἀναχωρήσομεν, for "I will go;" and what the Romanic peoples did when they made *amare habeo* (*aimerai*) serve for a future. We must not be surprised, therefore, at finding that the Aryans, even before their separation, possessed compound tenses. First of all there was the sigmatic aorist, Sanskrit *adiksham*, Greek ἔδειξα(μ), formed after the analogy of ἔλιπον with the aorist of the substantive verb (*âs-a*). Then there was the future (*bhavishyâmi*, λύσω for λύσῃω), in which we may perhaps trace the substantive verb (*as*), and the verb of "going" (*ya*). The same verb of "going" has also been detected in the optative (*bhavicyam, siem, φέροιμι*), but we are more probably dealing here with the suffix *ya*, which occurs so plentifully both in nouns and in the present stem. If Curtius is right, the termination of the optative which we have in the Greek φέροιμι is a relic of that early period when the person-endings were still primary. In Latin the suffix *ya* became *î* and *ê*, *siem* passing into *sim* on the one side, and into *sem*, as in *es-sem* or *fo-rem* (*fu-sem*), on

<sup>1</sup> Or rather *ur*, the final *s* being due to false analogy.



the other. In *amém*, however, the vowel is due to the conjunction of *i*, from *ya*, with the final *a* of the stem (*ama*). The optative introduces us to a mood as distinguished from a tense, since it expresses the remote contingency, the possibility, in short, of an event. The use of the optative belongs to a time when the distinction between fact and fancy was clearly felt: the speaker knows that he is a thinker, a *man*, and as such can discuss his own thoughts. In Latin the optative is frequently employed to denote the future regarded as a possibility, as in *reges, reget, audiemus*. But just as a fact may be momentary or continuous, past or present, so, too, contingency may be near or remote. By the side of the optative went the conjunctive, denoting probability, and symbolized by the suffix *a*, which coalesces with the final vowel of the stem into *â*. In classical Sanskrit the conjunctive has disappeared; in the Rig-Veda, however, we find forms like *asâni* (*asâmi*), *asâsi*, *asâti*, or *vahâni*, *vahâsi*, *vahâti*, answering to the Greek ἵσμεν with a short vowel, and ἔχω, ἔχῃς, ἔχῃ, the Latin *veham*, *vehas*, *vehat*, with a long vowel. In the Homeric poems the conjunctive often takes the place of the future, and the same is the case with the first person of the so-called third and fourth conjugations in Latin.

Apart from the imperative, whose second person singular sometimes ended in *-dhi* (*-bi*), sometimes in *-si* (δός, Vedic *mâ-si*), sometimes had no termination at all, the verb of the undivided Aryan community possessed no other tenses or moods. It was left to the separate branches of the family each to work out its verbal system in its new home, and in its own way, adding new

forms, forgetting others, now amalgamating and now dissociating. In classical Sanskrit, owing, in large measure, to the excessive growth of composition, several of the tenses of the Vedic verb were lost, such as modal forms of the simple aorist, while new tenses came into use. Among these may be noted a future formed by adding the present of the auxiliary *as* to a derivative noun of agency in *tar* (*bhavitâsmi*), and a periphrastic perfect like *bhâvayâm chakâra*, "he caused to be" (literally, "he made a causing-to-be"). In Greek we meet with many additions to the primitive system of the verb. A pluperfect was formed from the perfect, after the example of the imperfect from the present, by the help of the auxiliary *as*; but the Homeric ἐπεποίθει(σ)α passed by false analogy into ἐπεποίθειν, and was finally replaced by a periphrasis. A new perfect in -κα made its appearance, as well as a few aorists created by the aid of the same suffix; while in other cases the tendency to aspiration which made the Athenians speak of ἵππος (*âsvas*, *equus*) or ἰδῶρ (*udas*, *udus*) affected the second consonant of the root so that the old τέτυπα became τέτυφα.<sup>1</sup> Like the weak passive future and optative future, this aspirated perfect is not to be found in Homer. In Homer, too, we find only one instance (Il. x. 365) of the strong future pas-

<sup>1</sup> The perfects in κ are peculiarly Attic. There are twenty instances in Homer, but only from stems which end in a vowel. This is also the rule with the instances found in Herodotus (excepting κεκομικώς, ix. 115), Æschylus, Sophokles, and Thukydidēs. The perfects in κ are further met with in Æolic and Doric. No aspirated perfect occurs in Homer, except in the middle voice (*e. g.* δειδέχασαι), nor in Herodotus (except ἐπεπόμφει, i. 85), nor in the Tragedians (except τέτροφα in Sophokles), nor in Thukydidēs (except πέπομφα).

sive, and only two of the late Attic desiderative (Il. xii. 265, xiv. 37). The paulo-post future, the two passive futures, and the two passive aorists are all again products of Greek soil, the latter being formed by the aid of the suffixes *ya* and *dha* (ϑε), which may very possibly be the verbal roots we have in *i-re* and *τί-θη-μι*. The primitive Aryan verb possessed no passive voice; in fact, the passive, like the neuter verb, is a comparatively late creation. To the early intelligence every action seems to require an object, and to turn an object into a subject needs considerable powers of abstraction. Hence the parent-speech knew only of the transitive or active voice; the *parasmai-pada*, or "words for another," as the Sanskrit grammarians called it, and the middle or deponent voice, the *âtmanepada*, or "words for self." "I am loved" means the same as "one loves me," "I am fed" as "I feed myself" (*vescor*); and we can, therefore, easily understand not only that it was long before language needed a passive, but also that when the need was at length felt, it was readily supplied by the middle forms. In Greek, accordingly, no distinction is made between middle and passive, except in the two aorist tenses, and in Latin "deponents" have the same forms as passive verbs, while the second person plural, *amamini* (*estis*), is but the middle participle, which we elsewhere find in *aux-tumnus*, *vertumnus*, or *λεγόμενος*. It is very possible that the terminations of the old middle voice may be explained by the amalgamation of two personal pronouns. In Sanskrit the primary person-endings of the singular are *-i*, *-se*, *-te*, in Greek *-μαι*, *-σαι*, *-ται*, while the secondary endings are *-i*, *-thâs*, *-ta*, Greek *-μην*, *-σο*, *-το*; and we may,

perhaps, resolve these into *ma + mi*, "me-me," *twa + twi* "thee-thee," and *ta + ti*, "he-he;" certainly the secondary termination of the first person in Greek gives considerable probability to this analysis. In Letto-Slavonic the middle is formed by the reflective pronoun of the third person, as Old Slavonic *divlja se*, *diviše se*, "I admire myself," "thou admirest thyself," or Lithuanian *dývyjũ-s*, "I admire myself," just as in German dialects we meet with *wir bedanken sich*, instead of *uns*, or in the dialect of Mentone the reflective *se* takes the place of *no* (*nous*), when the first person plural is both subject and object (e.g. *nautre se flatema*, "nous nous flattons").<sup>1</sup> In Old Prussian *mien* and *tien* have taken the place of the third personal pronoun in the first and second persons, through German influence. In the Old Norse reflectives and middle voice *-mk* for *mik*, "me," and *-sk* for *sik*, "self," mark the first and third persons; "I come," for instance, being (*ek*) *komu-mk*, "they love one another," *thau elska-sk*. The third person pronoun, however, forced its way in time into the first and second persons also, *berju-mk*, for example, becoming *ber-sk*, while on other occasions it coalesced with the pronoun of the first person, producing the abnormal *komumsk*.<sup>2</sup> *Bua* in Icelandic signified "to build," "make ready," *buu-sk*, "to make oneself ready;" and from this comes the Old English *busk*, just as *bask* is

<sup>1</sup> See Brugman: "Ein problem der homerischen Textcritik" (1876), p. 38.

<sup>2</sup> Wimmer-Sievers: "Altnordische Grammatik" (1871), pp. 135, sq. In a Sleswig Easter-play of the fourteenth century we find *wir woln sich wern* (Kehrein, iii. § 101), and many instances of the same use of the third person reflective pronoun for the first or second person in Grimmelshausen's "Simplicissimus" (ed. Keller).

either "to bathe oneself" or "to bake oneself." Naturally enough, the different Aryan languages did not always agree as to the idea to which they assigned a reflective or middle sense; the idea of "taking," for instance, implies the further object "self," for whose sake a thing is taken; and in Sanskrit, accordingly, *labh* is only conjugated in the middle voice, though active in sense. The corresponding Greek *λαμβάνω*, however, is as frequent in the active as in the middle.

We have already alluded to the revolution undergone by the Latin verb. The old reduplicated perfect was almost extirpated by the new formatives in *-si* (from *as*) and *-vi, -ui* (from *bhu*); new pluperfects and futures were created by attaching *eram* (*esam*), *essem*, and *ero* to the perfect; a new optative was made by the help of *sem* (*siem*), and a new imperfect and future in *-bam* and *-bo* were derived from the auxiliary *fuam*, *fuo*. Scherer, indeed, has suggested that the auxiliary verb in the two latter instances was *dha*, "placing," on the ground that this was the source of the new Teutonic perfect (*lag-i-da*, *lai-d*); but the suggestion is untenable, not so much because the root *dha* appears as *do* in *condo*, *abdo*, as because we find an Old Irish future in *b* (as *caru-b*=*ama-bo*), and though a Latin *b* may come from *dh*, a Keltic *b* cannot. We have here an illustration of the importance of extending our field of observation as widely as possible before laying down philological dogmas, or propounding philological theories. One of the most frequent fallacies committed in linguistic science is that of insufficient induction, a few leading languages, such as Sanskrit or Greek, being assumed as standards by which all conclu-

sions must be tested and arrived at. A study of Keltic grammar has enabled us to correct another error in regard to the Latin verb, which has been long and widely believed, and is at first sight extremely plausible. It will be noticed that almost the whole of the middle or passive voice in Latin has undergone a transformation, which makes it exceedingly unlike the middle voice of the undivided speech. The characteristic of the Latin passive is the letter *r*, which Bopp thought might be explained from the reflective pronoun *se*, *s* between two vowels changing into *r* in Latin. In this case *amor* would stand for *amo-se*, *amari* or *amarier* for *amasi-se*, and the formation would be in strict harmony with that of Old Norse or Letto-Slavic. But unfortunately it turns out that the characteristic of the Old Irish passive was also *r*, and a Keltic *r* cannot be derived from an earlier *s*. At present, therefore, we must remain without an explanation of the Latin and Keltic passive, content only to discover how close a connection exists between the grammatical forms of the two groups of tongues.<sup>1</sup> The terminations of the Latin perfect present another problem which still awaits a satisfactory solution. Prof. Harkness<sup>2</sup> has ingeniously suggested that we should compare it with the Sanskrit *âsa* for *asasma*. In this case the Old Latin *esĭ*, "I was," would stand for *esĭmi*, and that for *esismi*, *esit* and *esimus* would be similarly for *esist* (*esistĭ*), and *esismus*, while *esisti*, *esistis*, and *esĭsunt* (compare *dedĕrunt*, *dedisont*) would need no ex-

<sup>1</sup> But see above, p. 113, note 2.

<sup>2</sup> "Transactions of the American Philological Association" (1875).

planation. But the first link in the chain of reasoning is not a strong one.

This sketch of Aryan grammar must have made it clear that the principle of flexion is not carried out purely and persistently in our family of speech. Flexion primarily consists in internal vowel-change, or some corresponding mode of *symbolizing* the relation that words bear to one another in a sentence. In the Aryan family this symbolization seems to have been effected as often by vowels or syllables following the "root" as by a change in the vowels within the root itself. If we ask why the suffix *ya* should have been chosen to mark the feminine gender, we can only reply that this was the grammatical conception of which it was made the symbol. M. Hovelacque believes that the suffix *ta* denotes the passive, the suffix *ti* the active, and that the latter suffix has produced a large number of active nouns as opposed to the passive and older forms in *ta*. In this case the difference of meaning will be indicated by the final vowel. We have more than once had occasion to notice the variation of signification assigned by the Greek language to the variation of vowel in the nominative ὄπεις and accusative ὄπας, where Sanskrit would have indifferently *vachas* and Latin *voces*, though the preservation of the *alpha* in the accusative was originally due to the presence of a nasal (ὄπας), as well as the way in which the language seized upon the difference of vowel that had grown up between ὄπεις and ἔπος, making the first a plural and the second an abstract singular. But it is in the verb that the principle of symbolism comes

<sup>1</sup> "La Linguistique," p. 200.



most into play. A slight change of vowel in the reduplicated syllable distinguishes the present  $\delta\acute{\iota}\delta\omega\mu\iota$  from the perfect  $\delta\acute{\epsilon}\delta\omega\kappa\alpha$ , and the conjunctive was denoted from time immemorial by an inserted  $a$ . No doubt these variations of pronunciation were at the outset purely phonetic, and frequently caused by the accent; but as new grammatical ideas and relationships came to be conceived, they were turned into flections by being used as marks and symbols of the newly realized relations of the sentence. Examples of the process may be found in the distinction of gender that gradually grew up between *major* and *majoris* or in the Greek employment of verbs in  $-\acute{o}\omega$  as transitives and verbs in  $-\acute{\epsilon}\omega$  as intransitives, though both terminations alike answer to the Sanskrit  $-ayâmi$ .

The pattern set by vowels or consonants within a word was soon followed by the hitherto meaningless terminations, or suffixes, as we term them, found at the end of words. These, too, came to be used as flections, though it not unfrequently happens that the "flection-suffix" betrays its origin by its identity with a mere classificatory suffix, or a suffix in which we can trace no signification or symbolization at all. Thus the same syllable which in  $\pi\acute{o}\delta\text{-}\epsilon\varsigma$  denotes the nominative plural is in  $\pi\acute{o}\delta\acute{\omega}\nu$ , that is,  $\pi\acute{o}\delta\acute{\epsilon}\tau\text{-}\omega\nu$ , at most but classificatory. We must rid ourselves of the notion that "suffixes" were ever independent words like our "if" or "in;" so far back as our knowledge of Aryan speech extends, they possessed no existence apart from the words to which they belonged, and which, again, only existed as words in so far as they possessed these suffixes. Suffixes became flections through the help of analogy.

In course of time, but still long before the separation of the family, Aryan speech entered upon its agglutinative stage. A number of definitely fixed flexions were in existence, and the isolated word had been clearly distinguished from the sentence of which it was a member. The need of a verb began, accordingly, to be felt, while old words from constant use had become attenuated both in form and meaning, and tended to attach themselves, like enclitics, to other better preserved words. These attenuated enclitics, or "empty words," to adopt the expressive Chinese name, soon came to be undistinguishable from other suffixes whose ancestry had been entirely different, and along with the latter were liable to be turned into flexions. Such flexions, however, were by nature imperfect; their agglutinative origin never altogether passed out of the consciousness of language, and a certain dualism was admitted into Aryan speech. When the synthetic period of its life was over, there was everything to favour the introduction of that analytic spirit so congenial to the Aryan genius.

It is not to the Aryan languages, then, that we have to look for the principle of flexion in its purest form. This must rather be sought in the Semitic idioms. Here the fundamental distinctions of grammar are wholly expressed by symbols. The verb is a late growth; indeed, the Semitic languages cannot be said ever to have acquired a verb properly so-called, the tenses continuing to denote not time but mere relation. It is only under exceptional circumstances, and through the influence of another language, that such Semitic idioms as Assyrian or Ethiopic came to possess real tenses. The

Semitic verb remained a noun, and whatever tenses and moods it has were of late origin. The first tense was the imperfect (or future) formed by the attachment of the first and second personal pronouns to an abstract noun, the singular of which was used without any suffix for the third person singular, and the plural for the third person plural. The perfect grew up similarly by the agglutination of the first and second personal pronouns to participles and other nouns at a period only just preceding the separation of the Semitic languages, and Assyrian, which was crystallized into a literary language as early as B.C. 2000, allows us to trace its genesis and history. Even in the case of these two tenses, however, the principle of symbolization had full play. The pronoun was prefixed in the imperfect, affixed in the perfect, and so in accordance with the Semitic law which places the defined word before the defining, the perfect brings the verbal stem into prominence and expresses a fact, while the imperfect lays chief stress on the pronoun and expresses the activity underlying a fact. In dealing with Semitic flexion, therefore, we must direct our attention to the noun out of which the verb, such as it is, has grown. Now the primitive Semitic noun possessed three cases, nominative, genitive, and accusative, characterized by the symbolical terminations *um* (*uñ, u*), *im* (*iñ, i*), and *am* (*añ, a*). The genitive termination seems a weakened form of the accusative, the latter expressing the object towards which thought is directed. There were three numbers, singular, dual, and plural, the dual being older than the plural (which originally ended in *-âmun, âmun*) and symbolically represented by a lengthened vowel

(-*a'amum*). The feminine gender was distinguished from the masculine by the symbol *t*, which (along with *tan*) played a large part in the classification of nouns. But most of the leading distinctions of sense were marked by internal vowel-change; thus *kadhala* is "he killed," *kudhila*, "he was killed," *kadh*, "murderer," *kidhl*, "enemy," *kudhl*, "a killing," *kôdhél*, "killing;" while the government of one noun by another was indicated by the two being pronounced in one breath, which led to a shortened pronunciation of the first and the eventual loss of the case-endings. A time came, however, when the Semitic languages entered upon their analytic stage; the old genitive relation was replaced by the insertion of the relative pronoun (itself originally demonstrative) between two nouns, and substantives that had stiffened into prepositions narrowed the use of the ancient cases. To the last, nevertheless, the Semitic tongues have remained faithful to their characteristic feature of triliteralism; that is, every root consists of three consonants or semi-consonants, which form the skeleton, as it were, to which the vowels give life and significancy. Phonetic decay has, of course, attacked these roots and reduced many of them to single or double consonants, while others have been enlarged by additional letters; but in the main every Semitic language is still characterized by its triliteral radicals. Many of them differ but slightly in both sound and meaning, and we must regard them as so many phonetic types that floated unconsciously before the mind of the primitive Semite, whose sole requirement was that they should be capable of being uttered in three syllables. Why three syllables should have seemed the precise

phonetic equivalent of a thought we cannot tell; we must be content with the fact that it was so. Naturally the extent to which flexion was carried in Semitic speech restricted the employment of composition, and compounds, accordingly, have always been rare in the Semitic languages. Where an Aryan would use a word like *ire*, "to go," with a preposition *ex* to signify "to go out," the Semite coined a new root. The memory was developed at the expense of the reasoning and analytic faculties.

The Semitic family may be divided into northern and southern. To the northern division belong the sister-dialects of Assyria and Babylonia, the sister-dialects known as Hebrew and Phœnician, and the Aramaic of Syria. Aramaic, however, differs very widely both in phonology and in grammar from the other members of the northern division, and must have branched off from them at an early period. It comprises Biblical Chaldee, the dialect of the Targums, the Syriac of Christian writers, and the Nabathean and Mendaite or Sabeian (Zabian). To the southern group belong Arabic, that is, the vernacular of northern and central Arabia, and the idioms of southern Arabia and Abyssinia. Under the latter are included the extinct Himyaritic (Sabæan), Minnean, and Ghe'ez or Ethiopic, and the modern Ehkili, Tigré and Tigrina, Amharic, and Harrari. The Semitic dialects form a compact group whose original home was Arabia, and resemble the Romance languages, except that their mother-language is unknown. The close similarity that consequently exists among them, together with the loss of their parent-speech, has thrown

great obstacles in the way of their comparative treatment. The Semite has been a trader and intermediary from the beginning; though wanting in originality and scientific analysis, he has always been ready to borrow from others and improve his new possession. A large part of his earliest culture and civilization came from the Turanian Accadians of Babylonia, from whom he derived not only the germs of settled city life, but the elements of mathematics, astronomy, religion and mythology, literature and writing. The cuneiform syllabary of Assyria had been the invention of the primitive Chaldeans, and the Canaanite tribes, when they migrated from the Persian Gulf, do not seem to have been acquainted with it. The so-called Phœnician alphabet, the source of most of the alphabets of the world, was adopted from Egypt, and was probably first used by the Phœnician settlers in the Delta. De Rougé and others have successfully traced it back to the hieratic alphabet of the Egyptians of the Middle Empire. The Aramæan traders of the Gulf of Antioch, who appear to have preceded the Phœnicians proper of Tyre and Sidon, may have employed the hieroglyphic syllabary of the Hittites before the Phœnician alphabet became known to them.

The language of Assyria and Babylonia has been recovered from the inscribed bricks and monuments of Nineveh, Babylon, and other cities, only within the last thirty years. The two countries spoke the same tongue with but slight differences, and as this tongue had been stereotyped for literary purposes at an early period, it presents us, on the whole, with an archaic form of Semitic

speech. In fact, Assyrian may justly be described as the Sanskrit of the Semitic idioms ; and its student has the double advantage of dealing with contemporaneous documents, and with a mode of writing in which the vowels as well as the consonants are marked. Assyrian literature, though consisting mostly of translations from older Accadian works, is very extensive, and only a tithe of it has as yet been examined. Every great city had at least one library, and most of these are still lying under the soil, awaiting the spade of the explorer. The literature was partly on papyrus, partly on clay ; and though the papyrus has perished, the clay tablets, the *laterculæ coctiles* as Pliny calls them, with their minute writing, have remained in a more or less perfect condition. It is with their help that we must reconstruct not only the ancient language of Assyria and Babylonia, but also the religion and history, the culture and the civilization of oriental antiquity. Like one of the Himyaritic dialects, Assyrian preserves the initial sibilant which has become *h* in the other Semitic tongues (as in *su'*, "he," *si'*, "she," and a *shaphel* for the *hiphil* conjugation), but stands alone in changing *s* to *l* before a following dental.

Hebrew is but a local dialect of the Canaanite group to which belong Phœnician, Moabite, and other neighbouring idioms, from which it differs no more than Assyrian from Babylonian, or Somersetshire from Dorsetshire English. The fragments of its ancient literature preserved in the Old Testament are the only sources of our knowledge of it, and the language of most of these has been reduced to the same uniform level shortly after



the Babylonish captivity. Hebrew was gradually supplanted by Aramaic as a spoken language, and though it continued to be used as a literary dialect was more and more coloured by the encroaching idiom of Syria. After the Maccabean epoch Hebrew became extinct even as a literary dialect, though it was still employed for theological and kindred purposes much as Latin was in the Middle Ages. Modern Hebrew may be divided into two periods, the first extending to the twelfth century, with the Mishna as its principal monument, and the second taking its start with the revival of Jewish literature in the south of France. Aramaic, Greek, and Latin words characterize the Hebrew of the first period, the words and phrases of the modern European languages, the Hebrew of the second. The square characters of modern Hebrew are descended from the Aramaic branch of the Phœnician alphabet, and supplanted in the first century before our era the old Phœnician letters, such as we see them on the Moabite Stone. The old letters are still retained in a modified form by the Samaritans, whose dialect, though mixed with Aramaisms, belongs to the Canaanite group. The vowel punctuation of the Old Testament was the invention of the Massoretes of the sixth century A.D., the text up to that time containing consonants only. It embodies the traditional pronunciation employed in Palestine when intoning the Scriptures, and can bear, therefore, but a remote resemblance to the original pronunciation of the language while it was still living. The number and nature of the vowel-sounds must have been much increased and changed, and the accentuation is due to the necessities of monotone.

Phœnician, like Assyrian, is known only from coins and inscriptions, a passage in the "Pœnulus" of Plautus being the sole exception. The "Periplus of Hanno" and the "History of Sanchuniathon" have come down to us only in fragmentary Greek translations. Of the inscriptions, that on the sarcophagus of King Eshmunazar of Sidon (sixth century B.C.) is perhaps the most important. The Punic of the Tyrian colony, Carthage, however, has left us a good many monuments, and though the older Punic is identical with the Phœnician of Palestine, the Neo-Punic, whose chief remains have been found in Tunis and eastern Algeria inscribed in an alphabet of its own, differs from it considerably.

Distinct from Assyrian and Hebrew in phonology, grammar, and vocabulary, though belonging also to the northern division of Semitic, is Aramaic, now represented by a few Neo-Syriac dialects in the neighbourhood of Lake Urumiyah. Aramaic was the dialect of the Semitic highlands, and was once widely diffused over Syria and Mesopotamia. The mercantile position of Carchemish (now Jerablûs) on the Euphrates caused it to become the *lingua franca* of trade and diplomacy from the eighth century B.C. downwards, and in the course of time it succeeded in extirpating Assyro-Babylonian, Phœnician, and Hebrew, just as it was itself afterwards extirpated by Arabic. Syriac, or Christian Aramaic, has no monuments older than the first century of our era, to which some of the Palmyrene inscriptions go back, but the Peshito or Syriac translation of the Bible (made about the beginning of the third century) laid the foundation of an extensive and important literature, mostly, how-

ever, of an ecclesiastical character. The Syriac writers were the first, it would seem, to elaborate a system of vowel notation and stops, and they served to introduce Greek science to the Arabs. In fact, most of the early Arabic translations from Greek were made by Syriac writers and based on Syriac versions. A considerable literature also appears to have flourished among the Mendaïtes of the fourth and fifth century, partly in the Nabathean, partly in the Sabean dialects. All we know of Nabathean literature, however, is derived from the Arabic translations of Ibn Wahshiya (A.D. 904), the most notable work being Kuthāmī's "Nabathean Agriculture," and the medical fantasies of Tenkelusha or Teukros. The "Book of Adam" is the chief product of the Sabean dialect. The Mendaïte idioms are remarkable for the extent to which the confusion and decay of the gutturals have proceeded as well as the numerous contractions undergone by words. The Aramaic group is distinguished by its tendency to change the sibilants into dentals, by the so-called "emphatic aleph," which is really a post-fixed article, and by its formation of passive conjugations with the help of the prefix *cth*.

The Arabic of Central Arabia, more especially of Mohammed's tribe, the Koreish of Mecca, may be classified under two periods, though to this day the Bedouins of the interior still speak a language which is not only as pure and unaltered as that of the Korân, but even in some respects more archaic than the Assyrian of Nineveh. The first period is that of the pre-Islamitic poems, of the Moallakât, the Hamâsa, the Kitâb el Agâni, the Divan of the Hodheilites, and culminates in the Korân as revised by

the Khalif Othman (A.D. 644-656). In the modern period the language has undergone phonetic decay to a certain extent, the case-endings have been lost, and foreign words introduced. The four Arabic dialects of Barbary, Arabia, Syria, and Egypt vary but very slightly from one another, the dialect of Barbary alone presenting some grammatical differences. Arabic, or Ishmaelite, as it is better called, has, like Assyrian, retained many of the features of primitive Semitic grammar; its phonology, however, in common with that of the other south Semitic dialects, departs widely from that of the north Semitic group, and has developed certain new sounds (*d*, *tz*, *zh*, *hl*). The original termination of the case-endings in *-m* has become *-n*, the demonstrative has passed into an article, as in Hebrew, and the old plural has been almost entirely replaced by collectives or "broken plurals," which characterize the whole of the south Semitic branch. Of the nineteen primitive conjugations or forms of the verb Arabic preserves nine, and its vocabulary is singularly large and abounds in delicate distinctions of meaning. Arabic literature is enormous and very varied; but we may notice its contributions to science in the Middle Ages and its lyrical poetry, for which it is still famous. The "mixed" jargons of Maltese and Mosarabic may be described as corrupt Arabic dialects; the latter was spoken in the south of Spain, and did not become quite extinct till the last century. The language of the Sinaitic inscriptions, which are written in a Nabathean alphabet of the third and fourth centuries, is also Ishmaelite, though influenced by Aramaic.

The "Joktanite" dialects of southern Arabia and Abyss-

sinia present several peculiar features. The earliest we know are the two dialects of Saba and Minna (Ma'n), contained in the Himyaritic inscriptions, many of which are earlier than the Christian era. They have preserved the primitive mimmatum (or case-ending in *-m*) of the Semitic languages, as well as the three cases themselves, and they have the peculiarity of forming a subjunctive from the imperfect by affixing *u* to the third person singular, and doubling it in the plural. The Minnean or Minæan dialect agrees with the Assyrian in retaining the older Shaphel conjugation instead of the Hiphil of Sabæan and Hebrew, and the older forms of the third personal pronoun (*sa, su, sumu*), with *s* instead of *h*. The Ekhili dialect of Mahrah is the modern representative of the extinct Himyaritic. From the south of Arabia the Joktanite Semites crossed over into Abyssinia under the name of Ghe'ez or "Free Emigrants," carrying with them their language and alphabet. The language became known as the Ethiopic, and the alphabet was changed into a syllabary, written like the Assyrian cuneiform from left to right. Two inscriptions in Ethiopic of the fifth or sixth century exist at Axum, and after the conversion of the country to Christianity in the fourth century, Ethiopic was much cultivated as a literary language, and many theological works as well as the Bible were translated into it. It is to these translations that we owe the Book of Enoch, the Apocalypse of Isaiah, and the Book of Jubilees in a complete form. Ethiopic is now a dead language, only used for liturgical purposes, its place having been taken by the Amharic in the south-west, the Tigrè in the north, and the Tigrina in the centre.

The latter dialects have borrowed a good number of words from the surrounding African tongues.<sup>1</sup>

Attempts have been made from time to time to connect these Semitic languages with the Aryan family, and as a necessary commencement of such an undertaking to reduce their trilateral roots to monosyllables. But all such attempts have ended in failure. Roots like *k-dh-l*, "to kill," obstinately refuse analysis, and the investigators cannot agree as to whether the refractory letter is to be sliced off at the end, at the beginning, or in the middle, or even in any place that seems most convenient. But words are changed rather by the action of phonetic decay than by the addition of new letters, and the resemblances that have been pointed out between Aryan and Semitic roots are in almost all cases easily accounted for by the imitation of natural sounds. The number of parallel roots that exist in Semitic of similar sound and meaning, such as *katsats*, *ka'sa's*, *gazaz*, *gazah*, *gazam*, *gaza'*, *gazal*, *gazar*, *khadad*, *gadad*, *kadad*, *gadah*, *guz*, *khatsats*, *khatsah*, *katsa'*, *katsar*, *ca'sakh*, *ca'sam*, *khatsah*, all containing the idea of "cutting," can only be explained, not by a theory of addition and subtraction, but by looking on particular sounds as so many phonetic types which presented themselves before the unconscious mind as symbols of the conceptions attached to them. In fact, the Semitic root can have no possible existence outside the dictionary and

<sup>1</sup> The recent decipherment of the inscriptions of Safa, east of Damascus, by M. Halévy, shows that a South-Arabian population had been settled in this country from time immemorial, distinct from the new settlers from the Hidjaz, whose presence is recorded by the Græco-Arabic inscription of Harran in Ledja (A.D. 568), "Z. D. M. G." xxxii. 1 (1878).

grammar. Before a combination of three consonants can be pronounced vowels must be supplied, and the root consequently changed into a word whose meaning varies according to the vowels with which it is sounded. But whether the Semitic root was originally "biliteral" or not, the endeavour to derive the Semitic and Aryan families from a common ancestor violates all the axioms of linguistic science. The two families are each inflectional, it is true, though in a varying degree; but here the likeness between them ends. In phonology, in structure, in grammar, and in vocabulary no two groups of speech can be more dissimilar. Grill contrasts the "formal" consonantalism of the Semitic root with the "materialistic" vocalism of the Aryan, but the reason of this contrast lies deeper than he seems to suppose. Vowels cannot form the skeleton, as it were, of Semitic speech, since they constitute its flesh and blood, the symbols of those relations of grammar which are denoted in the Aryan languages by suffixes. Speaking generally, we may say that the part played by suffixes in Aryan is played by the vowels in Semitic. Hence it is that while composition is the very life and essence of Aryan speech, it is thoroughly repugnant to Semitic modes of thought. With the Semite the universe is an undivided whole, not a compound resolvable into its parts. If we turn to phonology, here, too, we are met by the same contrast. The Aryan velar gutturals (*kʷ, qu, gʷ*) are as foreign to the Semitic tongues as the Semitic *'ain* and *dheth* are to the Aryan. The power of augmenting its vowels by prefixing *a* to *a, i* and *u* (*guṇa* and *vridhhi*) possessed by the Aryan dialects is unknown to the Semitic. So,



again, in the grammar it is difficult to conceive of two more opposed points of view than those embodied in Aryan and Semitic. The Semite has never developed a true verb; such verbs as he has presuppose a noun just as much as the Aryan noun, on the contrary, presupposes the verb. Relation, not time, is expressed by the Semitic sentence. As in Turkish, therefore, the third person remains a pure noun, undistinguished by any pronominal suffix, and like the noun admits of a distinction of gender. It is needless to refer to other points of contrast, the three cases of the Semitic noun, for instance, as opposed to the numerous cases of the Aryan substantive, or the insertion of a letter (*t*) with modifying force within the body of a word; it is enough to draw attention to the fundamentally different conceptions upon which the whole syntax of the two classes of speech is built. In Aryan the predicate and governed word were originally placed before the subject and governing word; the converse was the case in Semitic. The entire point of view from which the grammar started was thus reversed in the two families of language. It is true that with the lapse of centuries the Aryan sentence became complex and confused, and though Teutonic English still says "good man," and "man's good," the Frenchman speaks of *l'homme b n vole* and *la b n fice de l'homme*; it is true, also, that Assyrian acquired the habit of making the object precede the verb, possibly in consequence of Accadian influence; nevertheless if we look at the two families of speech as wholes, we shall see that the syntax of each has remained faithful to its primitive starting-point. It is difficult, however, to compare the rich development of

the Aryan sentence, with its numberless conjunctions and verbal forms, with the bald simplicity of Semitic expression. The Aryan sentence is as well fitted to be the instrument of the measured periods of reasoned rhetoric as the Semitic sentence is of the broken utterances of lyrical emotion.

The attempts, then, that have been made to derive the Aryan and Semitic families from a common source must be pronounced scientifically worthless. Mere morphological agreement hardly raises even a presumption in favour of genealogical relationship. It is quite otherwise, however, with the endeavours to prove a connection between the Old Egyptian of the monuments, along with Coptic and Libyan, and the Semitic group. A relationship of some kind certainly exists between them, since the grammatical agreement is most striking, though the disagreement in both structure and vocabulary is equally striking. We have already had occasion to refer to this puzzle of comparative philology, and to suggest that at a certain period of growth a language may possibly borrow from the grammar of another. However this may be, the Old Egyptian which can be traced back upon contemporaneous monuments to an antiquity of about six thousand years is an inflectional language, like the Coptic, which has sprung from it, though the flexion is simple and imperfect. As in Semitic, the feminine is denoted by an affixed *t*, which may also precede the noun, there is a construct genitive, and the personal pronouns bear a remarkable resemblance to the Semitic ones. A dual (in *-ui*) exists as well as a plural (in *-u*), but no signs of case-endings have been detected. The verbal forms are

simple enough ; much use is made of auxiliary verbs, and the persons are expressed by suffixing the personal pronouns. Indeed, the pronoun suffixes have the same form whether they are attached to a noun used as such or as a verb, *per-a*, for instance, being "my house," *meh-a*, "I fill." There are several conjugations, four formed by partial or complete reduplication (as *kebkeb*, *kckeb*, *kebeb*, and *kebek* from *keb*), one by the insertion of *t* within the root (*keteb*), as in Semitic, one by the insertion of *u* and sometimes *r* (*keneb*), one, again, by prefixing *a* (*akeb*), and another by prefixing *se* (*sekeb*). It is remarkable that the last conjugation is causative like the Semitic *shaphel*. A passive may be formed by the postfix *tu*, *ta*, or *t*. The subject is occasionally placed before the verb, but the usual order is verb, subject, direct object, indirect object, and adverb. Egyptian literature was at once ancient and extensive, though fragments only have escaped destruction. Perhaps its most important document was the "Ritual of the Dead," a chapter of which is quoted on the coffin of Men-ke-ra or Mykerinus of the fourth dynasty (B.C. 4100), though additions and glosses continued to be made to it up to the Ptolemaic period. During the long course of centuries along which we can trace its history, the Egyptian language necessarily underwent considerable change, *ts*, for instance, becoming first *d* and then *t*, until it finally passed into Coptic. The Coptic is divided into three dialects, the Bashmureic in the north ; the Theban in the south ; and the Memphitic, which had the aspirated *kh*, *th*, and *ph*. Coptic is a prefix language, the affixes of the Old Egyptian having been exchanged for prefixes, as in the neighbouring

African idioms. In the verb, however, the suffixes may be affixed as well as prefixed. Coptic literature is Christian, and flourished from the second to the seventh centuries. It is written in a modification of the Greek alphabet, the old mode of writing, whether pictorial, hieratic, or demotic, having been thought to savour of heathenism.

Connected with Old Egyptian is the Libyan or Berber group of tongues, extending from Marocco to the south of Tripoli, and split up into several dialects, among which the Kabyle, the Towareg, and the Ta-mashek may be mentioned. More than 200 inscriptions, some of them bilingual, have been found, which present us with an old form of Berber speech.<sup>1</sup> As in Egyptian and Semitic *t* is the sign of the feminine: it may be prefixed or affixed or even prefixed and affixed at the same time. The personal pronouns are affixed, though they may also be prefixed in the case of verbs, and there are different forms for the dative and accusative. Two real tenses have been developed, one aoristic, as *isker*, "he made," the other present, as *isáker*, "he makes." The two forms correspond most remarkably with the Assyrian *iscun*, "he made," *isácin*, "he makes," and seem to bear out the view that the Assyrian distinction of tense was imported from abroad. The causative conjugation is formed by the prefix *is-*, the passive and frequentative by the prefix *it-*. The language of the Guanches or aboriginal inhabitants of the Canary Isles belonged to the Berber family.

<sup>1</sup> See Faidherbe's "Collection complète des Inscriptions numidiques," in the "Mémoires de la Société des Sciences etc. de Lille," 3rd ser. viii. p. 361 (1870).

To the south and west of Abyssinia lie a number of dialects—Somâli, Galla, Saho, Denkâli, and Agaü,<sup>1</sup> which are classed together as Ethiopian or Khamitic, and show striking marks of agreement with the Coptic and Berber. Thus *t*, whether prefixed or affixed, is a sign of the feminine, *s* or *es* the characteristic of the causative conjugation, while there are two “tenses,” with much the same meaning as those of the Semitic verb, and similarly distinguished by prefixing and affixing the personal pronouns. These Ethiopian dialects lead on to the Hausa of the Soudan between the Niger and Lake Chad, which, though spoken by a purely negro population, resembles the Libyan family in many of its grammatical and lexical details. Thus the plural may be denoted by the termination *-āna*, *-ānu*, *-āne*, shortened to *-ū*, like the Egyptian *-u* and the Semitic *-ānu*, *-ūnu*, the feminine by the termination *-niā* or *-iā*, abstracts by the suffix *-ta*, and local and instrumental nouns by the prefix *ma*. A causative is formed by the suffix *-shie*, a passive by the vowels *-u* and *-o*, while the personal pronouns bear a remarkable resemblance both to the Egyptian and to the Semitic.<sup>2</sup> The pronominal suffixes are also used in the same way as in the Egyptian and Semitic languages. Barth believes that the Hausa represent the Atarantes of Herodotus (iv. 184), whose name he would explain as *a-tāra*, “the collected.” At any rate, it seems clear that the Hausa once occupied a position much further to the

<sup>1</sup> The Beja dialect, spoken by the Hadendoas and some of the Beni-Amer, north of Abyssinia, also belongs to the same group.

<sup>2</sup> *Na*, *nī*, “I,” *mū*, “we,” *ka*, *kai* (masc.), *ke*, *kī* (fem.), “thou,” *kū*, “you,” *sha*, *shi*, *ya*, “he,” *ta*, “she,” *sū*, “they.”

north-east than that in which they are at present found, and it is possible that while thus bordering on the Libyan tribes they may have borrowed those portions of their grammatical machinery which have so Semitic an appearance.

But whatever may be the opinion formed on this head, if we turn our eyes to the extreme south of Africa, we shall find a family of dialects which Bleek has claimed for the inflectional class of tongues. These dialects are the three Hottentot idioms, known as the Nama or Namaqua on the west, the Khora or Khorana on the east, and the almost extinct Cape Hottentot in the south. Hottentot possesses twenty simple vowels, and about twelve diphthongs ; its consonants, however, are deficient, and consist largely of gutturals. These are eked out by four clicks, dental, palatal, cerebral, and lateral, relics, it may be, of those animal cries out of which language arose. There are also three tones by which homonyms are distinguished, as in Chinese ; the accent usually falls on the stem-syllable. Suffixes play a large part in the formation of words, roots being thus marked off from stems as in the Aryan languages, and the verbal stem is generally kept distinct from the nominal stem, though the distinction is not carried far, since the verb may drop its person-ending when the subject is a substantive. The noun has three genders—masculine, feminine, and neuter ; three numbers—singular, dual, and plural ; and two cases—nominative and accusative : all marked by different pronominal affixes, which also denote the persons. Thus for the second person singular the suffixes are in the nominative *-ts(i)* masculine, *-s* feminine, and *-ts* neuter,

in the accusative *-tsa*, *-sa*, and *-tsa*, but different suffixes would have to be used for the first or third persons. These suffixes may be attached one to another just as in our own family of speech, and they differ from those of the agglutinative languages in frequently being merely classificatory or even meaningless. At the same time it must be allowed that the flectional instinct cannot be strong, since there is no concord between the adjective and the substantive. As in so many other tongues, the dative and accusative are not distinguished from one another, but the genitive may be denoted by the demonstrative *di*. Present, aorist, future, and perfect tenses are formed by the help of suffixes, as are also passives, causals, reciprocals, and similar conjugations, and a large number of postpositions are in use. We see from this short sketch of Hottentot grammar that it resembles our own Aryan grammar in two important respects, the power of composition and the conception of three genders. Perhaps Bleek is right in thinking that the fondness of the Hottentots, or Khoïkhoïn, as they call themselves, for sidereal worship and beast fables is largely due to the character of their speech, in which everything must be personified by receiving the suffixes of gender. On the other hand, the natural home of the beast fable seems to have been among the Bushmen, from whom the Hottentots and other African peoples derived it. The beast fable we must remember flourished among the ancient Egyptians,<sup>1</sup> and there are many indications to show that the

<sup>1</sup> See Mahaffy: "Prolegomena to Ancient History" (1871), pp. 389-92, who thinks that the beast-fable made its first appearance in Egypt, having been derived from "the primitive Africans, who may



Hottentots have moved from the north, where they may once have been in near contact with the inhabitants of the Nile.

One more inflectional group of tongues remains to be noticed, the Alarodian of the Caucasus, of which Georgian is the chief living representative. Unlike Hottentot or Haussa, the inflectional character of Georgian is beyond dispute : indeed, morphologically, it is difficult to distinguish it from Aryan, although, genealogically, the two families of speech have nothing in common. It is probable that the cuneiform inscriptions of Van and its neighbourhood will turn out to be written in an extinct form of Alarodian speech, as spoken in Armenia before the arrival of the Aryan immigrants. Georgian boasts of no less than eight cases, including an instrumental and a demonstrative, and the personal pronouns have further a copulative case. A locative is formed by the post-position *chi*. The sign of the plural, *bi* or *ni*, is inserted between the stem and the case-endings, *thavi-sa*, the genitive of *thavi*, "head," for instance, being *thave-bi-sa* in the genitive plural. The ordinal numbers are formed from the cardinals by the help of the prefix *me*, like substantives which denote an office or profession. With the exception of words formed by the preposition *sa*, "for," however, most of the Georgian derivatives are created by the help of suffixes, *-eli*, *-uli*, and *-uri* denoting gentilic nouns, *-oba* or *-eba* abstracts, *-iani* adjectives, and *-k'i* diminutives.

have felt that the wisdom of the lower animals was equal to their own, and who had not acquired exalted notions of the inherent superiority of the human race." He notices that the first essays in composition made by the Vei Negroes after the invention of writing among them were fables.

The verbal conjugation is extremely complicated ; there are several different forms, and a large number of tenses. Many of these incorporate the objective pronouns, and are able to lengthen themselves by the addition of what are now, at all events, unmeaning suffixes. The native grammarians are not far wrong in considering their language as *sui generis*.<sup>1</sup> Georgian literature is in large part ecclesiastical, but it comprises also several chronicles, romances, and poems, such as the "Story of Tariel," in 8,000 lines, besides a dictionary compiled by Prince Sul-khan Orbelian in the seventeenth century.

We have no reason for thinking that the inflectional groups of speech which are still spoken are the only specimens of this class of languages that have existed in the world. On the contrary, it is probable that there have been others which have disappeared, leaving no traces of themselves behind. The language of the Lykian inscriptions is as inflectional as Greek, but all attempts to connect it with the Aryan family have hitherto failed, and it is safest to look upon it as a waif and stray of an otherwise extinct family of speech. A fortunate accident has preserved for us a few old monuments in which we can study it ; a still more fortunate accident has made some of these monuments bilingual. If Lykian continues resolutely to resist being forced into the Indo-European group, it will have to be classed with the mysterious Etruscan, as a relic of a lost system of speech whose kindred have all perished without memorial. Etruscan itself, in spite of its agglutinative character, wears so frequently an inflectional appearance that scholars of repute have

<sup>1</sup> De Brosset : "Éléments de la Langue géorgienne" (1837), p. v.

tried to compare it now with Semitic and now with Aryan. In this respect it resembles the Finnic idioms, where agglutination has so disguised itself under the mask of inflection as to tempt a scholar like Weske to suggest their inclusion within the Indo-European family. In fact, any distinction that can be drawn between the Finnic and the Aryan verb is a purely artificial one; the forms in both have originated in agglutination, and become what they are through the influence of phonetic decay. So far as form is concerned, there is little difference between the Ostiak *madâdm, madân, madâ; madau, madâr, madâda*, and the Sanskrit *bhavâmi, bhavasi, bhavati; abhavam, abhavas, abhavat*. In the declension, too, the postpositions have in many instances ceased to be independent or even semi-independent words; indeed, the marks of certain of the cases (the genitive *-n(a)*, the abessive *-ta*, the adessive *-l*, &c.) are throughout the Turanian or Ural-Altai world mere symbols, whose origin has been long forgotten. But for all that the Finnic idioms remain agglutinative, the Aryan languages inflectional. The Aryan languages started with flection, and made their agglutinated compounds conform to the prevailing analogy; the Finnic idioms owe the appearance of flection which they possess to the wear and tear of time. In the one case analogy, in the other case phonetic decay has worked the change. The two groups of tongues have met, as it were, in the same spot, after starting from opposite quarters; and the fact need not surprise us any more than the common resemblance in many points presented by English and Chinese. After all, languages, however unallied, have all originated under

similar circumstances from men of similar mould ; they are but varying species of one and the same genus. Hence that gradual passage from one form of speech to another, described in a former chapter, and that sporadic participation of one form of speech in the characteristics of another. We may discover the principle of flexion in the agglutinative Dravidian of western India, where the Tulu dialect forms the frequentative *mālpēvé*, and the causative *mālpāvé* from the active *mālpuvé*, "I do," or in the Bâ-ntu of southern Africa, where the final vowel of the noun has a passive meaning if it is -*ǒ*, an active or causative one if -*i*, a neutral one if -*a*,<sup>1</sup> while in Mpongwe *ni kâmba* is "I speak," *ni kâmba*, "I do not speak." In the Finnic languages we can actually trace a change of signification in a root accompanying a change of vowel, and so be reminded of our own distinction between *in-cense* and *incense*, *tórment* and *tormént*. Thus *karyan* is "to ring" and "to lighten," *kar-yun* and *kir-yun*, "to cry," but *kir-on*, "to curse;" *kah-isen*, *koh-isen*, *kuh-isen*, "to hit" or "stamp;" *käh-isen*, *köh-isen*, "to roar;" *keh-isen*, *kih-isen*, "to boil."<sup>2</sup> What is this but the Semitic mode of indicating a change of signification by a change of vowel? The difference between the two is that the one utilizes the variation of vowel for lexical, the other for grammatical, purposes; it is the only difference, but, for determining the morphological position of a language, it is a most important one.

<sup>1</sup> Bleek: "Comparative Grammar of the South African Languages," p. 138.

<sup>2</sup> Donner in the "Z. D. M. G.," xxvii. 4 (1873).

## CHAPTER VIII.

### THE AGGLUTINATIVE, INCORPORATING, POLYSYNTHETIC, AND ISOLATING LANGUAGES.

“L'idée de l'infériorité des nations touraniennes, de leur inaptitude à l'art et à la civilisation, est un vieux préjugé qui a fait son temps, et qui ne doit guères son origine qu'aux affirmations vaniteuses, et surtout intéressées des nations germaniques.” — FR. LENORMANT.

PUTTING aside the polysynthetic dialects of America, the majority of the languages of the world belong to the agglutinative class. But just as the inflectional families of speech differ one from another, so also do the agglutinative; indeed, there is a greater difference between the rude and unformed Bushman and the polished Finnic, with its semblance of flexion, or the Dravidian of Western India, with its power of modifying the sense by internal vowel-change, than there is between any two groups of inflectional speech. Agglutination, too, may be of more than one kind. The agglutinated adjuncts may be either prefixed, as in Kafir, or affixed, as in Ural-Altai; or, again, they may be almost wholly dispensed with, as in Malayo-Polynesian. The root may be modified in sound during the process of agglutination, or may remain fixed and unchangeable, whatever incrustations may attach themselves to it. A verbal stem may exist apart from a

nominal stem, or, as in Polynesian, a verb may not have emerged into existence at all. The root may influence the suffixes, producing that law of vowel harmony which assimilates the vowel of the suffix to the vowel of the root, or suffix and root may resemble two atoms in close contact which each keep their own unalterable character.

The important part played in history and civilization by the races who speak the various dialects of the Ural-*Altaic* or *Turanian* family makes a brief review of the leading languages of this family as necessary as a review of the *Aryan* or *Semitic* families of speech. From the eastern shores of *Siberia* to *Scandinavia* and western *Russia* extends a group of tongues which can all be traced back to a common mother speech. The *Finns* and *Lapps* of the North, the *Esths* and *Ugric* tribes of *Russia*, the *Magyárs* of *Hungary*, the *Osmanlis* of *Turkey*, the *Tatars*, the *Samoieds*, the *Mongols*, the *Mantchus*, and the *Tunguses* all share the fragments of a common patrimony. Possibly *Japanese* may have hereafter to be added to the list; for the present, however, it must remain isolated and unclassified. The oldest monuments of *Turanian* speech have been of late revealed to us by the cuneiform monuments of *Babylonia*; the wild hill-tribes of *Media* and *Susiana*, the citizens of the ancient empire of *Elam*, and the primitive population of *Chaldea* itself all spoke cognate languages, which, it would seem, must be assigned to the *Ural-*Altaic** group. Already the same intellectual power which to-day distinguishes the *Finn* or the *Magyár* had begun to show itself; and the *Accadians* of primæval *Babylonia* were the inventors of

the cuneiform system of writing, the builders of the great cities of the country, the first students of mathematics and astronomy, and, in short, the originators of the culture and civilization which was handed on to the Semites, by whom they were afterwards conquered and dispossessed. Contemporaneous records prove that Western Asia possessed its China in Turanian Accad at least five thousand years ago ; and that the "wisdom of the Chaldeans," stored up in their imperishable libraries of clay, was no imaginary dream of a later age, but a startling and solid fact.

Of course it does not follow that the communities which now speak the allied dialects of the Turanian family all belong to the same race. The Lapps, in fact, though now using a Finnic idiom, are not related to the Finns in blood, and it is more than doubtful whether we can class the Mongols physiologically with the Turkish-Tatars or the Ugro-Finns. It is even possible that the Mongolian dialects themselves were originally distinct from those of the Turanian group, and owe their present inclusion in the group to their common agglutinative character, and to a long and close contact with the Turkish-Tatar languages, which have made them approximate so nearly to the latter as to compel us to classify them together. However this may be, the whole Turanian family is bound together by its structure, its grammar, its stock of roots, and its law of vocalic harmony. It may be divided into five branches, the Finno-Ugric, the Turko-Tatar, the Samoyedic, the Mongolian, and the Tungusian, the first two representing the culti-



vated members of the family. The Accadians of Babylonia looked upon "the Mountain of the East," the present Mount Elwend, as the spot whereon the ark of the Chaldean Noah had rested, and as the cradle of their race; but it is very possible that this was but the first centre and starting-point of the extinct Chaldeo-Elamite branch, the original home of the whole family really lying far to the north-west among the slopes of the Altai range.

The Finno-Ugric or Uralic dialects are divided by Prince L-L. Bonaparte into four sub-families, the Chudic, the Permian, the Volgic, and the Uigur. The Chudic sub-family is again divided into two branches, one branch being the Finnic, comprising Finnish, Vêpse, Vote and Karelian, Esthonian and Krevingian, and Livonian with the extinct dialect of Salis and the dialects of Kolken and Pisen, while the other branch is the Laponic, in which Lappic holds a solitary place. The Permian is spoken in the north-east of Russia, and includes Permian proper, Zyrianian, and Votiak. Volgic branches off into Cheremissian and Mordvinian (with its two dialects) on the Volga, and Uigur into Ostiak, Vogul and Magyár or Hungarian, once spoken on the banks of the Obi. The researches carried on of late years into the Uralic languages have not only demonstrated their close affinity and common origin, but also a system of equivalence of sounds similar to that known as Grimm's law. Thus Riedl has established the following table of consonantal permutations for the Magyár:—

$k = kh = h; h = j; g = gj; g = d; n = ñ = g = k; j = gj; j =$

$nj; j = v; l = j = gj; l = n = r; t = d = l = t; d = z; t = s;$   
 $n = gj; m = p; av = o; ev = ö; iv = ii.^1$

The same method of comparison which has been so successfully applied in the case of the Aryan tongues has also revealed to us the civilization and migrations of the primitive Uralic tribes, as well as their indebtedness to their Aryan neighbours. There was a time when the Finns had not yet penetrated to the snows of the far north, when they still bordered on Slavonic, Scandinavian, and German populations to whom they lent some words and from whom they borrowed more. Thus Thomsen has shown us that the Finnic *raippa*, "rope," is the Old Norse *reip*, the Swedish *rep*; the Finnic *laukka*, "a leek," the Old Norse *laukr*; the Finnic *penkki*, "a bench," the Swedish *bänk*; the Finnic *nuotta*, "a net," the Old Norse *nót*; the Finnic *paita*, "a shirt," the Gothic *paidha*; the Finnic *patja*, "a mattress," the Gothic *badi*.<sup>2</sup>

Ahlqvist has followed in the same track and sketched the condition of the Finnic tribes when they first settled in Europe and learned the arts of agriculture and cattle-breeding from their neighbours, the Teutons and the

<sup>1</sup> So, according to Erman, in Kazan Tatar *g* becomes *t* in Yakute.

<i>j</i> ( <i>y</i> )	„	<i>t</i> and <i>s</i>
<i>z</i>	„	<i>b</i>
<i>sh</i>	„	<i>s</i>
<i>ju</i>	„	<i>bjū</i>
<i>a</i>	„	<i>iū, oe</i>
<i>e</i>	„	<i>ui</i>
<i>ui</i>	„	<i>je</i>
<i>aimen</i>	„	<i>ubiun</i> .

See above, pp. 325-6.

<sup>2</sup> "Ueber den Einfluss der germanischen Sprachen auf die finnisch-lappischen" (transl. by Sievers, 1870).

Slavs. Before their contact with the latter, they were turf-cutters rather than agriculturists, numerous words existing in the various dialects which signify turf-cutting, but none of native origin which signify "a field." The plough (*aura* for *aatra*) was borrowed, it would seem, from the Goths, and the only cereals which have native names are the barley (*ohra, otra*) and the turnip (*uegris*). So, too, the words for "cattle" and "swine," *nauta* and *sika*, come from the Norsk *naut* and *sugge*, while the name of the "horse," *hepo* or *hevonen*, is the Swedish *häppa*, the Danish *hoppe*; and that of the "sheep," *lammas*, the German *lamm*, our *lamb*. The names of the stallion, the mare, the cow, and the bull, on the other hand, are all of native derivation, and prove that these animals must have been known to the Finns before their contact with the Aryans. Like the other members of the Ural-Altai family, the Finns were acquainted with metallurgy from an early period; indeed they seem to have used iron long before any of the Aryan tribes. Meteoric iron was probably the first worked, and it is curious that the Accadian of Babylon prefixes the determinative of divinity to the name of the metal as if to point out its heavenly descent. The smiths of the ancient legends are all divine beings, and the adventures of the Finnish Wäinämöinen, the old limping smith of heaven and earth, and his friend Ilmarinen, "the divine blacksmith,"<sup>1</sup> or the fall of the Greek Hephæstus from the sky, appear to symbolize the origin of the first

<sup>1</sup> M. Fr. Lenormant has very happily compared Wäinämöinen with the Accadian Ea. See "La Magie chez les Chaldéens," pp. 219-37.

specimens of the metal. The Finnic word for "copper," *vaski*, is identical with the Magyar *vas*, and shows that this metal must have been known to the ancestors of the Finns and Hungarians before their separation. The terms that denote "silver," too, are native, though differing in the various dialects, but gold has received a German name in Finnic and a Persian name in Magyar. Since it seems to have been a possession of the undivided Ural-Altai community, we may argue that a knowledge of it was lost by the Finns and Hungarians during their wanderings to the north and the west.

Much advance was made in civilization even after the Finns had parted from their Esthonian kindred. The Esthonians before their arrival in the region of the Baltic were but hunters and fishers, making neither butter nor cheese, though in possession of dogs, horses, and oxen. They first became acquainted with the sheep, goat, and pig when in the neighbourhood of the sea-coast. Here, too, wheat, rye, oats, pease, beans, and lentils were first grown. In an earlier age only barley and turnips had been sown on the clearing made by cutting down the trees and undergrowth for firewood. The huts of the people were built of branches laid against a tree or rock and covered with skins, with two openings, one for a door and the other to let out the smoke; their steam-baths (*saun*) were constructed simply of holes in the earth, and their clothes were made of skins, the hair being turned inside for the sake of warmth. The skins were stitched together by the mistress of the house with bone needles, the threads being formed from the fibres of a kind of nettle, and dyes were used to colour them. The husband employed

his time at home in making fish-hooks, hunting-gear, and the like ; the instruments being generally of stone, though copper and silver were likewise used. The iron axe was first known on the shores of the Baltic, where, too, the river-boats without sails were exchanged for stronger and more capacious ones. The reindeer, however, was still the chief means of locomotion, as it had been before the period of separation. From the first, too, the tribes had lived in communities, each under a war-leader (*wanem*), who was elected from time to time. Individual freedom was, however, highly prized, and the community accordingly did not exercise the despotic power it enjoyed among the primitive Aryans. There were neither judges nor laws, but family life was complete and well organized, slavery was unknown, and skins (especially those of the squirrel) formed the medium of exchange.<sup>1</sup> Turning to the south, we find a similar state of society among the ancestors of the Magyárs, before they had yet left their kinsmen in the Ural mountains. They possessed houses and villages, but mainly lived by hunting and fishing. They had the dog and the horse, but apparently no cattle. They could braid, weave, and knit, and were acquainted with gold, silver, lead, zinc, and iron. Indeed, their goldsmiths and silversmiths were already of repute. Cobblers, furriers, turners, tailors, wheelwrights, harness and rope makers, with their tools and trades, all have Magyár names, and beer was drunk on holidays. Like the Turks, their numerals were based on a septimal system, and thirteen months,

<sup>1</sup> Ahlqvist and Blumberg ("Sitzungsberichte der gelehrten estnischen Gesellschaft zu Dorpat," 1876, p. 149).

of twenty-eight days each, made up the year, at the end of which came an intercalary day. As among the Accadians, the months were divided into weeks of seven days. It was from the Turks, however, that these primitive Ugrians learnt a large part of the elements of civilized life. The names of the ox, the calf, the sheep, the pig, and the hen, are of Turkish origin, as is also all that has to do with agriculture—harvest, stubble, sickle, wheat, barley, apples, sowing, reaping, and grinding in the mill. From Turkish, too, are borrowed the names for axe, door, mirror, thimble, ring and pearl, as well as words for demon, witness, wine, and writing. Even the Magyar name of the sea, *tenger*, comes from a Turkish source, from which, perhaps, we may infer that the forefathers of the Hungarians lived in the most southerly part of the district occupied by the Ugrian tribes, the rest of whom have a common term for the sea of home growth. The same fact is further indicated by the Turkish derivation of the words used by the Magyárs for such southern animals as the lion, camel, badger, and bustard. The Turkish dialect laid under contribution, however, was not the Osmanli, but the Shuvash, which makes it clear that the advance in civilization had been made by the Magyárs before they had settled in Hungary, and probably while they still occupied their original seats.<sup>1</sup>

We have yet to learn what was the civilization of the primitive Turkish-Tatar horde, or of that people of the remote past, who spoke the parent-language of Ural-Altai

<sup>1</sup> Hunfálvy : "Magyarország ethnographiája," in the Transactions of the Hungarian Academy, 1876, pp. 221-75.

speech, it may be, before the Accadians had descended southwards and under the favouring influences of a southern sun developed the civilizations of Elam and Chaldea. Already, however, it would seem, the religious and poetical tendencies of the race had begun to display themselves. Ural-Altaic religion is essentially Shamanistic; every object and force of nature is believed to be inspired by a spirit, sometimes beneficent, sometimes malevolent, but the spirit can be approached only by the qualified sorcerer or shaman. A belief in magic and witchcraft lies at its very roots. It is strange that by the side of such a religion there has existed a rich mythology, mostly solar, and the creator of numberless lays and epics. The Finnic *Kalévala* is an epic worthy of comparison with Homer or the *Nibelungen Lied*. Its 22,000 verses, it is true, were redacted into a whole by Lönnrot and Castrén only within the present century, but the popular lays which compose it, though of varying age, all refer to the same cycle of mythology, to the same heroes, and the same legendary facts. The adventures of the three divine smiths—*Wäinänöinen*, *Ilmarinen*, and *Lemmakainen* or *Ahti*, their travels in the underground world of *Pohiola*, their final struggle with *Luhi*, “the hostess of *Pohiola*,” and their search for the mysterious *Sampi* are equal in interest and imagination to the best products of national genius found elsewhere.<sup>1</sup> Similar

<sup>1</sup> The *Kalévala* has been edited with introduction and glossary by F. W. Rothsen (1870). A. Schiefner has published a German translation (1852), Léouzou-le-Duc a French translation (1868; see also his “*La Finlande*,” 1845). Latham has given an abstract of it in his “*Nationalities of Europe*,” vol. i. pp. 182-209 (1863). Castrén’s “*Vorlesungen ueber die Finnische Mythologie*,” translated



to the *Kalévala* is the *Kalevipoëg* of the Esthonians, which, however, still wants its *Lönnrot* to make it thoroughly complete. The groundwork of the poems which make up the Esthonian epic is identical with that of the *Kalévala*, and show that the Finns and Esths started with a common stock of ancestral myths. The half-savage Ugric *Voguls* of the Ural, too, have their epic, consisting of long poems on the Creation, the Deluge, and the giants of the ancient world, which have recently been made known to us (in 1864) by *Hunfálvy*.<sup>1</sup> It is very remarkable to find these myths of a wild secluded tribe on the barren slopes of the Ural strikingly resembling those of the cultivated *Accadians* of primæval *Babylonia*. The legends of the Creation and the Flood, which were translated by the Semitic *Babylonians* into their own language after forming part of a great national epic, have been recovered from the buried library of *Nineveh*, and show to what a vast antiquity these old *Altaic* myths must go back. Even the *Lapps* have their mythical epic,<sup>2</sup> in which they relate how *Päwin parne* ("the Son of the Sun"), "the offspring of *Kalla*" (? *Kaleva*), along with his brother giants used the Great Bear as his bow, and hunted and tamed the heavenly stags—*Jupiter* "the bright stag," and *Venus*, "the colour-changing hind"—in the constellation *Cassiopeia*; how *Paiven neita* ("the Sun's Daughter") bestows her reindeer and all her goods

into German and annotated by *Schiefner* (1853), should also be studied.

<sup>1</sup> See the summary of this "*Vogul Genesis*," given by *M. Adam* in the "*Revue de Philologie et d'Ethnologie*," i. 1 (1874), pp. 9-14.

<sup>2</sup> See *Donner*: "*Lieder der Lappen*."

on him who can catch her unawares ; and how a hero, born after his father's murder, asks his mother for his father's name, and slays the murderer in single combat. The myths and tales of the Tatars are equally numerous, and those who care to read Castrén's collection of them may discover a reflection of the Sun-god in most of their heroes whose names are compounded with the term for gold. In short, throughout the Ural-Altai family we find a rich outgrowth of myth and legend, and the agglutinative character of the language, and the consequent transparency of the proper names, make it easy to trace their original meaning. Ural-Altai poetry is, like Assyrian and Hebrew, parallelistic, and mostly in the metre made familiar to us by Longfellow's "Hiawatha."

The Turkish-Tatar languages may be classed as Yakute, Kirghiz, Uigur, Nogair, and Osmanli. The Yakutes live in the midst of the Tungusian tribes of North-eastern Siberia ; the Kirghiz, divided into the Black Kirghiz or Burut and the Kazak Kirghiz, in Chinese Turkestan and the neighbourhood of the Aral ; the Nogairs or Russian Cossacks, in the Crimea and the district of Astrakhan ; while the Uigur, with its sister-dialects of Yagatai and Turkoman, had an alphabet of its own as early as the fifth century, and once produced a considerable literature. Osmanli, with the outlying Shuvak south-west of Kazan, is the tongue of the dominant race of Turkey, and though the literary dialect has borrowed a large part of its vocabulary from Persian and Arabic, the country dialects are comparatively pure. The Turkish verb, like the Finnic, is exceedingly rich in

forms ; suffix may be piled upon suffix so as to represent the most minute and varied differences of meaning. Both root and suffix, however, always remain clear and marked ; hence the transparency which characterizes the conjugation and makes it so perfect an instrument of logical thought. A periphrastic conjugation is also in use in which various participles are combined with the auxiliary *to be*, and the number of verbal forms is thereby greatly increased. Turkish literature is copious ; but perhaps the best known work is the "History of Nasr-il-Dîn Khoja," a sort of Turkish Eulenspiegel.

Midway between the Finnic and Turkic idioms may be grouped the Samoied dialects, our knowledge of which is in large measure due to the self-denying devotion of Castrén. They stretch along the shores of the White Sea and North-west Siberia, and comprise five main dialects, which are, however, split up into an infinity of smaller ones. Yarak is spoken in European Russia and as far as the river Yenisei, Yenisei Samoied on the banks of the Lower Yenisei, Tagwi further to the east, Ostiak Samoied on the Obi, and Kamassic in Southern Siberia. Ostiak Samoied and Yenisei Samoied must be carefully distinguished from Ugrian Ostiak and Yenissei Ostiak, which is allied to the Kot (or Kotte), and with it forms a stray fragment of what is apparently an otherwise extinct family of speech. The Samoieds are perhaps the most degraded of all the members of the Ural-Altai family, more so, certainly, than the Mongols. The latter speak three principal dialects—the Eastern or Sharra, spoken in Mongolia proper, the Western or Kalmuk, stretching westward into Russia between the Kirghiz

and Nogair Turks, and the Northern or Buriat in the neighbourhood of Lake Baikal. The latter is the most barbarous of the Mongol idioms, the others being more or less cultivated. The pronouns in Mongol have not amalgamated with the verb, as they have in Finnic or Turkic; thus in Buriat *bi bis* is "I am;" *shi bis*, "thou art;" *ogon bis*, "he is;" *bi yaba*, "I was;" *shi yaba*, "thou wast;" *ogon yaba*, "he was;" *bi bilei*, "I have been;" *shi bilei*, "thou hast been;" *ogon bilei*, "he has been."

Closely allied to Mongol is Tunguse, in the centre and extreme east of Siberia, divided into the three branches of Mantchu, Lamutic, and Tungusian. Of these Mantchu has become the best known in consequence of the Mantchu conquest of China. The Mantchus, however, have long possessed a literature, their alphabet of twenty-nine characters having been originally introduced by Nestorian Christians. Contact with Chinese, and perhaps also literary cultivation, have had the same effect upon Mantchu that similar influences have had upon English; the sign of number has been lost, like the possessive pronoun affixes, and to find them we must look to the ruder Lamutic and Tungusian. The harmony of the vowels, too, that distinguishing feature of Ural-Altaiic speech, is reduced to small dimensions in the Mantchu dialect, and the possessive pronouns are not affixed. The adjective simply consists of a noun placed before another to qualify it, like our *wine merchant*, and properly speaking there is no verb signifying "to have."

The chief distinguishing feature of the Ural-Altaiic family is the so-called law of vocalic harmony. The

vowels are divided into strong and weak, certain dialects also possessing neutral ones, the general rule being that all the syllables of a word must have vowels of the same class, that is, either strong or weak. This rule, however, is not carried out strictly in all the members of the family; sometimes only the affixes are affected by it; sometimes all the elements of a compound word must come under its operation. In some dialects, the Vêpse, the Esthonian, and the Votiak, for example, the law is neglected altogether; but this must be regarded as the result of phonetic decay, and not as a survival of a more primitive condition of speech, in which the vocalic harmony did not exist, since, as Donner has pointed out, roots of allied meaning in the Finnic group are frequently distinguished from one another simply by a difference of vowel, thus *kah-isen*, *koh-isen*, *kuh-isen*, with strong vowels, mean "to hit" or "stamp;" but *käh-isen*, *köh-isen*, with weak vowels, "to roar." The classification of vowels into strong and weak must, therefore, have been adapted to the differentiation of meaning at an early period. No doubt, however, when once the distinction had been set up it tended to spread and develop; Riedl and Adam have shown, for instance, that in the oldest Magyar texts anti-harmonic forms are common, as *halál-nek*, "at death," *tiszta-seg*, "purity," and that before the twelfth century compounds were but little subjected to the law. At the present time, in Magyar, as in Turkish, Finnish, Mantchu, and Mongol, the vowels of the whole word must be brought into harmony, whereas in Mordvin or Siryänian it is only those of the last syllable. The following is a classification of the

vowels in the principal languages of the Ural-Altai family:<sup>1</sup>—

The origin of this division of the vowels is to be sought in the phonetic tendency to anticipate a following vowel in a word by assimilating an earlier one to it, as in the German *umlaut*, or, conversely, to harmonize the vowel of the next syllable with one that has just been uttered. The latter assimilation would naturally be adopted by speakers who accented their words at the beginning instead of the end, as did the Aryans. As Sievers suggests, "it is a question whether a connection does not exist between the different forms assumed by assimilation and the accentuation of words. At all events, the accentuation of the first syllable of the word in the Ural-Altai languages would agree with such a view."<sup>2</sup>

Affixes, and not prefixes, characterize Ural-Altai agglutination. The noun has some eight cases, the principal among them being marked by the terminations, *-n* or *-na*, *-l* or *-la*, *-s* or *-sa*, the origin of which is rendered obscure by their antiquity. The other relations of the noun are expressed by simple or

<sup>1</sup> Adam: "De l'Harmonie des Voyelles dans les Langues uralo-altaïques" (1874).

	Strong.	Weak.	Neutral.
Finnish . . . . .	<i>u, o, a</i>	<i>ü, ö, ä</i>	<i>e, i</i>
Magyar . . . . .	<i>u, o, a</i>	<i>ü, ö</i>	<i>e, i</i>
Mordvin . . . . .	<i>u, o, a</i>	<i>ä, i</i>	—
Siryänian or Zyrianian . . . . .	<i>ô, a</i>	<i>ä, i, e</i>	—
Turkish . . . . .	<i>u, o, a, e</i>	<i>ü, ö, e, i</i>	—
Mongol . . . . .	<i>u, o, a</i>	<i>ü, ö, ä</i>	<i>i</i>
Buriat . . . . .	<i>u, o, a</i>	<i>ü, ö, ä</i>	<i>e, i</i>
Mantchu . . . . .	<i>ô, o, a</i>	<i>e</i>	<i>u, i</i>

<sup>2</sup> "Grundzüge der Lautphysiologie," p. 137.

compound words, agglutinated at the end ; and these, though amalgamated with the noun into a single whole, by the action of vocalic harmony, nevertheless, in the majority of instances, maintain their original and independent signification. They are, in fact, other nouns attached to the first, in order to limit its meaning and reference. In the Finnic idioms, the amalgamation has become so complete that it is difficult to trace either the original meaning or the original form of the agglutinated nouns ; and, except for their number and uses, forms such as the Votiak *murtly*, "to a man," or the Magyar *atyá-nak*, "to a father," might easily be taken for the cases of the Aryan declension. In the verb, too, the same amalgamation has taken place, and it is difficult at first sight to distinguish the Ostiak forms quoted above<sup>1</sup> from the persons of the Sanskrit verb. A closer investigation of the language, however, reveals the fact that the Ugro-Finnic verb, like the Ugro-Finnic noun, is virtually based on the same principles as the verb of Osmanli Turkish. This displays the analytic genius of Ural-Altaic speech at its best. The forms of the Turkish verb are at once clear, simple, and minute. *Sevmek*, "to love," where *mek* is the sign of the infinitive, becomes reflective by the addition of *in* (*sev-in-mek*), reciprocal by the addition of *ish* (*sev-ish-mek*), causative by the addition of *dir* (*sev-dir-mek*), passive by the addition of *il* (*sev-il-mek*), and negative by the addition of *me* (*sev-me-mek*), and all these forms can be united together, so that, for instance, *sev-ish-dir-il-mek*, an amalgamation of the reciprocal, the causative, and the passive, means "to be

<sup>1</sup> Page 186.



brought to love one another," *sev-in-dir-il-mc-mek*, "not to be made to love oneself." But the mechanism of the Turkish verb is almost equalled by that of the ancient Accadian; thus *gar-mu* is "I made," *gar-dan-mu*, "I caused to make," *gar-dan-ra-mu*, "I caused one another to make," *gar-dan-mu-mu*, "I did not cause to make." In fact, from the very first, the Turanian or Ural-Altai languages have been characterized by a perspicacity and logical vigour, which enable us to understand how their speakers could have been the originators of the culture and civilization of Western Asia. In disregarding the distinctions of gender, in analyzing the forms of speech, in making each word tell its own tale, and in assigning one definite signification to each element of their grammatical machinery, the Turanian languages resemble English, and like the latter mark a high level of intelligence and power.

More involved and delicate is the mechanism of another family of agglutinative speech—the Dravidian of India. It would seem that the Dravidians entered India before the Aryans, but by the same road from the north-west, and, like the Aryans, successfully established themselves among the Kolarian and other aboriginal races. The Dravidian dialects are twelve in number, six (Tamil, Malayalam, Telugu, Kanarese, Tulu, and Kudagu) being cultivated, and six (Toda, Kota, Khond or Ku, Gond, Orâon, and Rajmuhâli) being spoken by barbarous tribes. Tamil literature is especially abundant, though a good deal of it is borrowed or adopted from Sanskrit sources. It is mostly in verse, moral poems and didactic saws constituting its most ancient portions, the lyrics, epics,

and dramas being of later date. Unlike Telugu, Kanares, and Malayalam poetry, Tamil poetry is in large measure free from foreign words. Dravidian phonology is chiefly distinguished by the occurrence of cerebral letters, which Bishop Caldwell believes to have been handed on to the Aryans; every *r*, again, must be preceded by a vowel, while a soft explosive cannot begin a word, nor a hard explosive stand as a single consonant in the middle of a word. Modifications of sense are produced by suffixing the vowels *a*, *e*, *i*, otherwise the relations of grammar are almost entirely expressed by affixes. The power of agglomerating these suffixes one after the other into a single word far exceeds that possessed by the Turanian tongues, and reminds us of our own English conglomerates, such as "Employers' Liability for Injury Bill." Thus in ancient Tamil poetry, *sârndâykkû* means "to thee that hast approached," composed of *sâr*, "to approach," *d*, sign of the past, *ây*, the verbal suffix of the second personal pronoun, and *kû*, the postposition "to." There is no verb "to be" or "to have," but any noun can easily be turned into a verb by means of the suffixed pronoun; the Tamil *tevarir*, for instance, is "you are God," *tevarir* being the honorific plural, and *ir* the termination of the second person of the verb. The verb has only three tenses—present, past, and indefinite future,—and the indicative is its sole mood. A masculine and feminine gender, however, are distinguished in nouns which denote adults, and the accusative is marked by the termination *-ai* or *-ei*, the genitive by the termination *-in*. As in Aryan and Semitic languages, a difference of signification may be symbolized by internal vowel-change;

thus in Tulu, *mâlpuvé* is "I do," but *mâlpêvé* (frequentative), "I often do," *mâlpâvé* (causative), "I cause to do," *mâltruvé* denoting the intensive, and *mâlpâvuyi* the negative.

In the Malayo-Polynesian group, the agglutinative elements may be placed after the root, or even inserted in the body of it, but they are more commonly prefixed. Prepositions accordingly take the place of postpositions, and a prefixed article occupies a prominent position. Reduplication, also, is largely employed; thus, in Malay, it serves to mark the plural, as in Bushman, and throughout the Polynesian dialects the verb makes considerable use of it. The verb, however, properly speaking, has hardly come into existence; "his house has many rooms," for instance, would be in Dayak *huma-e bakaron arä*, literally "his-house with-rooms many;" "thy boat is very beautiful," *kotoh ka-halap-e arut-m*, literally "very its-beauty thy-boat." Phonetic decay has played great ravages in the whole of this family of speech. The alphabet is reduced to the simplest elements, and every consonant must be accompanied by a vowel. The general resemblance pervading the scattered dialects of Polynesia proves that this decay must have set in before the brown race settled in the Polynesian islands. The language spoken at the time, however, was not Malay, as has sometimes been supposed, but an offshoot of the same parent speech as that from which both Malay and the idioms of the Indian Archipelago are descended. The Polynesians present us with the spectacle of a race which has declined in civilization, of which their numerous songs and legends are a last relic. The Malays, on

the other hand, have enjoyed a considerable culture for generations. Their poetry, which comprises epics and dramas, is indigenous, as are also their romances, though their philosophic writings are due to contact with Hindus and Arabs. Javanese literature is similarly indebted to Sanskrit, but its poetry, fables, and traditions are of home growth.

The Bâ-ntu family of languages in Southern Africa marks the relations of grammar by prefixes only. These were originally nouns, which in course of time became pronouns, and then mere classificatory prefixes, and their number, as well as the regular but delicate phonetic changes which they undergo, render the Bâ-ntu declension and conjugation at once rich and complicated. The noun is divided by means of them into a great variety of classes, called genders by Dr. Bleek, the same noun having a different prefix for the singular and the plural, and both the adjective and verb with which it is construed being furnished with the same prefix, and so placed in the same class. Thus in Zulu Kafir we should have in the singular *u-MU-ntu* *W-ctu o-MU-~~khle~~* *U-ya-bonakala si-M-tanda*, "man ours handsome appears, we-him-love," in the plural *a-BA-ntu* *B-ctu a-BA-~~khle~~* *BA-ya-bonakala si-BA-tanda*. Zulu has fifteen of these classificatory prefixes, while Otyihereró has as many as eighteen. As might have been expected in a group of tongues which displays so acute a perception of phonetic differences, a passive, active, or neutral signification is frequently given to nouns by their terminating respectively in the vowels *o*, *i*, and *a*,<sup>1</sup>

<sup>1</sup> Bleek : "Comparative Grammar of the S. African Languages," p. 138 (*note*).

and in Mpongwe while *tánda* means "to love," *tánda* is "not to love." The signs of case are of course prefixed, like the signs of tense and voice; in Zulu, for example, *ng-omuntu* is "with the man," *ng-abantu*, "with the men."

Many of the agglutinative languages are more or less incorporating; thus we have just seen that the objective pronoun in the Zulu *si-m-tanda* comes between the subject and the root, and several of the Turanian languages have an "objective conjugation," in which the objective pronoun is intercalated between the verb and its subject pronoun. In Magyár, for instance, besides *hallok*, "I hear," *hallasz*, "thou hearest," *hall*, "he hears," we have *vár-om*, "I expect him," *vár-od*, "thou expectest him," *vár-ya*, "he expects him," where the objective pronoun may be either singular or plural. In Mordvin and Vogul, however, a difference is made between the forms *sodasa* and *kietilem* with the singular pronoun, and *sodasaïna* and *kietïänem* with the plural. Mordvin and Vogul also have special forms for the second personal pronoun when used as an object, *sodatä* and *kietilem* being "I eat thee," *sodatädäs* and *kietänem*, "I eat you."<sup>1</sup> Mordvin is able to go even yet further in the creation of objective forms, *sodasa-m-ak* being "thou eatest me," and *sodatama'st*, "thou eatest us." But these forms can easily be decomposed into an amalgamation of the verb with two personal pronouns, one employed as object, the other as subject, and so scarcely differ from the French *je vous donne*, which, though written as three separate words, is

<sup>1</sup> Magyár can also incorporate the objective second person when the subject is the first person, as *vár-l-ak*, "I await thee."

pronounced as though it were one. Still more analogous are such Italian expressions as *portandovelo*, "carrying it to you."<sup>1</sup> There is nothing in all this which reminds us of the intercalation of a word or syllable into the middle of a root, such as meets us in the Malay *k-um-akan* from *kakan*, "to eat," or the Sanskrit *yu-na-j-mi*, "I join." It merely indicates a peculiar syntactical habit, that is all.

But the case is altered when we find this principle of incorporation characterizing not only two or three isolated verbal forms, but all the forms of the verb, and admitting also the intercalation of a syllable denoting plurality. The Basque or Escuara dialects are the sole living representatives of a consistently incorporating language. Four of these dialects—the Labourdin, the Souletin, the eastern Bas-Navarrais, and the western Bas-Navarrais—are spoken in France; four others—the Guipuzcoan, the Biscayan, the northern Haut-Navarrais, and the southern Haut-Navarrais—in Spain; and Prince L-L. Bonaparte further subdivides them into twenty-five sub-dialects, among which may be specially mentioned those of Roncal and Irun.<sup>2</sup> The Souletin has borrowed the French *u*; elsewhere the vowels are those of Italian. *R* is not allowed to begin a word, and Prince L-L. Bonaparte has discovered what may be termed a law of vocalic harmony. A hard final consonant is dropped before an initial soft one, which then becomes

<sup>1</sup> It is true that *ve (vi)* is really the adverb *ibi*, but since it is used here pronominally it may be regarded, so far as sense goes, as genuine a pronoun as are the dative pronouns in the Basque verbal forms to be noticed presently.

<sup>2</sup> "Le Verbe Basque," p. 4.

hard"; double consonants are unknown; *g*, *d*, *b*, *n*, and soft *r* disappear between two vowels, and *k*, *t*, and *p* before a nasal. The cases are formed by postpositions which may be added one to the other, and in the modern dialects<sup>1</sup> the singular is distinguished from the plural only in the definite declension, where the postfixed article is *a* in the singular and *-ak* in the plural. This article is still used as a demonstrative in Biscayan. The singular, when used as a subject, also takes a final *-k*, but the singular *jaunák*, "the master," is distinguished from the plural *jaúnak*, "the masters," by the position of the accent. The verb constitutes the great difficulty of Basque, and made Larramendi entitle his Grammar "El Imposible Vencido," "the Impossible overcome;" and this difficulty is occasioned by the incorporation of the pronouns which have been fused with the verb-stem into a compact whole by the action of phonetic decay. Although there are practically but two verbs—"to be" and "to have"—all other verbs being generally used as participles, the number of forms possessed by these is almost endless. Not only is there a different form for each of the personal pronouns, whether in the objective or the dative case, but there are also different forms for addressing a woman, an equal, a superior, or an inferior.<sup>2</sup> Thus, in the

<sup>1</sup> The analysis of the verb shows that one way of forming the plural was once by the help of the postfix *t(e)*. See Vinson's "Essai sur la Langue basque par M. Ribáry," p. 109. M. Van Eys by his discovery of the change of *k* into *t* has been enabled to show that this postfix *t(e)* is identical with the old symbol of the plural *-k* ("Grammaire comparée des Dialectes basques," pp. 15, 16).

<sup>2</sup> The form which denotes respect incorporates the plural second personal pronoun *zu*, and except in the second person is found only



indefinite conjugation, that, namely, used when an equal is addressed, we have *det*, "I have it," *ditut*, "I have them," *nuen*, "I had it," *nituen*, "I had them," *isango nuke*, "I should have it," *isango nukean*, "I should have had it," *isan dezadan*, "I may have it," *isan nesan*, "I might have it," *isan dezaket*, "I can have it," *isan nezakean*, "I could have it," *isan nezake*, "I could have had it," *aut*, "I have thee," *saitut*, *saitustet*, "I have you," *sindustedan*, "I had you," *disut*, "I have it for thee," *diskizut*, "I have them for thee," *disutet*, "I have it for you," *diskizutet*, "I have them for you," *dïot*, "I have it for him," *diskiot*, "I have them for him," *diet*, "I have it for them," *dioskatet*, "I have them for them," *nazu*, "thou hast me," *gaituzu*, "thou hast us," *didazu*, "thou hast it for me," *diskidazu*, "thou hast them for me," *diguzu*, "thou hast it for us," *diskiguzu*, "thou hast them for us." When we examine the few verbs, other than the two auxiliaries, which are still conjugated, the analysis of these multitudinous forms becomes plain. Thus, if we take *ekarri* or *ekarten*, "to carry," we shall find *d-akar-t* signifying "I carry it," *d-akar-zu*, "thou carriest it," where it is clear that the initial dental is a relic of the objective pronoun, *t* and *zu* being the affixed subject-pronouns. So, again, *d-akar-ski-t* is "I carry them," *d-akar-ski-zu*, "thou carriest them;" where *ski* is the sign of plurality. *Zki* appears as *ska*, *tza*, and *tzi* in other dialects; thus, in Labourdin, *d-aki-ska-t* is "I know them," in Guipuzcoan *d-aki-tzi-t*, while Biscayan presents

in the Souletin and eastern Bas-Navarrais, which often substitutes it for the form used when addressing an equal (Vinson's "Ribáry," p. 106).

us with the form *d-aki-da-z*, in which the plural suffix (*z*) occupies a different place.<sup>1</sup>

The incorporation of the pronouns characterizes a language in which the intelligence of the speakers is still sluggish. A mere hint is not sufficient to convey the meaning; the object as well as the subject must be emphasized in order to be clearly indicated. The emphasis is obtained by adding the pronoun after the noun to which it refers: it is not sufficient to say "John killed the snake;" the needful definiteness is secured by saying "John the snake he-killed-it." The same usage characterized the Old Accadian of Chaldea; here, too, as in Hungary and Northern Russia, the pronouns could be incorporated, and by the side of *gar-mu*, "I made," we find the more common *gar-nin-mu*, "I made it." Even Semitic was no stranger to the practice of pleonastically repeating the pronoun; thus in Assyrian it is by no means unusual for a noun in the objective case to be followed by a verb with the pronominal suffix *-su*, "it" or "him." After all, the incorporation of the objective pronoun is only one step further than the incorporation of the subject pronoun which meets us in the much-vaunted classical languages of our own family of speech, if the theory is right which refers the termination of the third person of the verb to a demonstrative pronoun. It seems more probable, however, that the third person of the Aryan verb is but an abstract noun, like the third person in Tatar-Turkish, where *dogur*, "he strikes," is really the

<sup>1</sup> Vinson's "Ribáry," &c., p. 109. For the analysis of the verbal forms and the origin of the verbal roots see W. Van Eys: "Grammaire comparée des Dialectes basques" (1879).

participle "striking," and *dogd*, "he struck," the abstract "a striking," or like the third person of the Semitic verb, which similarly is a participle in the perfect and an abstract in the imperfect.<sup>1</sup> But even so, in the first and second persons the Greek was obliged to repeat the personal pronouns if he would express the subjects *ἐγώ* and *σὺ* (*ἐγὼ τίθημι*, *σὺ ἐσσι*).

The Basque vocabulary confirms the inference drawn from the structure of the language. Here, too, there is a poverty of imagination, a backwardness of intelligence. It is hardly an exaggeration to say that two-thirds of the lexicon are borrowed from French and Spanish, or from the earlier Latin and Keltic. Abstracts of native growth are rare in the extreme, and though there are names for various kinds of trees and animals, there is no simple Basque word for *tree* and *animal* themselves. This is the more noticeable when we remember that Basque shows a great facility for composition, and in some cases its compounds are welded together, as in the polysynthetic languages of America, by dropping parts of the component elements. Thus *illabete*, "month," seems to be a compound of *illargi-bete*, "full moon," *illargi*, "moon," itself being composed of *il* or *hil*, "death," and *argi*, "light," and *orsanz*, "thunder," is similarly derived from *orz*, "cloud," and *asanz*, "noise." It is unfortunate that our knowledge of Basque is so recent. The native songs and "pastorals" are of late date, and the oldest printed book, the poems of Dechepare,<sup>2</sup> was only published in

<sup>1</sup> Sayce: "The Tenses of the Assyrian Verb," in the "Journal of the Royal Asiatic Society," Jan. 1877.

<sup>2</sup> See the "Édition Cazals," Bayonne (1874).

1545. The French Basques appear to have crossed the Pyrenees since the Christian era, and though Wilhelm von Humboldt endeavoured to find traces of the Basque language in the local names of ancient Spain, Southern Gaul, the Balearic Islands, and even Italy, his facts and conclusions have been strenuously controverted by MM. Van Eys and Vinson.<sup>1</sup> It is certain that the transformations undergone by local names make it very unsafe to argue from them, and an inscription in an unknown language found at Castellon de la Plana, and written in a form of the Keltiberian alphabet shows no resemblance to Basque. But it must be remembered that the modern dialects necessarily wear a very different appearance from their ancestors of two thousand years ago, and that the name of the colony established by Gracchus in Northern Spain—*Graccurreis*, “the town of Gracchus”<sup>2</sup>—implies that a language was even then spoken in the neighbourhood of the Pyrenees, which contained a word for “city” resembling the modern Basque *iri* or *hiri*. The ethnologists have unfortunately brought the term Iberian into disrepute by extending it to that unknown race which occupied Western Europe before the arrival of the Kelts; it can never be too often repeated that language and race are not convertible, and since “Iberian” has now acquired an ethnological sense it should be carefully shunned by the philologist. The Iberians of ancient Spain probably spoke languages allied to the dialects of

<sup>1</sup> “La Langue ibérienne et la Langue basque,” by W. Van Eys, in the “Revue de Linguistique,” vii. 1 (1874); “La Question ibérienne,” by J. Vinson, in the “Mémoires du Congrès scientifique de France,” ii. p. 357 (1874).

<sup>2</sup> The earlier name of the city, Ilurcis, has a very Basque ring.

the Eskuara, but we have little proof of it, and still less proof that all the tribes called Iberian by classical writers shared the heritage of a common speech.

The analogy of some of the Basque compounds to those of the polysynthetic languages of America has just been alluded to; but whereas the principle upon which these compounds are formed appears only casually in Basque, it is the distinguishing feature of the American tongues. Polysynthesisism or incapsulation may be defined as the fusion of the several parts of a sentence into a single word, the single words composing it being reduced to their simplest elements. It is, in fact, the undeveloped sentence of primitive speech, out of which the various forms of grammar and the manifold words of the lexicon were ultimately to arise, and it bears record to the earliest strivings of language which have been forgotten elsewhere. The polysynthetic languages of America, in short, preserve the beginnings of grammar, just as the Bushman dialects have preserved the beginnings of phonetic utterance.

We will follow Steinthal<sup>1</sup> in selecting the barbarous Eskimaux of Greenland and the cultivated Aztec of Mexico as the two extreme types of American polysynthetic speech. The differences between them are as great as the differences between Turkish and Kafir; their sole resemblance to one another lies in their common structure. The Eskimaux, like the natives of America generally, knows little of abstracts, but he has an infinity of terminations for expressing all the details of an action and the

<sup>1</sup> "Charakteristik der hauptsächlichsten Typen des Sprachbaues," pp. 202, 277. (1860).

individual objects that meet his gaze. Thus the affix *-fia* denotes the "place" or "time" of doing a thing, *-khshuaq*, "largeness," *-nguaq*, "smallness," *-inaq*, "merely," *-tsiak*, "somewhat," *-liak*, "made," *-siak*, "possessed," *-pait*, "several," and there are other terminations to express what is hateful, suffering, useless, poor, beautiful, pleasant, monstrous, numerous, new, old, divided, near, single. So, too, there are verbal forms signifying to intend, to obtain, gradually, futurity, present, past, no more, to have given up, to seek, to go or come for, to hurry, to wish, to be willing, to be able, to be capable, to assist, to be easily able, to be better able, to be always able, to be no more able, further, much, actively, badly, well, better, merely, thoroughly, fully, too much, singly, continually, repeatedly, nearly, quite, conjecturally, probably, expressly, &c. But practically there is no difference between the noun and the verb; both form but parts of a sentence which is here the word, and hence the same word contains at once subject, verb, and object. Thus *sialuk* is "rain," but *sialugsiokhpok*, "he is outside in the rain," *Kakortok* is the name of a place, but *Kakortuliakhpok*, "he goes to Kakortok." Objects are regarded as either the possession of another or as suffering something from another, or, again, as active and as possessors. If the object is possessed it requires the possessive affix, if a patient the objective affix. The agent and the possessor take the subjective affix. The possessive affixes are themselves of a twofold kind, since though the object possessed must always be the same as regards its possessor, it may be either active or passive as regards another object or another action. Thus in the sentence :

“the whale’s tail touched the boat’s stern,” “tail” and “stern” are equally possessed, but whereas “tail” is active as regards “stern,” “stern” is passive. Hence the Greenlander would say: *aklfekhup sarpiata umiap suyua agtorpā*, where the final *-p* denotes that *aklfekhup*, “the whale,” is a subject, *-ata* that his “tail” is also a subject like *umia-p*, “the boat,” while the *a* of *suyua*, “stern,” is a neutral possessive, and the *ā* of *agtorpā* the objective suffix. Similarly the Latin distinction between *ejus* and *suus* is observed in Greenlandish. Naturally, conjunctions and subordinate sentences are unknown; instead of saying: “I saw that a boat came to you,” the Greenlander would say: *Kayak ishigākha ornik-ātīt*, “a boat see-I-it coming-it-to-thee.” As Steinthal remarks, it seems a waste of time to the Greenlander to distinguish the tenses of the verb. In the rudimentary sentence the element of time is unknown.

It will be noticed, however, that the Greenlander has learnt to break up many at least of his sentences into words. If we go further south, among the North American Indians, we shall find a closer adherence to the original form of speech. In Cherokee, for instance, *nad-hol-i-nin* means “bring us the boat,” from *naten*, “to bring,” *amokhol*, “boat,” and *nin*, “us;” in Algonkin *amanganakh-kiminkhi* is “broad-leaved oaks,” from *amangi*, “great,” *nakhk*, “the hand,” *kim* affix denoting shell-fruit, and *akhpausi*, “trunk,” though even these compounds are surpassed by the Greenlandish *aulisariartorasuarpok*, “he hastened to go fishing,” from *aulisar*, “to fish,” *peartor*, “to be engaged in something,” and *pinnesuarpok*, “he hastens.”



In Eskimaux and North American Indian, the pronouns are affixed, *kipwuttamu-akūm-ayū* in Cree, for example, signifying "he is smothered in the snow," where *ayū* is the pronoun, *akūm* the noun. The contrary is the case in Mexican. Here the pronouns are all prefixed. Thus *ne-o-ni-k-tsūh* is "I have done it" (literally "I-have-I-it-done"), *ni-sotsi-temoa*, "I look for flowers," *ni-mits-tsikāwakā-tlasòtla*, "I-thee-much-love." But like Greenlandish, Mexican has broken through the rigid rules of polysynthetic structure. While in the sentence *ni-sotsi-temoa* it "incapsulates" the noun *sotsi*, it can also substitute the objective pronoun for it, and use the noun as an independent word. Thus *ni-k-miktia sē-tōtolin*, "I-it-kill a hen," differs but little from a Basque sentence, except that the Mexican attaches the noun somewhat awkwardly at the end as a kind of afterthought, conscious of its departure from the normal form of speech. But it has gone even further than this. It can individualize a substantive, treat it, that is to say, as an independent and separate word, by affixing the termination *-tl*. Thus "I roast the flesh on the fire" would be *ni-k-tle-watsa in nakatl* ("I-it-fire-roast the flesh"), "the songs are sought like flowers," *sotsi-tēmolō in twīkatl*, where *lo* is the passive suffix. Reduplication and vowel-change play a considerable part in Aztec grammar, and in the adaptation of vowel-change to express a meaning which lies at the root of all inflectional languages we may see how the different classes of speech tend to overlap one another. *Ni-tla-saka*, for instance, signifies "I bring something along," *ni-tla-sāsaka*, "I bring something along vehemently," *ni-tla-sàsaka*, "I

bring something along vehemently from many quarters ;” so, again, *kotōna* is “to cut,” *kōkotōna*, “to cut into many pieces,” *kōkotōna*, “to cut many things.” Reduplication is largely used in forming the plural, though the affixes *-mē* and *-tin* are now commonly employed for the purpose. In fact, modern Aztec has changed a good deal during the last three centuries in consequence of the degradation of its speakers and their mixture with the whites. We must not forget that it was once a literary language, and that the Aztec civilization which was destroyed by the Spaniards and Christianity was, in spite of its unlikeness to the civilizations of Europe, of no mean order. The Mexicans, indeed, had not attained the developed system of writing of their Maya neighbours in the South, who used characters that were partly hieroglyphic, partly syllabic, and partly alphabetic ; but the numerous MSS. written in Aztec hieroglyphics that existed at the time of the Spanish conquest prove that the traditions of native literary culture were not without foundation. Few of these escaped the ravages of Spanish bigotry, and none of those we possess seem to contain any specimens of the poetry for which the ancient Aztecs were famous.<sup>1</sup> Of the Old Maya literature only three works remain, the “Second Mexican Manuscript” in the National Library at Paris, the “Dresden Codex,” and the “Manuscript Troans.”

Chinese is naturally the first example of an isolating language that occurs to the mind. Chinese civilization and literature reached back beyond B.C. 2000, how much beyond we shall probably never know. It arose in the

<sup>1</sup> See Bancroft : “Native Races of the Pacific,” ii. ch. xvii.

alluvial plain of the Hoang-ho or Yellow River, perhaps at the same time that an independent civilization was arising in the alluvial plain of the Tigris and Euphrates. Since those early days the language has changed greatly; phonetic decay has been busy with the dictionary, tones have been introduced to express relations of grammar, position and syntax have been replaced by "empty words," which have come to be mere grammatical symbols like our *to* or *of*, and the whole speech has grown old and weather-beaten. It is the Mandarin dialect which chiefly shows these marks of ruin; here the initial and final consonants have been dropped one by one until every word save one<sup>1</sup> ends with the same monotonous nasal. Elsewhere, however, the dialects have displayed a more strenuous resistance. In the north, indeed, the primitive seat of Chinese power, no less than three final consonants have been lost, but along the southern bank of the Yang-tsi-kiang, and through Chekiang to Fuh-kien, Dr. Edkins tells us, the old initials are still preserved. As has been noticed in a former chapter, it is partly by means of these dialects, partly by the help of the ancient rhymed poetry, partly by a thorough investigation of the written characters that Dr. Edkins and Prof. de Rosny have been enabled to restore the original pronunciation of Chinese words, and to trace the gradual decay of this pronunciation first in the long ages that preceded Confucius (B.C. 551-477), and then in the centuries that have followed. As sounds disappeared, and words formerly distinct came to assume the same form, a new device was needed for marking the difference

<sup>1</sup> *Eul*, "two" and "ear."

between them. This was found in the multiplication of the tones, which now number eight, though only four are in common use, the tones playing a similar constructive part in Chinese to that played by analogy in our own family of speech. It takes about 1200 years, says Dr. Edkins, to produce a new tone. But from the first the words of Chinese are monosyllabic; there may have been, and probably was, a time when polysyllables existed, as they still do in Tibetan,<sup>1</sup> but all record of it has perished. In spite, therefore, of the tones, the same word has often a great variety of meanings, as in Old Egyptian; thus *ju* is "me;" "agree," "rejoice," "measure," "stupid," "black ox," and *lu*, "turn aside," "forge," "vehicle," "precious stone," "dew," "way."

"In Chinese," says Prof. Steinthal,<sup>2</sup> "the smallest real whole is a sentence, or at least a sentence-relation, or perhaps a group of roots, which, even if it is not yet a sentence, or a sentence-relation, is still something more or other than a word. Thus while other languages can form words and sentences, Chinese can form only sentences, and its grammar really resolves itself into syntax." In fact, when once we know the prescribed order of words in a Chinese sentence, we are virtually masters of its grammar. The subject always comes first, the direct object follows the word expressing action, and the genitive, like the attribute, precedes the noun that governs it. The defining word, in short, stands before the word

<sup>1</sup> See Böhlingk: "Sprache der Jakuten," p. xvii. *note* 46, who observes that several Tibetan roots that are now monosyllabic can be proved to have once been polysyllabic.

<sup>2</sup> "Charakteristik," p. 113.

it defines, the completing word after the word it completes. Nowhere is the order of the Chinese sentence better illustrated than in the ideographic use of the Chinese characters in Japanese, which are read as though they were Japanese. Thus, in order to express the words, "but I shall not see him to-day," in this mode of writing, the characters would follow one another in the order required in Chinese, "but not shall I see to-day him," but they would be read by the Japanese in exactly the reverse order, "him shall I see to-day not but."<sup>1</sup> It must not be assumed, however, that the order of the sentence follows one hard and fast rule. We have just seen that while the genitive and attribute precede the noun, the object follows the verb, to which it might be supposed to stand in much the same relation as the attribute to the noun. Sentences which express the purpose, again, follow the principal clause, as do also "objective substantival sentences" in most cases, although adjectival, temporal, causal, and conditional ones precede it. Though each word has its own fixed place, that place depends upon logic and rhythm, and not upon a general law which forces every part of the sentence into the same mould. Literary development has doubtless had much to do with this result, and inversions of the established order which were first introduced by the requirements of rhetoric have now made their way into the current speech. In sharp contrast to this comparative flexibility of Chinese stands the stereotyped arrangement of the Burmese or

<sup>1</sup> The Chinese ideographs are called *koyé* or *won* (Chinese *yin*), the Japanese reading of them, *yomi* or *kun* or *tókū*. See Hoffmann : "Japanese Grammar," 1st edition, pp. 32, 46.

the Siamese sentence. Here no distinction is made between the different grammatical relations of a sentence or the different kinds of sentences; in Siamese or T'hai every word which defines another must follow it, in Burman it must equally precede. No account is taken of the fact that the nature of the definition cannot always be alike. Hence the inability of these languages to denote the various turns of expression, the various forms of sentence and syntax, that we find in Chinese: hence, too, the greater need of auxiliary or "empty" words to avoid the uncertainty occasioned by the constant application of one unbending law of position.

Not that Chinese, especially modern Chinese, dispenses with those symbolic auxiliaries which Prof. Earle has christened "presentives;" just as the Old English flexional genitive in *-s* is making way for the analytical genitive with "of," so the Old Chinese genitive of position may now be replaced by the periphrastic genitive with *ti* or "of." *Ti*, originally meaning "place," has now come to be merely a relative pronoun, marking the genitive, the adjective and participle, the possessive pronoun, and even the adverb as well. So, too, the plural, the dative, the instrumental, the locative, and the like, may all be denoted by particles instead of by position only. These particles are merely worn-out substantives, *twi*, for instance, the symbol of the dative, having once meant "opposition," *tsung*, the symbol of the locative, "the middle." Similarly person and time may be expressed by pronouns, adverbs, and auxiliary verbs, not by syntax merely. In fact, the same tendency towards increasing clearness of expression which has shown itself in the

modern languages of Europe, has also shown itself in Chinese. Less has been left to suggestion ; thought has been able to find a fuller and distincter clothing for itself, and requires less to be understood by another. Science needs to be precise, and it is in the direction of science, that is to say, of accurate and formulated knowledge, that all civilization must tend. Language is ever becoming a more and more perfect instrument of thought ; the vagueness and imperfection that characterized the first attempts at speech, the first hints of the meaning to be conveyed, have gradually been replaced by clearness and analysis. It is true that language must always remain more or less symbolic and suggestive ; it can neither represent things as they are, nor embody exactly the thought that conceives them ; to the last we must understand in speech more than we actually hear. As Chaignet has said,<sup>1</sup> " Les rapports nécessaires ne s'expriment presque jamais ; les plus grossiers d'entre les hommes sont encore des sages ; ils s'entendent à demi-mot ; ils parlent par sous-entendus ;" and Prof. Bréal has emphasized the fact under the name of "the latent ideas of language," calling attention to the manifold relations and senses in which a single word like *company* is understood according to the connection in which it is found.

Words, and the ideas which lie behind them, define and explain each other. It is by comparison and limitation that science marches forward : it is by the same means that the dictionary is enlarged and made clear. Nowhere is this fact better known than in the isolating

<sup>1</sup> " La Philosophie de la Science du Langage étudiée dans la Formation des Mots " (1875), p. 83.



languages of the far East, where each word taken by itself may belong to any one of the parts of speech. Thus in Siamese *luk mei*, "son + tree," is "fruit," *mä nã*, "mother + water," is "stream," *chai plaw*, "heart + empty," is "extravagance," while in Burman *kay khyan*, "rescue + thing," is "deliverance," *lū gale*, "horse + young," is "boy," *ran prū*, "strife + make," is "to contend."<sup>1</sup> But it is in Chinese that the principle has been carried out to its fullest extent. Out of the 44,500 words in the imperial dictionary of Kang-hi, 1097 begin with (or are formed upon) *sin*, "the heart." So, too, *thyan*, "the sky," in the general sense of "time," serves to define a whole class of words. *Chun thyan* is "spring," *h'ya thyan*, "summer," *chyeu thyan*, "autumn," *tung thyan*, "winter;" *tso thyan* is yesterday, *kin thyan*, "to-day. *Tsi* by itself is at once "finger" and "pointing," but the combination with it of *thau*, "the head," renders its meaning at once unquestionable. No doubt can arise as to the signification of *tau* and *lu*, which both mean "road" when they are joined together, any more than in the case of such combinations or compounds as *khing sung*, "light-heavy," *i.e.* "weight," or *fu-mu*, "father-mother," *i.e.* "parents." Sometimes not only two, but six or seven words may be united, and the whole combination used as one word with a single meaning of its own; thus in Kiang-nan a man may say: *phyan-tu-chi-chwen*, "pleasure + play + eating + drinking," with

<sup>1</sup> So in Malagassy *reni-landy*, "mother + silk," means the silkworm," *reni-tantely*, "mother + honey," "the bee." Van der Tuuk: "Outlines of a Grammar of the Malagassy Language," p. 7.

the common signification of the pleasures of life.<sup>1</sup> Usage, however, determines the order and employment of these compound expressions; thus the phrase just quoted would run in the northern provinces *chi-l'ò-phyau-tu*, and it would often be incorrect to use the determinative of a certain class of words with a word which might seem naturally to belong to the same class. But it must be remembered that it is as impossible for an isolating language to think of the single word apart from the sentence or context as it is for polysynthetic language to do so, and Steinthal<sup>2</sup> remarks with justice that "the Chinaman never uses the root [or rather word] *šǎ* alone, but always in conjunction with an object."

Accentual rhythm is further employed to help out the meaning of a sentence. Where one word is defined by another, or accompanied by an "empty" word, the accent rests upon it; where the two words are synonyms or mutually defining, the accent rests upon the second, though in some dialects on the first. Where four or five words are joined together, a secondary accent springs up by the side of the principal one, resting on the second word should the principal accent fall on the fourth or fifth.

Chinese literature is at once extensive and ancient, in spite of the destruction of it ascribed to the Emperor Chi-whang-ti (B.C. 221), a destruction, however, that could in no case have been complete, and is very possibly as legendary as Omar's destruction of the Alexandrine Library.<sup>3</sup> At all events, in the *Shu-king*, the classical his-

<sup>1</sup> Edkins: "Grammar of the Mandarin Dialect," p. 111.

<sup>2</sup> "Charakteristik," p. 122.

<sup>3</sup> Only works on medicine, divination, and agriculture are said to

tory of China, we have a work of Confucius himself, and the nine other Chinese classics, consisting of the five classics and four books, claim an equal or greater antiquity.<sup>1</sup> In the Shi-king upwards of 300 odes have been preserved, many of them in rhyme, a Chinese invention which was rediscovered in Europe at a far later date, according to Nigra, by the Kelts. Besides the religious, or rather moral works, of Confucius, Mencius, and Lao-tse, Chinese literature comprised books upon almost every conceivable subject, including the famous "Tai-tsing-ye-tung-tse," an encyclopædia of the arts and sciences in 200 volumes. It was published at the instance of the Emperor Kien-lung (A.D. 1735-95), and is but one example out of many of the encyclopædic labours of the Chinese *savans*. China has long since entered upon the period of its decrepitude; the perfection to which the examination-system has been carried has fossilized its civilization and dried up the springs of the national life; and if the Chinese people are ever to expand and progress again, it will rather be in the new worlds of America and Australia than in the effete Celestial Empire itself. But we must not forget that the beginnings of Chinese civilization are lost in a fabulous antiquity; when our own forefathers were sunk in abject barbarism or struggling through the gloom of the Dark Ages, China was building up the fabric of an isolated culture, and inventing writing and printing, silk

have been exempted from the edict of destruction. A copy of the Shu-king, or "Book of History," was, however, discovered subsequently in pulling down an old house.

<sup>1</sup> The earliest of these is the "Book of Changes," a sort of mystical geometry, compiled in prison by Wān-Whang about 1150 B.C.

paper and the compass. In China we see a time-worn and decaying people, and since the language of a people is but the outward expression of its spirit, we must equally see in the Chinese language a time-worn and decaying form of speech.

## CHAPTER IX.

### COMPARATIVE MYTHOLOGY AND THE SCIENCE OF RELIGION.

“For no thought of man made Gods to love or honour  
Ere the song within the silent soul began,  
Nor might earth in dream or deed take heaven upon her  
Till the word was clothed with speech by lips of man.”

SWINBURNE.

“Every legend fair  
Which the supreme Caucasian mind  
Carved out of Nature for itself.”

TENNYSON.

PLATO, in his “Phædrus,” tells us how Sokrates, as he walked along the banks of the Ilisus, was questioned by Phædrus regarding the local legend of Boreas and Orithyia. And the answer which he puts into the mouth of his master is one full of interest and suggestion. “The wise are doubtful,” says Sokrates, “and if, like them, I also doubted, there would be nothing very strange in that. I might have a rational explanation that Orithyia was playing with Pharmacia, when a northern gust carried her over the neighbouring rocks; and this being the manner of her death, she was said to have been carried away by Boreas. There is a discrepancy, however, about the locality, as according to another version of the story she was taken from the Arcopagus, and not from this

place. Now I quite acknowledge that these explanations are very nice, but he is not to be envied who has to give them; much labour and ingenuity will be required of him; and when he has once begun, he must go on and rehabilitate centaurs and chimæras dire. Gorgons and winged steeds flow in apace, and numberless other inconceivable and impossible monstrosities and marvels of nature. And if he is sceptical about them, and would fain reduce them all to the rules of probability, this sort of crude philosophy will take up all his time.”<sup>1</sup> The fantastic world of mythology confronted the cultivated Greek of the age of Sokrates and Plato in a way which it is hard for us to realize, and there were few equally bold enough to confess their inability to explain it. For it much needed explanation; the popular mythology shocked the morality of the Greeks of the Sophistic and philosophic age, as much as it offended their reason and experience. And yet this mythology formed the background of their art and their religion; it had been made familiar to them in their childhood, and every spot their eyes rested on recalled some ancient myth. It was not so very long before the time of Sokrates that the old mythology had exercised a potent influence upon the politics of the day; the five Spartan arbitrators had adjudged Salamis to Athens, when Solon had wrested it from the hands of the Megarians, on the ground that it was to Athens that the sons of Ajax had once migrated. Unless the Greek was prepared, like Xenophanes, to denounce Homer and Hesiod as the inventors of his mythology and the “lies” it told about God, or to banish the

<sup>1</sup> “Phædrus,” p. 229. Jowett’s translation.

poets from the ideal state, like Plato in his Republic, and forbid them to repeat their legends in the hearing of the young, he was sorely tried to harmonize the belief of his manhood with the myths that had been bequeathed to him by the childhood of his race.

Theagenes of Rhegium (B.C. 520) is said to have first attacked the problem, and like the Jewish and Christian commentators of a later time to have found the key in allegory. The tales of Homer were but veiled forms beneath which the truth lay hidden to be revealed by the qualified interpreter. The myths had ceased to be fairy-tales belonging to another world than this, and constituting no rule of action; their absolute incompatibility, when literally understood, with the morality and science of a newer age, was brought out in full relief, and the doctrine laid down that "the letter killeth, but the spirit giveth life." What, however, this spirit was, what the allegory was intended to convey, admitted of dispute, and led to the formation of different schools of interpretation. There were those who saw in them symbols of scientific phænomena, and regarded the old poets as wonderful physicists acquainted with all the facts and phænomena of nature which a later age had to rediscover. Thus we find Metrodorus resolving Agamemnon and the other heroes of the Trojan Epic into the elements and physical agencies, the gods themselves not escaping the process of transmutation. There were others, again, like the Neo-Platonists, for whom the myths were moral symbols, and with them Helen became the soul of man, around which must fight the powers of light and darkness, the reason and the



passions, the strivings after good, and the temptation to evil. Plato, we have seen, hesitated in his opinion on the matter. At one time he looks upon the myths as the mischievous products of the poets, between whom and the philosophers there must be perpetual war; at another time he shrinks from pronouncing sentence against them, and confesses that they embody feeling and religion. The more practical mind of Aristotle accepted the facts, and made no attempt to explain them away. Secure in his own conception of the impersonal reason, of thought thinking upon itself, he was content to leave to the multitude their myths partly as yielding an easy and popular explanation of the difficulties of life, partly as serving to satisfy their spiritual needs and prevent them from becoming dangerous to the State. The myths themselves, he holds, are the "waifs and strays" which have come down to us from those earlier cycles of existence through which the universe has been eternally passing; though how they survived the cataclysms with which each cycle ended we are not told.

Aristotle was the last of the philosophers who saw in the old myths something more than the deliberate fabrications of an interested class of persons. Such belief as still remained in the traditional mythology was rapidly passing away: the educated classes had found a religious resting-place in the atheism of Epikurus, while the masses were eagerly accepting the strange and wonder-working superstitions which were pouring in from the East. On all sides it was agreed that, if the gods of Hellas existed at all, they took no part in the affairs of this world. Their holy serenity could never be ruffled by the passions

and the miseries of human life. With them, therefore, the myths could have nothing to do, and the contrary belief was but one of those worn-out superstitions which could not survive the extinction of Greek freedom. To Euhemerus was due the great discovery that the gods and demi-gods of the ancient mythology were but deified men ; men, too, more immoral and dissolute than even the polished coteries of Alexandria or Pergamus. Euhemerus, it would seem, threw the statement of his doctrine into the form of a romance. In the words of Diodorus, it began by asserting that "the ancients have delivered to their posterity two different notions of the gods ; one of those that were eternal and immortal, as the sun, moon, stars, and other parts of the universe ; while others were terrestrial gods that were so made because they were benefactors to mankind, as Herakles, Dionysius, and others." Euhemerus professed to have derived his information from inscriptions in Egyptian hieroglyphics on a golden pillar in an ancient temple of Zeus at Panara, a town in the island of Pankhæa, off the coast of Arabia Felix. Above Panara rose a mountain where Uranus had once dwelt, and the inhabitants were named Triphyl-ians, being three Kretan tribes who had settled in the country in the time of Zeus, but were afterwards expelled by Ammon. The inscriptions were written by Hermes or Thoth, and recorded the lives and adventures of Uranus, Zeus, Artemis, and Apollo.

Such was the framework into which the rationalistic explanation of mythology, since known as Euhemerism, was fitted by its author. It suited the spirit of the time, and was transplanted to Rome by Ennius, the apostle of

Epicurean scepticism, where it found a ready welcome among an unimaginative and rationalizing people. Histories were now written in which the old myths, stripped of all that was marvellous in them, and therefore of their real life and essence, figured side by side with the facts of contemporaneous history. The primitive condition of the human mind, the character of the age in which the myths arose, was grotesquely misconceived, and in destroying the halo of divinity which encircled its ancient myths, paganism destroyed itself. The work begun by Euhemerus was completed by the irreverent satire of Lucian, the Voltaire of the Roman Empire.

But a new power was growing up in their midst, of which the wits and sceptics knew and thought but little. Christianity was slowly attracting to itself all those who still felt that they needed a religious creed. And Christianity, not yet freed from the influences of its Jewish birthplace, was prone to identify the deities of heathenism with the demons of Pharisaic philosophy and to turn the mythology of ancient Greece into a record of demoniac activity. The Christian was quite ready to accept the element of the miraculous contained in a myth, but he referred it to the agency of Satan. In the hands of the Christian writers, therefore, Greek mythology lost all its beauty and attractiveness; reminiscences of it still survived to mingle with the legends—Jewish, Norse, or Arabic—which satisfied the literary cravings of the Middle Ages, but otherwise it was lost and forgotten, or else looked upon with dread and abhorrence. It remained for the Renaissance, for the new birth of Europe from the slumber of the

Dark Ages, to revivify the old myths of Greece and with them the paganism of which they had once formed part.

But like most revivals, the neo-paganism of the Italian Renaissance was forced and artificial. The spell exercised by the Greek myths was due to their connection with Greek literature and art; it was not founded on belief and education. Between the society of Athens in the days of Sokrates and the society of Italy in the age of Leo X., there was a great gulf fixed, and the scholars and humanists who believed they had crossed it merely deceived themselves. The old Greek, even though he were a follower of Epikurus, started with the assumption of the truth of his mythology; the traditions of childhood, the social atmosphere around him, made this a necessity. The humanist, on the other hand, had to start with the assumption of its falsity; and the same impulse, the same contempt for the opinions of the uninstructed, which had made Euhemerus a rationalist, made the humanist persuade himself that he was a believing pagan. His attempt to revive a dead creed was necessarily a failure; all that he could do was to restore to Greek mythology its beauty and grace, to excite once more the old questions as to its origin and its nature.

The theories of modern thinkers, however much they may agree with those of the ancient Greeks in method or conclusions, differ from them wholly in one essential point. The modern European knows nothing of that feeling of reverence with which the myths were once approached; they are for him unconnected with the affairs of everyday life. The investigation of their origin and significance is a purely literary or scientific question;

it has no practical bearing or importance whatsoever. It was entered upon, too, when Europe was still under the dominion of two ruling ideas. One was the lingering belief that the gods of the heathen were devils in whose honour and interests the myths had been composed ; the other was the new idea so fittingly expressed by the Baconian term "invention," which regarded the whole universe as a piece of clockwork whose secrets were to be solved by discovering how it had been artificially put together. On no side was there any doubt that the old Greek myths were cunningly devised fables ; the only dispute was as to the purpose for which they had been devised, and who had devised them. The believers in the current theology, the students of the classical literature, the disciples of the rising school of inductive science, all alike saw in them artificial products and deliberate inventions. The philosophers resorted to the old allegorical method of interpretation, the theologians preferred the method of Euhemerus, or else convinced themselves that the mythology of the ancient world was but an echo and distorted form of Hebrew tradition.

The allegorical school of interpreters is best illustrated by Lord Bacon in his treatise "*De Sapientia Veterum.*" Its popularity is evidenced by the editions it rapidly went through, and by its translation into English and Italian. It was imagined to have solved the problem of mythology, to have penetrated into the inmost meaning of the myths. They were the allegories of the priests of early time who veiled their deep knowledge of the mysteries of nature in parables and similitudes which the uninitiated multitude interpreted as literal facts. Para-

bles were employed "as a method of teaching, whereby inventions that are new and abstruse and remote from vulgar opinions may find an easier passage to the understanding." "For," continues Bacon, "as hieroglyphics came before letters, so parables came before arguments." The Egyptian priesthood was credited with the profoundest wisdom, and in the Egyptian hieroglyphics was found a clear proof of the doctrine of the allegorizers. As the figure of a vulture signified "maternity,"<sup>1</sup> so Bacon makes Cassandra a symbol of plainness of speech, and converts the Cyclopes into "ministers of terror." In Pan he sees nature itself, the shaggy hairs of the god being "the rays which all bodies emit," his biform body denoting "the bodies of the upper and the lower world," his goat's feet, "the motion upwards of terrestrial bodies towards the regions of air and sky," his pipe of seven reeds, "that harmony and concert of things, that concord mixed with discord, which results from the motions of the seven planets." Cupid, again, is the primæval atom, "the appetite or instinct of primal matter; or to speak more plainly, the natural motion of the atom." His "attribute of archery" indicates "the action of the virtue of the atom at a distance," while his everlasting youth means that "the primary seeds of things or atoms are minute and remain in perpetual infancy." Bacon, in his Essay, unites the two schools of allegorizers, both those who held that the myths had a moral meaning, and those who interpreted them of the phænomena of nature. It seems strange that so keen an intellect should never have asked itself how it could support and verify

<sup>1</sup> Horapollo, i. 20.

the interpretation it put forward. Upon Bacon's principles, the same myth could be explained in a hundred different ways according to the fancy of the hierophant, and his famous treatise remains a monument not of ingenuity merely, but also of the ease with which a great thinker will overlook the most obvious arguments against the prevalent ideas of his own time.

The Baconian school of allegorizers was followed by a revival of Euhemerism. The rationalistic explanation of mythology was peculiarly acceptable to an age which had not as yet formulated the canons of documentary criticism, but was deeply corroded by a prosaic scepticism. The mechanical theory of the universe was in high favour, the conception of development was still to be struck out, and the past ages of the world were judged of by the standard of the present. Once more, therefore, an attempt was made to extract a pseudo-history from the Greek myths by stripping them of the supernatural and ascribing it to the inventiveness of an interested priesthood. The pages of Lemprière's "Classical Dictionary" give a good idea of the success achieved by the school. Here we may read how Circe was "a daughter of Sol and Perseis, celebrated for her knowledge of magic and venomous herbs," how Inachus was "a son of Oceanus and Tethys, father of Io, and also of Phoroneus and Ægialeus," who "founded the kingdom of Argos and was succeeded by Phoroneus B.C. 1807, and gave his name to a river of Argos, of which he became the tutelary deity after reigning sixty years," and how Erichthonius, "the fourth king of Argos, sprung from the seed of Vulcan," after being placed in a basket by Minerva,



“reigned fifty years, and died B.C. 1437.” The Abbé Banier, the leading authority in France on the subject of ancient mythology during the earlier part of the last century, went even further. Thus he tells us that he will “make it appear that Minotaur with Pasiphaë, and the rest of that fable, contain nothing but an intrigue of the Queen of Crete with a captain named Taurus ;” and stuff of this kind was translated into English and served up before the English public in six large volumes, under the title of “The Mythology and Fables of the Ancients, explained from History,” in 1737.

The myths, however, fared no better at the hands of the theologians. Bochart saw in Saturn the Biblical Noah, and in his three sons Jupiter, Neptune, and Pluto, the three sons of Noah—Ham, Japhet, and Shem.<sup>1</sup> G. J. Voss, on the other hand, identified Saturn with Adam, with an equal show of reason, while Prometheus became Noah, and Typhon, Og, King of Bashan.<sup>2</sup> Towards the end of the last century Bryant’s learned book, entitled “A New System, or an Analysis of Ancient Mythology” (1774-6), made a considerable stir in this country, his object being to show that the myths of antiquity were but distorted echoes of “the primitive tradition” recorded in the Old Testament, and that idolatry was but a perversion of the original revelation vouchsafed to Adam and his descendants. This theological explanation of mythology is even now not quite extinct. Apart from second-rate theological literature, we find Mr. Glad-

<sup>1</sup> “Geographia Sacra,” i. (1646).

<sup>2</sup> “De Theologiâ gentili et Physiologia christiana, sive de Origine et Progressu Idolatriæ,” pp. 71, 73, 97 (1668).

stone, in his "Studies on Homer," endorsing the same views, and resolving Zeus, Apollo, and Athena into the three Persons of the Trinity. Even the arbitrary explanations of the allegorizing school have more plausibility than those of the theological interpreters; at any rate they need fewer assumptions, and do not come into conflict with the ascertained facts of history. The assumption of a primæval revelation, and of the preservation of its shattered relics in the religious and mythological beliefs of the heathen world, is a pure creation of the fancy; while the mixture of Aryan and Semitic involved in the theological theory is contrary to all that has been taught us by modern science and research.

It was Grote who made the great step forward in the explanation of Greek mythology. He first pointed out clearly the essential character of a myth, and the distance which separates it from history. To mix the two together is to destroy both. The attempt to find history and philosophy in mythology is to rob mythology of its innermost spirit and kernel; the attempt to link history with myth is to turn it into fable. Myth and history belong to two different phases of the human mind; what history is to the grown man and a cultivated age, that myth is to the child and the childlike society of the early world. There is a gulf between the two which cannot be bridged over; deal with a myth as we may, it still remains a myth, it can never become history. And a myth must be dealt with as a whole; we must not take a part of it only, and according to our own arbitrary judgment determine what we shall accept and what we shall reject. Those who would strip the myth of the marvellous and

supernatural, take from it, not merely its beauty and its poetry, but its very life and essence as well. The mythical age and the historical age stand widely apart ; they demand a different mode of treatment, a different standard of criticism, a different attitude of mind.

Here Grote was content to leave the problem, without making an attempt to discover how the mythology grew up, or what was the origin of the mythical age. Some myths, like the story of Phœbus or Hyperion, were plainly symbolic, scarcely concealing beneath their language of metaphor the phænomena of nature they were intended to express ; other myths, Grote allowed, might be based on historical tradition, though without the ordinary aids of the historian it was impossible to prove this ; but speaking generally, the origin of mythology must be left unexplained, the key to its interpretation had been lost, and the endeavours made to find it had all ended in disappointment and delusion.

At the very moment, however, that Grote was thus writing, the lost key was being found, the solution of the problem of which he despaired was being discovered. The same scientific method of comparison to which the secrets of nature have been made to yield, has been successfully applied to the old riddle of mythology. The world of mythology is the creation of language—of language that has ceased to be real and living, and has become dead and forgotten. A myth, as a general rule, is but a “faded metaphor” and misinterpreted expression. The living signification it once possessed has perished out of it, and a new and false signification has been put into it. Language can at best express but im-

perfectly the ideas we wish to convey. It is by suggestion and simile, rather than by clear and definite statement, that we understand one another's meaning. Analogy is the chief instrument by means of which the vocabulary is extended; spiritual, moral, philosophical ideas must all be represented by words denoting the objects of sense. At first but little distinction is drawn between the primary sensuous signification of the word and its metaphorical application; but gradually the original sense fades out of view, the meaning of the word becomes more scientifically precise, and it passes from the realm of poetry to that of sober prose. The younger a language, the more primitive a society, the more numerous will necessarily be its metaphors and metaphorical expressions, the less scientific its phraseology. And these metaphors are the seeds out of which mythology has grown. When Tennyson writes:—

“Sad Hesper o'er the buried sun,  
And ready, thou, to die with him,”<sup>1</sup>

there is no danger of our understanding the words otherwise than as a poetical metaphor, but in the early days of humanity, before the birth of science or the growth of a scientific language, there was not only a danger but an inevitable necessity of such a misunderstanding taking place. The sensuous imagery in which a childlike society had endeavoured to shadow forth its ideas and its knowledge became a snare and a false clue to the generations that followed. The ideas and knowledge of mankind change with the centuries, and little

<sup>1</sup> “In Memoriam,” cxx.

by little the true meaning of the old words and phrases is forgotten, new senses are put into them, new conceptions attached, and false interpretations imagined. We are all convinced that whatever exists must have a reason for its existence. Words without significance are but the echoes of a gibberish that fall upon the inattentive ear, and as quickly disappear. Such empty sounds cannot fasten themselves upon the memory, and there is no reason why they should. We assign to them a meaning which they seem to us most plausibly to bear, slightly changing their pronunciation if need be to suit the sense required. A housekeeper in one of the large mansions of the north used to point out a Canaletto to visitors with the remark that it was "a candle-light picture, so called because it could not be seen to best advantage during the day;" and what this good housekeeper did on a small scale, mankind has always been doing on a large scale. The heritage of names and phrases which has descended to us invested with all the reverence of antiquity must, we feel, be preserved; yet all natural sense and meaning has vanished out of them, and the only sense we can attach to them is one utterly strange and unreal, which needs a commentator to account for it. One part only of the language we receive from our fathers expresses, however imperfectly, our present knowledge of the world about us; the other part is the enshrinement of dead and forgotten knowledge, a phantom-speech which corresponds with no reality of things. Gorgeous as may be the colours of this fairyland of mythology, the spirit that we breathe into them is the spirit of our dreams. It is true that with the increase of our know-

ledge, the limits of this fairyland grow more and more contracted, and to find it in its full extent we must go to the barbarians of the Pacific, or the children and the uneducated of our own country. Nevertheless, so long as language remains strewn with metaphor and poetry, so long as it is not reduced into a jargon of scientific exactness, so long is a certain amount of mythology inevitable even for the most sceptical and prosaic among us. We still personify "nature" in ordinary speech, we still speak of the sun as "rising" and "setting," of the world as "growing old," of "the spirit of an age." Language is the outward expression and embodiment of thought; but once formed it reacts upon that thought and moulds it to what shape it wills.

A myth, then, cannot arise unless the true meaning of a word or phrase has been forgotten and a false meaning or explanation been fastened upon it. Sometimes the false meaning has been the result of a simple blunder; as, for instance, when the official recognition of the Septuagint translation of the Pentateuch, by the seventy members of the Alexandrian Sanhedrim, caused the unknown author of the Epistle of Aristeeas to imagine that the translation itself was made by seventy persons.<sup>1</sup> Sometimes, again, it has originated in taking literally what was intended metaphorically, as when the Talmudic writers found in two verses in the Psalms (xxii. 21, cxxxii. 1, &c.)<sup>2</sup> a basis for their curious legend which

<sup>1</sup> Hitzig : "Geschichte des Volkes Israel," p. 341.

<sup>2</sup> "Save me from the lion's mouth : for thou hast heard me from the horns of the unicorns" [wild bulls]; "Lord, remember David, and all his afflictions : how he sware unto the LORD, and vowed unto the mighty One of Jacob," &c.

told how David was once when keeping his sheep carried up to the sky on the back of a monstrous rhinoceros, and, in return for the deliverance vouchsafed him by God through the help of a lion, promised to build a temple whose dimensions should be those of the animal's horn.<sup>1</sup> Sometimes it has resulted from the change of signification undergone by words in the course of centuries. Thus, the "silly sheep" of which Spenser speaks are objects not of compassion but of envy, *silly* being, like its German cousin *selig*, "blessed" or "happy." Sometimes a myth has sprung from the attempt to assign a meaning to an unintelligible word by deriving it from words of similar sound. Such myths are created by those popular etymologies—that *Volksctymologie* as the Germans call it—which play so large a part in local names. A gardener has been known to speak of *ashes-spilt*, by which he meant *asphalt*, a word utterly unintelligible to him. Familiar instances of such myths are the legends of the deer killed by Little John, or of the suicide of Pontius Pilate, which have grown up from the attempts to explain the names of Shotover Hill, really a corruption of *Château Vert*, "The Green House," and of the Swiss mountain Pilatus, originally *Pileatus*, so called from the "cap" of cloud that often rests upon it. The latter legend is a good illustration of the way in which a myth, when once

<sup>1</sup> "Midrash Tillim," fol. 21, col. 2. A similar example may be met with in "Pirkê R. Eliezer," c. 45, where we are told that Moses dug a deep pit in the land of Gad, and confined in it the evil angel Karûn, who was allowed to creep out of it and plague the Israelites only when they sinned. The real source of the story is the fact that *Karûn*, "anger," is the Arabic form of the Hebrew name Korah.



current, will be believed in against all evidence to the contrary. The small snow lake near the top of the mountain was transformed into a spot worthy of the remorseful death of the Roman proconsul, and natives and visitors, in spite of the testimony of their senses, insisted upon investing it with a fictitious horror. Thus Merian in 1642 describes it as "situated in a secluded spot, deep and fearful, surrounded by dark woods, and enclosed to prevent the approach of man; its colour is black, it is always calm, and its surface is undisturbed by the wind." It is remarkable that a French range of hills in the neighbourhood of Vienne bears the same name as the Swiss mountain, and from the same cause. Vienne, however, was actually the place to which Pilate was banished; and the accidental coincidence is a striking example of the impossibility of our discovering historic truth in a myth, although we may know from other sources that it has accidentally attached itself to a real event. Close to Vienne is a ruin called the "Tour de Mauconseil," from which, it is said, Pilate threw himself in his despair. But the value of the legend may be easily estimated when we learn that the tower is really a *tête-du-pont* built by Philippe de Valois. The eponymous heroes from whom tribes and nations have been supposed to derive their names, owe their existence to the same popular etymologizing, and are as little serviceable to the historian or the ethnologist as the legends of Pilate's death. Thus *Rome* had to be supplied with a founder of the same name; and since the legends hesitated between two pronunciations of the word, *Remus* with an *e*, and the diminutive *Romulus* with an *o*, the conclusion was near

at hand that Romulus and Remus were twin-brothers, to both of whom was due the foundation of the city.

But these four sources of misunderstanding would not by themselves account for all the myths with which the early literature of our race is filled. They must be combined with the inability of language to express the spiritual and the abstract without the help of sensuous imagery. The rich mythology of Greece and Rome, of Scandinavia and Germany, has, in large measure, grown out of the misunderstood words and phrases whereby our primitive forefathers tried to shadow forth their knowledge of nature and themselves. Like the child and the barbarian of to-day, they had not yet awakened to the distinction between object and subject, between the thinker and that whereof he thinks. The nominative of the first personal pronoun is later than the accusative ; it was not *ego, aham*, that was attached to the first person of the verbal form, but *ma, mi*. Hence it was that human action and human passion were ascribed to the forces and phænomena of nature, and conversely the attributes of inanimate objects to animate beings. And so men spoke of the sun coming out of his chamber like a bridegroom, and rejoicing as a giant to run his course ; of the dawn mounting up from the sea with rosy fingers, and fleeing from the sun as he pursued her with his burning rays ; or of the fire devouring its victim and purifying the hearth of its suppliant. Partly because of this childish confusion between nature and self, partly because all abstract ideas *must* be expressed in the language of metaphor, the seeds of an abundant mythology were sown for future generations to nourish and mature. The sun

became a giant, whose chariot rolled daily out of his palace in the east ; the dawn was changed into Daphnê, and her pursuer into Apollo ; and the fire was exalted into a mighty god whose adventures were strange and manifold. Expressions which had fully represented the knowledge and conceptions of an earlier period were no longer adequate or applicable ; their true meaning, consequently, had come to be forgotten, and a wrong meaning to be read into them ; and all that remained was to interpret the new meaning in accordance with the beliefs and prejudices of a later day. Myths, for the most part, embody the fossilized knowledge and ideas of a previous era forgotten and misinterpreted by those that have inherited them.

Just as there is a historic age, so also is there a mythopœic age. When society becomes more organized, when the family passes into the tribe or clan, the fact is reflected in the language of the community and the ideas which shape and control it. The mere animal wonder of the savage makes way for inquiry : “ *La maraviglia Dell' ignoranza e la figlia e del sapere La madre.*” And along with this awakened curiosity to understand and interpret the outward world, goes the first striving of the intellectual instinct which takes the form of tales and legends, of hymns to the gods and songs of victory. Language is needed for something better than the mere acquisition of the necessities of life ; the society it has knit together and created works out upon it the fancies of its growing thought, and finds leisure in which to gratify its spiritual and intellectual wants, and to fill its vocabulary with new words and meanings. Language enters upon its epithetic

stage, upon the period when the newly wakened mind and eye seize eagerly upon the analogies and resemblances between things, and when, accordingly, the same attribute is applied to innumerable objects which agree together only in possessing it. The same imitative tendency that furnished language with its first raw material is now busy in developing it, in making it express the changeful ideas and feelings of the human mind. Whatever could be called by a familiar name seemed thereby to be brought within the bounds of comprehension. We know things only by their attributes, and to call a metal *rajatam*, *argentum*, "the bright," was to assimilate it to the sky and other equally well-known "bright" things.

Now, it is just this epithetic stage of language, this period when man was beginning to question nature, and embody his answers in speech, that is the most fruitful seed plot of mythology. An epithet tends to become a name; there were many more bright things besides *rajatam*, "silver," but the term came in time to be restricted to silver alone. In other cases, however, it might happen that the same epithet was stereotyped into a name for two or more objects which the progress of knowledge showed to have nothing in common except their first superficial appearance. Or, again, the same object or the same class of objects might acquire two or more different names derived from different attributes. Thus the "sky" might be called not only the "bright" spot, *dyaus*, *Ζεὺς*, but also the "azure," *cælum*; or, again, *heaven*, that which is "heaved" up above the earth. Here, then, was every opportunity for future confusion; and it was not long before the confusion took place.

Synonyms were separated from one another and resolved into different beings, while homonyms that really referred to widely different objects were amalgamated into a single whole. Thus the dawn might be called *Ushas*, ἠώς, "the burning-red,"<sup>1</sup> or *Dahanâ*, *Daphnê*, "the flaming one,"<sup>2</sup> and the two synonyms after losing their attributive meaning and stiffening into proper names became two independent personages, one the goddess of the morning, the other the timid maiden whom the sun-god pursues. But the dawn was not the only object that could be called "the flaming one;" the same name was given by the early Greek to the laurel also, whose leaves blaze and crackle in the fire, and when the older application of the attributive had come to be forgotten, the name *Daphnê* was confounded with its homonym, δαφνὴ, "the laurel," into which the poets dreamed their *Daphnê* had been changed.<sup>3</sup> So, too, *Promêtheus* was at bottom the *pramanthas* or "fire-machine" of India, the two sticks which are rubbed against one another to produce fire; but transplanted to Greek soil the word lost its original significance, and became a mythological name for which a new etymology had to be sought. And the new etymology was readily found. Though *pramanthas* in the sense of a fire-machine did not exist in Greek, the same root had given rise in that language to the verbs *μανθάνω* and *μήδομαι* with a mental and not a material signification, and in place of the Indian compound, the Greek spoke of *προμήθεια*, "forethought," and *προμηθής*, "provident." And so *Promêtheus*,

<sup>1</sup> Root *ush*, "to burn."

<sup>2</sup> Sanskrit root *dah* (= *dabh*), "to burn."

<sup>3</sup> Max Müller : "Lectures," ii. pp. 548-9.

the fire-bringer, was transformed into the wise representative of forethought, who stole the fire of heaven for suffering but finally victorious humanity, and had as his brother Epimêtheus, "Afterthought." Myths are the creation of language, and whenever in the history of language expression outstrips thought, we shall have a mythopœic age.

The character of a myth, consequently, cannot be uniform, any more than the language from which it is born. Language embodies the ideas and beliefs, the emotions and knowledge of the community that speaks it, and will therefore be as many-sided as the ideas and emotions themselves. Hence there will be a mythical geography and a mythical philosophy as well as a mythical theology, or, if the phrase may be allowed, a mythical history. Man has to struggle through myth to science and history, to be the victim of his own speech before he recognizes that he is its master. Just as tribal life precedes the recognition of the individual, so must language, as the product and mirror of the community, dominate over the individual until he has come to know his own freedom and his own worth. To the child and the savage words are real and mysterious powers; it needs a long training before they can become "the wise man's counters." And so philosophy begins with its Eris and its Erôs, its Nêstis and its Aïdôneus, as in the Epic of Empedoklês,<sup>1</sup> while the *Odyssey* is the first textbook of European geography. The religious halo which surrounds the larger number of myths is mainly due to

<sup>1</sup> See Plutarch: "De Plac. Phil." i. 30.

the prominent place occupied by religion in fostering the earliest intellectual efforts of the race. Religious myths differ from others only in being more hallowed and venerable, and, therefore, in being more permanent. Had it not been for the religious sanction with which they were handed down, there are numberless religious myths that would have quickly perished as soon as their incompatibility with the axioms of existing knowledge became manifest. It was only because of the religious truth they were supposed to veil and inculcate, and the sacred associations that had gathered around them, that they were remembered and handed on, that violent attempts were made to reconcile them with the beliefs and science of a new generation, and that no process of interpretation was considered unnatural which proved them to be in harmony with the spirit of a later age.

But every myth, whether religious or otherwise, must have a setting in place and time. The fairy-world to which it belongs is yet a world, with a history and a geography of its own. Hence old myths come to be fastened on persons or localities that strike the popular imagination, and are made the centres of tradition. Around the founder of a faith like 'Sakya Muni Buddha or a king and conqueror like Charlemagne, there gather the tales that have descended from the past, and form a mythical Buddha and a mythical Charlemagne by the side of the historical ones. The immemorial story of the storming of the bright battlements of the sky by the powers of darkness, and the death of the sun at the western gate of heaven in all the glow of his youth and strength, was transferred first to the struggles of Bœotians



and Phœnicians round the citadel of Thebes, and then to the long contests waged on the coasts of Asia Minor by the Greek colonists and the defenders of "windy Troy." To look for grains of history or ethnology in such tales as these is like the search for gold in the rays of the sun. The facts of history must be collected from ordinary historical sources, from monuments and inscriptions and contemporaneous literature; the myth *may* contain a historical kernel, may be based on a historical tradition, but we cannot know this from the myth itself, nor can we separate from one another the elements of myth and history. The one is a reflection of objective facts, the other of words and thoughts. Mythology will enable us to trace the growth of the human mind; its outward development in the world of action and history must be recovered by other means. It is not from the Homeric poems but from the discoveries of Dr. Schliemann at Mykenæ, that we are assured of the existence of a powerful dynasty, and of a rich and civilized state in the old Achæan Peloponnesus; and it is the same monumental evidence, combined with similar evidence from elsewhere, that verifies the legend which brought Pelops from Lydia with the wealth of the Paktôlus, or ascribes the prehistoric culture of Hellas to strangers from the East. The memory of the past perishes quickly from the minds of the untrained and the uneducated; the battle of Minden in 1759, little more than a hundred years ago, is utterly forgotten by the peasantry of the neighbourhood, and all that Skanderbeg's countrymen remember of him is a miraculous escape that never took place, while the oldest Albanian genealogy cannot mount beyond eleven ances-

tors.<sup>1</sup> Sir G. C. Lewis reminds us of the game in which a story is whispered from ear to ear through a circle of players, and the first and last versions, when compared together, are invariably so unlike as to seem to have nothing in common. What the uninstructed man remembers is the tale told again and again round the fire in winter, full of marvels and prodigies, but reflecting in every detail the experiences of his own every day life. This is what the grandam and bard will hand down from generation to generation, especially if adorned with verse or rhythm. From time to time a new incident or a new name taken from current events will be woven into it, to mislead the would-be historian of a later day, and confound once more the distinction between history and myth. But for the most part the incidents and names belong alike to cloudland. It is not the unmeaning names of living personages, but the significant epithets of venerable legend that imprint themselves upon the popular memory. The name of Cyrus, it is true, is a historical one, but not so that of his opponent Astyages, the Persian *Aj-dahâk* or Zohak, "the biting snake" of night and darkness, and the story which Herodotus has selected as the most credible of the various ones related concerning the birth and bringing up of Cyrus, is but the old Aryan myth which is told of every solar hero. The William Tell of our childhood, who splits the apple with his arrow without hurting the boy on whose head it was placed, and successfully arouses "the three cantons" of Uri, Schwytz, and Unterwalden, to alliance and resistance against the German Empire, is but a double of the Palna-

<sup>1</sup> Von Hahn : "Sagwissenschaftliche Studien," i. pp. 62, 63.

Toki of Norway, and the William Cloudeslee of English folklore. William and Tell are equally unknown names in the Oberland of the fourteenth century, no Gesler can be found among the bailiffs of Zürich; and when the Emperor Albert visited the Swiss he met with nothing but loyal hospitality. The confederation of the three Cantons was solely for defence and internal organization; they were the steadfast upholders of the German Empire in the person of Louis of Bavaria, and the battle of Morgarten in 1315 was fought in defence of the latter against the pretensions of Frederick and the Hapsburg House.<sup>1</sup>

Equally instructive is the curious legend of Pope Joan, which has been minutely examined by Döllinger and illustrates the readiness with which a myth will spring up among an ignorant and uneducated multitude even in the midst of contemporary literature. But perhaps the most remarkable example is afforded by the Nibelungen Lied, the great Epic of the Germanic nations, since here history and myth seem at first sight to have coalesced, and legend to have occupied itself with the names and fortunes of historical characters. The story of the Nibelungs or Cloud-children, as we find it in the German Epic of the twelfth century, can be traced back to the story of Sigurd in the Scandinavian Edda, and the old Saxon legend of Dietrich of Bern. Sigurd is the Siegfried of the Teutonic version,

<sup>1</sup> See Rilliet: "Les Origines de la Confédération Suisse," 2nd edition (1869); Hungerbühler: "Étude critique sur les traditions relatives aux Origines de la Confédération Suisse" (1869); K. Meyer: "Die Tellsage" (in Bartsch: "Germanische Studien," i. pp. 159-70), 1872; Vischer: "Die Sage von der Befreiung der Waldstätte" (1867); Liebenau: "Die Tellsage zu dem Jahre 1230 historisch nach neuesten Quellen untersucht" (1864).

who gains possession of the golden sunbeams, the bright treasure of the Niflungs, by slaying Fafnir, the serpent of winter, and after delivering Brynhild from her magic sleep is made by Gunnar to forget his betrothed and marry her daughter Gudrun or Grimhild. But his unfaithfulness is speedily avenged. Sigurd is murdered by Gudrun's brothers, and Brynhild burns herself on the funeral-pyre of Sigurd, like Herakles, the Greek sun-god, on the peak of Cæta. Not yet, however, has the fatal treasure wrought its full measure of mischief. Atli, the brother of Brynhild, takes vengeance on the murderers, and Swanhild, Sigurd's posthumous son, is slain by Jörmunrek. In the Saxon story Atli is replaced by Etzel, the younger son of Osid, the Frisian king who conquers Saxony from King Melias, and lives in Susat, now Soest in Westphalia, while the Nibelungs or Cloud-children dwell at Worms, and Dietrich rules in Bonn, the earlier name of which was Bern. In the redacted Epic of the twelfth century the legend has entered upon a yet newer phase. Bern has become Verona, Dietrich Theodor, the famous Gothic conqueror of Italy, and Etzel Attila the Hun. The Jörmunrek of the Icelandic myth is transformed into Hermanric, the Gothic king at Rome, Siegfried himself is identified with Siegbert of Austrasia, who reigned from 561 to 575, married Brunhault, defeated the Huns, and was murdered by his brother's mistress Fredegond; while Gunther, the Gunnar of the Edda, assumes the character of the Burgundian Gundicar, the victim of Attila. The coincidences between the myth and actual history seem too numerous and striking to be the mere result of accident. And yet such is the case.

The Attila of history died in 453, two years before the birth of the historical Theodoric, and Jornandes who wrote at least twenty years before the death of the Austrasian Siegbert, was already acquainted with the name and story of Swanhild, the child born after Sigurd's death. If more were needed, the Icelandic and Saxon versions of the legend would prove its mythic antiquity. The historical colouring thrown over it by the version of a literary age is but deceptive; the old Teutonic story of the waxing and waning of the summer-sun was told and sung long before the time of Gundicar and Attila, long, in fact, before the beginning of the Christian era. Just as the untaught peasant will invent an etymology for a word or name he does not understand, and connect it with what is familiar to him, so the literary artist will find a place in history for the personages of mythology, and identify their names with those of which they remind him. No doubt, as we have already seen, a popular myth will sometimes absorb the name and deeds of a historical character; no doubt, too, a real person may sometimes bear a name famous in legend, and essay to emulate the actions of his mythical namesake, thereby becoming himself in time a figure of myth; but such cases lie outside the sphere of the historian; without other evidence he cannot separate the true from the false, the facts of history from the creations of fancy.

The puzzle over which the philosophers of Greece laboured in vain has thus been solved. Myths originate in the inability of language fully to represent our thoughts, in changes of signification undergone by words as they pass through the mouths of successive gene-

rations, and in the consequent misinterpretation of their meaning and the growth of a dreamland whose sole foundation are the heirlooms of bygone speech. Language, therefore, can alone explain mythology, and in the science of language we must look for the key which will unlock its secrets. It is by tracing back a word to its source, by watching the various phases of form and sense through which it has passed, that we can alone discover the origin and development of a myth. The work, in fact, consists in tracking out the true etymologies of words, as opposed to those false etymologies which are of themselves the fruitful causes of mythology and effectually prevented the scholars of the past from probing its mystery. The discovery of true etymologies has been made possible by comparative philology, and comparative philology, accordingly, is the clue by the help of which we can safely find our way through the labyrinth of ancient myth. Without its aid, it is unsafe to attempt the explanation of even the simplest myth, and where its aid fails us, the solution of a myth is out of the question. It is only where the proper names are capable of interpretation that the source—the etymology, as we may call it—of a myth can be discovered. Where they still resist analysis the myth must remain like the words of which the lexicographer can give no derivation.

Like the lexicographer, too, the mythologist must group and compare his myths together. Just as a multitude of words can be followed back to a single root, so a multitude of myths, differing in form in their historical and geographical setting, may all be followed back to a single germ. An attempt has been made to reduce the

manifold myths and folk-tales of the Aryan nations to about fifty originals, and whatever may be the value of the attempt, it is certain that the kaleidoscope patterns which the imagination of man has woven out of a few primæval household tales are almost infinite.

But care must be taken to compare together only those myths which belong to the languages shown by comparative philology to be children of a common mother. Where language demonstrates identity of origin, there will be identity of myths ; but not otherwise. To lump together the legends of Greeks and Romans, of Fins, of Kafirs, and of Australians, will lead only to error and confusion. It is but to repeat the old mistake of the "philologists" of the last century, who heaped together words from the most diverse languages of the globe because they happened to be alike in sound and sense. The mind of primitive man is similar wherever he may chance to live, and the circumstances that surround him are much the same ; his ideas, therefore, and his expression of them, will present what may seem to many a startling resemblance ; the same problems will present themselves to him, and his answers will be of the same kind. The likeness in form and sentiment between the hymns of the Rig-Veda and the hymns of the early Accadians of Babylonia is frequently surprising ; nevertheless we know that there could have been no contact between the Rishis of India and the poets of Chaldea. The hare is accounted unclean by the Kafirs just as it was by the Jews and the Britons ; but for all that the belief must have fixed itself independently among each of the three peoples. It is not more strange



to find a general likeness between the adventures of solar heroes, whether among Indo-Europeans, Fins and Tatars, or South Sea Islanders, than it is to find the primitive races of the world explaining the phænomena of sunrise and sunset in the same way. Weeds will grow up everywhere, should soil and climate suit, but we are not obliged to assume that they all belong to one genus or one species, or have all come from one primæval home. It is enough for us to compare the myths of a single family of speech ; to group together those of them that are alike, noting the points in which they differ, the transformations they have undergone, and the several modes in which they have been fashioned and adapted. The story of Baldyr is but the story of Akhilles in a new form ; the siege of Troy is but a repetition of its earlier siege by Hêraklês, or of the two sieges of Thebes by the seven heroes and their descendants ; the legend of Cyrus and Astyages is the legend of Romulus and Amulius, of Perseus and Akrisius, of Thêseus and Ægeus.

Now and then, it is true, the resemblances between two myths belonging to unallied families of speech extend to details which may seem to us of the most trivial character. But it does not follow that they were so in the eyes of the men of the mythopœic age. The same train of reasoning from the same set of supposed facts will end in the same conclusions, and a myth, it must be remembered, embodies the first childlike knowledge of the world about him possessed by primitive man, and the conclusions which he drew from it. Coincidences have been pointed out between the story of Jack the Giant-

Killer and the Kafir story of Uhlakanyana, who tricks the cannibal and his mother, to whom he had been delivered to be boiled,<sup>1</sup> but coincidences do not of themselves point to a common origin. And the comparative mythologist, like the comparative philologist, must always be on his guard against cases of borrowing. Myths and legends can be borrowed as readily as words, and, indeed, even more readily. A large part of the mythology of ancient Greece, we now know, was derived from Babylonia, partly through the fostering hands of the Phœnicians, partly along the great highway that led across Asia Minor. The Babylonian original of the myth of Aphrodité and Adônîs has been recovered from the clay library of Nineveh, and the story of Héraklès and his twelve labours may now be read in the fragments of the great Chaldean epic, which was redacted into a single whole about two thousand years before the birth of Christ. It would be worse than a mistake to treat as a pure and native myth the hybrid conception which resulted from the amalgamation of Hercules, the old Italian god of enclosures, with the Greek Sun-god Héraklès, or of Saturnus, the patron of "sowing" and agriculture, with Kronos, who owed his existence to his son Kronion (or Khronion), "the ancient of days." Nor is it so easy as it would appear at first sight to distinguish between what is native and what is borrowed. When once a myth has been adopted from abroad it is taken up into the popular mythology; its foreign features are gradually lost; the proper names

<sup>1</sup> See Bishop Callaway: "Nursery Tales, Traditions, and Histories of the Zulus," i. 1 (1866).

about which its clusters are changed or modified in form. It is not often that we have to deal with so plain a case as the story of Melikertes, whose name has remained the same as that of the Tyrian Melkarth, "the city's king," or that of Aphroditê and Adônîs where Adônîs is still the Semitic *'adônai*, the "lord" of heaven. Other tests are more often needed for determining the home-born origin of a myth. Does it harmonize with the general character of the mythology? is a similar tale or group of tales found among an alien race, with whose mythology it is in better accord? can we trace its passage from one part of the world to another? These are the questions which we have to ask ourselves. The story of the *Kyklôps* in the *Odyssey*, adapted as it has been in both form and proper names to the genius of Greek speech, yet stands isolated in Aryan mythology. We seem to hear in it an undertone which harmonizes but ill with the familiar cadence of Aryan myth. And it is just this story of the *Kyklôps* which finds its analogues in the folklore of non-Aryan tribes.<sup>1</sup> The one-eyed giant who lives on human flesh, and is finally blinded by a hero whom he entraps into his cave, but who escapes under the belly of a sheep or ram, and then taunts the monster, reappears among the Turkish *Oghuzians*, where he is called *Depé Ghöz* or "Eye-in-the-Crown," the hero himself being named *Bissat*.<sup>2</sup> In the Finnish version of

<sup>1</sup> See W. Grimm, in the "Abhandlungen der Akademie der Wissenschaften zu Berlin" (1857); Rohde: "Der griech. Roman," p. 173, note 2; and Sayce: "Principles of Comparative Philology," 2nd edition, pp. 321-23.

<sup>2</sup> Diez: "Der neuentdeckte oghuzische Cyclop verglichen mit d. homerischen" (1815).

the tale as given by Bertram, the hero's part is played by Gylpho, a poor groom, the Kammo or Kyklôps having a horn in addition to the one eye in the forehead, and being not only blinded but also put to death, as in the Oghuzian tale; but no mention is made of the hero's escape by the help of the sheep. In the Karelian legend reported by Castrén,<sup>1</sup> the Kyklôps is made human by having two eyes assigned to him, while the Esths have Christianized the myth, telling how a thresher once blinded the eyes of the devil under the pretext of curing them, and, as in the Odyssey, lost him the sympathy of his friends by giving his own name as *Issi* or "Self." In the Oghuzian version the story is amplified by a magic ring which the Kyklôps presents to the hero, and which in other versions clings to the latter's finger, or compels him to shout out, "I am here;" and this addition has apparently been rationalized in the Odyssey. If so, there can be little doubt as to where we must look for the most primitive form of the story, and when we remember that the Turkish tale is also found among the Finnic members of the Ugro-Altaiic family, while it stands isolated in Greece, notwithstanding the three Graiai of Æschylus with their one eye between them, it would seem that the Greek myth was a borrowed one, and that its origin must be sought among the tribes of Turan. And yet a doubt is cast upon this conclusion by our finding that among the fastnesses of the Pyrenees, the Basques, too, have preserved a legend of the Tartaro or One-eyed Kyklôps, which seems almost the sole fragment of their existing folklore that has not been

<sup>1</sup> "Reseminnen från åren" (1833-44), p. 87.

borrowed from abroad.<sup>1</sup> Among the forms assumed by the legend is one that describes how the man-eater lived in a cave, where he is challenged by one of three brothers. The latter lops off one of the arms of the Tartaro and renewing the challenge next day lops off his head, then kills several more Tartaros, fights a body without a soul, and delivers the three daughters of a king. It is certainly more probable that the traveller's tale recorded by the poet of the *Odyssey* was received from races in the Western Mediterranean, of whom the Basques may be the last surviving relics, than that it came from the interior of Asia, from barren lands where the Ural-Altaiic hordes were settled. But what is most probable is not therefore always the most true. M. Antoine d'Abbadie has met with a story similar to that of the *Kyklôps* and the escape of *Odysseus* under the belly of a ram among the tribes of Abyssinia, and the story can be traced back to the far east of Asia long before the days in which the *Odyssey* took its present shape. Herodotus tells us<sup>2</sup> how *Aristeas* of *Prokonnesus*, in his poem of the *Arimaspea*, described the *Arimaspi* or "One-eyed men," who lived beyond the *Issedones* and the *Scythians* in the extreme north-east, where they bordered on the *gryphons*, whose task it was to guard the hidden treasures of gold. Now the *Arimaspi* of *Aristeas* must be identical with the one-eyed men of the Chinese "*Shan Hoi King*," an old book of Monsters, which claims to have been written in the twelfth century B.C., and the illustrations of which, at all events, go back to the time of

<sup>1</sup> Webster and Vinson : "Basque Legends" (1877).

<sup>2</sup> iv. 13, 27.

the Han dynasty. These one-eyed men are described as living beyond the western desert of Gobi, and the portrait of one of them which is given exactly represents the Polyphemus of Greek legend, with a single eye in the centre of the forehead, and a general appearance of wild barbarism. Along with this account of the *Kyklôps*, the Chinese writer gives a further account of certain small men covered with hair inhabiting some islands to the east, as well as of diminutive pygmies who come from the same neighbourhood as the *Kyklôps*, and have to walk arm in arm for fear of being picked up and eaten by the birds. The hairy men from the islands in the east are plainly the *Ainos* of Japan, not yet it would appear colonized by Japanese when the "Shan Hoi King" was composed, while in the pygmies we recognize at once the pygmies of the *Iliad*<sup>1</sup> and of Aristotle,<sup>2</sup> to whom, on the shores of the circumambient Ocean, the cranes "carry slaughter and death." The primæval source of the two old Greek stories thus becomes manifest: it was from the frontiers of China, through the medium of the Scythian caravan-trade, that the tales of the *Arimaspi* and the pygmies were brought to Greece, and just as the tale of the pygmies has been incorporated into the *Iliad*, so the tale of the *Kyklôps*, in much the same form as that in which it has survived among Turks and Fins, has been incorporated into the *Odyssey*. The tale is indeed a borrowed one, but it was borrowed from the east and not from the west. The Basque *Tartaro*, like the *Kyklôps* of *Abysinia*, would have come in all probability from Asia, possibly through the hands of the Greeks themselves, pos-

<sup>1</sup> iii. 6.

<sup>2</sup> H. A. viii. 12, 3.

sibly in some other way. The strange idea of a body without a soul which has been embodied in the Basque myth, is certainly of foreign origin. Miss Frere, in her "Old Dekkan Days," tells us that she has heard the story in Southern India, and far away in the north the Samoyeds have a legend of seven robbers who hung up their hearts on a peg and were destroyed by a hero, whose mother they had captured, with the help of a Swan-maiden, whose feather-dress he had stolen. A similar legend was met with by Castrén among the Fins, of a giant who kept his soul in a snake which he carried in a box with him on horseback, and the Norse story of the giant without a heart in his body, given by Dr. Dasent,<sup>1</sup> seems to have been derived by the Scandinavians from their Finnic neighbours. Before we can use a myth to establish the common origin of those among whom it is found, we must be quite sure that it is not borrowed. Language is no test of race, merely of social contact, and so, too, the possession of a common stock of myths proves nothing more than neighbourly intercourse.

We need not linger long over the objections that have been raised to the method and the results of comparative mythology. All new things are sure to be objected to by those who have to unlearn the old. It is hard for scholars who have spent their lives in extracting profound lessons of philosophy or science out of the symbolic myths wherein they had been wrapped by our highly gifted grandsires, harder still for those who would discover in these ancient legends facts of history or echoes

<sup>1</sup> "Norse Tales," pp. 64, 57.



of revealed truth, to admit that their search and labour have been all in vain. It has been urged on the one hand that the comparative mythologist would assign too high an imagination to primitive man, whom he transforms into a poet ever busied in contemplating the ceaseless changes of nature and life ; on the other hand, that he makes the mythopœic age one of dull stupidity and feeble imagination, in which the phænomena of the atmosphere engrossed the whole attention of men who were yet too witless to understand the language in which they were described. But such mutually destructive objections are readily answered. The men who described the toils of the sun and the fading of the dawn in language that soon passed into myth were endowed neither with too high nor with too feeble a phantasy. The gods they worshipped were the gods that brought them food and warmth, and these gods were the bright day and the burning sun. Eagerly did they watch for the rising of the dawn and the scattering of the black clouds of night and storm, because " man goeth forth unto his work and his labour until the evening," and the needs of life have to be satisfied ere then. It was not stupidity, but the necessities of his daily existence, the conditions in which his lot was cast, that made man confine his thought and care to the powers which gave him the good gifts he desired. Winter, according to the disciples of Zoroaster, was the creation of the evil one, and among the first thanksgivings lisped by our race is praise of the gods as " givers of good things." As Von Hahn has pointed out<sup>1</sup> the small part played by the moon in mythology is due to the little share it has in providing

<sup>1</sup> " *Sagwissenschaftliche Studien*," p. 92.

for human wants. It is only among the Accadians of Chaldea, that nation of astronomers and astrologers, that the moon takes the place denied to it elsewhere. Though Accadian mythology, like all other mythologies, is largely solar, it is also largely lunar. The Moon-god stands above the Sun-god, whose father he is held to be ; it was from him that the royal race traced its descent, and to him were erected the lofty towers which served at once as temples and observatories. What clearer proof can we have that the character of a mythology is determined by the material needs and circumstances of those that formed it, or that the mythopœic age is one in which those needs are still keenly felt ?

The men of the mythopœic age, however, were not savages, nor were those who interpreted to them the mysteries of the world mere stolid boors blind to the beauties of nature. The powers that seemed to give them the blessings they asked for were invested with human action and human feeling. But it was because they could not do otherwise. The language in which they spoke of their gods may appear to us imaginative and poetical ; but it was the only language they could use. Man attributed his own passions, his own movements, to the forces of nature, not because he was a poet, but because he had not yet learned to distinguish between the lifeless and the living. He clothed the deep things of the spirit in sensuous metaphor and imagery ; but it was because he had not yet realized that aught existed which his senses could not perceive. The objects of his thought and its expression were limited, because the objects of his worship were limited ; but few as they were,

they were more than enough for the rich outgrowth which reached its noblest perfection in the gorgeous mythology of Greece. The hymns of the Rig-Veda, the oldest monument of our Aryan race, which have founded the science of language, have founded also its younger sister, the science of mythology. Here, at any rate, we have the touchstone by which we can test the soundness of our theory ; here we may see the names and phrases, not yet emptied of their earliest metaphorical meaning, beginning to pass into the myths of a later day. As words and grammatical forms which had lost almost all trace of their original sense in the idioms of Europe suddenly received new life and significancy when compared with the language of the Rig-Veda, so the myths and folklore of Greece and Rome, of Germany and Gaul and Slavonia, yielded up their secrets and revealed their primitive meaning when read in the light of the epithets and utterances which the old Hindu bards addressed to the Sun-god or the Dawn. Why must every myth, it has been asked, be resolved into a solar hero or a dawn-maiden ? Why this wearisome monotony of subject, this vague and indefinite sameness of adventures ? The answer is an easy one. Apart from the fact that there are many myths which have been shown by a scientific analysis to have nothing to do with either the sun or the dawn, and many more which as yet defy our efforts to analyze them, primitive man cared to coin epithets for none but those bright powers of nature from whom he believed his benefits to come, and the Rig-Veda, accordingly, demonstrates beyond dispute that the greater part of the myths of our

Aryan race *are* derived from the faded metaphors applied to the sun and the dawn, and from no others. And not the Rig-Veda only, but the mythologies of other nations when closely questioned testify to the same fact. Whether we turn to the myths of Polynesia,<sup>1</sup> of Fins and Tatars, or of ancient Chaldea, we find them centering round the same or similar phænomena of nature, and taking upon them similar forms. And thanks to the agglutinative character of the languages, the proper names in these cases have generally remained clear and transparent, preventing all mistakes as to the first origin and meaning of the myths.

But there is always a danger that a hobby may be ridden too hard. The solar explanation of myths has been extended by some writers far beyond its legitimate limits. We may admit that a large part of the myths we can analyze have a solar origin, and yet hold that there are many to which such an explanation does not apply. If mythology is the misunderstood summary of the beliefs and knowledge of primitive man, it will include much more than his conceptions of solar and atmospheric phænomena ; we shall find it a record of all his ideas regarding the world around him. As a matter of fact, there are numberless myths, both Aryan and non-Aryan, which can be proved to have another origin than a solar one. There are myths relating to the storm-clouds, to the stars, to eclipses of the moon, even to the creation of the earth and sea and living beings, from which the solar

<sup>1</sup> See the New Zealand stories of Maui, the Sun-god, in Tylor's "Primitive Culture," pp. 302, 309, and Gill : "Myths and Songs from the South Pacific" (1876).

element is altogether absent. To confound the so-called "Solar Theory" with comparative mythology, is to show an entire ignorance of the method and results of the latter. Nor must it be forgotten that there are many myths of which we shall never know the true source and derivation. We may guess at it in some cases, but like doubtful etymologies, our guesses can never become certainties. And where comparative philology sheds no light on the meaning of the proper names, even a guess is inadmissible.

Two more objections still remain to be dealt with. On the principles followed by comparative mythologists, it is said, any story of life and death and marriage, any tale in which the hero migrates from east to west, or dies in the prime of his career, ought to be received into the circle of solar myths. So vague and general are the features attributed to the myth, so elastic the limits by which it is confined, that it is possible to transmute almost any individual into an image of the sun. But here, again, the objection lies not against comparative mythology, but against a misuse of it. Comparative mythology is but a branch of comparative philology, and must be content to follow, not to lead. Only where a scientific analysis of the proper names reveals their original character may we compare two or more myths together within the same group of languages, and determine their primary form and significance. Herâklês is a solar hero, not only because his life and labours are those of other solar heroes, but because his own name discloses his derivation from *swara*, "the splendour of heaven," like that of the goddess Hêrê, while the names of those with

whom he comes into contact, Augeias, Deianeira, Iole, have equally to do with celestial phænomena.

The other objection is based on the fact that a myth is frequently peculiar to a single locality, or met with only in writers of late date. But from its very nature a myth will clothe itself with an infinity of different forms, adapting itself to the conditions of place and time, and taking the colour of each country and age. Just as some old word or old form of the highest value to the etymologist may linger on in some sequestered corner, so an early form of a myth may survive in the mouths of a few illiterate peasants to be discovered by the antiquarian or book-maker of a late date. The Greek legend of Kephalos and Prokris is not found in literature before the time of Apollodorus and Ovid, and yet the scientific analysis of it shows that its roots must go back to a hoar antiquity. Prof. Max Müller has explained Prokris by the help of  $\pi\rho\acute{\omega}\xi$ , "a dewdrop," and the Sanskrit roots *prish* and *prush*, "to sprinkle," and when we know that Kephalos, the son of Hersê, "the dew," is but an epithet of the sun, as is "the head" of the horse in the Veda, the signification of the whole story becomes clear. Prokris is slain unintentionally by Kephalos while jealously watching him through fear of her rival Eos, just as the dew in the early morning is parched up by the first rays of the rising sun.<sup>1</sup> In modern Greek folklore we seem to find fragments of tales which the Greeks brought with them to Hellas, and which yet were never noticed by those of their writers whose works have come down to us, tales like the  $\mu\tilde{\nu}\thetaοι$ , which Amphitryon advises to be told to the children in

<sup>1</sup> Max Müller : "Chips from a German Workshop," ii. 87-91.

the "Hercules Furens" of Euripides,<sup>1</sup> or of which Aristophanes once quotes the opening formula.<sup>2</sup> In this modern folklore Kharon is the god of death, not the grim ferryman of the Styx, and when we remember that he performs the same functions in the paintings of the Etruscan tombs, it becomes probable that side by side with the literary representation of him went another, possibly more popular, possibly provincial, in which he took the place of Aides.

If the mythopœic age is one through which all races of men must pass who have lifted themselves above the lowest savagery, it is evident that it cannot be confined to those languages in which gender and sex are denoted, as Dr. Bleek maintained.<sup>3</sup> The indication of gender is an accident of language, the creation of myths a necessity. No doubt the process is largely aided by the existence of gender: personification becomes much easier, the transition of an epithet into a proper name much simpler. Indeed, to indicate sex is of itself to mythologize; the sailor who speaks of his ship as "she," is using the language of myth. The very fact that Prokris was feminine caused the word to be regarded as a woman's name when its original meaning was lost; and Bleek may be right in holding that the beast fables of the Hottentots have some connection with the sex-denoting character of their dialects. But the connection cannot be a necessary one,

<sup>1</sup> ll. 98-101. See also Plutarch: "Thes." 23; Plato: "Gorg." p. 527 A.

<sup>2</sup> "Wasps," 1182. Cf. Schmidt: "Griechische Märchen, Sagen und Volkslieder" (1877), Introd., especially pp. 11-13.

<sup>3</sup> See "A Comparative Grammar of South African Languages," i. (1862), pp. ix.-xi., and "Report."



since the Bushmen, who above all the races of Southern Africa are distinguished by their love of the beast fable, know nothing of the distinction of gender, while the genderless Accadian possessed a richer and more developed mythology than the Semite, who divided his nouns into masculine and feminine. In fact, we now know that much of the Semitic mythology was simply borrowed from the older mythology of Accad. Go where we will, all over the world we find mythology ; it is inseparable from the growth of language, whose offspring it is. The grammar of a language can do no more than determine the proportions the mythology will attain and the exact forms it will assume.

Myth, folklore, fable, allegory—all these are related terms, but terms to be kept carefully apart. A myth is the misinterpreted answer given by the young mind of man to the questions the world about him seemed to put. It is the speculation of a child which the grown man has treated as though it were the utterance of his own mature thought. The term folklore is of vaguer meaning. It embraces all those popular stories of which the fairy tales of our nursery are a good illustration, but from which the religious element of mythology is absent. Their proper names, too, are for the most part incapable of analysis ; the distance that separates them from their original source and centre is too great to be spanned even by the comparative philologist. Popular etymologies doubtless abound in them, but such etymologies remain comparatively unfruitful, changing or modifying only an unessential portion of the story, and not its whole character. The attempt to explain nature which lies at the

bottom of a myth is altogether wanting, or if it were ever present has been so obscured and effaced as to be utterly unrecognizable. Though the figures of mythology may move in the folklore of a people they have changed their form and fashion; the divinity that once clothed them is departed; they are become vulgar flesh and blood. It is true that it is often difficult to draw the line between folklore and mythology, to define exactly where the one ends and the other begins, and there are many instances in which the two terms overlap one another; but this is the case in all departments of research, and the broad outlines of the two types of popular legend stand clearly distinct. It is a mere misuse of the term to include myths, as is sometimes done, under the general head of "folklore."<sup>1</sup>

The precise relation of mythology and folklore is still a disputed question. There is much folklore which can be traced back with certainty to faded myths. The tale of the sleeping beauty, for example, is but a far-off echo of the old myth which described the sudden awakening of nature at the approach of the spring sun, and the myth of the *Kyklôps* can only be excluded from the category of folklore by seeing in the name of the monster a living reminiscence of the sun, "the round eye" of heaven. A tale collected by Schmidt in Zante,<sup>2</sup> recounts how an armed maiden sprang with lance and helmet

<sup>1</sup> The two Grimms, in their Preface to the "Deutsche Sagen" (1816), p. v., state that the peculiarity of a myth consists "in its referring to something known and consciously conceived, to some place or some name which is verified by history;" but this definition does not hold good in all cases (see Bechstein: "Deutsches Märchenbuch," 1st edition, 1847, p. iii.).

<sup>2</sup> "Griechische Märchen," &c., p. 77.

from the swollen calf of an unmarried king, and in this we cannot refuse to see a survival of the story which made Athena, the dawn-goddess, spring from the head of Zeus. But there are many other nursery tales which can be forced into a connection with known myths only by arbitrary and unscientific theorizing. And among these nursery tales we find the same resemblance, the same apparent bond of union, as among the myths by which they are accompanied. Not only can the same kind of likeness be pointed out in the folklore of allied languages and dialects, but also in that of unallied families of speech. The fact which the comparative method has shown to hold good of mythology, holds good of folklore also. And the fact has to be explained in the same way as in the case of mythology. When, for instance, we find Kafir legends of Uhlakanyana which present numerous points of analogy with the story of Jack-the-Giant-killer, or when we come across tales among Eskimos, Mongols, and the Karens of Further India which resemble what the Greeks told of the Symplegades, or of Kharybdis and Skylla, we must remember how much alike are the minds of half-civilized men, and the circumstances amid which they live. When, again, we find a compact body of folklore existing among the scattered members of the Aryan family, and by its close agreement pointing to a common origin, we are justified in holding that it must have grown up before the division of the Aryans, and been carried by them far and wide into their new settlements.<sup>1</sup> But as in mythology, so in folklore,

<sup>1</sup> For arguments in favour of the priority of nursery tales to myths, see A. Lang in the "Fortnightly Review," May, 1873.

we must be on our guard against assuming that to be native and original which is really borrowed. Benfey, indeed, has gone too far in affirming that almost all the folklore of modern Europe has migrated from India since the beginning of the Christian era, and the existence in the eighth century of the romance of SS. Barlaam and Josaphat, the latter of whom is but Buddha in Western disguise, has obliged him to modify his first theory, which placed the introduction of it as late as the tenth century and the closer contact of the Mahomedans with India.<sup>1</sup> Some portion at all events of the tale of Love and Psychê in Apuleius, which Friedländer has successfully compared with modern German and Hindu tales of the same kind,<sup>2</sup> must go back beyond the time when there was any intercourse between India and the Mediterranean. Nevertheless, there can be little doubt that folklore travels more easily than mythology, and that the literature of the nursery, and we may also add of the monasteries, was largely enriched by the Crusades. The "Gesta Romanorum" or the "Romance of Dolopathos," translated from a Latin work of John the Monk into Latin verse about 1225 A.D., will illustrate the extent to which the borrowing went on, and the "Decamerone" of Boccaccio, like the Fables of La Fontaine, bear on almost every page the stamp of their eastern origin.<sup>3</sup> The fables

<sup>1</sup> See his Preface to the translation of the "Panchatantra" (1859), pp. xxii. *sq.*

<sup>2</sup> "Dissertatio qua fabula Apuleiana de Psyche et Cupidine cum fabulis cognatis comparatur," in two University Theses (Königsberg, 1860).

<sup>3</sup> See Max Müller: "On the Migration of Fables," in "Chips from a German Workshop," iv. pp. 145-209.

of the Hindu Panchatantra or "Pentateuch," a collection which owed its existence in the first instance to the Buddhist teachers, and is at least as old as the third century of our era, have been carried not only into Europe, but also into Tibet and Mongolia, among Tatars and Ugric tribes. The "Basque Legends," published by Webster and Vinson, are equally for the most part importations from abroad. There are few among them which we cannot recognize in a more primitive form among the inhabitants of Southern France, the Slavs of Eastern Europe, or even the Keltic population of the Western Highlands. The readiness with which a folklore passes from country to country, is a fresh proof of the avidity with which the mind of the uninstructed man seizes upon such intellectual food, and the fidelity with which it remains stored up in his memory. What "a good story" is to the loungee in the clubs, a nursery tale is to the untaught peasant. Like "good stories," nursery tales, of course, are modified by those who borrow and repeat them. They have to adapt themselves to their new abode, to catch the colour of the scenery and the life in the midst of which they find themselves. The elephant of the Indian tale becomes a horse, the founder of Buddhism a Christian saint.

The fables of the Panchatantra have been necessarily included under the head of folklore. But there are many fables which could not be so included, and in any case fables constitute a class of popular tales apart by themselves. It is only when the fable is, so to speak, unconscious, when it has not been composed with the deliberate purpose of conveying a lesson, that it ought strictly to be

regarded as a part of folklore. The consciously devised fable is a curious product, which stands on the very threshold of the literary age, or else is the form of political satire most conveniently resorted to under a despotic government. But the consciously-devised fable is an aftergrowth, an imitation ; it is but the later adaptation of an aboriginal species of popular tale. The fable, in fact, differs from other popular legends at the outset in nothing save its introduction of brute beasts as speaking and acting like men. It is only by degrees that its didactic usefulness becomes manifest, and it is made "to point a moral or adorn a tale." The most primitive beast-fables, such as those of the Bushmen and the Hotentots, rarely have any more didactic purpose than an ordinary myth. Human attributes are assigned to the brute creation for the same reason and in the same way that they are to the objects of inanimate nature ; indeed, no distinction is drawn in the South African fables between the animals and the celestial bodies ; the same peculiar pronunciation is ascribed alike to the moon, the anteater, and the hare. Elsewhere, as among the Polynesians<sup>1</sup> and the Australians,<sup>2</sup> the heavenly bodies are turned into beasts, and the word *Zodiac*, "the circle of animals," perpetuates the same confusion of ideas even among ourselves. But the cause of the confusion is the cause which underlies all mythology. The only way in which primitive man could account for the motions of the sun and moon and stars, was by endowing them with

<sup>1</sup> Gill : "Myths and Songs from the South Pacific," pp. 40-51.

<sup>2</sup> Ridley : "Kámilarói and other Australian Languages" (2nd edition, 1875), pp. 141, 142.

his own life and powers. As yet no distinction was drawn between the object and the subject ; nor could it be until the mythopœic age had passed away. Hence it was that the brute animals were made to talk and behave like man himself, and the same tendency which gave to the myths of one race a physical character, threw the myths of another race into the form of beast-fables. It is not a little curious that the chief home of the beast-fable should be Africa, and especially those backward tribes of Southern Africa whose languages contain in their clicks the bridge that marks the passage of inarticulate cries into articulate speech. It seems as if the same conservatism which has preserved the animal sounds out of which language was developed, has preserved also a sympathy with the animal world, a memory of the close ties which unite us with it. Professor Mahaffy has suggested that Africa, pre-eminently the land of animal-worship, was the first birthplace of the fable, and he reminds us that the first literary essays made by the Vei-negroes after Doalu's invention of a syllabary, were fables about beasts.<sup>1</sup> But the Vei-negroes are not alone in their employment of them. Go where we will among the native races of Africa we shall find the beast-fable occupying a peculiar and almost isolated place. Such literature as they possess consists almost wholly of beast-fables. Beast-fables were known among the Egyptians at least as early as the reign of Ramses III., and used by them to satirize the government and caricature the kings. But it is possible that, like the clicks, the beast-fable also radiated from one source—the race now known as

<sup>1</sup> "Prolegomena to Ancient History," p. 391.



Bushmen. It is among them that it exists in its fullest and most original form, and it is among them, too, that the art of drawing animals with considerable skill has been cultivated from time immemorial, as is evidenced by the rock paintings of Southern Africa. Even with the imperfect materials we possess at present, it is possible to trace the diffusion of certain fables from a primitive Bushman source. Thus the hare plays much the same part in these African fables that the fox does in our European ones, and fables that illustrate the superior cunning of the hare can be traced from the Bari of Central Africa<sup>1</sup> through Malagasy, Swahili, Kafir, and Hot-tentot back to the Bushmen, where he is associated with what Dr. Bleek calls "a most unpronounceable click,"<sup>2</sup> not otherwise found in the language. But though we may regard the Bushmen as disseminators of the beast-fable through the continent of Africa, it is impossible to doubt that it has grown up independently elsewhere also. Thus among the remains of the library of Nineveh are fragments of fables, one of which represents the conversation of a horse and an eagle; and these fragments mount back to the Accadian epoch. The Hindu fables, again, cannot be connected with Africa, and when we compare the collection of the Panchatantra with the fables of *Æsop*, it becomes probable that the Aryans were acquainted with this class of fictitious composition before the age of their separation. All over the world indeed, we find animals endowed with the language and

<sup>1</sup> See the specimen given by Miterrutzner: "Die Sprache der Bari in Central-Afrika," p. 10.

<sup>2</sup> "Second Report concerning Bushman Researches" (1875), p. 6.

powers of men. Thus among the Polynesian myths collected by Mr. Gill, we are told of a shark that speaks and acts like a human being,<sup>1</sup> and an Australian legend reported by Mr. Ridley ascribes human speech and action to the pelican and the musk-duck.<sup>2</sup> The fable is an integral part of mythology ; it is not until we reach the literary age that it ceases to be the spontaneous utterance of a childlike people and becomes the vehicle of a moral or a satire. As we shall see, there is no necessary connection between totemism and the fable.

Allegory and parable are the products of an era of cultivation. We have left the childhood of mankind behind us ; we have passed to the time of conscious reflection and religious or moral propagandism. Artificiality is the essential characteristic of both. The parable is the germ of the romance. It draws an analogy between some truth the speaker would press home and a story framed from the occurrences of simple everyday life. The allegory is more elaborate. Its language is consciously ambiguous ; its form is longer than that of the parable ; it describes, not some simple event of ordinary life, but a strange and often bizarre history, filled it may be with the marvellous and the supernatural. Quite different is the deliberate fiction, such as the monk of the Middle Ages palmed off as bygone history. In the silence of his cell he could not distinguish between the real and the imaginable, and tissues of fiction like the history of the Trojan kings of Britain or the Iberian monarchs of Spain deceived their

<sup>1</sup> "Myths and Songs from the South Pacific," p. 92.

<sup>2</sup> "Kámilarói," &c., pp. 143, 144.

inventor as much as they deceived his readers.<sup>1</sup> But though we may acquit the monkish chroniclers of moral guilt in thus forging fictitious history, it is of the utmost importance not to confound such curious specimens of morbid imagination with the early myths of young and healthy humanity.

Mythology is so closely bound up with religion that the comparative philologist cannot escape from the study of those religions and religious systems which have their root in the mythopœic age. Side by side with the science of mythology, stands the new science of religion or Dogmatology. Like the science of mythology, the science of religion is comparative, comparing the history and dogmas of the various religions of the world ; and like the science of mythology, too, it has to turn for help at almost every step to comparative philology. Roughly speaking the religions of man may be divided into two broad classes ; those that have been organized into a system, and those that have not. Those of the second class rest upon mythology, and the same key that has to be applied to mythology has also to be applied to them ; those of the first class are supported upon sacred books, written in sacred and extinct languages, the meaning of which has to be recovered by comparative philology, though they, too, have for the most part a background of myth. Comparative mythology and the science of religion, therefore, are the twin offspring of the science of language. Language is a record of the past thoughts and yearnings of society, and the strongest of these yearnings, the deepest

<sup>1</sup> An account of many of these will be found in Buckle : "History of Civilization," i. ch. vi.

of these thoughts, are those which have to do with religion. As we restore the old sense and life of a myth by discovering the first meaning and import of its key words, so we can trace step by step the phases through which a creed has passed, and determine the germs out of which its dogmas have developed, by ascertaining the exact significance of the language wherein they were expressed. The application of the scientific method has shown that the Rig-Veda knows nothing of a priestly hierarchy, of a system of caste, of the burning of widows, and that the introduction of all these things was the slow work of later centuries. We have only to examine the language in which a dogma of the Christian Church has been embodied at different periods, and ascertain its exact meaning to those who employed it, to see how strangely it has changed and shifted, how continuous has been that "Development of Christian Doctrine," which Dr. Newman has described. What misery and hatred would have been avoided had men known how vague and shifting were the words and phrases over which they fought, how coloured by the ages through which they passed and the knowledge of the men who used them! It is with this outward shell, this external form of religion that its scientific student is concerned; with "the letter that killeth," not with "the spirit that giveth life." Questions of orthodoxy and heresy, of the truth or falsity of particular religions, must be handed over to the theologian. That intuition of the Divine, whether we call it the religious instinct, the sense of the Infinite, or the grace of God, which is the soul, the life and the preserver of all real religion, nay, of all real mythology also, lies outside the sphere of the

science of religion. The object of the latter is to compare and classify the faiths of the human race, to trace their growth collectively and severally, to analyse the changes they have undergone and the shapes they have assumed, and to restore the first sense and meaning to their sacred books. The work is a vast one, and it will need the labour of many minds and many years before it can be completed. But already something has been done. We are even now beginning to see that there is no faith, however degraded, which does not contain some ray of light and truth; no creed, however pure and exalted, which has not passed through many phases of existence, and gathered to itself additions of which it may well be rid. A religion, even if revealed, must be communicated to man, and handed down through human channels; its outward form, therefore, will be shaped and moulded by the changing years, and be subject to all the conditions of growth and decay. It will be conformed not only to the necessities of time and place, but also to the character and instincts of the races by whom it is professed. The Christianity of the Negro is not, and cannot be, the same as the Christianity of the Englishman, so far as its outward form and fashion is concerned, and the various shapes assumed by Christianity in different ages and in different countries, are not more remarkable, more seemingly incongruous, than the various shapes similarly assumed by Buddhism. All organized religions have a history, and that history is written in the languages they have used.

But an organized religion, like an organized State, is a late product, an outward sign and symbol of advanced

civilization and literary culture. It presupposes long ages of previous preparation, beliefs and prejudices, ideas and imaginings, which are worked upon by the founder or the founders of the new creed. Buddhism was but a reaction against the tyranny of the Brahmanic priesthood, whose first principles and philosophy it accepted, and the dualism of the Zend Avesta can be traced back to the conceptions which lie latent in the Rig-Veda of India. What Buddhism is to Brahmanism, Christianity may in one sense be said to be to Judaism, and just as the tenets of early Christianity have been ascribed to Essenes, so Mr. Thomas would now ascribe the tenets of early Buddhism to Jains. Nor does the parallel end here: Buddhism started with being an Aryan religion, and has ended with being extirpated from its birthplace and becoming the faith of non-Aryan races, just as Jewish Christianity was merged in Gentile Christianity and driven from its first home in Palestine. The great council which settled the creed of Buddhism was convened by A'soka, the first royal convert, about three centuries after the Buddha's death, as the Council of Nikæa, which drew up the Nicene Creed, was summoned by Constantine in A.D. 325. The sublime morality and simple life and teaching of the first Buddhist missionaries are not more widely separated from the elaborate ritual, the worship of saints and relics, the praying-machines and rosaries, the priestly hierarchy, and the Lama-Pope of the modern faith, than are the precepts and history of the New Testament from the constitution and practices of the Latin Church. And as Zoroastrianism was a protest against the Polytheism of the Veda, so did Mahomedanism pro-

fess to be a protest against the Christian idolatry of the sixth century. Indeed, there is much in common between these two great Puritan religions of the Aryan and Semitic world.

The variety and many-sidedness of the religions which are not yet organized might seem to defy classification and record. Even here, however, it is possible to bring order and arrangement into the apparent chaos, and to sketch in broad outline the development of religion and the religious consciousness. Man shares with the animals the instinct of imitation and conservatism; and in the most developed forms of faith we may often detect survivals which go back to a remote past. Some phase of religious thought through which a people may have passed millenniums ago, may be fossilized in words and phrases, the key to the original meaning of which is furnished by comparative philology. Few of us when we speak of *Deity* think that the word bears witness to a time when our forefathers looked up to the "bright heaven" as the source and giver of all good things, and the Welsh *crefydd*, "religion," the Irish *craibhdhígh*, "people who mortify the flesh," when compared with *'sram*, "to chastise oneself," and *'srânta*, "asceticism," point to the practice of self-inflicted penance.<sup>1</sup>

The existence in any religion of beliefs, practices, or customs which are no longer in harmony with the religion itself is as clear a proof of their having preceded that religion as are the names we give to the days of the week of the gods worshipped by our heathen ancestors. If we find ancestor-worship or fetishism prevailing among a

<sup>1</sup> Rhôs : "Lectures on Welsh Philology," pp. 14, 15 (1st edition).



people, we may assume that ancestor-worship or fetishism are stages of religious thought in the past history of the people. Now, a comparison of the various religious beliefs and customs of mankind shows that there are no less than six forms in which the religious consciousness of man has endeavoured to embody itself before the rise of organized religions, or the conception of the Unity of God. These are ancestor-worship, fetishism, totemism, shamanism, henotheism, and polytheism. If these six forms can be proved to have been successive stages of growth, or if a relation can be pointed out between them, we shall have gone far towards sketching the history and development of unrevealed religion. But as yet our materials are too scanty and imperfect for such a work, and though attempts have been made from time to time to accomplish it, they are all more or less open to criticism. The theory that fetishism is the first in the chain of development started by De Brosses in the last century has been rudely shaken by Prof. Max Müller,<sup>1</sup> and can never again be maintained in its old form. The fetish, so called from the Portuguese *feitiço*, "an amulet," the Latin *factitius*, implies a belief in the divine or the superhuman, and hence to regard fetishism as the starting-point of religion is like making the husk of a seed, and not the kernel within, the primal germ of a tree. Nevertheless the nature of fetishism, coupled with the fact that its presence always marks a degraded condition of mind and religion, tends to show that it belongs to the childhood of religious thought. The Christianity of modern Spain may be disfigured by fetish-worship, but that is because the

<sup>1</sup> "Hibbert Lectures," ii. (1878).

religious and mental state of the fetish-worshippers represents that of the first men.

Ancestor-worship would seem to be the first form in which the religious instinct struggled to clothe itself. The State came before the individual, the tribe before the State, and the family before the tribe. The individual had no existence as such apart from the family or clan to which he belonged. His religion in its outward form was made up of rites and ceremonies which could only be performed collectively, and it is a curious proof of the deep-rootedness and antiquity of this belief that it lingered on into the historic age of Greece and Rome. Each member of a family, like the bee in a hive, was but part of a single whole, and in its relations to every one and everything outside the family, that whole alone could originate and act. But the family consisted of the dead as well as of the living. The savage could, and can, draw no clear distinction between his waking realities and the images of his dreams. Like children, the first men wondered whether they slept or wakened, and the unpractised memory could give them no reply. The figures of dream-land were to it as real and vivid as the events of the day before. And in his dreams the dead appeared to the sleeper once more living and clothed in corporeal form. There was but one explanation of the fact which could suggest itself to him. Man had two lives, one in the world of lights and shadows, the other in a world which we should name the spiritual.

The conception of this reflected life once obtained, it was not difficult to find traces of it even in the world of objects itself. The voluntary or involuntary fasts of the

savage produced visions indistinguishable from the dreams of night, while the shadows thrown by the things about him were so many immaterial second "selves." The conception of a continued, superhuman life enjoyed by dead ancestors combined with these to create the conception of spirits or ghosts; and with this new conception the religious instinct took a new departure. The dream or waking vision had portrayed the disembodied ancestor sometimes as a friend, sometimes as an enemy, sometimes bringing benefit and blessing, sometimes disease and pain; and the human passions thus reflected in him were now transferred to the new conception of ghost or spirit. But just as every object has its shadow, so, too, the spirit may take up its abode in animals and material things. The Hurons of North America believe that the souls of the departed turn into turtle-doves; the Zulus see the spirits of their ancestors in certain green and brown harmless snakes, and accordingly offer them sacrifices. The worship of ancestors passes by insensible degrees into the worship of animals and trees. And pre-eminently among animals, the serpent, the most subtle of all the beasts of the field, attracted the fear and the adoration of man. The crawling serpent, the solitary occupant of tombs and empty houses, seemed the natural habitation the dead had chosen for himself, and the Pythagorean saying that the human marrow after death is changed into a snake, is but a later form of the old idea. The terror inspired by this venomous foe of man was another potent cause that brought about the wide prevalence of serpent-worship.

For necessity is the mother not of invention merely,

but also of religious ceremonies. We have already seen how the character of a mythology is the work of the daily needs of man ; and it was the same daily needs that were the source of his earliest adoration and prayer. It was for the sake of earthly good and success, or to avert a threatened evil, that his offerings were spread to the manes of the dead and the spirits that moved about him. The angry ghost he had seen in his dreams, or whose gnawings he felt in his aching tooth, had to be propitiated and appeased. "The Redskin," says Carver,<sup>1</sup> "lives in continual apprehension of the unkind attacks of spirits, and to avert them has recourse to charms, to the fantastic ceremonies of his priest, or the powerful influence of his manitous. Fear has of course a greater share in his devotions than gratitude, and he pays more attention to deprecating the wrath of the evil, than securing the favour of the good beings." Fear of pain and the desire of food were the two main motives that drove men to the practice of religion, and the sense of their dependence on a power beyond themselves.

Out of ancestor-worship would grow fetishism as soon as the conception of an indwelling spirit in material objects had been formed and the idea of worship been associated with the desire of satisfying man's daily wants, or warding off sickness and other ills. Fetishism is a worship of stocks and stones ; the inanimate objects which minister to human needs are invested with a transient divinity, and adoration is paid to them so long as they excite terror or satisfy desire. The spiritual is localized in the bow, the spear, or the fruit-tree ; but it is

<sup>1</sup> "Travels," p. 388.

localized only so long as these objects are of use to the worshipper. An amulet loses all its virtue as soon as the owner believes that it will no longer shield him from harm ; the Indians of Columbia beat their idols when any one is ill, "and the first which loses a tooth or claw is supposed to be the culprit."<sup>1</sup> Like the Palladium of Troy, the *Βαιτυλοί* or Beth-els of the Semite, or the Ephesian "stone which fell down from heaven," the wand of Hermes, the arrows of Apollo, and the other symbols of the Greek divinities are but the survivals of a primitive fetishism.

In Shamanism, so called from the Shaman or Siberian sorcerer, who is himself but a transformed '*srâmana*, or Buddhist missionary priest, we rise to a higher conception of religion. All the objects and forces of nature have alike their indwelling spirit, who is no longer the transient creation of self-interested superstition, but represents the permanent substance, "the thing-in-itself" of German philosophers, believed to reside in things and produce their phænomena. It is no longer in the power of man to make and destroy his deity ; the innumerable spirits by whom he is surrounded have a world of their own, and can only be approached by a special class of persons who stand between them and the rest of mankind. But these spirits are, after all, the mere reflections of the objects and forces to which they belong, and like the objects and forces of nature are either beneficial or harmful to man. The work, therefore, of the Shaman, or *Angekok*, as he is termed in Greenland, is to neutralize the action of the

<sup>1</sup> Dunn : "Oregon," p. 125, quoted by Lubbock : "On the Origin of Civilization" (1st edition), p. 246.

evil spirits and to compel the action of the good spirits by various incantations and magic ceremonies. Of course the same spirit may be at different times mischievous and beneficial, like the object or phænomenon it represents, and the Shaman can not only avert evil from one man, but bring it down upon the head of another. Shamanism is the form specially assumed by the religious instinct among the tribes of the Ural-Altai family, and even the cultivated Accadian of ancient Chaldea continued to be under its influence long after the development of a considerable civilization.

Quite distinct from shamanism is totemism, which bears the same relation to the Indians of North America that shamanism does to the nations of the Ural-Altai stock. The totem, which is generally an animal, is the symbol or badge of a tribe, and, consequently, the object of worship to every member of that tribe. Totemism is therefore tribal; it is defined by Sir John Lubbock as "the deification of classes," which correspond to the tribes they symbolize and protect. The same sort of rationalistic explanation has been given of totemism as was given of mythology in the last century. It has been said that the totem was originally the name of some animal applied to an individual from his supposed resemblance to it; the name then became the surname of his descendants, while the animal it denoted was invested with a sacred character. But such an explanation forgets that the individual does not precede but follow the family and the tribe; it is only at a later time that the individual founds a family and hands on his name to those that come after him. The eponymous heroes of antiquity are

the creations of a systematizing mythology. It is simpler to trace totemism to that embodiment of the dead ancestor's spirit in some living animal of which we spoke above. Here, perhaps, we may see the germ out of which it grew. There is, however, a close connection between totemism and mythology. The tribal age is also the epithetic age of language, the age when epithets are coined and handed down to future generations. It was only needful for the objects of tribal worship to be compared to animals for the animals first to be substituted for them, and then to be worshipped in their stead. Dr. Brinton<sup>1</sup> tells us of Michabo, "the Great Hare," from whom the various branches of the Algonkin family, from Virginia and Delaware to the Ottawas of the North, traced their descent. But Michabo was really a solar hero, like Quetzalcoatl of Mexico or Huayna Capac of Peru. His home was on the marge of the east, whence he sent forth the lights of heaven on their daily journey, and his identification with the hare was simply due to the ambiguity of the word *wabos*, which enters into the composition of his name, and properly means "white," and thence on the one side "morning," "east," "day" and "light," and on the other side "the hare." But the adoration which was intended for "the great light" of sun and day would never have been extended to "the Great Hare," had not the way been prepared by an earlier cult of animals and the old belief in their embodying the souls of the dead.

It is, however, with polytheism, and what Professor Max Müller has christened henotheism, that mythology stands in the most intimate relation. Polytheism

<sup>1</sup> "Myths of the New World," pp. 161, *sq.*



and henotheism are but two phases of the same form of religious faith, the two sides, as it were, of the same prism. It matters little whether a multitude of gods are worshipped together, or whether the worshipper addresses but one of them at the time, making him for the moment the supreme and single object of his religious reverence. In either case we have a plurality of deities, confessed explicitly in polytheism, implied in henotheism. And these deities are necessarily suggested by nature : the variety of nature overpowers in an infantile state of society the unity for which the mind of man is ever yearning. Gradually, however, the attributes applied to the objects and powers of nature take the place of the latter ; the sun becomes Apollo, the storm Arés. Deities are multiplied with the multiplication of the epithets which the mythopœic age changes into divinities and demi-gods, and side by side with a developed mythology goes a developed pantheon. The polytheism which the infinite variety of nature made inevitable continues long after the nature-worship that underlay it has grown faint and forgotten. A time at last comes when even abstract names have to submit to the common process ; temples are raised to Terror and Fear, to Love and Reverence ; and the doom of the old polytheism of nature is at hand. When once the spirit of divinity has been breathed into abstractions of the human mind, it cannot be long before their essential unity is recognized, and they are all summed up under the one higher abstraction of monotheism.

But the gods have first been clothed with human form. The worship of man, with all his crimes and meanness,

by his brother-man, is impossible so long as the element of divinity is not abstracted from the original object of worship. But as soon as polytheism makes it possible to dissociate the god from the image and symbol that enshrine or represent him, there arises the cult of man himself, the apex and crown of created nature. The human attributes with which the gods have been endowed assume concrete shape; Vishnu is provided with arms and legs, Merodach with the form of an armed warrior. At first idealized humanity is supra-human humanity as displayed in Titanic strength or supernatural wisdom; it is only in the hands of the Greek artist that it becomes idealized human beauty. As the doctrine of force is older than the doctrine of art, the ascription of the attributes of strength, of swiftness or of wisdom to the divine is older than the ascription of beauty. Philip of Krotona was deified by the Greeks of Egesta because of his beauty;<sup>1</sup> elsewhere it has been other qualities that have gained for men apotheosis or saintship.

In bringing the gods down to earth in the likeness of men it was inevitable that the men should in turn be raised up to heaven in the likeness of gods. Anthropomorphic polytheism is almost invariably accompanied by the deification of men. The relics of ancestor-worship that still survived would at first cause the deification to take place after death, and it is curious to find in the practice of the Roman Church the same echo of the influence once exercised by the worship of the *Manes* as in the superstition that forbids us to "speak evil of the dead." But in course of time the apotheosis took place

<sup>1</sup> Ht. v. 47.

during a man's life. As might have been expected, this first occurs in the case of the Chaldean and Egyptian monarchs who lived apart from the mass of their subjects, and were to them like invisible and beneficent gods. The apotheosis of the Roman Emperors was due to a variety of mixed causes, and rested primarily on the fact that each was supposed to represent the unity and omnipotence of the State. As Mr. Lyall has pointed out in an interesting article, we can still watch the process of deification among certain of our Indian fellow-subjects.<sup>1</sup> Not long ago, for instance, the Būnjâras turned General Nicholson into a new god, to be added to the many existing soldier-divinities at whose tombs sacrifices and worship were regularly offered. It is clear that deification cannot be without influence upon the mythology in the midst of which it is found. Deified heroes and their deeds will become blended with the heroes and deeds of myth; and the natural course of a myth may thus be interrupted and turned aside. The same disturbing consequences that accompany the localization of an ancient myth, and its attachment to a figure of history, will accompany its intermixture with the name and adventures of a deified English general or a canonized Christian saint.

Like the Zeus of its poets, polytheism gives birth to its own destroyer. The further it is removed from its original basis in outward nature, the more spiritualized and reflective it becomes, the more does it tend to pantheism on the one side and monotheism on the other.

<sup>1</sup> "Religion of an Indian Province," in the "Fortnightly Review," xi. pp. 121-40 (1872).

Its deities cease to be more than mere abstractions, and these abstractions are soon resolved into a higher unity. Already in the days of the Accadian monarchy the religious hymns of Chaldea speak of "the One God,"<sup>1</sup> and even before them the Egyptian priests had been busy in proving that the manifold gods of the people were but manifestations of one and the same Divine Essence. Xenophanes asserts that "God is one, greatest among gods and men, in no wise like unto men in form or thought," and the language of Æschylus is full of the same faith.<sup>2</sup> With Aristotle the Divine becomes *νόσις νοήσεως*, thought thinking upon itself, that Impersonal Reason which Averrhoes essayed to harmonize with the clearly-cut, sharply-defined God of Mahommed. As the generations pass, our conception of the Godhead becomes more abstract, more worthy; and though we may not acquiesce in the definition of the modern writer who declares it to be "that stream of destiny whereby things fulfil the law of their being," we may yet learn from the science of religion and the study of comparative philology what strangely different meanings men have read into the terms they use to express the centre of their highest hope and faith, and how, stage by stage, their thoughts "have widened with the process of the suns."

<sup>1</sup> W. A. I. iv. 16, 1, 7, 8.

<sup>2</sup> Compare "Prom. Vincit." 49, 50; "Ag." 160-78; "Suppl." 574.

## CHAPTER X.

### THE ORIGIN OF LANGUAGE, AND THE RELATION OF THE SCIENCE OF LANGUAGE TO ETHNOLOGY, LOGIC, AND EDUCATION.

“Der Mensch ist nur Mensch durch Sprache ; um aber die Sprache zu erfinden, müsste er schon Mensch sein.”—*W. von Humboldt.*

“One might be tempted to call language a kind of Picture of the Universe, where the words are as the figures and images of all particulars.”—*Harris* (“Hermes,” p. 330).

“Es ist ein Factum der Monumente, dass die Sprachen im ungebildeten Zustande der Völker, die sie gesprochen, höchst ausgebildet geworden sind, dass der Verstand sich sinnvoll entwickelnd ausführlich in diesen theoretischen Boden geworfen hatte.”—*Hegel.*

“Das Leben eines Volks bringt eine Frucht zur Reife ; denn seine Thätigkeit geht dahin, sein Princip zu vollführen.”—*Hegel.*

To understand a thing aright we must know its origin and its history. Thanks to the comparative method of science, we can now trace with tolerable fulness the history and life of language ; will the same method enable us to discover its origin also ? Can we follow language up to its first source, and set before us the processes whereby man acquired the power of articulate speech ? No single science, indeed, can reveal the origin of the facts and phænomena upon which it is based ; these it has to take for granted and content itself with discovering the relations they bear one to another, the laws which govern

them, the transformations which they undergo. But the single sciences are subordinated one to the other, and it is the province of one to explain the origin of the facts from which another has to start. Comparative philology may be powerless of itself to dispel the mystery which envelops the first beginnings of articulate speech; with the aid of the master-science of anthropology, however, the mystery ceases to be insoluble, and the origin and exercise of the faculty of speech become as little mysterious as the origin and exercise of the other faculties of civilized man.

We have already reviewed in the first chapter the various attempts that have been made in ancient and modern times to solve the riddle of language, and have seen how each fresh attempt has advanced the solution in a greater or less degree. False explanations have been gradually eliminated, approximately true ones have been corrected and defined. Here, as elsewhere, no single key will suffice to turn the lock; language is the product not of one cause, but of a combination of several. Grammar has grown out of gesture and gesticulation, words out of the imitation of natural sounds and the inarticulate cries uttered by men engaged in a common work, or else moved by common emotions of pleasure and pain. Language, in fact, is a social creation; we may term it if we like, a human invention, but we must remember that it is no deliberate invention of an individual genius, but the unconscious invention of a whole community. It is, as Professor Whitney has observed, as much an institution as is a body of unwritten laws; and like these it has been called forth by the needs of developing society.

Nowhere has the old proverb that "Necessity is the mother of invention" received a better illustration than in the history of speech ; it was to satisfy the wants of daily life that the faculty of speech was first exercised, and the cries which were as natural to man as songs to birds, first adapted to the expression of articulate language. The clicks of the Bushman still survive to show us how the utterances of speechless man could be made to embody and convey thought. And the same process that slowly transformed the beast-like cries of our earliest ancestors into articulate sounds, slowly transformed the vague and embryonic thought enshrined in them into grammatical sentences. Like the beehive community to which modern research refers the first beginnings of society, the first essays at language were undifferentiated units, out of which the various parts of the sentence were eventually to come. The whole precedes its parts historically, if not logically, and it was only by setting sentence-word against sentence-word that the relations of grammar were determined, and means found in the existing material of speech for expressing them.

But in speaking of the origin of language we must be careful to distinguish between the origin of the faculty of speech and the origin of the exercise of it. So far as the origin of the exercise of it is concerned, it is not more difficult to explain than the origin of the exercise of our faculty of locomotion. We walk because we have the muscular power to do so, and this power must be exercised if we would satisfy our healthy desire to move the limbs and would supply the needs of our daily existence. The question as to origin of the faculty of speech falls



under the province of biology, and M. Broca speaking in the name of biology has endeavoured to answer it.<sup>1</sup> Whether the endeavour has been successful must be decided by future observation and experiment.

According to his researches the faculty of speech is localized in "a very circumscribed portion of the [two] cerebral hemispheres, and more especially of the left." These hemispheres, into which the brain or cerebrum is divided, are distinguished on their under side into three lobes—the posterior, overlapping the cerebellum, on which the cerebrum partly rests, the middle, and the anterior, the two latter being separated from one another by the Sylvian fissure. Below this fissure is a triangular protuberance called the island of Reil, marked by small, short convolutions or *gyri aperti*, which are among the first to be developed, and are surrounded by a large convolution forming the lips of the Sylvian fissure. It is on the upper edge of the Sylvian fissure, and opposite the island of Reil, that M. Broca places the seat of the faculty of speech in the posterior half of the third frontal convolutions of the right or left hemispheres. Aphasia, he finds, is invariably accompanied by lesion or disease of this portion of the brain. The lesion occurs in the left hemisphere in about nineteen out of twenty cases, and though the faculty of speech is sometimes not affected even by a serious lesion of the right hemisphere, it "has

<sup>1</sup> See the "Bulletins de la Société anatomique," 1861, 63; "Bulletins de la Société de Chirurgie," 1864; "Bulletins de la Société d'Anthropologie de Paris," 1861, 63, 65, 66; Proust: "Altérations de la Parole," in the "Bulletins de la Société d'Anthropologie de Paris," 1873; and "De l'Aphasie," in the "Archives générales de Médecine," 1872.

never been known to survive in the case of those whose autopsy has disclosed a deep lesion of the two convolutions" of the right and left hemispheres.

The greater importance of an injury to the left hemisphere seems due to the fact that the convolutions of this hemisphere develop at an earlier period than those of the right. To the same fact may also be ascribed the tendency of most persons from childhood to use the right rather than the left hand, the movements of the right-hand members of the body depending on the left hemisphere. Left-handedness is the exception, like the early development of the convolutions of the right hemisphere of the brain. So, too, the localization of the faculty of speech in the right hemisphere is equally the exception, language which is learnt in infancy naturally calling into exercise the most developed of the two portions of the brain. But like the left hand, the right hemisphere may in time acquire a certain control over language, and in most cases, accordingly, lesion of the left hemisphere produces merely aphasia, that is, inability to use words rightly, not inability to understand what is said by another. It is possible that the fluency and readiness of expression which distinguish certain speakers result from a simultaneous development of the frontal convolutions in both hemispheres of the brain.

The faculty of speech, whether exercised or unexercised, is the one mark of distinction between man and the brute. All other supposed marks of difference—physiological, intellectual, and moral—have successively disappeared under the microscope of modern science. But the prerogative of language still remains, and with it the

possession of conceptual thought and continuous reasoning. Though numberless instances may be brought forward which prove the possession of rudimentary reason and intelligence by the brute beasts, though instinct itself is but a kind of hereditary reason, thought in the true sense of the word is impossible without language of some kind. The power of forming concepts, of summing up generalizations under single heads which form the starting points of fresh generalizations, depends upon our power of expressing them in short-hand notes or symbols like the words of articulate speech or the conventional signs of the mathematician. Language, it is true, is the embodiment of thought, but it is equally true that without language there can be no thought. The Tasmanian, with his poorly organized language, had no general terms; the New Caledonian is unable to understand such primary ideas as "to-morrow" and "yesterday," and the speechless child has not yet reached the level of intelligence displayed by the dog or the elephant.

But the child is capable of acquiring language, which the dog and the elephant are not, and this capability is sufficient to mark him off as a member of the human family. The faculty of speech may lie dormant and unexercised, but wherever it exists we have man. The deaf-mute, whose deafness has prevented him from learning to speak, or the mute whose diseased vocal organs refuse to utter the sounds he desires to form, are alike men, able to share in the possession of language as soon as the physical difficulties which stand in their way are removed. Even the idiot or the patient suffering from aphasia cannot be compared with the parrot and other

talking birds, since his misuse of thought and speech can be traced back to a diseased condition of the brain, while the chattering of the parrot remains a mere mimicry to which neither sense nor meaning is attached.

We must further remember that language does not necessarily depend on the production of vocal sounds. We can converse by means of signs and gestures as well as of modulations of the voice. Wherever and in whatever way a meaning may be conveyed to another, we have language. What the precise symbols are whereby the meaning is conveyed is a secondary matter ; the important fact is whether the meaning is so conveyed at all. Vocal language is more perfect than any other kind of language ; the sounds we utter are more infinitely various than the signs we could make with our hands, and therefore better adapted to symbolize the manifold ideas of the growing intelligence ; but the experience of travelers shows that we could get on well enough, so far as the necessities of life are concerned, with a language of signs. Such a language would sufficiently express the needs and thoughts of a savage or barbarous community, however inadequate it might be to express those of a civilized one. The language of signs used by the North American traders in their intercourse with the natives quite sufficed for all the purposes for which it was devised. Thus James<sup>1</sup> gives a list of 104 signs employed by the Indians in the place of words, and adds another list published by Dunbar, which differs from his own in several respects. *Darkness*, for instance, was indicated

<sup>1</sup> Long's "Expedition to the Rocky Mountains," vol. i. Appendix B, pp. 271-88 (1823).

by extending the hands horizontally forwards and back upwards, and passing one over the other so as to touch it once or twice ; a *man* by a finger held up vertically ; *truth* by pointing with the forefinger from the mouth in a line curving a little upward, the other fingers being carefully closed ; *good* by holding the hand horizontally and describing a horizontal curve outwards with the arm ; *running* by first doubling the arm upon itself, and then throwing the elbow backwards and forwards ; *no* and *not* by waving the hand outwards with the thumb pointed upward. In Dunbar's list, on the contrary, the indication of the negative consists in holding the hand before the face, with the palm outward, and vibrating it to and fro ; while *man* is denoted in a somewhat complicated way by extending the forefinger, the rest of the hand being shut, and drawing a line with it from the pit of the stomach down as far as can be conveniently reached.

A similar language of signs was employed in the monasteries where the rule of silence was strictly enjoined. Thus *giving* was denoted by opening the hand, *taking* by shutting it. One forefinger laid across the other represented a *brother* ; *blindness* was indicated by placing the hands over the eyes, *shame* by placing them over the eyes obliquely, *day* and *daylight* by forming a ring with the thumb and finger and holding them before the face.<sup>1</sup> Similarly the North American Indians repre-

<sup>1</sup> Leibnitz : "Collectanea Etymologica," ch. 9 (1717). Compare Tylor : "Early History of Mankind and the Development of Civilization," ch. iii. iv. v., and Kleinpaul : "Zur Theorie der Geberdensprache," in Steinthal's "Völkerpsychologie," &c., vi. pp. 352-75.

sented the sun by forming a circle with the thumb and finger and holding them up towards the sun's track, the time of day being marked by extending the hand in an eastward direction and then raising it gradually. Had the hands not been wanted for other purposes, it is possible that the mouth might never have been used to communicate ideas.

The possibility of a language of signs suggests the question whether the possession of speech is so distinguishing a characteristic of man as has just been laid down. That animals can communicate with one another by means of signs and gestures admits of no doubt, however limited and imperfect such communication may be. Nay more, in many cases they can communicate with one another by the help of cries, and the six sounds uttered by the *cebus azaræ* of Paraguay excite definitely-corresponding emotions in other members of the same species. The barking of the dog and the mewing of the cat are said to be attempts to imitate the human voice, and it is often not difficult to guess the feeling or the desire implied by either. When we remember the inarticulate clicks which still form part of the Bushman's language, it would seem as if no line of division could be drawn between man and beast even when language itself is made the test.

But the difficulty is only the old one that meets us wherever we try to draw a hard and fast line of division between two groups which yet belong to very definite and distinct types. Such germs of language as the beasts possess remain but rudimentary; man alone has developed them into the wonderful outgrowth of speech.

Were the beast to do the same, he would become man. The difference between the beginnings of language which we detect in animals and the first attempts at speech of early man is but a difference of degree ; but differences of degree become in time differences of kind. The speechless child cannot be distinguished from the unconscious younglings of the herd ; but whereas the youngling of the herd can become at best the owner of a faint intelligence, the child may develop into a Cæsar or a Newton.

Accordingly the followers of Darwin and Haeckel, with whom accumulated differences of degree, aided by natural and sexual selection, become eventually differences of kind, hold that language presents no greater obstacle to their theory than do the details of the physical structure. Just as the rudiments of conscience and will exist in animals, so also do the rudiments of speech. Physiologically there is a greater chasm between the monkey and the chimpanzee than there is between the chimpanzee and man, and the moral and intellectual interval that divides "the supreme Caucasian mind" from the Tasmanian or the smileless Veddah, seems at least as great as that which divides the latter from the anthropoid apes. Only the fact remains that no anthropoid ape has ever raised himself to the level of articulate-speaking man.

Between the ape and man, therefore, the evolutionist has inserted his *homo alalus*, "speechless man," whose relics may yet be discovered in Central Africa, or in the submerged continent of the Indian Ocean.<sup>1</sup> Wherever

<sup>1</sup> See Haeckel : "History of Creation," Engl. tr. by Ray Lan-



the conditions were favourable, *homo alalus* developed into *homo primigenius*, whose first records are the unworked flints of countless ages ago. Where the conditions were unfavourable, there was retrogression instead of progress, and *homo alalus* became the progenitor of the gorilla, the chimpanzee, the gibbon, and the orang-otang. Such is the theory which post-tertiary geology can alone verify or confute.

Its adherents, however, can appeal with considerable justice to the experiences of childhood. The race, we may presume, must have passed through the same stages of mental and moral growth as the individual now compresses into a few years. The unconsciousness of the child reflects the early unconsciousness of mankind. The same labour the child has now to undergo in learning its mother-tongue mankind had once to undergo in learning speech. With this difference, however, that primitive man was a grown child who painfully elaborated a language for himself, whereas the individual child has but to acquire a language already formed, and with it the accumulated experiences and ideas of former generations. What the European, with hereditary instincts and aptitudes, now learns in two or three years, is the slow and laborious creation of many minds and many centuries. The child's memory is exercised rather than his reason or his imagination.

Nevertheless, we may gain many important hints and

kester, vol. ii. pp. 293-333 (1876). Haeckel makes *homo primigenius* precede *homo alalus* or *pithecanthropus*, who originates the still speechless woolly-haired and straight-haired men, and is himself derived from the catarrhine or flat-nosed *quadrumana*.

suggestions as regards the origin of language by watching the first attempts made by the child to speak. Like primitive man, he is moved partly by the innate love of imitation, partly by the necessity of making his wants known, partly, too, by the healthy desire to exercise his lungs. As long ago as the reign of Psammitichus, an endeavour was made to discover the origin of speech by observing the earliest utterances of children; and the Egyptian king believed that he had found in Phrygian the oldest language of the world, since the first utterance of the two infants he had brought up in speechless solitude was *bekos*, the Phrygian term for "bread."<sup>1</sup> But the number of scientifically trained observers who have carefully noted the development of a child's consciousness and power of speech is extremely small, and we are consequently much in want of accurate phonological and psychological facts bearing upon the subject. M. Taine gives the following account of the observations he made in the case of one of his own children.<sup>2</sup> This was a little girl, of whom he notes that "the progress of the vocal organ goes on just like that of the limbs; the child learns to emit such or such a sound as it learns to turn its head or its eyes—that is to say, by gropings and repeated attempts." "At about three and a half months, in the country, she was placed on a carpet in the garden; lying there on her back or stomach for hours together, she kept moving about her four limbs, and uttering a number of

<sup>1</sup> Hdt. ii. 2. *Bekós* has the same root as our *bake*, the Greek *φάγω*, *φοξός*, the Sanskrit *bhaj*. If the story has a basis of fact, the sound uttered by the unfortunate children may be considered an attempt to imitate the cry of goats.

<sup>2</sup> "Revue Philosophique," i. (January 3, 1876).

cries and different exclamations, but vowels only, no consonants; this continued for several months. By degrees the consonants were added to the vowels, and the exclamations became more and more articulate. It all ended in a sort of very distinct twittering, which would last a quarter of an hour at a time, and be repeated ten times a day." She took delight in this twitter "like a bird," but the sounds, whether vowels or consonants, were at first very vague, and difficult to catch. Her first clearly articulated sound was *nn*, made spontaneously by blowing through the lips. The discovery amused her greatly, and the sound was accordingly repeated over and over again. The next sound she formed was *kraaau*, a deep guttural made in the throat, like the gutturals so characteristic of Eskimaux; then came *papapapa*. These sounds, which were at the outset her own inventions, were fixed in her memory by being repeated by others, and then imitated many times by herself. As yet, however, she attached no meaning to any of the words she uttered, though, like the dog or the horse, she already understood two or three of the words she heard from the lips of those about her. Thus from the eleventh month onward she turned to her mother at the words "where is mamma?" which, be it observed, is a polysyllabic sentence. But a month later the great step was made which divides articulate-speaking man from the brutes. The word *bébé* had now come to signify for her a picture, or rather "something variegated in a shining frame." During the next six weeks her progress was rapid, and she made use of nine words, each with a distinct though wide and general meaning. These were *papa*, *mama*, *tété*, "nurse;" *oua-oua*

“dog;” *koko*, “chicken;” *dada*, “horse” or “carriage;” *mia*, “puss;” *kaka*, and *tem*. Besides these *bébé* also continued to be employed, though its meaning was enlarged so as to signify “whatever wets.” It will be noticed that most of these words are reduplications, that only one of them is monosyllabic, and that three at least are imitations of natural sounds. They were used, too, as general terms, not in the sense of a single individual only, but of all other individuals which seemed to the child to resemble one another. M. Taine observed that the guttural cry of the chicken, *koko*, was imitated with greater exactness than was possible for grown-up persons. The word *tem* was probably a natural vocal gesture, though it might have been a rude representation of *tiens*. In any case it was used in the general sense of “give,” “take,” “look;” in fact, it signified a desire to attract attention. It had been first used for a fortnight as a mere vocal toy, without any meaning being attached to it, and after a time was left off, no other word taking its place. Meanwhile, by the seventeenth month, several new words had been learned, including *hamm*, which the child employed to signify “eat” or “I want to eat.” This word was her own invention, the merely natural vocal gesture of a person snapping at something. But the guttural and labial force with which it was pronounced gradually disappeared and the word was finally reduced to the nasalized *am*.

Equally interesting observations were made by Mr. Charles Darwin on a little boy,<sup>1</sup> whose first utterance, *da*,

<sup>1</sup> “Mind,” 7 (July, 1877); also in private communications to the author.

was heard at the age of five and a half months. No sense, however, was attached to it. "When a little over a year old he used gestures to explain his wishes," and at the age of twelve months had already invented the word *mum* (or *mm*) to signify "food" or "I want to eat." The imitative origin of this word is as clear as that of *hamm*, used in a similar way by M. Taine's little girl. The boy soon came to attach it to all articles of food, *sugar*, for instance, being called *shu-mum*. When asking for food, the word was uttered in a highly interrogatory tone, and five months before its invention the child understood its nurse's name. Greater difficulty was experienced in pronouncing the consonants than in pronouncing the vowels, a fact which agrees with that observed by M. Taine, who found that his little girl's first cries consisted of vowels only. According to Mr. Pratt, in his "Samoan Grammar," the Polynesians distinguish words almost entirely by their vocalic elements; at all events, consonants may be changed and transposed at will among them, without preventing a word from being understood, whereas a change in the vowels at once makes it unintelligible. Children, too, seem to recognize words by the vowels they contain, rather than by their consonants. Prof. Holden,<sup>1</sup> however, states that ease of pronunciation far more than the complexity of the ideas expressed, appears to determine their adoption of a word. In one case, where a child of two years of age had acquired the large vocabulary of 483 words, there were 53 words beginning with *b*, but only 16 beginning with *l*. In another case,

<sup>1</sup> "On the Vocabularies of Children under two years of age," in the "Proceedings of the American Philological Association," 1877.

399 words had been acquired at the same age, while in a third the vocabulary amounted to no more than 172. In fact, children vary a good deal as to their quickness of perception and skill in reproducing sounds. While one child begins to speak at the age of twelve months, or learns to pronounce words with ready accuracy, another seems to be dumb up to the age of two or even three years, or acquires a correct pronunciation with the greatest possible difficulty and slowness. Indeed, in some cases, a correct pronunciation is never acquired throughout life, not from any defect in the vocal organs, but from mental or cerebral imperfection. It seldom happens, however, that the child fails to understand the meaning of what is *said* to him, even though unable to reproduce it in turn. Like the dog or horse, which understands the words and tones of its master, or the cat which comes when called by name, he soon learns to associate sounds and ideas, and instinctively catches the sense of an order or a prohibition. No doubt inherited aptitudes have much to do with the facility with which the sense is thus instinctively caught.

The relation of linguistic science to ethnology has already been touched upon in an earlier chapter. Language belongs to the community, not to the race; it can, therefore, testify only to social contact, never to racial kinsmanship. Tribes and races lose their own tongues, and adopt those of others; and while the Jews of Austria and Turkey regard the Spanish of the fifteenth century as their sacred language, the Spaniards themselves have forgotten that any other language, whether Iberian, Kellic, or Teutonic, ever existed in Castile besides Latin.

The Kelts of Cornwall speak English ; the non-Aryan population of Wales and Ireland either Keltic or "Saxon." The Jews have adopted the manifold languages of the countries they inhabit, like the provincials of the Roman Empire, who borrowed the speech of their conquerors, or the natives of northern Africa and western Asia, among whom Arabic has become a mother tongue. The modern theory of nationalities, so far, at least, as it is based on the existence of a common language, is but the cry of political intriguers : race in physiology and race in philology are two totally different things. Races physiologically as distinct as Mongols and Turks may be found speaking allied tongues ; while races physiologically related, like the Jews of Europe and the Bedouins of Arabia, may be found speaking unallied ones. It is questionable, indeed, whether any race in this age of the world can even physiologically be called pure and unmixed ; but it is at any rate quite certain that language can throw no light on the matter. Language is a social product, not a racial one ; it grew up to allow the members of a community to communicate one with another, not to bind together the members of a race. The members of a community may have belonged to different tribes and races ; nay, in early times, when women were taken from abroad, and captives were used as slaves, they must have done so, but the language in which they addressed each other was the same. Here and there there might have been a woman's language, or a language of the nursery, testifying, in some instances, to the foreign origin of the wife, and separate from the language of the



men; but even in these cases one or other language came in time to prevail. Philology and ethnology are not convertible terms.<sup>1</sup>

Identity or relationship of language, therefore, can prove nothing more than social contact. The fact that the Kelts of Cornwall now speak English shows plainly under what social influence they have been brought. The Jews of Austria would never have put Spanish in the place of Hebrew had they not once have lived in close contact with the natives of Castile. Language is an aid to the historian, not to the ethnologist. So far as ethnology is concerned, identity or relationship of language can do no more than raise a presumption in favour of a common racial origin. Where all else—physical characteristics, habits and customs, religious beliefs and practices—indicate that two populations belong to the same race, similarity of language will furnish additional and subsidiary evidence, but not otherwise. If ethnology demonstrates kinship of race, kinship of speech may be used to support the argument; but we cannot reverse the process, and argue from language to race. To do so, is to repeat the error of third-hand writers on language, who claim the black-skinned Hindu as a brother, on the ground of linguistic relationship, or identify the white race with the speakers of the Aryan tongues. All mankind may be descended from a single pair of ancestors, and yet the languages they speak be derived from different centres; while, on the other hand, we may trace the

<sup>1</sup> See Sayce on "Language and Race," in the "Journal of the Anthropological Institute," 1875.

languages of the globe back to a common source, and yet believe that the several races of the world have had a diversity of origin.

Language, in fact, is not one of the characteristics of race, not one of those fixed and permanent features which distinguish the different ethnological types of man. It did not grow up until man had become a "social animal," and had passed from the merely gregarious stage of existence into that of settled communities. While the characteristics of race remain definite and unalterable, language is ever shifting and changing, ever in the condition of the Herakleitean flux. A Chinaman may exchange his own language for an Aryan one, but he cannot at the same time strip off the characteristics of race. The Ethiopian cannot change his skin, however easily he may change the tongue he speaks. Language, in short, was not created until the several types of race had been fully fixed and determined. The xanthocroid and the melanocroid, the white albino and the American copperskin existed with their features already fixed and enduring, before the first community evolved the infantile language of mankind. \*

Does the science of language, we may ask, throw any light upon the age to which we may assign this event? Does it help us to answer the question of the antiquity of man? The answer must be both yes and no. On the one side it declares as plainly as geology or prehistoric archæology that the age of the human race far exceeds the limit of six thousand years, to which the monuments of Egypt allow us to trace back the history of civilized man; on the other side it can tell us nothing of the long periods of time that elapsed before the formation of

articulate speech, or even of the number of centuries which saw the first essays at language gradually developing into the myriad tongues of the ancient and modern world. All it can do is to prove that the antiquity of man, as a speaker, is vast and indefinite. When we consider that the grammar of the Assyrian language, as found in inscriptions earlier than B.C. 2000, is in many respects less archaic and conservative than that of the language spoken to-day by the tribes of central Arabia; when we consider further that the parent-language which gave birth to Assyrian, Arabic, and the other Semitic dialects must have passed through long periods of growth and decay, and that in all probability it was a sister of the parent-tongues of Old Egyptian and Libyan, springing in their turn from a common mother-speech, we may gain some idea of the extreme antiquity to which we must refer the earliest form we can discover of a single family of speech. And behind this form must have lain unnumbered ages of progress and development, during which the half-articulate cries of the first speakers were being slowly matured into articulate and grammatical language. The length of time required by the process will be most easily conceived if we remember how stationary the Arabic of illiterate nomads has been during the last four thousand years, and that the language revealed by the oldest monuments of Egypt is already decrepit and outworn, already past the bloom of creative youth.

An examination of the Aryan languages will tell the same tale, although the process of change and decay has been immeasurably more rapid in these than in the

Semitic idioms. But even among the Aryan languages the grammatical forms of Lithuanian are still, in many cases, but little altered from those used by our remote forefathers in their Asiatic home, and in one or two instances are more primitive and archaic than those of Sanskrit itself. Whatever may have been the rate of change, however, it is impossible to bring down the epoch at which the Aryan tribes still lived in the same locality, and spoke practically the same language, to a date much later than the third millennium before the Christian era. A long interval of previous development divides the language of the Rig-Veda, the earliest hymns of which mount back, at the latest, to the 14th century B.C., and that of the oldest portions of the Homeric poems, and yet there was a time when the dialect that matured into Vedic Sanskrit, and the dialect which matured into Homeric Greek were one and the same. Whether or not Herr Poesche is right in believing that Aryan dialects were spoken by the cave-men whose skulls have been found at Cannstadt, Neanderthal, Cro-magnon, and Gibraltar, and who have left behind them memorials of their skill in the shape of carved bones and horns,<sup>1</sup> at all events the age of the first Aryan settlements in Europe must be tolerably remote. And it must be remembered that the parent-Aryan itself was as developed and highly inflectional a language as Sanskrit or Greek; its first stage of growth had been left far behind, much more that primæval era when it was first being elaborated out of the rude cries and grammarless utterances of a barbarous community. It must also

<sup>1</sup> "Die Arier," pp. 54, 55 (1878).

be remembered that this parent-Aryan was but one out of many allied dialects or languages which have elsewhere perished, and, could we follow its history far enough back, may possibly claim relationship with some other family of speech, such as the Alarodian, between which and it there now remains not a trace or link of connection and kinship. Phonetic decay had already stamped its grammar and vocabulary; words like *dzwâram*, "door," survive as the last relics of otherwise extinct groups, and the primarily sensuous meaning has faded out of terms which express moral or spiritual or abstract ideas. Even the ease and rapidity with which our children acquire their mother-tongue, point to long ages during which this hereditary aptitude was being formed and accumulated. If it has taken two thousand and more years to elaborate those mathematical conceptions which a school-boy now learns in a few months we must measure the period by æons which has witnessed the growth of our European idioms with all the complexity and wealth of words which a helpless infant learns in an even shorter time.

The Ural-Altai family of languages bears similar testimony. To find a common origin for Uralic, Turkish, and Mongol, we must go back to an indefinitely great antiquity. The Accadian of Chaldea is an old and decaying speech when we first discover it in inscriptions of 3000 B.C., a speech, in fact, which implies a previous development at least as long as that of the Aryan tongues; and if we would include Accadian, or rather the Protomedic group of languages to which Accadian belongs, in the Ural-Altai family, we shall have to

measure the age of the parent-speech by thousands of years. The Mongols, moreover, are physiologically different in race from the Ugro-Tatars, and it is difficult to estimate the length of time required for the complete displacement of the original dialects of Mongols, Mantchus, and Tunguses, by those of a foreign stock. But it was at any rate considerable.

Comparative philology thus agrees with geology, pre-historic archæology and ethnology in showing that man as a speaker has existed for an enormous period, and this enormous period is of itself sufficient to explain the mixture and interchanges that have taken place in languages, as well as the disappearance of numberless groups of speech throughout the globe. The languages of the present world are but the selected residuum, the miserable relics, of the infinite variety of tongues that have grown up and decayed among the races of mankind. Since language is a social creation, the first languages will have been as numerous as the first communities. Wherever there was a community, there also was necessarily a language. Language is the creator as well as the creation of society, and though it is true that it is made and moulded by society, it is equally true that without language society cannot exist. The various species of languages that have sprung up since human thought was first clothed in speech must have been as numberless as the species of plants and animals that have flourished on the earth, and just as whole genera and species of plants and animals have become extinct, so also has it fared with the genera and species of language. In some cases the languages of

two or more communities formed independently under similar conditions, climatic and otherwise, may have coalesced into a single group; more often the single group has split itself into numerous dialects which in time become distinct languages.

But the attempt made in the infancy of linguistic science to reduce these groups to a mystical triad has long since been abandoned by the scientific student. To lump the manifold languages of the world, agglutinative, incorporating, isolating, and polysynthetic under a common heading of "Turanian" or "Allophylian" is as unscientific as to refer Aryan and Semitic to one ancestor. It has been shown in a former chapter that the number of separate families of speech now existing in the world which cannot be connected with one another is at least seventy-five; and the number will doubtless be increased when we have grammars and dictionaries of the numerous languages and dialects which are still unknown, and better information as regards those with which we are partially acquainted. If we add to these the innumerable groups of speech which have passed away without leaving behind even such waifs as the Basque of the Pyrenees, or the Etruscan of ancient Italy, some idea will be formed of the infinite number of primæval centres or communities in which language took its rise. The idioms of mankind have had many independent starting-points, and like the Golden Age, which science has shifted from the past to the future, the dream of a universal language must be realized, if at all, not in the Paradise of Genesis, but in the unifying tendencies of civilization and trade.

While linguistic science thus shows that the com-



munities in which man, in the true sense of the word, first existed were numerous and isolated, it is quite evident that it can throw no light on the ethnological problem of the original unity or diversity of the human race. The characteristics of race were fixed before the invention of speech, and to determine whether or not we are of the same blood as the negro and the Mexican, whether the Darwinian is justified in tracing *homo alalus* to a single pair of apes or to several different species is the task of the ethnologist, not of the student of language.

It is, therefore, with man as he appears in history and not as he appears in nature that comparative philology has to do. It is, as we have seen, essentially a historical science, dealing with the historical growth and evolution of consciousness as preserved in the records of speech. Its laws, indeed, must be noted and verified by physiology on the one hand and by psychology on the other, but its results and conclusions have to be brought before the bar of history. The research which finds a Norman-French element in the English language is confirmed by the recorded facts of history, and the existence of the Romanic tongues is explained by the long domination of the Roman Empire. The non-Aryan forms and words which show themselves in the Keltic grammar and vocabulary are in accord with the testimony of history and archæology to the presence of a præ-Keltic and præ-Aryan population in western Europe. And just as the conclusions of comparative philology can be verified or refuted by the historian, so conversely the historian can fill up the breaks in his record by the help of comparative

philology. The contact of tribes in præ-historic times can be proved by the similarity of their dialects, and the foreign names given to objects enable us to determine the source from which they were derived, and the relations that existed between the lender and the borrower. Similarity of language has shown that the Hungarians were once the neighbours of the savage Voguls of the Ural, and the Semitic origin of such Greek words as *alpha* and *beta*, *δέλτος* "a writing tablet," and *φῦκος* "dye," indicates that writing and the purple trade came to Greece from Phœnicia.<sup>1</sup> Where contemporaneous literature fails us we can fall back upon the surer and more enduring evidence of language. The history and migrations of the Gipsies have been traced step by step by means of an examination of their lexicon. The wild speculations of older writers who saw in them wandering Egyptians or Tatars, or even the ancestors of the companions of Romulus, have had to make way for exact and minute history. The grammar and dictionary of the Romany prove that they started from their kindred, the Játs, on the north-western coast of India, near the mouths of the Indus, not earlier than the tenth century of the Christian era; that they slowly made their way through Persia, Armenia, and Greece, until after a sojourn in Hungary they finally spread themselves through western Europe, penetrating into Spain on the one side and into England on the other. Though the determination of the ethnic features and relationships of the Gipsies must be left to the physiologist, comparative philology has

<sup>1</sup> See A. Müller: "Semitische Lehnworte im älteren Griechisch.," in "Bezenberger's Beiträge," i. pp. 273-301 (1877).

shown itself quite competent to determine their historical origin and fortunes.

Perhaps the chief triumph of comparative philology in the field of historical reconstruction has been the recovery of the history of the Aryan nations in ages about which history and legend are alike silent. Who could have suspected a few years back that we should ever be able to describe the external and internal history of our remote ancestors, their migrations and beliefs, their culture and civilization, with greater certainty and minuteness than is possible in the case of the Saxons of the Hephtharchy or even the Hebrews of the Davidic era? Where other records fail, the record of language remains fresh and unimpaired. The ideas and beliefs, the struggles and aims of a community are enshrined in the language it speaks, and if we can once more make this language a living one, can discover the meaning assigned to its words at the time they were first coined and used, the facts and thoughts that it enshrines will lie revealed before us. While the other sources of historical truth,—architectural monuments and inscriptions, skulls and artistic remains, objects of household use, and even contemporaneous annals,—can tell us only of the outward fortunes and history of a people, language, when rightly questioned, can tell us of the far more precious history of mind and thought. As the fossils of the rocks disclose to the palæontologist the various forms of life that have successively appeared upon the globe, so, too, the fossils of speech disclose to the scientific philologist the various stages that have been reached in the growth of human consciousness. In the pages of Fick's Dic-

tionary of the parent-Aryan we may read the religion, the morality, the culture and the civilization of rude tribes who lived and died long before the first hymn of the Rig-Veda was composed, long before the first Hellene had reached the shores of Greece, or the first Indo-European word had been written down. Armed with the comparative method, we can revivify the older strata of speech, and thereby also the older phases of a community's life. History, in fact, is living language, just as myth is dead language; it describes the past actions and ideas of a society in words which represent them as they actually were.

History is not the only department of study which has derived unexpected help from comparative philology. Logic, too, deals with language, and its disciples will never escape the dangers of confusion and logomachy until they recognize that formal logic is based on language and must therefore be secured against a false analysis and interpretation of that language. As yet, however, the recognition has not been made. The philosophy of speech, in the hands of the Greeks, suffered from the introduction of logic into grammar, and revenge was taken by grounding logic upon the definitions of an imperfect grammar. The Greek grammarians with all their acuteness were unable to avoid the mistakes inevitable in those who know but a single language, and Aristotelian logic, which has continued practically unchanged up to the present day, starts with the rules and deductions of the Greek grammarians. The latest attempt to improve upon it by establishing a distinction between "connotative" and "denotative"

terms has been shown by Mr. Sweet to rest upon a mere accident of Indo-European grammar, proper names which are said to be purely denotative really connoting at least two attributes "human" and "male," and "connotative" words like "white" being as much abstract names as "whiteness," and like it signifying attributes without any reference to the things that possess the attributes.<sup>1</sup> It is difficult to eradicate the belief that the forms in which we think are identical with the thought itself, and it is only linguistic science that enables us to see that many of the forms of grammar which we imagine necessary and universal are after all but accidental and restricted in use. The cases of Latin and Greek do not exist in the majority of languages; the Polynesian dialects have no true verbs; and the Eskimaux gets on well enough without "the parts of speech" that figure so largely in our own grammars. The distinction made by writers on logic between such words as *redness* and *red* is a distinction that would have been unintelligible to the Tasmanian; "red," in fact, has no sense unless we supply "colour," and "red colour" is really the same as "redness."

Formal logic is founded on Aristotle's analysis of the proposition and the syllogism. Hegel long ago pointed out that the analysis was an empirical one dependent on the observation of the individual thinker, and the criticism of Hegel is supplemented by the teaching of comparative philology.<sup>2</sup> The division of the sentence into two

<sup>1</sup> "Words, Logic, and Grammar," in the "Transactions of the Philological Society," 1876, pp. 18, 19.

<sup>2</sup> See Hermann: "Die Sprachwissenschaft nach ihrem Zusam-

parts, the subject and the predicate, is a mere accident ; it is not known to the polysynthetic languages of America, which herein reflect the condition of primæval speech. Even in Greek and Latin we meet with complete sentences like *τύπτει* and *amat* where the subject is not expressed, and may therefore be either "he," "she," or "it ;" and the Aryan verb was originally compounded with the objective and not the subjective pronoun, *bhavâmi* being "existence of me" and not "I exist." As Mr. Sweet observes,<sup>1</sup> "the mental proposition is not formed by thinking first of the subject, then of the copula, and then of the predicate: it is formed by thinking of the two *simultaneously*." Consequently "the conversion of propositions, the figures, and with them the whole fabric of Formal Logic fall to the ground." So far as the act of thought is concerned, subject and predicate are one and the same, and there are many languages in which they are so treated. Had Aristotle been a Mexican, his system of logic would have assumed a wholly different form. Even the logical analysis of the negative proposition is incorrect. The negation is not part of the act of comparison between subject and predicate, that is, is not included in the copula, but belongs to the predicate, or rather attribute, itself. "Man is not immortal," is precisely the same as "man is mortal," "mortal" and "not immortal" being equivalent terms, and had Aristotle's successors spoken *lanmenhange mit Logik, menschlicher Geistesbildung und Philosophie* (1875). He notices that logical fallacies arise not from ignorance of the syllogistic form, but from ambiguities of the thoughts as conveyed in words and sentences.

<sup>1</sup> *L. c.* pp. 20, 21.

guages, which, like those of the Ural-Altaic family, possess a negative conjugation, they would not have overlooked the fact.

The progress even of the science of language itself has been checked by the evil influence of formal logic. The compilers of the "Universal Grammars" or "Grammaires raisonnées" of the last century exercised an unconscious influence upon the founders of comparative philology. It was tacitly assumed that the analyses of logic were embodied in language, and that if we could penetrate far enough back into the history of speech we should find it a simple representation of the logician's analysis of thought. That which is logically prior must, it was supposed, be historically so too. Hence came the false theories that have been put forward in regard to the origin of language, the nature of roots, and the priority of the word to the sentence. It was the old error of confounding that which seems simplest and most natural to us, with that which seems simplest and most natural to savage and primitive man.

A right conception of logic, however, is of less practical importance than a right conception of grammar, since for one who is instructed in the principles of formal logic there are twenty who are instructed in the principles of grammar. And the grammar that is taught, as well as the method of teaching it, is essentially unsound. Whatever may be the revolution effected by comparative philology in the study of logic, the revolution it has already effected in the study of grammar is immeasurably greater. The grammars we have inherited from Greece and Rome are largely founded on false theories,



and filled with imaginary facts and false rules. We cannot know the true nature of things except by contrast and comparison, and opportunity to contrast and compare was wanting to the authors of our school-grammars. "The definition of the noun," says Mr. Sweet, "applies strictly only to the nominative case. The oblique cases are really attribute-words, and inflexion is practically nothing but a device for turning a noun into an adjective or adverb."<sup>1</sup> This fact comes clearly into view when we trace the Aryan case-endings to their origin,<sup>2</sup> or consider that "man's life" and "human life" mean one and the same thing. In "flet noctem," "he weeps all night," *noctem* and "night" are simply adverbs of time. The accusative is but the attribute of the predicate, "he drinks wine" being equivalent both to "he is drinking wine" and to "he is a drinker of wine" or "a wine-drinker," where the qualificatory character of "wine" becomes at once manifest. Mr. Sweet remarks with justice that "as far as the form goes, 'king' in 'he became king,' 'he is king,' may be in the accusative." In Danish *det er mig* is the sole representative of "it is me," the French *c'est moi*. As for the cases with which English grammars were once adorned, they were but part of the attempt to force all grammars alike into the traditional form of Latin grammar, without regard for the real and living facts of language. It was difficult for those who had been taught to look upon Latin as the model of all speech, and Latin grammar as the normal type to which every other grammar must con-

<sup>1</sup> "Words, Logic, and Grammar," p. 24.

<sup>2</sup> See above, ch. v.

form, to conceive of languages like the American or the Chinese, or even, we may add, the English, which did not possess any cases at all.

Adjectives, again, embrace a good many words which the grammarians ordinarily class as substantives and pronouns. In "cannon ball" "cannon" is as much an adjective as "black," and such pronouns as "some," "this," "that," "one," and the derived articles "the" and "a" ought really to be classed as adjectives. Pronouns in the true sense of the word are always relative, that is they always relate to some one or something that has gone before. "He," for instance, is at bottom identical with "who," and where we should say "this is the man who loves," the Polynesian would say "this is the man: he loves." As has been pointed out previously, the so-called relative pronoun was originally a demonstrative. Even the distinction of gender in the pronouns is a mere accident of speech. The same word serves the agglutinative tongues for "he," "she," and "it," and the little need that really exists for the distinction may be seen from the obliteration of it in the polished and cultivated Persian, as well as in the dialect of the Austrian Tyrol. When a preposition is added to a pronoun or a noun we have a compound attribute, the preposition itself being modified attributively by the noun, and the two together constitute an attribute of some other word.<sup>1</sup>

Such are some of the grammatical facts that we can observe as soon as the influence of those Latin and Greek and English grammars which are still taught in hundreds of schools has been shaken off. We have not

<sup>1</sup> Sweet : *l. c.* p. 30.

to go far to discover how full such "text-books" are of statements which comparative philology has shown to be either false or inadequate. The very idea of a verb "governing" a case is an absurdity, and the phrase can only be maintained on the same principle as that on which we still speak of the sun "rising" and "setting." The locative case is ignored both in Latin and Greek, and a rule of syntax lays down that "every verb admits a genitive case of the name of a city provided it be of the first or second declension, and of the singular number; but if the name be of the plural number only, or of the third declension, it is put in the ablative." The matter is no better when we turn to the verb. Here the conjunctive *regam* or *audiam* is confounded with the optative *amem* and *sim*, while the optative *reget*, *audiet* is called a future; the accusative *amatum* and dative *amatu(i)* are termed supines; and a verb in *-ω* is made the normal type of the Greek conjugation. It is needless to refer to the many impossible or non-existent forms a boy is forced to learn by heart, or to the doctrine ground into him that a word is inadmissible in Latin and Greek which does not occur in the extant fragments of a few literary men.

In fact, the current system of teaching grammar is destructive of all true conception and appreciation of what language really is. Language is no artificial product, contained in books and dictionaries and governed by the strict rules of impersonal grammarians. It is the living expression of the mind and spirit of a people, ever changing and shifting, whose sole standard of correctness is custom and the common usage of the community.

What is grammatically correct is what is accepted by the great body of those who speak a language, not what is laid down by the grammarian. To extract certain rigid rules from the works of a selected number of writers, and treat everything which does not conform to these rules as an exception or a mistake, is to train up the young to a radically wrong notion of speech. The first lesson to be learnt is that there is no intrinsic right or wrong in the use of language, no fixed rules such as are the delight of the teacher of Latin prose. What is right now will be wrong hereafter, what language rejected yesterday she accepts to-day. The exception is often a survival of what was once the prevailing usage, the current form may be the creation of a false analogy. There are no golden and silver ages in grammar, whatever may be the case in literature, and to confound the analysis of an arbitrarily limited literature with the knowledge of a language is to put the shadow for the substance, the frigid maxims of the schoolmen for the pure spring of living speech.

A literature guides us to the knowledge of a dead tongue, but it cannot do more. To know what that tongue actually was when spoken and not merely written down, what were the changes it underwent, what particular period or periods in its history its literature represents, and how fully it does so, we must turn to historical philology. In no other way can we learn its true nature and development, can understand its grammar and observe the stages of growth or decay through which it has passed. It is not the least practical benefit conferred by comparative philology that it has dissipated the old

idea of a fixed and stationary standard in language, and shown that the forms of grammar in which thought expresses itself are but variable accidents dependent on the conditions which surround a people or an age.

But while thus sweeping away the rules and maxims elaborated by the ancient grammarians, comparative philology has substituted for them the scientific conception of law. Language, like nature, is ever changing, but its changes take place in accordance with fixed, inviolable law. There is nothing arbitrary and capricious about them. They are the result of certain uniform sequences which we generalize and sum up under the name of scientific laws. It is well to impress this fact deeply upon our minds. We are ready enough to admit the action of law in the realm of material nature; it is otherwise, however, wherever the element of volition comes into play. Language, standing as it does upon the confines of both the material and the mental worlds, touching physiology on the one side and psychology on the other, might seem at all events partially removed from the influence of scientific laws. It is, therefore, of the highest moment that it should be studied in such a way as to show that this is not the case. It is becoming recognized that the minds of the young should be accustomed from the first to the conception of the universal prevalence of law, and efforts are being made to replace the study of language by that of physical science upon this very ground. But it is only the study of language as carried on according to exploded and antiquated methods, that is open to the charge of misleading and perverting the growing intelligence; carried on accord-

ing to the principles of scientific philology it becomes the surest means of impressing on the mind the great fact of the universality of law amid all the change and development of nature.

What is wanted, then, is that grammars should be written in accordance with the method and results of comparative philology, and when written should be taught and studied. Much has already been accomplished in this direction. The Greek Grammar of G. Curtius, the Latin grammars of Schweitzer-Sidler, Schmitt-Blanck, Müller-Lattmann, and Roby, the *Sprachwissenschaftliche Einleitung in das Griechische and Lateinische* of Ferdinand Bauer; the German grammars of Scherer, Vilmar, and Heyse; the French grammars of Brachet, Meissner, and Ayer; and the English grammar of Morris, in spite of their inevitable imperfections, have placed the study of the languages with which they deal on a wholly new footing. It is time, therefore, that they should supersede the grammars now in use in the majority of schools, though the teachers in most instances will probably have first to be themselves taught. As Breymann observes:<sup>1</sup> "Education according to the new method implies three elements—memory, reason and insight; whereas education according to the old method was almost wholly confined to that of memory," and as it is more desirable to develop three sides of a man than one side only, there can be little hesitation as to which mode of education is the best. No doubt the memory is chiefly exercised in young children, but the mere fact that a child can learn

<sup>1</sup> "Sprachwissenschaft und neuere Sprachen," p. 23 (1876).

to speak its mother-tongue, and sometimes other tongues as well, proves that it also possesses reason and insight, which may be drawn out by judicious instruction. It must do a child intellectual good to understand what it learns, besides assisting the process of learning; and to understand was the last thing that the old school-grammars enabled the learner to do. In teaching Latin and Greek, it is true, there will still be much which must be learnt by heart as now; but a boy will gain much if he is made to see that Latin and Greek are not mere collections of arbitrary symbols or Chinese puzzles, but languages like his own, undergoing similar transformations, and subject to similar laws. It is said that we never really know a language until we think in it, and it is impossible to think in a language which we have learnt after the fashion of a parrot.

But the question arises: Can we ever learn to think in a dead tongue? can we ever clothe the dry bones with flesh and make Latin and Greek become to us as German or French? Here, again, comparative philology helps us to a practical answer. The method alike of science and of nature is to proceed from the known to the unknown; and if we are to study language to any purpose we must follow the same method. The traditional system of education in our boys' schools is the haphazard growth of a time whose needs and opportunities were essentially different from those of our own. Latin was taught because it was the common language of the church and the law, and for an ambitious youth it was as necessary to know Latin as it was to know his own language. The Renaissance placed Greek on an equal footing with Latin.



Modern Europe had as yet but little literature ; and that little reflected the beliefs of a discredited Church. For the new ideas which were to mould the Europe of the future, for the masterpieces of human thought and eloquence, the scholars of the Renaissance had to turn to the writers of ancient Rome and, more especially, of ancient Greece. Latin and Greek naturally took their places as the indispensable foundation of a gentleman's education.

All this is now changed. Modern literature is larger than the ancient classics, and at least as valuable, while science with its myriad paths of inquiry has made it impossible for a single man to master the whole circle of knowledge. Here, as elsewhere, a division of labour is demanded ; if we are to follow up one line of research with success, most other lines must be forsaken. But before thus setting out on the chosen path of life, "a general education" is required. And the object of this general education is twofold. Our mental faculties have to be sharpened and expanded, and a stock of knowledge to be acquired which will serve us in our dealings with the world or in the department of study we pursue. In order that these two objects may be attained with the greatest possible thoroughness during the short years of our general education, we must be careful that the subjects of study chosen for the sake of the one should be suitable for the other also. To teach a boy useless or spurious knowledge for the sake of sharpening his intellect is a crime. We of the nineteenth century, "when every hour must sweat her sixty minutes to the death," cannot afford to be crammed with what we have hereafter to forget or unlearn, while there is so much that we

must know if we are not to be handicapped in the race of life. If we can arrive at the same end by two ways, one short and the other long, the teacher ought not to hesitate as to which he should prefer.

Instead of beginning with the extinct languages, which we can know only indirectly, education should begin with those living idioms from which alone we can learn the true nature of actual speech. Language does not consist of letters, but of sounds; and until this fact has been brought home to us, our study of it will be little better than an exercise of memory. We must start with the sentence, the real unit of speech, and not with the isolated word; we must, in short, adopt the same method in learning another tongue that we adopted in infancy in learning our own.<sup>1</sup> There is consequently but one way of acquiring a true knowledge of a foreign speech and of coming to understand what language actually is. This is by first learning to speak the language in question, and afterwards translating its living sounds into the arbitrary symbols of written letters. When once we have been taught to think in two or more different languages, and have thus discovered the independence of ideas and their expression, it will be comparatively easy to pass to the acquisition of other, and it may be, extinct tongues. To have realized that all languages, whether living or dead, are at bottom the same, governed by the same general laws, and designed for the same general purposes, is to have penetrated into the secret of speech, and made the study of language take its rightful place as a valuable

<sup>1</sup> See L. J. V. Gérard: "On the Comparative Method of learning Foreign Languages." (Leicester) 1876.

instrument for training the mind. In the passage from the modern to the ancient languages, comparative philology will lead the way. It will show us how the forms of modern French presuppose those of ancient Latin, how German or English grammar does but repeat under new forms the principles and conceptions of Greek grammar, and how the changes undergone by letters in the classical tongues are explained by the changes that are being undergone by sounds under our own eyes. With a system of education like this, following as it does the method of nature and science, time, brains and energy will be saved, and a truer and deeper knowledge of Latin and Greek will be gained than was ever possible upon the old plan. At the same time the study of languages will cease to be a mere mental gymnastic, or the gratification of an idle curiosity, to be laid aside and forgotten at the first convenient opportunity; the boy will have obtained an art of the utmost value to him in after life, the art, namely, of speaking and writing modern languages, while the insight he has gained into the nature of speech, and the training he has had in catching and reproducing unfamiliar sounds, will enable him to acquire other languages and detect differences in pronunciation with an ease and readiness which would else have been impossible. The current system of education, like the old-fashioned "scholarship" on which it rests, is a thing of the past, the product of chance and not of science; and it justly deserves Montaigne's reproach: "C'est un bel et grand adgement sans doute que le grec et le latin, mais on l'achete trop cher . . . et cette longueur

<sup>1</sup> "Essais," i. 25.

que nous mettons à apprendre ces langues est la seule cause pourquoi nous ne pouvons arriver à la grandeur d'âme et de connoissance des anciens Grecs et Romains." Friedländer,<sup>1</sup> Bratuscheck,<sup>2</sup> Ostendorf and Breymann, all agree, from the point of view of scientific philology, in urging that the study of the classical tongues should be preceded by that of the modern ones. As Ostendorf remarks,<sup>3</sup> "a satisfactory organization of a higher system of education in schools is inconceivable so long as instruction in foreign languages in gymnasia and polytechnic schools of the first rank has to begin with Latin." The whole question was fully discussed at a conference held under the presidency of Councillor Wiese at Dresden in the autumn of 1873, and answered on the side of science and reason.

The teaching of Latin and Greek must itself be reformed, not only in the matter of grammar, but still more in the matter of pronunciation. Our insular pronunciation of Latin is at once incorrect, inconsistent, and perplexing. By the help of comparison and induction, the pronunciation of Latin, as observed by the upper classes of Rome under the Emperors, has been recovered, and Corssen's great work on the "Äussprache, Vokalismus und Betonung der lateinischen Sprache," contains a full account both of it and of the mode in which it has been restored. The pronunciation of ancient Greek is a matter of greater difficulty, and we know that it changed very

<sup>1</sup> "Ueber die Reformbestrebungen auf dem Gebiete des höheren Schulwesens für die männliche Jugend in Deutschland" (1874).

<sup>2</sup> "Ueber den Unterricht in der französischen Grammatik."

<sup>3</sup> "Mit welcher Sprache beginnt zweckmässiger Weise der fremdsprachliche Unterricht" (1873).

considerably between the age of Plato and that of Dionysius Thrax. In the time of the latter, for instance,  $\vartheta$ ,  $\xi$  and  $\chi$  had become single sounds, whereas their compounded character appears plainly in the works of the tragedians where  $\tau'$  and  $\kappa'$  before an aspirated vowel become  $\vartheta$  (that is,  $t+h$ ) and  $\chi$  ( $k+h$ ). During the centuries of political decay and disruption that followed, changes in pronunciation went on rapidly, and there can be little doubt that in some respects even our English way of pronouncing Greek is more correct than that of the modern Greeks, who confound most of the vowels and diphthongs together under the same monotonous sound of  $e$  ( $\acute{e}$ ). Nevertheless, since Greek is still a spoken language, and the classical revival at Athens has made it possible for an English scholar to converse freely with a Greek when once the obstacle of a divergent pronunciation is overcome, it is desirable that we should forego our own prejudices and adopt that pronunciation which would allow us to turn to practical use the long hours and labours we have spent at school over the Greek tongue. The same difficulty does not meet us in the case of Latin. Here there is nothing to prevent us from employing the pronunciation which is approximately the right one, and it is much to be hoped that the movement in favour of a reformed pronunciation will speedily spread and prevail. At present, it is impossible for the comparative philologist in England to lecture upon Latin without the help of a black board and chalk. When he speaks of  $i$  in Sanskrit or other tongues, the ordinary student thinks of  $e$  (as in English); when he refers to  $e$  and  $ai$  the audience writes down  $a$  and  $i$ ; and so long as *agis* and

*cecidī* are pronounced *ejis* and *sesīdai*, it is impossible to show that they have any connection with *ago* and *cadere*.

But the reform of Latin and Greek pronunciation, which is one of the practical results of a more extended acquaintance with comparative philology, would be incomplete without the more crying reform of our own English mode of spelling. It is needless to enlarge here upon the practical evils of this curious system of symbolic expression, which obliges a child to learn by heart the spelling of almost every separate word in the dictionary, the consequence being that at least forty per cent. of the children educated in our board-schools leave school unable to spell, and so, little by little, neglect to read or write at all, and fall back into the condition of their illiterate forefathers. Dr. Gladstone calculates that the money cost of teaching this modicum of learning in the elementary schools "considerably exceeds £1,000,000 per annum," and that in Italy, where the spelling is phonetic, a "child of about nine years of age will read and spell at least as correctly as most English children when they leave school at thirteen, though the Italian child was two years later in beginning his lessons."<sup>1</sup> Nor need we do more than allude to the vicious moral training afforded by a system that makes irrational authority the rule of correctness, and a letter represent every other sound than that which it professes, or to the difficulty thrown in the way of learning to speak a foreign language by the dissociation between sound and symbol to

<sup>1</sup> See his excellent little book on "Spelling Reform from an educational point of view" (1878), pp. 14, 20.

which the child has been accustomed from his earliest years. The language of the ear has to be translated into the language of the eye before it is understood, and this it is which makes the English and the French notoriously the worst linguists in Europe. The inadequacy of English spelling is exceeded only by that of Gaelic, and in the comparative condition of the Irish and Scotch Gaels on the one side and the Welsh Cymry on the other, we may read a lesson of the practical effects of disregarding the warnings of science. Welsh is phonetically spelt, the result being that the Welsh, as a rule, are well educated and industrious, and that their language is maintained in full vigour, so that a Welsh child has his wits sharpened and his mind opened by being able to speak two languages, English and Welsh. In Ireland and Scotland, on the contrary, the old language is fast perishing; and the people can neither read nor write, unless it be in English.<sup>1</sup>

<sup>1</sup> The following books and papers may be consulted on the subject of the reform of English spelling:—A. J. Ellis: "Three Lectures on Glossic;" "Pronunciation for Singers;" "Orthography in relation to Etymology and Literature;" "Early English Pronunciation;" Bickers: "The Question of Spelling Reform;" J. H. Gladstone: "The Spelling Reform;" "Spelling Reform from an educational point of view;" Hadley: "Is a Reform desirable in the Method of Writing," in "Philological and Critical Essays;" Haldeman: "Analytic Orthography;" E. Jones: "Spelling and School-boards;" "The Revision of English Spelling a National Necessity;" "The Pronouncing Reader on the Anglo-American System;" Latham: "A Defence of English Spelling;" Fleay: "English Sounds and English Spelling;" March: "Orthography," in the "Cyclopædia of Education and Yearbook of Education, 1877;" "Opening Address before the International Convention for the Reform of English Orthography;" Max Müller: "Spell-



But the practical evils of our present spelling must be left to others to deal with. To the scientific philologist it is at once an eyesore and an incumbrance. What he wants to know is, not how words are spelt, but how they are pronounced. His object is to trace the gradual changes that sounds undergo, and so determine the laws which they obey. A corrupt or antiquated spelling only misleads and confuses. The whole fabric of comparative and historical philology is based on the assumption that Hindus, Greeks, Romans, Goths, and others, spelt their words pretty much as they pronounced them. The objection that a reformed spelling would destroy the continuity of a language or conceal the etymology of its words, is raised only by ignorance and superficiality.

ing" (reprinted from the "Fortnightly Review," April, 1876); Pitman: "A Plea for Spelling Reform" (a series of tracts compiled from periodicals, &c., recommending an enlarged alphabet and a reformed spelling of the English Language); Sweet: "A Handbook of Phonetics"; Whitney: "How shall we Spell," and "The Elements of English Pronunciation," in "Oriental and Linguistic Studies," 2nd series; Withers: "The Spelling hindrance in Elementary Education"; "Alphabetic and Spelling Reform an Educational Necessity"; "The English Language Spelled as pronounced"; "On Teaching to Read"; — the "Proceedings of the American Philological Association," 1874-8 (containing Addresses by March, Trumbull, and Haldeman); Burns's "Spelling Reformer"; Pitman's "Phonetic Journal"; "The Bulletin of the Spelling Reform Association" (1877-9); Ellis, Sweet, and Spedding in the "Academy," Feb. 24, March 3, March 10, March 17, June 2, June 9, June 16, June 23, and July 9, 1877; Skeat in the "Athenæum," April 29 and May 27, 1876; Spedding in the "Nineteenth Century," June, 1877; "Report of the Conference held in London, May 29, 1877." For Spelling Reform in Germany see "Reform," published monthly at Bremen (1877-9), and the "Verhandlungen der Konferenz zur Herstellung grösserer Einigung in der deutschen Rechtschreibung," Jan. 1876.

The continuity of a language consists in its sounds, not in its letters ; in the history of the modifications of pronunciation through which it has passed, not in a fossilized and deceitful spelling. As for etymology, our present spelling, the invention of printers and præ-scientific pedants, is as often false as right. *Could*, for instance, the past tense of *can*, has an *l* inserted in it, because *should*, the past tense of *shall*, has one ; *rime* is spelt *rhyme* as though derived from the Greek  $\rho\upsilon\theta\mu\acute{o}\varsigma$  ; and it is not so long since *lantern* was written *lanthorn*, as *sweetard* is still written *sweetheart*. But in a very large proportion of words the spelling no longer suggests even a false etymology ; while to make the spelling of every word declare its own origin is to attempt a sheer impossibility. A different spelling of words which are pronounced in the same way is no assistance to the reader, but a mere burden upon the memory ; apart from the fact that no difficulty is experienced in distinguishing the sense of different words written in the same way, such as *box* or *scale*, or that words of identical origin and sound, like *queen* and *quean*, are sometimes written differently, we never find ourselves at a loss to understand homophonous words when we hear them spoken, although in conversation we have not the same leisure and power of knowing the end of a sentence that we have in reading. As a matter of fact, however, etymology is the province of the professed philologist, not of the amateur, and the absurd paradoxes and lucubrations upon language that even now teem from the press are the result of a belief that anyone who has a smattering of Latin and Greek is qualified to pronounce upon the nature and origin of

words. In astronomy or any other of the physical sciences such a presumption is now almost inconceivable ; that it should still be possible in linguistic science shows what need there is of impressing its facts and method upon the minds of the young. One who has been properly trained in the principles of comparative philology will at least have learnt that the etymology even of English words is not to be taken up hastily and without preparation, but that it is a difficult and delicate task, which demands all the resources of the practised student of phonology and the philosophy of speech.

To speak of spelling reform, however, is really to speak inaccurately. What is wanted is not a reformed spelling, which though it may approximately represent our present pronunciation, would become an antiquated abuse in the course of a generation or two, but a reformed alphabet. For practical use, an alphabet of forty characters would sufficiently represent the principal varieties of sound heard in educated speech, each character, of course, denoting a distinct sound, and one distinct sound only. The scientific philologist would have his own alphabet, whether Prince L-L. Bonaparte's, Mr. Melville Bell's, Mr. A. J. Ellis's, or Mr. Sweet's, for marking the minute shades of difference in English sounds, as well as those sounds which do not occur in the "Queen's English," or in any form of English at all. But the practical phonetic alphabet, of which Mr. Pitman's, notwithstanding certain imperfections, may well serve as a model, would prove an inestimable benefit both to the educator and to the philologist. The child, on the one hand, would have to commit to memory

only forty symbols and their values in order to know how to read and write, while the philologist would be able to discover the peculiarities of individual and dialectal pronunciation, as well as the changes undergone by sounds in a given number of years. With a practical alphabet of this kind, too, it would be found that the pronunciation, and consequently the spelling, of the educated classes throughout the country did not differ much more than the spelling of certain words by different printing-presses at the present time. Adults accustomed to the current alphabet would have no greater difficulty in learning the additional characters than they have in learning the Greek or German letters ; and they would at any rate have the satisfaction of feeling that they were approximating towards the civilized condition of the ancient Hindu, who had an alphabet of forty-nine characters, each standing for a single distinct sound, and were correspondingly receding from the condition of such semi-barbarous populations as the Tibetans, the Burmese, or the Gaelic, among whom spelling and pronunciation agree as little as in English itself.

No doubt the printers would suffer at first by a change in our spelling, and the change, therefore, would have to be introduced gradually, perhaps by means of transitional modes of spelling. But a time would come when the whole current English literature would be published in the new type, our present books presenting no greater difficulties to the ordinary reader than the poems of Spenser do now. Indeed, the difficulties would be far less, since they would contain no obsolete and unknown words, such as

make the task of studying the works of Spenser or Chaucer doubly hard. A page of Pitman's "Phonetic Journal" is not hard to decipher, even without a knowledge of the alphabet in which it is written.

But in order that a reformed alphabet may have the support of the scientific philologist it is necessary that it should be international, that is to say should assign to the symbols of the vowels (and wherever possible of the consonants also) the phonetic powers they possess in the ancient Latin alphabet, and, generally speaking, in the modern continental alphabets as well. The comparative philologist will gain but little, if any, help from an alphabet in which *a*, for instance, continues to have the value given to it in *mane*, or *i* the value given to it in *I*. The reformed alphabet must be based on a scientific one. Then, and then only, too, will there be a chance of our realizing the dream of linguistic science,—a Universal language. It is towards this end that the comparative philologist works, this is the practical object to which his eyes are turned. And when once the needless stumbling-block of a corrupt spelling is removed, everything seems to point to English as destined to be the common tongue of a future world. Not, perhaps, English as it is now spoken, with a few relics of primitive inflection still clinging to it, but such an English as the Pigeon-English of China which Mr. Simpson has prophesied will become the language of mankind.<sup>1</sup> English may be heard all over the world from the lips of a larger

<sup>1</sup> "China's Place in Philology," in "Macmillan's Magazine," Nov. 1873.

number of persons than any other form of speech ; it is rapidly becoming the language of trade and commerce, the unifying elements of our modern life. Science, too, is beginning to claim it for her own, and it is not long ago that a Swedish and a Danish writer on scientific subjects each chose to speak in English rather than in their own idioms for the sake of gaining a wider audience. Little by little the old dialects and languages of the earth are disappearing with increased means of communication, the growth of missionary efforts, and let us add also, the spread of the English race, and that language has most chance of superseding them which, like our own, has discarded the cumbrous machinery of inflectional grammar. The great Grimm once advised his countrymen to give up their own tongue in favour of English, and a time may yet come when they will follow the advice of the founder of scientific German philology. That a universal language is no empty dream of "an idle day" is proved by the fact that the civilized western world once possessed one. Under the Roman empire the greater part of Europe was bound together by a common government, a common law, a common literature, and, as a necessary consequence, a common speech. When the darkness of barbarism again swept over it, and the single language of civilized Rome was succeeded by linguistic anarchy and barbarism, the Church and the Law, the sole refuges of culture, still preserved the tradition of a universal tongue. It was not until the Reformation shattered Europe into an assemblage of hostile nationalities that language, as the

expression of the highest spiritual wants and feelings of man, became finally disunited and disuniting. Diplomacy, indeed, the one attempt to harmonize the rival members of "the European family," had its common speech; but diplomacy was powerless against the stronger passions which were shaping the Europe of a later day. Now, however, there are signs that religion is at last ceasing to be an element of disunion, and becoming instead a bond of sympathy and common action among all educated men. The mischievous cry of nationalities, which found support in the crude and misunderstood theories of immature philology, is dying away; we are coming to perceive that language and race are not synonymous terms, and that language is but the expression of social life. Whatever makes for the unity and solidarity of society makes equally for the unity and solidarity of language. The decaying dialects of the world may be fostered and wakened into artificial life for a time; but the stimulus soon disappears, and the natural laws of profit and loss regain their sway. By clearing away old prejudices and misconceptions, by explaining the life of language and the laws which direct its growth and decay, the science of speech is silently preparing the ground for the unhindered operation of those tendencies and movements which are even now changing the Babel of the primæval world into the "Saturnia regna" of the future, when there will be a universal language and a universal law. Genius is predictive, and the outlines of a philosophical language which Leibnitz designed, and the universal language



which Bishop Wilkins actually composed,<sup>1</sup> may after all be something more than the ideal of a literary enthusiast or the dream of an unpractical philosopher.

<sup>1</sup> "Essay towards a Real Character and a Philosophical Language" (1668). See Max Müller's analysis in "Lectures on the Science of Language," ii. pp. 50-65.

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becomes  $a_2$  (Greek and Latin *o*). Long  $\bar{a}$  is analyzed into  $a_1$  (*e*) + A (*a*) or  $a_2$  (*o*) + A;  $\beta\bar{a}\mu\alpha$  :  $\beta\omega\mu\acute{o}\varsigma$  =  $\kappa\acute{\epsilon}\rho\mu\alpha$  :  $\kappa\omicron\rho\mu\acute{o}\varsigma$ . Every root contains  $a_1$  which may be changed into  $a_2$ ; and every weakening of a syllable implies the dropping of  $a_1$ . The *a* sound, which does not essentially differ from A, and appears in Sanskrit as *i* or  $\bar{i}$ , under certain circumstances combines with a preceding *i*, *u*, or vocalized *r*, *n*, and *m* to lengthen these latter sounds.)

[See also H. Osthoff in Kuhn's "Zeitschrift," 24. 4 (1878), pp. 417-426. Osthoff denies that either  $\epsilon$  or  $o$  has been developed in Greek out of the sonant nasal or vocalized *n*, and endeavours to explain away contrary instances. Nevertheless, it would seem that  $\epsilon$  really does sometimes take the place of  $\acute{a}$  in such cases. Osthoff shows that while an original unaccented sonant nasal is represented in Greek by  $\check{a}$  ( $\acute{a}\nu$ ) and in Gothic by *un*, an accented one is represented by  $\tilde{a}$  ( $\tilde{a}\nu$ ) in Greek and *in* (as in the German *sind*) in Teutonic. The two forms of the sonant nasal are not distinguished in the other European Aryan languages.]

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## INDEX.

ABSTRACT and spiritual ideas, as *spirit, virtue, intellect*, of sensuous origin; at the outset only, words for the visible and sensuous, till the mind employed metaphor to express the higher imaginations of the soul; metaphors still necessary in dealing with abstract subjects and in philosophic reasoning; add a charm to poetry; the creations of mythology mainly the work of metaphor; modern science accepts a "nature" which clothes itself with the attributes of humanity and sex; the power in language of rising from the concrete to the abstract made Hieroglyphic writing possible, and enables the Chinaman to adapt his system to new ideas, i. 103-4.

Abstracts a good gauge of the development of language; legend of Pythagoras summing up Eastern and Greek thought on law and order observed in the world, and naming it *kosmos*; indebted to Anaxagoras, Herakleitus, and Xenophanes for our ideas of mind, motion,

and existence; but the idea of *natural selection* belongs to the present generation, and is a higher glory than the conquests of a Cæsar, i. 102-3.

Accadian language ceased to be spoken before seventeenth century B.C., i. 3-4.

Accent in Aryan chiefly on the last syllable; for centuries thrust back in Latin and the Æolic dialects of Greece, and is still proceeding in modern European tongues; Polish accents the penultima and Bohemian the first syllable; in Semitic the penultima primarily received the accent, and the Arabic which agrees with the English is a later innovation, i. 176-7; accent alone able to resist phonetic decay; its shifting a yielding to decay, *ib.* 202.

Accidental coincidences in the likeness of words in different languages, i. 148-9.

Achæmenian, or Old Persian, dialect recovered from the cuneiform inscriptions of Darius Hystaspis and his successors, ii. 81.



- Advancing civilization, signs of; division of labour differentiated organization, analysis of thought and its expression, i. 377.
- Affected English plurals *termini* and *fungi*, and the genitive and dative *Christi* and *Christo*; introduction of Chinese characters into Japan by the learned class, i. 174.
- Age of a language marked by phonetic decay as in the Old Egyptian and Accadian; some languages more affected than others; examples of words from the Basque, Yakute Turkish and Chinese, i. 197-8.
- Agglutinative languages and near approach of many to the inflectional; our own both agglutinative and isolating; the French *je vous donne* an instance of incorporation; Chinese agglutinative, with much that resembles inflection, while the polysynthetic languages of North America retain their primæval character, i. 130; no sharply defined line of division of the various families of speech; but species and classes really exist, each with its own type and characteristics based upon its own conception of the sentence and its parts; the sentence the starting-point of philology and key to classification, *ib.* 131; their differences reviewed; important part played in history and civilization by the races who spoke the various dialects of the Ural-Altai; the oldest monuments of Babylonia, the cuneiform inscriptions have shown that the wild hill tribes of Media and Susiana, the Elamites and Chaldeans all spoke cognate languages, ii. 188-190; communities now speaking allied dialects of the Turanian appear to belong to different races, ii. 190-191; many agglutinative languages are now more or less incorporating, as Zulu, Magyár, Mordvin, and Vogul; these forms easily decomposed into an amalgamation of the verb with two personal pronouns, and are almost analogous to the French *je vous donne* and the Italian *portand'velo*, *ib.* 209-210; further incorporation affecting all the forms of the verb, and the intercalation of a syllable in the Basque or Escuara dialects, *ib.* 210-213; the incorporation of the pronouns found in Old Accadian, as in Hungary and Northern Russia; the pronoun repeated pleonastically in Semitic and Greek, *ib.* 213-4.
- Agreement of numerals and words in common use a presumption that languages are related, i. 153; pronouns a less reliable criterion, *ib.* 153-4.
- Alarodian an inflectional group, difficult to distinguish morphologically from Aryan, having nothing genealogically in

- common ; Georgian the chief living representative of the family, and its literature largely ecclesiastical, with some chronicles, romances, and poems, ii. 184-5.
- Alexandria the birthplace of classical philology, i. 14.
- Alphabets, scientific ; "Standard" and "Missionary" of Lepsius and Max Müller; proposed alphabets of Ellis, Prince L-L. Bonaparte and Sweet, i. 333.
- Analogists and Anomalists, two contending Alexandrine factions, i. 15 ; *ib.* 23.
- Analogy, influence of ; changed the current forms of English, Latin, Greek, and Sanskrit, i. 178-9 ; sometimes alters the whole structural complexion of a language, as in the Coptic, *ib.* 180 ; influence on English flexion ; power of changing and extending meaning of words ; new object or idea named from something familiar ; Kuriak, Russian, and English examples, *ib.* 181 ; sometimes wrong, as the term *whale-fishery* and the name *guinea-pig* ; fair and legitimate when applied to a new object in relation to something familiar, as the French *canard*, Low-Latin *canardus*, German *kahn*, a small "boat," then a duck, which was frequently used to decoy other birds, ended in signifying a mere empty cry to deceive, *ib.* 182.
- Ancestor-worship seems to have been first developed ; lingered on into the historic age of Greece and Rome ; the family consisted of the dead and the living ; savages unable to distinguish between waking realities and dreams ; led to infer that man had two lives ; visions produced by voluntary or involuntary fasts with the conception of the continued existence of dead ancestors led to the belief in spirits or ghosts ; the souls of ancestors sometimes regarded as friendly and at others unfriendly, and supposed to reside in animals and material things as among the Hurons and Zulus ; the latter see their ancestors in green and brown snakes and offer sacrifices to them ; ancestral worship passes insensibly into the worship of animals and trees ; specially through fear into the wide-spread adoration of the serpent, ii. 290-291 ; offerings spread to the manes of the dead to avert evil ; man's daily needs the source of his earliest adoration and prayer ; dread of evil spirits and use of charms among the Red Indians, *ib.* ii. 292.
- Anticipations of a universal language ; signs of religion becoming a common bond of sympathy and action among all educated men ; the mischievous cry of nationalities dying out ; the perception of

language as the expression of social life ; clearing away old prejudices and misconceptions ; tendency and movements in progress for turning the Babel of the primæval world into the "*Saturnia regna*" of the future, and the realization of the views of Leibnitz and Bishop Wilkins, ii. 351-2.

Antiquity of man proved by the science of language ; age of Egyptian and Assyrian civilization ; far earlier date of the parent-language of the Assyrian, Arabic, and other Semitic dialects ; time required shown by the slight changes in Arabic during the last four thousand years, whilst the language on the oldest Egyptian monument is decayed and outworn, ii. 318-19 ; changes and decay more rapid in Aryan than in the Semitic idioms ; grammatical forms of Lithuanian in one or two instances more primitive and archaic than Sanskrit ; language of the Rig-Veda and Homeric poems originally the same ; Aryan dialects believed by Herr Poesche to have been spoken by the cave men at Cannstadt, Neanderthal, Cromagnon, and Gibraltar ; vast period required for the development and growth of the parent Aryan from the rude cries of barbarians ; phonetic decay and word survivals, *ib.* 319-321 ; Ural-Altai family

bears a similar testimony to an indefinitely high antiquity ; Accadian a decaying speech three thousand years B.C., and implies a long period of previous development ; the Mongols and Ugro-Tatars ; agreement of comparative philology, geology, pre-historic archæology, and ethnology, in proclaiming the enormously long period of man's existence on the earth ; necessary to explain the phænomena of language, *ib.* 322-3 ; further corroborated by the number already ascertained of existing separate families, and others like the Basque and Etruscan, of which scarcely a vestige remains, *ib.* 323.

Apollonius Dyskolus and his son Herodian, two famous Alexandrine grammarians ; part of the former's "*Syntax*" still extant ; their labours ended the controversy between the Analogists and Anomalists ; Greek and Latin school grammars inherited from this old dispute, confound thinking and speaking, and introduce formal logic ; result of comparison with other languages, i. 23, 24.

Apothegm modern on Speech and Silence, only a partial truth ; the prophet the harbinger of a higher cult and civilization than the seer ; estimate of the poet of the Rig-Veda ; haphazard etymology abandoned, but the pic-

- ture retained of "winged words" inspired by Hermes and the Muses; language the bond of society, and the boundary between man and the brute, i. 1-2.
- Apotheosis and its causes; first due to worship of ancestors after death, as in the Manes of the Roman Church, but in Chaldea and Egypt, kings were deified while living, and also the Roman Emperors for State reasons; deification of heroes still common among the Bunjâras, who recently made General Nicholson into a new god; natural course of a myth affected in this way and also by the canonization of Christian saints, ii. 297-8.
- Arabic language, dialects, and literature, ii. 173-178.
- Aramaic a Semitic dialect, distinct from Assyrian and Hebrew in phonology and grammar; once widely diffused over Syria and Mesopotamia; became the *lingua franca* of trade from the eighth century downwards, in time extirpating Assyrio-Babylonian, Phœnician, and Hebrew, just as it was itself by Arabic afterwards, ii. 171-2.
- Arbitrary element small in gesture-language compared with spoken, consisting of a few interjections and onomatopœic sounds, i. 95-6; the same sounds used for different ideas; no necessary connection between an idea and the word that represents it; natural sounds differently understood, as in the attempts to imitate the note of the nightingale in various languages; first words of children according to Psammitikhus and the Papyrus Ebers, i. 95-6; no reason in the nature of things why the word *book* should be applied to the present volume in preference to *koob*, *biblion*, or *liber*, *ib.* 97; essential that language be an *instrument for the communication of our thoughts to others*; Aristotle on thought and communication; the voiceless Yogi of India, and the Bernardine nuns of southern France, resemble the untrained deaf-mute, *ib.* 97; the name *Slav* assumed by our Aryan kinsfolk signifies "the speaker," in opposition to the dumb and unintelligible German—just as the Assyrians are called a people "of a stammering tongue;" *Man* from the root *man*, "to think;" derivatives explained, *ib.* 97-8; language the prerogative of man and the bond of society; a social product; springing up with the first community, developing with the increasing needs of culture and civilization, *ib.* 98; reason for calling the present volume a *book*; new words come into use for new objects and ideas; unintentional changes;

- new words and derivatives must be accepted by society before they form a part of living speech; fate of proposed new words, *ib.* 99-100.
- Aristarchus the Homeric critic, a strict Analogist, endeavoured to remove all exceptions, and to determine the genitive and dative of Zeus, i. 15.
- Aristophanes ridiculed the pedantry of artificial rules, i. 10.
- Aristotle on digestion, i. 8; opposed the theory of the natural origin of speech; held that words had no meaning in themselves, and made no clear distinction between words and language: his ten categories a mixture of grammar and logic; his logical system empirical and based solely on Greek; only capable of correction by comparative philology; injury to logic by his method compensated by the additions to Greek grammar, *ib.* 11-12; on the *logos*, *ib.* 122.
- Armenia regarded by the Accadians as the cradle of their race; afterwards the home of the Aryan Medes, i. 307.
- Armenian literature; classic period begins with the formation of the alphabet by Mesrop in the fifth century of our era; and the works of Moses of Chorene, Lazar of Pharp, Eznib of Kolb, and others; leading phonetic feature of the language the interchange of
- hard and soft explosives, while original *p* becomes *h*, ii. 83.
- Article definite, postfixed by the Albanians, Bulgarians, Scandinavians and Aramæans, i. 124; wanting in the majority of languages and wherever found can be traced back to the demonstrative pronoun and is identical with it in German; has the same function as the adjective or genitive, but not the same position in the sentence; it precedes the noun in English, German, Hebrew, Arabic, and Old Egyptian where the adjective follows it; in Scandinavian, Wallach, Bulgarian, and Albanian placed after its noun; reason of this irregularity; not found in Ethiopic or Assyrian, except in the latest period of the latter; among the Aryan dialects; Russian and other Slavonic idioms (Bulgarian excepted) have no article, the Greek being very inadequately represented by the relative pronoun in the old Slavonic; Sanskrit without, though the demonstrative *sa* sometimes takes its place as *sa purusha*, like *ille vir* in Latin; neither Finnic nor the Turkish-Tatar have an article; Osmanli Turkish occasionally follows the Persian and expresses it by a *kezra* (ز) or *hemza* (ء); Hungarian through German influence has turned the demonstrative *az* into a genuine article; the objective case,

- called by Böhlingk "casus-definitus" formed by an affix in Turkish-Tatar, Mongol, and Tibetan, often answers exactly to the use of a definite article with a noun, i. 423; nearly similar use of an affix in Ostiak, Hindustani, Persian, and Chinese; while the Algonkins and Othomis prefix the article, *ib.* i. 423-4; reason of this opposite usage; opinions of Max Müller and M. Benlów, *ib.* i. 424-5; position of the qualifying word in the primitive Aryan sentence, according to M. Bergaigne before the subject and governing word; place of the article in Semitic, German, Wallach, Bulgarian, Scandinavian, and Icelandic; Aramaic alone assigns it a natural position; late appearance in Hebrew and Arabic and different constructions, *ib.* i. 426-7; agreement of the Old Egyptian in placing the determining word and prefixing the article, *ib.* i. 427-8.
- Articulate sounds fully investigated by Ellis, Bell, Sweet, Helmoz, and Prince Lucien Bonaparte; the physical laws of utterance have been determined and etymology become to a large extent a physical science; difference between phonology and language; their mutual relation; confusion and dispute about change of pronunciation and meaning; inflection been attributed to phonetic decay; the Schlegels on the growth, divisions, and development of languages, i. 59-61.
- Articulate utterances of speech classed with musical notes, i. 237.
- Aryan or Indo-European results of inquiry, the starting-point for the investigation of other families of speech; the comparative method applicable to all; the study of Semitic by Gesenius, Ewald, and Renan soon proved that the laws derived from Aryan were not universal; that each group and language possesses its own linguistic laws and peculiarities; Aryan language the parent speech of a highly civilized race, and highly inflectional; its exceptional character, i. 55-6.
- Aryan or Indo-European family of languages variously named by scholars; Indo-European, perhaps, the most favoured; Indo-Germanic chosen by Bopp, widely known among Germans; Sanskrit now discarded, and Japhetic objectionable, as the ethnological table in Genesis is really geographical; Caucasian inapplicable, as only the little colony of the Iron or Ossetes belong to the Aryan, ii. 69-70; *Ārya* occurs frequently in the Rig-Veda as a national name, and a name of honour; derived



from *arya*, perhaps "ploughman" or "cultivator;" the great recommendation of Aryan, its shortness and general adoption; being Sanskrit the word requires some limitation, *ib.* 70-1; subdivisions and dispersion of the family, *ib.* 71-2; Vedic and Post-Vedic poor in vowels, but rich in consonants; euphonic laws strict and delicate; syntax comparatively simple, but grammatical forms full and clear; often preserved archaic forms obscured elsewhere; Latin and Greek sometimes more primitive; rise and spread of the dialects, *ib.* 73-5; the modern Aryan of India including the Rommany of the Gipseys, *ib.* 75-6.

Aryan Dictionary and civilization restored by Fick, who has argued from time to time as if the absence of a common term in East and West necessarily implied that the object was unknown, ii. 127; advanced civilization and the state of society apparent from the terms denoting family relationship, dwellings, rule, and settled customs, *ib.* 127-9; religion simple, the worship of natural objects and phenomena, especially the sun and dawn, and other bright powers of the day; worshipper only prayed to one god at a time; attributes of the gods; nature-myths of a later age, and hymns to the gods a fruitful source of

mythology, and the basis of a liturgy of which fragments were carried away by the various bodies of emigrants; belief in evil spirits of night and darkness, *ib.* 129-130.

Aryan distinctions of the vowels *ā*, *ē*, *ō*, lost by the Asiatic branch of the family; changes of roots in Finnic, i. 189-190, *note*.

Aryan mother-country; views of Latham and Poesche untenable; objections to Poesche's theory; comparative philology affords proof of the Asiatic cradle of the race; dependence of linguistic change on geography; position according to Pictet, Hovelacque, and Johann Schmidt; Douse's theory, ii. 122-3; current opinion places it in Bactriana on the western slopes of Belurtag and Mustag, ii. 123; here is the *airyanem vaējō* of the Vendidad; the legend only a late tradition, and applies to the Zoroastrian Persians, but the geography is real and agrees with comparative philology about the early Aryan home; further evinced by climate, natural history, and productions, *ib.* 123-4; Humboldt's view that the Sea of Aral, the Caspian, and Euxine formed at one time a great inland lake, confirmed by recent researches; this inland sea, with the desert to the south, cut the Aryans off from the civilized races of Elam



- and Babylonia, and forced the first emigrants to the west to push their way through the steppes of Tataria and the pass of the Ural range; the parent speech no uniform tongue, was split up into dialects and perpetuated, *ib.* 124-5.
- Aryan words in use before the separation of the family into Eastern and Western, how ascertained, ii. 125-6.
- Aryan grammar reconstructed: mode of accentuation; the parent language highly inflected, afterwards modified, ii. 138-9.
- Aryan myths and folk-tales supposed to have been derived from about fifty originals, ii. 259-260.
- Aryan proper names shown by Fick to be compounded of two words and analogous names in Greek, Old German, Servian, and Welsh; the second part liable to contraction as in Greek and Kretan; after the separation of the family many shorter names formed by leaving out one of the elements; later names based on an entirely different method, probably due to Etruscan influence, ii. 133-4.
- Aryan route westward, settlements and breaking up again to people other countries, where their knowledge of natural productions would be largely increased, animals domesticated, and agriculture improved, ii. 134-6.
- Aryans a pastoral and agricultural people, acquainted with gold, silver, and bronze; had some knowledge of medicine, surgery, arithmetic, music, pottery, and other useful arts, ii. 130-3.
- Assamese, an apparently Aryan language, inserts the plural affix (*bilak*) between the noun and the case ending, i. 173-4.
- Assur-bani-pal's Library, contents of; Assyrian dictionaries, grammars, reading-books; translations interlinear and parallel from the old Accadian, i. 3-4.
- Assyrian account of Chaos, i. 103.
- Assyrians and Babylonians, the first grammarians, i. 4; language nearly the same; recovered within the last thirty years from the inscribed bricks and monuments of Nineveh, Babylon, and other cities, ii. 168; familiarized with the distinction between present and past through their knowledge of Accadian, *ib.* 175.
- Attempts to connect the Semitic languages with the Aryan family, or derive them from a common source, scientifically worthless, ii. 175; their relationship, *ib.* 178-182.
- Attempts to divide languages morphologically by Schlegel, Pott, Bopp, Schleicher, and Max Müller, i. 368; all so far as founded in fact based on

the conception of the sentence by various races; views of Bopp, Schlegel, and Pott self-contradictory; Steinthal first pointed out that the sentence rather than the word was the basis of morphological arrangement, and in dealing with grammar and structure two related words are necessary; his division of languages, *ib.* 369-70.

Bacon (Roger) on Greek, Hebrew, and Latin as separate and independent languages; noticed the existence of French dialects, i. 25 and *note*; amusing etymologies by scholars of his day; Jacobus de Voragine and the Vulgate, *ib.* 26-7.

Bâ-ntu languages of South Africa prefix the same noun to each of the related words in a sentence, i. 129; mark the relations of grammar by prefixes only; delicate phonetic changes render the declensions and conjugations rich and complicated, ii. 208; compared with Zulu Kafir, *ib.* 208-9.

Barbarism and its effects on the civilized language of Rome in producing linguistic anarchy over the greater part of Europe; conservative influence of the Church and Law, till the Reformation roused Europe into hostile nationalities with their different tongues, ii. 350.

Basque said to have only two

verbs, "to be" and "to have," whilst many languages wanting these, i. 129; vocabulary mostly borrowed from the French and Spanish, or earlier Latin and Keltic; abstracts of native growth rare; names for various kinds of trees and animals, but no simple word for *tree* or *animal*; shows a facility for composition; our knowledge of the language of recent date; Humboldt's views on Basque ancient local names, controverted by MM. Eys and Vinson, i. 214-5; analogy of Basque compounds to the polysynthetic languages of America only casual, *ib.* 216.

Beast-fables common among the Hottentots, Bushmen, and Vei-negroes, ii. 280-1; used by the ancient Egyptians during the reign of Ramses III. for satire and caricature; in greatest perfection among the Bushmen, and widely disseminated by them; fragments of Accadian fables found among the remains of the Library at Nineveh; used by the Hindus, and probably known to the Aryans before their separation; found also among the Polynesians and Australians, *ib.* 282-3.

Bedouin of Central Arabia, through want of intercourse with their neighbours, said to speak a more archaic language than those of Nineveh and Jerusalem 3,000 years ago, i. 201.

- Benfey on the physical accessories of speech in putting sense and significancy into sounds expressive of the emotions, i. 81-2; objection to Geiger's theory, *ib.* 82; note on communication between men and animals, *ib.* 82; carried on the labours of Bopp and Pott with some modification, but failed to reduce Aryan and Semitic to one stem; languages require to be studied minutely; Grimm followed by Rask, Burnouf, Lassen, Haug, Spiegel, Juste, and others, *ib.* 52-3.
- Bergaigne on the old adjectival suffix *bha* (*bhi*) in our own family of speech, i. 119.
- Bleek derived speech from the cries of the anthropoid apes; on articulate and inarticulate language; imitation of instinctive sounds by man and its results in connecting with the outward utterance an inward signification; language considered interjectional in its origin, aided by instinct which in development created and moulded thought, i. 77.
- Bopp (Francis), the true founder of comparative philology, acquired Sanskrit while on a visit to England; his numerous works between 1816 and 1854; attempted to include the Polynesian dialects and the Georgian in the Indo-European family, i. 49-50; confined his work to the scientific and inductive side of the science; while the metaphysical was ably expounded by Alexandervon Humboldt, who sketched the outlines of a true philosophy of speech, and threw out suggestions of great value to later scholars, *ib.* 50; Bopp's division of languages into three groups; his mistakes; assumption that the laws of Aryan philology held good of all human speech, and that Aryan was the primitive language; treated agglutination as an earlier stage of inflection, and confounded roots with words, *ib.* 62-3; his views of Chinese, Polynesian, and Caucasian; regarded language as an organism passing through a series of necessary changes; this view assailed by Pott, who maintained there was no necessity in language to develop as an organism like the seed into the tree, or the chrysalis into the butterfly, than in thought itself, *ib.* 63; his analysis of Aryan grammar and analysis of flexion rejected by Scherer, Westphal, and Ludwig, *ib.* 83; protest against his analysis indiscriminating, *ib.* 84.
- Borrowed languages and words; English a superstructure of Norman, French, and Latin on an Anglo-Saxon foundation, and nine-tenths of the Hindi is Sanskrit; influence of neighbours in the inter-

- change of words, as *meeting*, *comfortable*, *naïve*, *éclat*; words show geographical and social relationships as *Boomerang*, the Dutch *pude*, *puye*, Latin *podium*; while words like *maize*, *hammock*, *canoe*, and *tobacco* from the Haytian through the Spanish show that the Spaniards were the discoverers of America; and that the Teutons inhabited the Baltic provinces when the Romans received amber from them under the name of *glæsum*; Professor Thomsen has proved that the Finns, Scandinavians, and Teutons were neighbourstwo thousand years ago from the number of borrowed words in the Finnish language, i. 170-1.
- Borrowed sounds, idioms, suffixes, and grammatical forms, i. 172-3.
- Borrowed or loan words in various languages, ii. 126.
- Boult's derivation of city, count, and custom, i. 21-2, *note*.
- Brasenose College, Oxford, origin and corruption of name, i. 343-4.
- Bréal's qualified approval of the essential part of Schleicher's theories, i. 76; on primitive man and the formation of new words, ii. 6.
- Brücke on the utterance of high-pitched vowels, i. 261.
- Brugman and his critics on the three primitive vowels, *ā*, *ē*, *ō*, 309-310, *note*.
- Buschmann on *pa* or *ta*, and *ma*, the roots of "father" and "mother," ii. 7.
- Bushman and Hottentot clicks mere inarticulate sounds or noises, i. 242; folk-lore and speeches of animals, 242-3, *note*; the most unpronounceable click, not found in any of the dialects, put into the mouth of animals in Bushman, but wanting in the Hottentot language, i. 283-4; ii. 282.
- "Cabalistic Grammar," published at Brussels, and "Audacious Grammar" at Frankfurt, a monument of "cabalistic" dreams and "audacious" folly, i. 100.
- Caramuel, a Spanish bishop of the seventeenth century, author of 262 works, containing a vast amount of jargon, unable to bequeath one of his coinages to posterity, i. 100.
- Carib women of the Antilles used a different language from their husbands; while the Eskimaux women of Greenland turn *k* into *ng*, and *t* into *n*; custom of *tabu* among the South Sea Islands respecting the use of a syllable or word occurring in the reigning sovereign's name, i. 205; similar custom among the Chinese, and nearly the same among the Kafirs and Abipones; old European superstition seen in the Greek calling his left hand the better one, and the Roman

- change of the name Maleventum into Beneventum; belief in the power of words, *ib.* 206-7.
- Carlyle on worn-out and forgotten metaphors, i. 103.
- Cat introduced into Egypt from Nubia during the eleventh or twelfth dynasty, and called *Miau*, the name still common in China; the French and German equivalents, and the unmelodious ending of *katz* borrowed by the latter, i. 107.
- Ceremonial dialects and languages common in Java, the larger Polynesian islands, Japan, China; among the Latins, Hungarians, Germans, French, and Basques, i. 207-8.
- Changes in the quantity of Latin and Greek words and terminations, i. 177; cause of change, the desire of clearness and emphasis; French cutting off its final consonants, English softening the hard letters, and Classical Italian with its pedantic pronunciation incapable of being spoken rapidly; omission of the negative by Frenchmen when using *pas*, *point*, *jamais*, while Englishmen strengthen the negative by repeating it, like most early languages, i. 185-6.
- Changes in language through least effort, or Phonetic Decay conspicuous in almost every word spoken, but will not account for the development of fresh mental views; reasons and illustrations in the meanings of words from the Latin and German, i. 193-6.
- Changes in Anglo-Saxon; the inflections almost lost, i. 196; phonetic decay as in Latin and French words; words of different origin assume the same form, while others of the same origin appear different; unwarranted attempt to reduce triliteral Semitic roots to biliterals, *ib.* 201-2.
- Changes of language among wandering savages; the Indians of Central America; the Ostiaks and Hurons; the German colony of Pennsylvania when cut off from frequent communication with Europe, i. 208-210.
- Changes of pronunciation in different branches of the same family generally slow and gradual; remarkable instance of rapid change amongst the Samoans, i. 308-9.
- Changes in allied languages not so marked, *e. g.* the Indo-European, the Romance, and Semitic compared; reasons of slight changes in Semitic phonology; difference in Malayo-Polynesian, and laws of equivalence; extensive changes in Ugro-Finnic and the whole Turanian family so far as investigated by M. de Ujfalvy; laws of sound-change discovered by Bleek in the Bantu or Kafir family, i. 325-7; advantage over its Aryan

- analogue in dealing with actually existing sounds, whilst the pronunciation of Greek, Latin, and Gothic has to be assumed; comparative philology began with the allied forms of the languages of India and Europe; the assumption easily seen by the Italian and German, appears unnatural to the Englishman from the spelling, *ib.* 327-8; the spelling of English ably discussed by Ellis, Pitman, and others; the sounds analyzed by A. J. Ellis; systems of Sweet, Jones, the American Philological Association, and works of their predecessors, *ib.* 330-2; changes in Dutch spelling, Spanish, and German; great improvements in the last by Schleicher, Frikke, and others, *ib.* 332-3.
- Charm of the English Version of the Bible due to the use of equivalents to Greek and Hebrew words from Romanic and Teutonic sources, i. 187-8.
- Cheroki language contains thirteen verbs with many forms to denote particular kinds of "washing," but no single word for "washing" in general, i. 120; ii. 5.
- Chief agents in the manufacture of speech, the breath, respiratory organs, throat, and mouth, i. 247.
- Children's speech a type of man's early acquisition of language, i. 104; difficulties in learning a foreign language; use of gestures; travellers' mode of drawing up vocabularies and phrase-books of unknown idioms; gestures bridge over the gulf between inarticulate and articulate speech, and are the means of communication for deaf-mutes, *ib.* 105.
- Childlike inability to distinguish sounds, due to two different causes; example of a child substituting *n* for *l*, i. 311, and *note*.
- Chinese and Burman compared; all the isolating possibilities of Chinese worked out; its pronunciation more than 2,000 years ago restored by Dr. Edkins; changes in the outward form of the cultivated language and introduction of tones; probable cause of phonetic decay; its ideographic system nearly similar to the ancient Accadian, i. 373-4.
- Chinese vocabulary multiliteral; detected by Dr. Edkins and M. de Rosny; the same word used as a noun, verb, adverb, or the sign of a case; illustrates the early days of speech; effect of contact and contrast, i. 119-120.
- Chinese words "to be hurt" and "autumn" explained, i. 119; smallest real whole, a sentence, or a sentence relation; the same true of other languages; words only significant when they stand in rela-



- tion to each other, *ib.* 122 ; pronunciation of Mandarin Chinese ascertained as it was 4,000 years ago, ii. 9-10.
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- Civilization of Athens, Egypt, Babylonia, and modern Japan superior in many things to our own, ii. 66.
- Civilization of China, Babylonia, and Egypt now generally believed to have been independent and self-evolved ; apparent from their mode of writing ; Egypt 6000 years ago at the height of her culture whilst surrounded on all sides by barbarous tribes ; the civilization on the Euphrates and Hoang-Ho were also similarly situated ; geographical barriers cut off tribes, races, and languages from each other, and thus preserve racial and linguistic types ; the grammar of the Eskimaux a relic of a bygone era of speech, i. 381-2.
- Civilization and culture render language uniform and stationary, i. 204 ; counteract the tendency to multiply dialects, and create a common medium of intercourse ; the Macedonian Empire made Greek the language of the East, and the Roman made Latin that of the West ; steps in linguistic unity ; languages of trading nations must finally prevail ; extinction of the weaker languages only requires time ; reason of Bishop Wilkins' failure to invent a universal language, *ib.* 211-12 ; why the same Arabic dialect prevails in the East ; history of a language traced by a comparison of its dialects ; progress of civilization and the diminution of languages and dialects ; the Basque, those of the Caucasus, the Etruscan, and Lykian waifs of extinct families, *ib.* 214-15.
- Classification of existing languages, ii. 33-64.
- Classical philology reared by the Alexandrines on the ruins of Hellenic culture and originality ; the decay of Greek mental activity caused the dialect of the Attic tragedians, historians, and Homeric poems to become obscure, i. 14.



- Claudius the Roman Emperor endeavoured to reform the alphabet, and introduced three new letters, i. 23.
- Clement V. exhorted the great Universities of Europe to establish two Chairs of Hebrew, Arabic, and Chaldee, i. 25.
- Clicks in South African languages; three of the easiest borrowed by the Kafirs from the Hottentots, and these in turn from the primitive Bushmen; the labial and compound dental wanting in the Hottentot, and the "unpronounceable click" found in the Bushman fables of hare, ant-eater, and the moon, i. 283-4 and *notes*.
- Coincidences of sound in the Quicha words *inti*, *munay*, and *veypul*; the Sanskrit *indra*, *manyu*, and *vipula*; the Mandshu *shun* and *sengi*, and the Latin *sanguis*; the North-American Indian *potómac*, and the Greek *pótomos*, i. 148-9.
- Comparative method of investigation explained; reason of the failure of the old method when applied to Latin, Greek, and Hebrew, i. 133.
- Comparative philology furnished materials for investigating the origin of language, nature of roots, and flexion; comparative and historical grammar in their various relations; old sense of philology and the modern use, i. 135; method of Harris and Stoddart; the science, variously named, deals with real words and sentences either in living speech or written record, or such as are capable of restoration by sound comparison with existing words, i. 135-6; divisible into phonology, sematology, and morphology; each described, *ib.* 141.
- Comparison of languages as the instruments of thought; ideal of perfection, like that of beauty, very different amongst different peoples; as amongst the Eskimaux, Greeks, Romans, and English, i. 374-5; grammatical relation, flexion, and polysynthetism, *ib.* 375-7.
- Comparison the life of inductive science, i. 132.
- Comparison of words and sentences; the subject defined, i. 141; roots and not derivatives, as a rule, must be compared; changes in the form of words, *ib.* 152; *captive*, *caitiff*, and *sound* explained; the American *potomac* a compound, the Greek *pótomos* from *po* found in *pino* and *potos*, in the Sanskrit *pánam*, and English *potion*; *monkey* from the Italian *monichio*, a derivative of *monna*, and that a contraction of *madonna*, *mea domina*; the Gothic *finf*, Latin *quinque*, Lithuanian *penki* belong to the period when the Aryans of Europe and Asia were still undivided; formed by reduplication, but no con-

nection with the Semitic *khámésh*, *ib.* 152-3.

Composition, a species of declension and conjugation; Latin and Greek words of the same meaning; difference between "good-for-nothing," and "he is good for nothing," *i.* 390; power of composition in some languages greater than in others; polysynthetic sentences present the appearance of gigantic compounds; composition as rare in Semitic as it is common in Aryan, *ib.* 391-2; a fruitful source of grammatical flexion and "word-building;" person-endings of Aryan verbs probably personal pronouns as in Aramaic; Latin, Gothic, French, Italian, also compounds, *ib.* 392-3; many suffixes not inflections; idea of past time denoted by reduplication, which served other purposes in the history of Aryan speech; many suffixes coeval with Aryan speech, *ib.* 395; some never applied to a purely flexional purpose as in *knowledge* and *wedlock*; the same also found in other languages; classificatory or formative suffixes may be due to composition, but many cannot be traced back to independent words; changes through false analogy and phonetic decay in Sanskrit, Latin, and Greek, *ib.* 395-401; epithetic stage of language, far advanced, and

implies poetic imagination, culture, civilization, and the germs of a mythology; newly coined words follow the old rule; classificatory suffixes due to composition, and imply those of an earlier kind of origin, *ib.* 402; secondary suffixes explained; combination of two in English *songstress*; secondary suffixes in Aryan, their use and influence, *ib.* 402-4; suffix *ya* in Greek words a mark of the feminine; gender unknown in agglutinative and isolating languages; the Eskimo, Chocktaw, Mushagee, and Caddo, divide objects into animate and inanimate; the Bâ-ntu nouns separated into classes by prefixes; agreement of the pronoun, adjective, and verb shown by the use of the same prefix; examples from the Kafir, *ib.* 405; many indications that the parent Aryan or its ancestor had no sign of gender; Latin and Greek also the same at one time; influence of analogy; the idea of gender suggested by the difference between man and woman, by the meanings of the words; *e.g.*, the Hidacho use different words for the masculine and feminine either alone or added; the Sonorian add words signifying man or woman; the primitive Aryan transferred to himself the actions and attributes of inanimate objects, and his own to

them, endowing them with a life similar to his own ; growth of mythology and distinction of gender coeval ; awoke to a higher consciousness, saw the essential difference between himself and the objects around ; formation of the nominative for the first personal pronoun, and the conception of abstracts, *ib.* 406-8 ; origin of gender only learnt by careful comparison of dialects and families of speech, *ib.* 409-410 ; the conception of number very limited in uncivilized language ; form of Hidatsa nouns alike in singular and plural ; in Sonorian the simple word stands for both ; distinguished by the Othomi by prefixing the article *na* and *ya*, and the Amara of Africa can only say *fārūsū ayūhu*, *ib.* 410-11 ; the Tumuli denote the plural by postfixing *da* ; reduplication serves as a plural with many savages ; ideas of number among the aborigines of Victoria, the Puris of South America, and the New Hollanders ; Aryan *tri*, *three*, and the Sanskrit *tar-ō-mi* ; the dual regarded by Mr. Tylor as a survival, or a relic of a by-gone speech ; many languages possess a trinal number ; one of the Melanesian idioms and the Fijian a quadruple number, *ib.* 412-13 ; different modes of forming the plural, *ib.* 413-14.

Conquest and mixture powerful aids in dialect-making, *i.* 205.

Consonants the skeleton of articulate utterance ; wanting in many Polynesian words ; differences between words often marked by children by the vowels ; preponderance of vowels a sign of phonetic decay ; consonants apt to be dropped, as in the Greek *mermeros* and the Latin *memor* from the Sanskrit *smar* "to remember ;" the sounds of a language simplified by use ; the primitive Aryan alphabet must have once resembled those of barbarous or semi-barbarous tribes, and included a large variety of consonants, *i.* 269-270 ; division of consonants into hard and soft, or surd and sonant ; further into liquids, gutturals, dentals, palatals, labio-dentals ; labials and Sanskrit linguals or cacuminals, *ib.* 270-1 ; *the liquids*, *ib.* 271-4 ; *the nasals*, *ib.* 274-5 ; *the labials*, *ib.* 275-6 ; *the dentals* and *palatals*, *ib.* 276-8 ; *the gutturals* and *sibilants*, *ib.* 278-282.

Constant state of changes in language ; three great causes of, imitation, emphasis, and laziness, *i.* 166 ; marvellous facility of imitation among savages possessing only a scanty vocabulary ; morbid mania among the Maniagri, the Russians, and Yakutes of Siberia ;

- also in the Philippine Islands and Java, *ib.* i. 67-8.
- "Construct state" in Semitic, really an instance of composition, i. 390-1.
- Controversy on roots begun before the Nirukta of Yaska was composed; arguments on both sides summarized, ii. 2; how revived in our own day; the term and its conception familiar to the scholars of the West from their Arab and Hebrew teachers; difference between the Sanskrit and the Semitic root; perceived that roots had history, and that Latin, Greek, and English could not be compared before their oldest forms had been discovered; roots, the elements out of which the material of speech was formed, must not be confounded with verbs or any other constituent of living speech; roots of language compared to the roots of a tree; called by Max Müller phonetic types, the moulds into which we pour a group of words allied in sound and meaning, *ib.* 3-4; nature of Semitic roots and mode of forming words, *ib.* 4.
- Coptic once a postfix language, now a prefix one, i. 372.
- Cost of spelling in elementary schools according to Dr. Gladstone, ii. 343.
- Creation of dialects, causes of; dialectic differences in England and America, i. 202-3; growth of dialects in savage and barbarous communities; Malayan and Polynesian traceable to a common source; Milanese almost innumerable; the Manipureans of forty families unintelligible to their nearest neighbours; great variety in South America, Ancient Greece, and the Basques, *ib.* 203-4.
- Credo, its history and relation to Sanskrit and Greek, ii. 19-20.
- Cult of man, how it became possible; idealized humanity at first represented strength or wisdom, but became beauty with the Greek artists; Philip of Krotona deified at Eggesta on account of his beauty, ii. 296-7.
- Czermak's experiments on the *velum pendulum* changes for the pronunciation of *a, e, o, u,* and *i*, i. 261.
- Dante, after comparing the dialects of Italy, selected the "Illustrious, Cardinal, and Courtly" of Sicily for the language of his "Divina Commedia," i. 25.
- Dardistan, a small country north of Afghanistan, the language Indian rather than Iranian, contains a number of interesting dialects discovered by Dr. Leitner, ii. 77-8.
- Darwin's "Expression of the Emotions in Men and Animals," i. 81.

- Democracy of Buddhism broke down caste, raised inferior dialects to a level with Sanskrit, and conduced largely to the success of the Hindu grammarians, i. 38.
- De Sacy's "Axioms of Universal Philology," and views of comparative grammar, i. 33.
- Devanâgari alphabet, a splendid monument of phonological accuracy, i. 38.
- Dialectic regeneration best seen in a period of social revolution like the Norman Conquest, when the literary language loses the support of the educated classes; the unwritten languages of savages and barbarians in a constant state of change; old words and expressions have to make way for new ones; the slang of schoolboys, the cant of thieves and costermongers exemplify the same fact, i. 191.
- Diez created Romance philology by the publication of his "Comparative Grammar," and "Dictionary," i. 53.
- Difference between true and falsetto notes explained, i. 247, and *notes*.
- Difference in English and French modes of speaking, and the reason; ludicrous mistake in *feu* and *fou* in the story of an English gentleman, i. 200.
- Difference in the isolating dialects of China and Further India explained, i. 129.
- Different conception of the sentence in the main and subclasses of speech; the psychological peculiarity which originated each form became continually more definite and unalterable, i. 129-30.
- Diokles, the manumitted slave of Cicero's wife, author of a treatise "On the Derivation of the Latin Language from Greek," i. 24.
- Diphthongs and their formation; *ai* and *au* when sung to a long note give a distinct *i* and *u* at the end of each; Sanskrit grammarians discovered *â* and *ô* were combinations of *a + i* and *a + u*, i. 266.
- Diplomacy powerless against the passions that shattered the "European Family" with its common speech, and shaped modern Europe, ii. 351.
- Distinction of strong and weak cases by the Sanskrit grammarians confirmed by modern research, ii. 140-8.
- Distinction of vowels and consonants rests on a difference of function, i. 246.
- Division of words in a sentence unnecessary in writing or speaking; the French *je le vois* as much a single group of sounds as the Basque *dakust* or the Latin *amatur*; the sentence in the polysynthetic languages of America as incapable of being split up into its elements as an ordinary compound in Greek or German;

mode of treating the several words of a sentence by the ancient Hindu grammarians illustrated, i. 113; law of accent, *ib.* 113-14; division of speech into formal and material, both defective and misleading; articulate sounds may be called the matter, but only become words when thought and significancy have been breathed into them; significancy relative and of two kinds; belongs to sematology and grammar; in going back to the sentence word the distinction must be observed between the material sounds, the meaning and form when used, *ib.* 114.

Donatus the grammarian, in the fourth century, adopted the views of Herodian, i. 24.

Dravidians entered India before the Aryans and settled among the aboriginal races; speech agglutinative, and consists of twelve dialects—six cultivated, and the rest spoken by barbarous tribes; Dravidian phonology; vowels *a, e, i* placed at the end to modify the sense; and other relations of grammar by affixes; the verb only one mood and three tenses, ii. 205-7.

Dual number older than the plural; in Sanskrit three distinct forms preserved, two in Greek, and a single case in Latin, ii. 148-9.

Dyskolos, "the difficult," a name

given to the Alexandrine grammarian Apollonius from his special devotion to Syntax, i. 23.

Edkins, Dr., on Mandarin Chinese as a decayed speech, and the time required to create a new tone, i. 293.

*Ego, egōn*, the Sanskrit *aḥam*, a far later creation than the objective *mé* or *mâ*, marks the epoch when the "me" became an "I," i. 407-8.

Ellis on English pronunciation since Shakespeare's time, i. 199.

Emphasis, use of; acts upon the outward sound of words, and tends to build up new forms; the varying quality of vowel, an apparent exception to Grimm's laws, explainable on the principle of emphasis by Greek Sanskrit and Old High German words; enriches the vocabulary by introducing synonyms to give clearness and intelligibility to thought, i. 186-7.

English contractions *I'll, I'd, won't* and *can't* scarcely distinguishable from Basque forms, i. 200.

English fitted to become a universal language, i. 377.

English forcing back of the accent illustrated by the word *balcony* and line from Milton, i. 176.

English etymologists neglected the labours of continental



- scholars on the philosophy of grammar, i. 37; Dr. Murray held that all the languages of the world were derived from one, consisting of a few monosyllables; pointed out the relationship of Sanskrit and Persian to the Aryan dialects of Europe, and affinities of Scythian words; Whiter in his "Etymologicum Magnum" exceeded Murray, mixed up impartially English, Greek, Latin, French, Irish, Welsh, Sclavonic, Hebrew, Arabic, Gipsev, and Coptic, &c.; examples of his derivations, *ib.* 37-8.
- English spelling; its practical evils and defects; compared with Italian; inadequacy of English spelling only exceeded by the Gaelic, ii. 343-4; the condition of the Irish and Scotch Gaels compared with the Welsh Cymry, *ib.* 343-4; list of works and papers on the Reform of English Spelling, *ib.* 344-5 and *notes*; want of the scientific philologist and object in tracing changes of sound; objections to spelling reform answered; etymology, changes in spelling, and homophonous words; a reformed alphabet needed, one of 40 characters sufficient for practical purposes; its advantages and easy acquirement; approach to the civilized condition of the ancient Hindu, who had an alphabet of 49 characters, *ib.* 347-8.
- Epicureans in their inquiries on language explained everything in accordance with the theory of atoms; held that language was natural to man, and the different sounds in different languages for the same object were due to circumstances, climate, social condition, constitution and physique, as the cries of animals, i. 13.
- Epithetic stage of language the most fruitful source of mythology; tendency of epithets to become names, and several applied to the same object from different attributes, as in the words for "silver," "sky," "azure," and "heaven," ii. 250; synonyms were resolved into different beings, and homonyms amalgamated; the dawn called *Ushas*, *Eōs*, or *Dakanā*, *Daphnē*, became two separate deities; *Daphne*, *Prometheus*, and *Epimetheus*, *ib.* 251-2.
- Eponymous heroes and popular etymologizing; Remus and Romulus, ii. 247-8.
- Eskimaux, the supposed descendants of the cave-dwellers in Southern France, have preserved their old habits of thought, and yet our class of speech differs less from theirs and the Algonquin than the dialects of China and the jargon of the Mongols and Turks, i. 126.
- Etruscan from its agglutinative character and appearances of



- flexion has led scholars to compare it with Aryan and Semitic, ii. 185-6.
- Etymologists must know not only the laws of phonology and sematology, and be able to trace words back to their early forms, but also to construct many in the same way a palæontologist reconstructs a fossil animal, i. 345-6; difficulties and mode of meeting them, *ib.* 346; Max Müller's four facts in etymology summarized and explained, *ib.* 347-50.
- Faculty of speech, its origin and exercise; where located, according to M. Broca, ii. 302-3: the grand distinction between man and the brute, *ib.* 304.
- Faidherbe endeavoured to bridge over the gulf between man and the ape by pointing to the clicks of the Bushman, and the cries of the *cebus azaræ* of Paraguay, when excited, i. 76-7.
- Falsetto notes, how produced, i. 247, and *notes*.
- Families of speech peculiar; three oases in Asia and Europe where before the beginning of history language became permanent and traditional; families made up of dialects with a common grammar and stock of roots; hypothetical "parent speech;" Fick's Dictionary and Schleicher's "restoration" of the Parent Aryan forms; allied dialects; Dr. Murray's nine primæval roots, i. 215-17; advance of culture tends to ideal unity; anticipation of a time when hope and faith will find utterance in one language, *ib.* 219.
- Fetishism, origin of; the worship of stocks and stones, or objects which satisfied man's daily wants, or warded off evils,—investing them with divinity whilst useful; custom of the Indians of Columbia; the Palladium of Troy, the Bethels of the Semite, the Ephesian "stone," wand of Hermes, arrows of Apollo, and other symbols of Greek divinities, only the survivals of a primitive fetishism, ii. 292-3.
- Fick on the derivation of Western and Eastern Aryan from two parent stems; these again from a primitive speech; proof of their original unity; dialects of Asia Minor and Armenia; his conclusion confirmed by the cuneiform inscriptions, i. 306-7.
- Fifth declension in Latin the result of unconscious blunders, i. 179.
- Finnic idioms nearly inflectional have suggested their relationship to Aryan, but have never cleared the border between flexion and agglutination, i. 131.
- Finnic Kalevala, an epic worthy of comparison with Homer, or the Nibelungen Lied; adven-

- tures, travels, final struggle with Luhi, and search for the mysterious Sampi ; similarity of the Esthonian Kalevipoeg ; the ground of the poems shows that Esths and Finns started with a common stock of ancestral myths ; the Ugric Voguls have their epic on the Creation and Deluge, and the giants of the ancient world, strikingly similar to the legends of the Accadians, and show the high antiquity of these old Altaic myths. ii. 197-8 ; the Lapps have their mythical epic, and the myths and tales of the Tatars are equally numerous ; the agglutinative character of the language, and transparency of the proper names, make it easy to trace their original meaning, ii. 197-9.
- Finno-Ugric dialects divided by Prince L.-L. Bonaparte into four sub-families ; their settlements, arts, and modes of life, ii. 191-6.
- First utterances of mankind were probably polysyllabic, i. 118.
- Flection found in its purest form in Semitic, i. 127-8 ; how Assyrian or Ethiopic came to possess real tenses ; the former crystallized into a literary language, B.C. 2000 ; in Semitic the verb formed out of the noun ; the three cases of the noun and their relations, ii. 164-6.
- Foreign speech may be forced on a people by a paternal government, but must be borrowed ; French compulsorily used at Oxford in the time of the Plantagenets and Latin during the Commonwealth ended in failure, i. 100.
- Fox maintained that *Bordeaux* should be pronounced *Bordox*, i. 178.
- French Encyclopædia devoted six volumes to Grammar and Literature ; divided grammar into general and particular ; the principles enunciated largely worked out by Gottfried Hermann and G. M. Roth ; families of speech and morphology of language then unknown ; the school grammars of Greece and Rome, with the categories of modern philosophical systems, defective ; truer conception by F. Bernhardi of the nature and relationship of speech ; defined language as an allegory of the understanding ; sought a connection between the sound and the object ; and discussed the relation of language to poetry and science, i. 35-6.
- French in the eighth century still the *lingua romana rustica* in which the clergy preached ; its equivalents of Latin words, ii. 116 ; oath of Strassburg preserved by Nithard ; the golden age of epic poetry and the Chanson de Roland ; new stage of development began with Sire de Joinville ; four

- principal dialects, differing chiefly in the vowels, contributed to the formation of Modern French, *ib.* 116-17.
- Fluency and readiness of expression of some speakers, probable cause of, *ii.* 304.
- Galton's whistle as a test of the number of vibrations in audible sound, *i.* 231, *note.*
- Geiger on the origin of roots or words ; each the symbol of an action ; all roots traced back by him to verbs, *i.* 81.
- Genitive case still wanting in groups of languages like the Taic or Malay ; the Latin objective genitive and subjective genitive ; place of the genitive in Aryan and Semitic different, *i.* 414-15 ; apposition used instead ; F. Müller's view ; place of the defining noun in Hottentot, Chinese, Malay, and Semitic ; the predicative and genitival relation ; office of the adjective and genitive the same, *ib.* 416-7 ; formation of adjectives in Tibetan ; genitive in Hindustani ; Greek adjectives and the Sanskrit genitive, *ib.* 418 ; the close connection of the adjective and genitive in the Bâ-ntu languages ; Zulu sentence ; Semitic distinctions with Assyrian and Hebrew examples, *ib.* 419-20 ; the oldest Accadian inscriptions contain a genitive by position ; a post-position found throughout the Ural-Altai family ; peculiarities of the Accadians, Finns, and Semites ; use of prepositions like *dé*, *of*, or *von* in modern analytic languages ; varying aspect worn by the genitive in the different families of speech, *ib.* 420-1.
- Germans eagerly pursued the study of Sanskrit soon after its discovery ; Schlegel the poet first laid down the great fact that the languages of India, Persia, Greece, Italy, Germany, and Slavonia formed but one family ; his work the foundation on which Bopp reared the science of language, *i.* 48-9.
- Gestures and the instinctive play of the features denoting pleasure or pain, and their difference ; the latter common to man and the brutes, whilst gestures implying a rational element are peculiar to man, *i.* 106 ; often a poor resource and fail to express the meaning intended by children and travellers, *ib.* 106-7.
- Giovanni de Balbis, author of a Latin Dictionary, *i.* 25.
- Gipsies penetrated Europe in the twelfth or thirteenth century ; Miklosich endeavoured to trace their line of march and the countries passed through by a careful examination of their vocabulary, *ii.* 76.
- Glottology includes a knowledge of the general laws and conditions of language, *i.* 134-5.
- Gods human in form and attri-

- butes ; Vishnu with arms and legs, Merodach as an armed warrior, ii. 297.
- Grammar and the method of studying it essentially unsound ; the grammars of Greece and Rome largely founded on false theories, imaginary facts, and false rules, ii. 330-1 ; the noun and oblique cases ; Aryan case-endings ; the Danish *det er mig* and French *c'est moi* ; cases in English derived from the Latin ; nature and functions of adjectives, pronouns, and verbs ; rules, exceptions, and survivals, *ib.* 331-4 ; province of literature and historical philology ; forms of grammar variable and the causes ; recent improvements in the method of Greek, Latin, German, French, and English grammars, *ib.* 334-7 ; reasons formerly prevalent for teaching Latin and Greek, *ib.* 337-8.
- Grammar studied practically by the Romans ; Julius Cæsar composed a work entitled "De Analogiâ," and invented the term *ablative* ; Cato learnt Greek in his old age in order to teach his son ; the study of the problems of grammar made Latin the vehicle of law and oratory, i. 18-19.
- Grammar the guide to the relationship of languages ; with structure the clue to direct comparative philological research ; existence of the Aryan family of speech proved by their grammatical forms ; Sir W. Jones, Adelung, and Vatter's lists of words mere curiosities, i. 150-1 ; oldest forms must be noted from books and monuments or existing dialects, *ib.* 151.
- Grammarians of India next to those of Assyria and Babylonia in order of time ; the rise of Buddhism and the elevation of popular dialects to the rank of literary languages, caused the language of the Veda to become antiquated, and compelled the educated Hindu to study and compare its earlier and later forms, i. 4-5.
- Greek contact with Persia stimulated Themistokles to acquire a fluent knowledge of Persian ; overthrow of the empire of Cyrus and Darius, impressed the Greeks with contempt for the Asiatic, and infused a belief in the innate superiority of their own language and literature, which proved the bane of classical philology till recent times, i. 8-9.
- Greek contempt for the "barbarian" led them to neglect the investigation of the dialects of Asia Minor ; Plato noticed the resemblance only to draw a wrong conclusion ; and maintained many Greek words had been borrowed by the Phrygians, i. 8.
- Greek grammar, technical terms

- of, misunderstood, mistranslated, and confounded by the Romans, i. 22.
- Greek, or Hellenic, the most important branch of the Aryan family in its vowel system and the perfection of grammatical forms, ii. 101-9.
- Greek researches into language divided into three periods, viz. before Sokrates, the Sophists, and Alexandrine grammarians; labours of the Sophists Herakleitus and Demokritus; rise of the so-called science of Etymology; derivation of *lucus a non lucendo*; follies of the pretended science enshrined in the "Etymologicum Magnum," and the "Onomastikon" of Pollux; two of its rules illustrated, i. 7-8.
- Greek school grammar by Dionysius Thrax, published at Rome in the time of Pompey, still extant; divided into six parts; spread and added to the absurd etymologizing of the Greeks; Lucius Ælius gave lectures on Latin literature and rhetoric about 100 B.C., and Marcus Terentius Varro wrote five books, "De Linguâ Latinâ," which served as the basis of the "science" of Latin Etymology; Roman vagaries only excelled by Junius and the author of "Ereuna," i. 20-1, and *notes*.
- Greek, Roman, and North-American-Indian mode of forming compounds; the last exhibits the primitive condition of speech; the Cherokee, out of six or eight thousand verbal forms, has no single word for the verb separately; examples of the forms, i. 120.
- Greek word *dēmos* from *da*, "to divide," shows private property in Attica originated in the allotment of land as amongst the Slavs at present, i. 161.
- Grimm adopted Bopp's method, but devoted himself to the minute and scientific study of one branch of languages; his *Deutsche Grammatik* ushered in a new epoch in comparative philology, i. 51; studied the ancient through modern and living languages; his method ably applied by Curtius to Greek, who availed himself of the labours of Lobeck, Gottfried Hermann, Passow, Döderlein, and Philipp Buttmann, while nearly a similar advance had been made in Latin by Corssen's predecessors, *ib.* 54; compared the science of language with that of natural history, and, like Goethe, thought mankind had sprung from several separate pairs, *ib.* 70; his view of the development of language, and the origin of the first words from Aryan roots, giving a particular meaning to each separate vowel and consonant, unverified assumptions, *ib.* 70-1; his failure prepared the way for Schleicher, *ib.* 71-2.

- Grimm's laws of the interchanges of sound in Aryan speech, the result of wide observation and comparison; English *th* and its relation to *t* in Latin and Greek words, i. 154; his laws affected by others, as noted by Verner in Teutonic; every change in strict accordance with phonetic law and capable of explanation; diversification of Teutonic, Latin, Romanic, and modern English, *ib.* 313; causes of change, *ib.* 314; transition of *g, d, b,* into *k, t,* and *b* in German, and growth of an aspirate; action of one sound upon another, and assimilation explained, *ib.* 315-16; metathesis, and the insertion and omission of vowels; Swarabhakti incompatible with the acute accent, *ib.* 317; prosthesis, or prothesis, and epenthesis illustrated by words from various languages, *ib.* 318-20; different languages have different phonetic tendencies, but Grimm's law never "suspended," or allows exceptions, unless interfered with by others which happen invariably under certain conditions; borrowed words necessarily undergo the same changes; words sometimes altered in form so as to disguise the etymology, as *Shotover* from *Chateau vert*; generalizations and uniformity of Grimm's law, *ib.* 322-3.
- Growth and development of language through civilization; the language of Chaucer compared with that at the disposal of a modern writer, i. 100-1; dialects of savages a type of what all languages were originally; the condition of the Tasmanians, New Caledonians, Veddahs of Ceylon, and the Dammaras of South Africa, *ib.* 101-2.
- Harar language, apparently Semitic, uses postpositions, and reverses the Semitic order of the words in the genitive. i. 174.
- Harris stimulated inquiry and attention to the framework of school grammars by his "Hermes;" and was followed by Horne Tooke's "Diversions of Purley," which revived the old mistake of the Greek Analogists, i. 34-5.
- Hebrew, a local dialect of the Canaanite group, together with the Phœnician, Moabite, and neighbouring idioms, ii. 169-70.
- Helmholtz detected the exact form of many compound tones by applying the microscope to the vibrations of different musical instruments; confirmed his own and Donders' discovery that the sounds articulated by the human voice have their own special shape, i. 234.
- Helvétius followed Anaxagoras and asserted that we became men through the possession of hands, i. 95.



Henotheism and Polytheism but two phases of the same form of religious faith ; plurality of deities suggested by the variety of nature overpowers man's yearning for unity ; gradually attributes applied to the objects and powers of nature take the place of the latter ; the Sun becomes Apollo, and the Storm Arês ; deities are multiplied in the mythopœic age when epithets are changed into divinities and demi-gods with a developed mythology ; abstract names follow the common process, and temples reared to Terror and Fear, to Love and Reverence ; and these are ultimately followed by the higher abstraction of Monotheism, ii. 295-6.

Herakleitus advocated the doctrine of the innate and necessary connection between words and objects, i. 6.

Herder substituted the idea of development for that of uniform sequence ; his "Treatise on the Origin of Speech" dissipated the theory that language was a miraculous gift, i. 48.

Herder and Lessing the leaders of a new era of thought and philosophy ; the "Ideal of Speech" followed by Jenisch's Berlin Academy prize essay, the "Ideal of a perfect Language ;" his four marks of superiority ; Herder had previously laid down in his

"Ideen" that in each language the understanding and character of its speakers reflects itself, i. 32.

Herodian's views taken up by Ælius, Donatus, and Priscian ; their grammatical labours, i. 24.

Heyse, a follower of Humboldt from Hegel's point of view, professed to base his theory on the results of comparative philology ; held that language was spiritualized sound, i. 66 ; his ideas of internal development mystical and contrary to fact ; his assertions respecting the soul sheer mythology ; evolution of the various forms of speech *not necessary* ; language originated from the need of intercommunication, and, as Heyse emphasizes it, was the work of reasonable, thinking beings, *ib.* 67-8.

High and Low German, their formation exactly in accordance with Grimm's law ; and the rise of a new language in historical times, i. 307-8.

Hindu grammarians first investigated the language of the Rig-Veda, i. 38-9 ; laid the foundation of modern scientific philology ; their mode of treating words, i. 113 ; long before the Greeks in their phonological labour, and far more scientific ; some of their treatises will compare favourably with those of the present day ; their names of the various



- sounds and groups of letters from their formation, i. 244-6.
- Historians of a later age only able to trace the causes of events of a particular era, ii. 65; the greatest thinkers not free from the prejudices and habits of their times, as Aristotle on Slavery, Bacon and Raleigh on Astrology; apt to overestimate the culture and civilization of modern Europe; Anglo-Indian contempt of the descendants of Manu and Vikramaditya, *ib.* 66.
- Historical growth and evolution of consciousness; the existence of Non-Aryan and pre-Keltic populations in western Europe; contact of tribes in prehistoric times; Hungarians and Voguls once neighbours; Greek words borrowed from Phœnicia; original home and migrations of the Gipsies, ii. 324-6.
- History culled from monumental evidence, from the discoveries of Schliemann and others, not from the Homeric Poems; Mykenæ, Pelops, and the culture of Hellas, ii. 254.
- History of the Aryan nations recovered; their migrations and beliefs, culture and civilization better known than the history of the Saxons of the Heptarchy, or the Hebrews of the Davidic era; how preserved and traced by Fick before the first Hymn of the Rig-Veda was composed, the Hellenes reached Greece, or the first Indo-European word had been written down, ii. 326-7.
- Holden, Professor, on ease of pronunciation in the adoption of words; and numbers of words acquired by children two years of age in particular instances, ii. 314-15.
- Homeric Poems, estimation of by the Greeks; numerous discordant copies gave rise to literary criticism amongst the Alexandrines; a minute investigation and comparison of the older and later forms of the language followed, overshadowed by metaphysics, i. 14-15; the old dispute about the origin of words assumed a new form, *ib.* 15.
- Horace's lines on the primitive condition of man and the evolution of speech, i. 13.
- Hovelacque on the organ of language and its position; his work on the origin of language exhibits the defects of Schleicher's theory, and contains little more than a catalogue of the various families of speech with their characteristics, i. 76.
- Humanists the older, bowed before classical antiquity, and only aimed at writing and speaking Latin correctly; Switheim on government; "to govern" a legacy by the schoolmen, unknown to Priscian, but found in Consentius; outdone

- by the orthodox in the "errors" of the Vulgate, i. 26-7.
- Human speech ; the problem of its reproduction more successfully approached from the physical and acoustic side than the physiological ; instruments most exactly constructed to represent the vocal organs failed to produce anything like human speech ; the mind the creator of speech by giving signification to articulate sounds, i. 335-6.
- Human throat a marvellous instrument for the production of manifold sounds ; its structure ; the most perfect wind instrument of infinite pliability and power of change, and in constant sympathy with the other harmonies of the other organs of speech, i. 236.
- Humboldt's (Wilhelm von) great work on the Kawi language published after his death ; followed by Steinthal's journal, conducted with the help of Lazarus, has proved a treasury of suggestive thought to linguistic scholars, i. 50-1 ; *ib.* 64 ; confounded the two senses of the word language ; his theory reflects Kant's dualism ; erred in following the *à priori* method rather than the *à posteriori* ; but his work of great value to scholars, *ib.* 66 ; classed Chinese with the inflectional languages of Europe ; assumed that all language follows a regular course of development from the isolating stage to the inflectional, *ib.* 370-1.
- Idea of a universal grammar due to logic and the unmethodical comparison of ancient and modern languages, and a revival of old Greek theories, i. 33-4.
- Identity of language the result of contact, or social influence ; a presumption in favour of a common racial origin of populations ; kinship of race and language ; descent of mankind and origin of languages, ii. 317-18.
- Imitation in childhood and amongst a community ; love of imitation sometimes causes a community to adopt the language of its neighbours, as the Kelts of Cornwall, Wends of Prussia, Huns of Bulgaria, Negroes of Hayti, Lapps, and the aborigines of America, i. 168 ; difficulties and limit of the power of imitation amongst the South American Indians and Negroes ; disparity of culture a barrier ; Chinese attempts to imitate English, *ib.* 169-70 ; changes form and meaning, *ib.* 175 ; false analogy and tendency to exclude the irregular ; uniformity in modern Greek declension, *ib.* 176.
- Imperfections of speech, lispings and stammering, mainly due to nervous disease, and too high a palate another cause of irregular utterance, i. 252.

- Importance of the mouth, or chamber of resonance, in the creation of articulate speech ; many sounds owe their origin to it ; others formed in the throat are modified in their passage through, the vowels first, then the gutturals and dentals, and lastly the labials undergo change, i. 253.
- Inability to distinguish sounds due to two very different causes, i. 311, and *note*.
- Inflectional families of speech not numerous, but the literary and historical importance of two exceeds that of any other group ; inflectional character of Hottentot, maintained by Bleek, is denied by Friedrich Müller, ii. 68-9.
- Inspiration of the Vulgate according to Galland and Smaragdus, i. 27.
- Intensity of sound, how produced ; whispering by less intensity but quite as distinct as loud voice ; three kinds of the latter, and action of the organs, also in sighing and groaning, i. 248-9.
- Interjectional cries, like the play of the features, common to all men ; express emotions, not ideas ; some like *Agh* (*ach*) in Aryan seem to have become roots ; many modern interjections had once a full conceptual meaning ; instinctive cries of men engaged in a common work may be considered interjections ; sense of life and power that makes the child shout, the bird sing, and is the ultimate motive of human speech, causes us to beat time by the help of rhythmical utterances, becomes a symbol of the action to all who have taken part in it and passes into a word, i. 109-10.
- Inward sense, the essence of language, how ascertained, i. 164-5.
- Iron another form of Aryan, a name due to Max Müller. ii. 70.
- Isolating dialects of China and Further India differ from each other, i. 129.
- Italian oldest written monuments do not go back beyond the 12th century ; literary Italian created by Dante ; his fourteen dialects ; now more scientifically reduced to three groups, Northern, Central, and Middle ; wide differences between them, ii. 118-19.
- Kafir woman's reason for coining the word *angoca* for water in the song of Tangalimlibo, ii. 17.
- Kâtal, a Semitic root, explained, and its derivatives, ii. 4.
- Kautsa and the early Hindu grammarians ; origin and extent of their labours ; the language of the Rig-Veda had become so obsolete in the fifth or sixth century B.C., as to be understood with difficulty ; the Prâti'sakhya, the oldest production of the grammatical

- school, far superior to the most advanced labours of the Greeks in the same direction ; the Nighantavas contain a list of rare Vedic words, and perhaps started the controversy on the origin of nouns between Sâka-*âyana* and Gârgya and their followers ; a Sanskrit Dictionary formed and the doctrine of roots clearly enunciated, i. 41-2 ; labours of Yâska and Pânini ; the *Nirukta*, or Etymology of the former, a model of method and conciseness, and the grammar of the latter, the crowning work of Hindu scholarship in the fourth century, *ib.* 42-3.
- Keltic language the westernmost of all the Aryan, still spoken in Wales, Brittany, Ireland, and the Scottish Highlands ; peculiarities and changes of letters, ii. 83-4 ; Welsh, Cornish, Breton, and Irish literature ; Scotch Gaelic the most corrupt of all the Keltic tongues, *ib.* 87-8.
- Keltic philology placed on a scientific footing by Pritchard, Zeuss, and Stokes, i. 53.
- Kephalos and Prokris, Greek legend of, traceable to a high antiquity ; explained by Max Müller, ii. 273.
- Knowledge defined ; the result of comparison, i. 132-3.
- Krates of Mallos regarded "anomaly" as the leading principle of language ; defended the right of usage ; author of the first Greek grammar ; tried to reform orthography ; Appius Claudius Cæcus had written on grammar and Spurius Carvilius had substituted *g* for *z*, so that Krates found a ready audience for his "lectures" upon the study of Greek, B.C. 156 ; almost all Roman culture borrowed from the Greeks, boys learnt Greek before Latin, and it was generally understood ; the first Roman history written in Greek by Fabius Pictor, B.C. 200 ; speech of Tiberius Gracchus at Rhodes ; a native literature sprang up under the influence of Greek teachers, and Latin was trained as the instrument of communication between the polished nations of antiquity and their Roman masters, i. 15-8.
- Language a social product, the creation and creator of society ; independent of individual caprice and control ; changes assumed referable to general laws, i. 133-4.
- Language ever shifting, and not a characteristic of race ; may be exchanged ; when created, ii. 318.
- Language of man like the song of birds, instinctive and necessary, i. 83 ; significant sound, the outward embodiment and expression of thought, *ib.* 132.
- Language of the mythopœic age only apparently imaginative and poetical, ii. 269.

Language, origin of, cannot be revealed by any single science, but by the sciences subordinated to each other; failures of the early attempts to solve the mystery, *ib.* 300-1; the product of a combination of causes; a social creation by a whole community, *ib.* 301; faculty of speech natural to man; nature of his first utterances and how moulded into articulate sounds to convey embryonic thought, *ib.* 302; where localized according to M. Broca, and the results of full and defective development, *ib.* 303-4; the one mark of distinction between man and the brute; the possession of conceptual thought and continuous reasoning contrasted with the rudimentary reason and intelligence of animals, *ib.* 304-6; language not necessarily dependent on vocal sounds; use of signs and gestures by travellers and savages; James and Dunbar's account of the signs used by the North American Indians, *ib.* 306-7; signs used in monasteries where silence was strictly enjoined; North American Indian signs for the sun's path and the time of day, *ib.* 307-8; the cries of animals expressing feeling or desire always remain rudimentary, and never develop into speech, *ib.* 309; views of Darwin, Haeckel, and their followers; no anthropoid ape

ever raised to the level of articulate speaking man; theory of the evolutionist on his *homo alalus* and *homo primigenius* left to post-tertiary geology to verify or confute, *ib.* 310; unconsciousness of childhood and the early condition of mankind compared; experiments of Psammitichus on two infants brought up in solitude, *ib.* 310-11 and *note*; result of Mr. Taine's observations on one of his own children described, *ib.* 311-13; Darwin's observations on a little boy's first utterances; Mr. Pratt on Polynesian distinctions by vocalic elements; Professor Holden on ease of pronunciation in the adoption of words, *ib.* 313-15; age at which children generally begin to speak; defects in pronunciation and their causes, *ib.* 315.

Language, science of, created a science of comparative mythology, and a science of religion; the subject defined; each necessary to understand the others, *i.* 57-8; familiar forms of Greek myths traced back to the Vedic hymns; value of Max Müller's labours in these new sciences, *ib.* 58.

Language, science of, related to ethnology; language belongs to the community, not to the race; its changes amongst tribes and races enumerated; foreign influence through wives and captives, *i.* 316-17.

Language, the bond of society, includes every means of communicating the thoughts and feelings to others; the deaf mutes gifted with speech; savages still use gestures largely, and the Grebos indicate persons and tenses of verbs in this way, i. 2; one of the earliest subjects of reflection; inquiry into the nature of language seems to have originated in Babylonia on account of its mixed races and languages; the Tower of Babel believed to be the cause of the diversity by the Confusion of Tongues; fragments of the native legend found in Assur-bani-pal's library, closely resemble the account in Genesis, *ib.* 3; the Greek *logos* an expression of the close relationship between thought and words; the question attempted to be solved, and at the bottom of all linguistic science; controversy on free-will and necessity; its importance to language and grammar; the Greek perceived that language was the outward embodiment of thought, but failed to discover its nature and laws, *ib.* 4-6.

Languages, four of the most important groups examined; Malay-Polynesian by W. von Humboldt, Buschmann, Von de Gabelentz, and F. Müller; the Bâ-ntu by Bleek; the Athapasian and Sonorian by

Buschmann; the Ural-Altaiic, also called Ugro-Altaiic or Turanian; the philology of the Finnic group almost as advanced as Aryan; limits of the Ural-Altaiic not quite settled, nor the Chinese and Mongol, i. 55-7.

Latin language, three periods of Old Latin down to the Second Punic War; Classical Latin; and Neo-Latin, the language of the people under the Empire, out of which sprang the Romanic idioms of Mediæval and modern Europe; their relative use and differences, ii. 112-14.

Latin spoken in Gaul had a strong affection for diminutives; the same tendency in Irish, German, Swiss, and Italian; also among the provincials of the Roman world, ii. 115-16.

Law, universal prevalence of, in language; nothing arbitrary or capricious amid all the changes or development, ii. 335.

Laws of consonantal change laid down for Latin and Greek, for Sanskrit and Zend, for Keltic and Old High German, verified and explained by the modern Romance dialects; whilst the study of savage idioms has yielded invaluable facts for linguistic science; difficulties of treating an extinct literary language scientifically, i. 157.

Laws of speech, primary or empirical; their nature and relations; applicable to words and



- sentences of any period ; English, Sanskrit, and Latin, equivalent letters ; our linguistic ancestors able to count one hundred before their separation into two branches, one to conquer India and the other to occupy Europe, i. 138-9 ; words, like fossils, enabled us to trace the past history of our race ; laws require to be verified by experiment and observation ; the phonautograph and phonograph show the waves of air set in motion by each sound we utter ; psychology confirms the conclusion of glottology that the concrete precedes the abstract ; words common in Spanish and Arabic due to contact, *ib.* 140-1.
- Laziness an active cause in changing the harder sounds into weaker ; Mr. Douse's attempt to explain the phenomena of Grimm's Law by Reflex Dissimilation, i. 196-7.
- Leblanc, a young man whose larynx was completely closed, was only able to utter *a* and *e*, i. 261.
- Legend of Boreas and Orythia explained by Sokrates to his disciple Phædrus, ii. 230-1.
- Leibnitz overthrew the belief that Hebrew was the primæval language ; set Missionaries to compile vocabularies, grammar and phrase-books ; implored Witsen to procure specimens of the Scythian languages, Samoyedes, Siberians, Bashkirs, Kalmucks, Tungusians and others ; his Dissertation on the Origin of Nations, and method of inquiry ; found an illustrious convert in Catherine of Russia ; works of the Jesuit Don Lorenzo Hervás, the Mithridates of Adelung and Vater due to his influence ; his efforts seconded in another direction by Herder, i. 47-8.
- Lengthening of vowels by way of compensation in Greek and Latin for loss of a consonant, i. 320-21.
- Letto-Slavic languages, their variety and grammatical complexity, i. 94-100 ; the Lettic group comprises Lithuanian and Lettish ; Lithuanian literature, chiefly "national songs" and prose tales ; its phonology strikingly agrees in some respects with the Indic, but Lettish has undergone further modification, *ib.* 100-1.
- Literary dialects and languages less subject to decay than unwritten, as seen in the Tuscan of Dante and the dialect of Bologna or Naples ; the Latin of Cicero declined with the Empire, and the Anglo-Saxon with the Norman Conquest ; whilst the language of the Assyrian inscriptions remained almost unaltered 2,000 years ; the character of Hebrew and how influenced by its sister tongues, i. 198-9.
- Lithuanian language spoken by



- the least progressive member of European Aryans, subject to Phonetic Decay from want of intercourse with its neighbours, i. 200; compared with the Bedouin of Central Arabia, *ib.* 201.
- Livius Andronicus translated the "Odyssey" into Latin, i. 17.
- Logic, formal, based on language; introduced into grammar by the Greeks; Aristotelian logic and the latest attempt to improve it shown by Mr. Sweet to rest upon the mere accidents of Indo-European grammar, ii. 327-8; cases of the Latin and Greek wanting in the majority of languages; no true verbs in the Polynesian dialects, and the Eskimaux lack some of "the parts of speech;" Aristotle's analysis of the proposition and the syllogism examined by Hegel and Sweet, *ib.* 328-9; progress of the science of language retarded by the evil influence of formal logic and of "Universal Grammars" or *Grammaires Raisonnées*; right conception of logic less important than that of grammar, *ib.* 330.
- Ludwig's views of flexion adopted by some French philologists; supported by Bergaigne's researches on the case-suffixes, i. 84-5; his theory fails when applied to the verb; the advocates of agglutination meet the same difficulty in the stem-suffixes, *ib.* 85.
- Lykian inscriptions, some bilingual, but cannot yet be deciphered, or connected with the Aryan family, ii. 185.
- Mahn's three periods of speech and their characteristics, i. 32-3.
- Malayan and Polynesian dialects, their resemblances and differences, i. 137.
- Malayo-Polynesian group; varied position of the agglutinative elements; place the preposition and article at the end; ravages of phonetic decay; inference from the general resemblance of the Polynesian dialects; race declined in civilization apparent from their numerous songs and legends: Malays have long enjoyed culture, possess epics, dramas, and romances; their philosophic writings due to contact with the Hindus and Arabs, ii. 207-8.
- Manchus, conquerors of China indebted to the Nestorian Christians for their alphabet of 29 characters: effect of contact with the Chinese and literary culture; the possessive pronouns not affixed; the adjective merely a noun placed before another to qualify it, ii. 201.
- Man's intellectual creations progressive, not like the unvarying processes of nature always

- the same; development of thought conditioned and varying, i. 163-4.
- Mechanism of speech settled by the labours of Ellis, Melville Bell, Helmholtz, Czermak, Brücke, Sweet, and others; the main facts ascertained and explained; the real nature and causes of the phonetic elements of speech understood, i. 246.
- Membranous tongues like our own *chordæ vocales*, act as tense cords, i. 233.
- Memory of past events soon lost by uneducated persons; the battle of Linden utterly forgotten by the peasantry of the neighbourhood, and Albanian genealogies cannot be traced beyond eleven ancestors, ii. 254-5.
- Metaphorical expressions the work of analogy; three-fourths of our own language said to be worn-out metaphors; the source of terms for the spiritual and abstract growth of knowledge; the only abstract notion attained by the Tasmanians was that of resemblance, i. 181-2.
- Miklosich and Schleicher explained Slavonic philology; and the latter gave a description of the whole Indo-European family of languages, and included the science of language among the physical sciences, i. 53.
- Mixed languages, specimens of, *Maltese*, i. 219-20; *Creolese* (or broken Danish); *Surinam Negro-English* (or rather Negro-English Dutch), *ib.* 221-2; Negro Spanish of *Curaçoa*, *ib.* 222-3; *Indo-Portuguese*, *ib.* 223-4; *Negro-Portuguese* and *Negro-French*, *ib.* 224-5.
- Monboddo, Lord, a sounder critic than Dugald Stewart, convinced by Wilkins "that Sanskrit was a richer and in every respect a finer language than even the Greek of Homer;" his theory of the descent of mankind from two tailless apes, and all languages from the Osirian of Egypt; adduced numerals and grammatical forms to prove the relationship of the classical languages of Europe and India; not far in 1795 from discovering the Indo-European family of speech, the foundation of the science of language, i. 46-7.
- Mongol dialects; that spoken near Lake Baikal the most barbarous, ii. 200-1.
- Moreover*, the modern word, appears as *overmore* in the Paston letters, and is an instance of the variation of words from age to age, i. 371-2.
- Morphology treats of the various forms under which thought expresses itself; different modes of thought and expression in Chinese and English; peculiar characteristics and temperament form race;

- how peculiarities become permanent features, i. 364-5 ; languages classed morphologically, *ib.* 365 ; meaning of race ; the European Jew adopts the language of the country in which he is settled ; modern mixed languages ; types of languages strongly marked, but the dividing lines almost imperceptible ; peculiarities of Finnic, English, and French, *ib.* 366 ; results of contact ; the minds of most men cast in the same mould, and tendency to produce common forms ; approach of different types to each other, and the consequences, *ib.* 367 ; relation of the parts of the sentence to one another, grammatical forms and structure, *ib.* 382-4 ; 390.
- Müller's (Max) theory of language ; position respecting dialects ; account of the origin of the myths of Greece and Rome ; his views midway between Schleicher and Steintal, i. 77-9 ; on etymology and sound, *ib.* 149 ; cites authorities to prove that *k* and *t* are not distinguished amongst the Sandwich Islanders, *ib.* 310 ; on the Latin accusative and infinitive, *ib.* 429-31 ; on roots, ii. 3-4.
- Murray's (Dr.) nine primæval roots and their meanings, i. 217 and Notes.
- Mythology largely based on metaphors employed in explaining the phenomena of nature, which were afterwards understood literally as applying to beings of a superhuman world ; myths of Eôs and of Phœbus Apollo ; mythology a misunderstanding of the metaphors and a misconception of the analogical reasoning of our early ancestors, i. 182-3.
- Mythology of the Greeks in the time of Sokrates and Plato inexplicable and wanting in morality ; connected with their art and religion ; familiar to them from childhood, every spot associated with some ancient myth ; influence on politics ; difficulty of belief among the educated ; myths resolved into allegory by Theagenes ; others like Metrodorus saw in Agamemnon and the Trojan heroes and the gods, the elements and physical agencies ; the Neo-Platonists regarded them as moral symbols ; conduct of Plato and Aristotle ; the educated accepted the atheism of Epikurus, whilst the masses eagerly embraced the wild superstitions of the East, ii. 231-3 ; common opinion that the gods took no notice of human affairs ; views of Euhemerus readily received at Rome ; irreverent satire of Lucian, *ib.* 234-5 ; spread and influence of Christianity ; proneness of the Christians to refer everything marvellous to

the agency of Satan, *ib.* 235 ; Neo-Paganism short-lived ; difference between modern thinkers and the ancient Greeks ; Bacon on Mythology ; revival of Euhemerism, and attempt to extract history from Greek Myths ; Lemprière and the Abbé Banier, *ib.* 236-40 ; opinions of Bochart, Bryant, and Gladstone, *ib.* 240-41 ; Grote's views on the essential character of myths and history, and different mode of treating them ; the key found for solving the problem ; formation of myths ; preservation of names when the natural sense has vanished ; false interpretations ; mythology rife in the islands of the Pacific ; personification and metaphors in common use ; myths traced to false meanings and mistakes ; ignorant attempts to explain them, *ib.* 241-6 ; chief causes of the rich mythology of Greece and Rome, Scandinavia, and Germany, *ib.* 248-9.

Mythopœic age ; awakened curiosity to understand and interpret the outward world ; the first strivings of the intellect manifested in the form of tales and legends, hymns to the gods, and songs of victory ; epithets a fruitful source of mythology, and several applied to the same object from different attributes, *ii.* 249-50.

Myths different in form, histori-

cal and geographical setting may be traced back to a single germ, like many words to a single root, *ii.* 259 ; those of the same family of languages to be compared ; resemblances in allied and unallied families, *ib.* 260-1 ; borrowed and variously modified, *ib.* 262-7.

Myths from attempts to explain names as *Château Vert* and *Pileatus*, *ii.* 246 ; Eponymous heroes owe their existence to the same popular etymologizing which ascribed the foundation of Rome to the twin brothers *Remus* and *Romulus*, *ib.* 247-8 ; myths vary in character according to the language from which they are derived ; many-sided ; religious more hallowed and permanent ; old myths fastened on persons and places made the centres of tradition ; 'Sakhya Muni Buddha, Charlemagne ; storming the battlements of the sky transferred to the sieges of Thebes and Troy, *ib.* 252-4 ; Cyrus and Astyages, *ib.* 255.

Nasal vowels how produced ; no French nasalized *i* or *u*, and the cause of this deficiency ; a nasal *i* occurs in Portuguese and probably in the Sanskrit *simha*, "lion," *i.* 261-2.

Natural selection at work in the use of English, French, and Latin words, *i.* 345.

Nature and laws of pronunciation only discoverable in

- modern languages ; must work back in the study of an extinct speech ; success of Ellis and Sweet in early English due to the abundance of data ; great difficulty in restoring the pronunciation of Latin and Greek, i. 155-6.
- Nature and objects of linguistic science ; language provisionally defined ; sounds and meaning ; thoughts indirectly represented by writing, which directly symbolizes sound ; defects of hieroglyphics in clearness and certainty of expression, i. 90-1 ; picture-writing intelligible everywhere ; gestures sufficient for indicating ordinary wants, but not those of a civilized community, *ib.* 92 ; many gestures stand for the same ideas everywhere ; Burton on their use among the Arapahos, Fisher on the Comanches, and James on the Kiawa-Kashia Indians, *ib.* 93 ; instinctive, and may be prior to the acquisition of language ; how excited speakers are readily understood ; different styles of address suited to different classes ; Abyssinian Galla mode of punctuation of his speech ; motions of the lips used among the deaf and dumb, imply a previous spoken language, *ib.* 94.
- Necessity of studying the idioms of modern and actual speech before the dead languages ; how to acquire a foreign language, ii. 339 ; utility of comparative philology in showing that all languages are governed by the same general laws ; how modern French presupposes Latin, and how German and English repeat under new forms the principles and conceptions of Greek grammar, with analogous letter-changes ; agreement of continental scholars, and conference at Dresden in 1873, ii. 340-1.
- Need of reform in our pronunciation of Latin and Greek ; by comparison and induction Corssen has restored the pronunciation of Latin as observed by the upper classes under the Emperors ; changes in Greek, and reasons for accepting the modern pronunciation, ii. 341-3.
- Neo-Hebrew under the Kimchi ; the Christian scholars of the Reformation devoted themselves to Semitic with the same energy and success as the Stephenses and Scaligers to classical philology ; Hebrew grammar cast in a classical mould, Latin and Greek words derived from Hebrew roots, and a new etymological system sprang up quite as grotesque as its predecessors of Greece and Rome, i. 30-1.
- New words and derivations ; *gas* and *blas* by van Helmont ; *od*, Baron von Richenbach ; *liberalize*, the Marquis of Lansdowne ; *fatherland*, Isaac

- Disraeli; *incuriosité*, Montaigne; *urbanité* and *sériosité*, Balzac; *bienfaisance*, the Abbé de Saint Pierre; *dévouloir*, Malherbe; and Burke, *Literator*, i. 99-100; *Gas*, *ghost*, and *yeast*, ii. 4.
- Nibelungen Lied, the great Epic of the German nations, seems, at first, a fusion of history and myths; the story can be traced back and its variations at different periods, and the chief actors; its Icelandic and Saxon versions prove its mythic antiquity, ii. 256-8.
- Noiré regarded the cries of men engaged in a common work as intelligible symbols of that work to them, and forming the roots, or the germs out of which all future language sprang; his explanation of Aryan frequently contravenes scientific etymology; but his theory explains much in language, does not exclude Onomatopœia, and clears up the origin of that part of speech hitherto considered the most difficult, i. 82-3.
- Nominative case of the first personal pronoun later than the accusative; human action and passions ascribed to the forces and phænomena of nature, and the attributes of inanimate objects to animate beings, formed the groundwork of mythology for future generations, ii. 248-9.
- Number of forms assumed by waves of sound limited in kind; nature of peculiar tone illustrated by comparison with spectrum analysis; sympathetic vibrations by the violin, piano, and wind instruments, i. 235-6.
- Nursery names for the *cat*, *cow*, the name given to the *dog* by the natives of the north-east coast of Papua, i. 107.
- Object and scope of the science of language defined; the science has to do with all the forms of significant utterance, but cannot pass the barrier of roots; other sciences necessary to explain what lies beyond and gave rise to articulate speech, i. 160.
- Object of general education unfolded; the need of right method and choice of subjects, ii. 338-9.
- Object of the science of language threefold; divisions of the subject and summary, i. 137-141.
- Objection to Dr. Bleek's view of confining the mythopœic age to those languages in which gender and sex are denoted, ii. 274-5.
- Objections to the results of comparative mythology stated and answered, ii. 267-74.
- Ogyrven or roots, according to Welsh writers, "the seven score and seven parent-words" from which all other words are derived; the Hindoos nearly 2,000 years ago held similar



- views, and traced the manifold words of their language to certain phonetic forms termed "elements," ii. 1; the Prâti 'sâkhya of Kâtyâyana calls the verb a *dhâtu* or root, *ib.* 1-2.
- Onomatopœia and its importance in the formation of language; roots formed by its help; use among the Papuans; natural sounds very differently represented by different persons as shown in the words given as the equivalent of the note of the nightingale, i. 107-8; works on Onomatopœia, *ib.* 109 *note*.
- Order of words in a sentence constantly liable to change; the definite article postfixed in some and prefixed in others of the Aryan family, i. 371-2.
- Origin and development of myths among the different races, ii. 258-267.
- Origin and nature of mythology, and the history of religion ascertained by the comparative method of investigation applied to language, i. 161.
- Origin of language to be sought in *gestures, onomatopœia, and interjectional cries*; the first rude modes of communication; formation of sentences by onomatopœic words and gesticulation; the whole sentence, the only possible unit of thought; work of the lexicographer; use of accent; the Greek *logos*, the complete act of reasoning, i. 111-12; relation of the word to the sentence, and how words may be divided; sounds must have a meaning, and represent thought, before they constitute language, *ib.* 112-13.
- Osmanli, the tongue of the dominant race in Turkey; the literary dialect; a large part of the vocabulary borrowed from Persian and Arabic, while the country dialects are comparatively pure, ii. 199.
- Palatals described; interchanges and equivalents in various languages, i. 277-8.
- Palatals and gutturals closely connected with the sibilants in German, Icelandic, modern Greek, and Swiss dialects, i. 282-3.
- Pashtu, or Pakhtu of the Afghans considered an Indian dialect, and forms a sort of stepping-stone between the Indian and Iranian divisions, ii. 77; has borrowed its whole system of pronominal suffixes; and is also called Patan and Siyâh-Push, *ib.* 77.
- Pehlevi language, a curious mixture of Aryan and Semitic formed in the courts of the Sassanian princes of Persia and confined to the literary class, i. 174; known from translations of the Zend-avesta, the "Bundehesh," coins, and inscriptions, ii. 81-2.
- Persian, or Iranian nearly akin to Sanskrit; more archaic



- than the Vedic-Sanskrit; Zend-avesta, the Bible of the Zoroastrian faith, of recent date; history of the Iranian group may be traced through successive and long-continued periods represented by Zend, Old, or Achæmenian Persian, Huzvâresh or Pehlevi, Parsi, and Neo-Persian, ii. 78.
- Personal and possessive pronouns affixed to nouns in the Zaza dialect; the Hoopah and Navaho; the vocabularies from river Uapes, and amongst the English Gipsies, i. 121.
- Philology, a new science and still divided on certain points; has made greatest progress on the phonological side; review of its various phases, and vast importance in the history of the human mind, and the riddle of mythology; it enables the student to read the thoughts and beliefs of the earliest ages with greater certainty and minuteness than if they had been recorded by the historian, i. 87-9; the comparative philologist able to test and rectify such derivations as some of Butmann and K. O. Müller's from the Greek; dependence on specialists and the reason, *ib.* 158-9; Bopp the father of the science of comparative philology, not a specialist in any of the Aryan languages; his errors corrected by special students in various languages, *ib.* 159-60.
- Phœnician, like Assyrian, only known from coins, inscriptions, and a passage of the "Pœnulus" of Plautus, with fragmentary Greek translations from Hanno and Sanchuniathon, ii. 171.
- Phonautographs constructed by Scott and König delineate the forms of the waves of sound on a plate of sand, in the flickering of a gas-flame, or in the movements of a writing-pencil, and the microscope shows the impressions of articulate sounds in the tinfoil of the phonograph, i. 234-5; instruments described; the phonograph unable at present to reproduce the sibilants; proves that all sounds may be reproduced backwards by beginning with the last forms indented on the tinfoil; *sociality* becoming *ytilibaishos*; diphthongs and double consonants reversed with equal clearness; and also shows that *ch* of *cheque* is really a double letter, i. 335.
- Phonetic expression of the verbal copula long left to be supplied by the mind; and still wanting in many Polynesian languages; illustrations from the Dyak, i. 117-8.
- Phonetic law of the English *th* representing *t* in Sanskrit, Latin, and Greek, i. 137.
- Phonetic utterances, nature of; phonology and sematology explained in their relation to

- each other; priority of sounds, words, and dialects, and their dependence on the structure of the organs of speech; hard and soft sounds; laws of equivalence and interchange in a group, i. 226-7; intimately connected with physics and history, *ib.* 228-29.
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- Phonology and glottology, their functions and relationship; the connection between sense and sound, i. 165.
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- Plato's derivation of *Theoi*, "gods;" problem of the "Kratylus" and the conclusion, i. 7-10.
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- Polysynthetic languages of North America an interesting survival of primitive forms of speech which have elsewhere perished, i. 125; the two extreme types the Eskimaux and Aztec; contrast and grammatical peculiarities; Aztec civilization destroyed by the Spaniards; Mexican system of writing inferior to the Maya; no specimen of ancient Aztec poetry left, ii. 219-20.
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- Pott probably unequalled for his knowledge and insight among students of language; great value of his works in checking unifying haste, i. 51; assailed Bopp's view, advocated original diversity, and endeavoured to found a science of Sematology, *ib.* 63-4; applied Grimm's method to the whole Indo-European languages, *ib.* 64.
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- Reason of man in the mythopœic age attributing his own passions and movements to the forces of nature, ii. 269-70.
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- Reduplication one of the oldest contrivances of speech; and most important for denoting the relations of grammar and expression of the inward emotions, i. 388-9.
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- Rhætian, with its two dialects, one spoken by Protestants and the other by Roman Catholics, has been shown by Ascoli to be allied to two others which have been erroneously classed with Italian, ii. 119-20.
- Rhetoric and its use among the Sophists, i. 9.
- Rig-Veda, collection of hymns and poems, some of very ancient date ; the whole

- ascribed to the fourteenth or fifteenth century, B.C. ; rigid theory of its inspiration ; growth, divisions, and uses ; ritual assigned to different classes ; number of hymns, verses, and syllables, according to 'Saunaka, the same as in the present texts ; the Pada text formed and became the basis of a scientific phonology, i. 39-41 ; language nearly obsolete in the time of Kautsa, although the exact recital of the hymns was considered indispensable in the performance of religious service, *ib.* 41.
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- Romanic tongues traced to a well-known fountain-head ; enable us to verify and correct our attempts to restore the parent Aryan, by a comparison of the derived languages, as well as to study the laws of letter-change in actual, living speech ; their various forms explained, ii. 109-12.
- Roots, fierce controversy on, before the Nirukta of Yâska was composed, ii. 1-2 ; their nature and how discovered ; distinctive character of each particular family, according to Pott, the unconscious working of analogy, *ib.* 7-8 ; Semitic roots, and Finno-Ugrian dialects ; roots given by lexicographers merely represent the oldest known forms of words ; Old Chinese recently traced by Dr. Eddins and M. de Rosny, *ib.* 9-10 ; existence of a primitive "root-period" pointed out by Bréal in the Dictionaries of Fick and Curtius, *ib.* 11-12 ; roots differ as the language to which they belong in being monosyllabic or polysyllabic ; difference in Polynesian, Aryan, Semitic, and Chinese ; the sentence words of the primitive Aryan, Chinese, Taic, and Bushman ; all attempts to reduce Semitic roots to single syllables have failed ; Böhlingk on Tibetan words now monosyllabic ; the Bâ-ntu family and others ; in some languages both monosyllabic and polysyllabic roots are found, as Old Egyptian ; the Hindus reduced their roots to single syllables, *ib.* 12-13 ; at one time the roots of Aryan were necessarily the same ; Latin, Greek, and Sanskrit words compared ; the noun and verb co-existent ; nominal and verbal stems, *ib.* 14-15 ; parallel roots ; new words coined by savages, *ib.* 16-17 ; simple and compound roots, *ib.*

17-18; views of Pott and Curtius on secondary roots; amalgamation and reduplication, *ib.* 19-21; Latin *deus* and *divus* referred to *div*; *Zeus* and *Jupiter* to *dyn*; roots divisible into classes; their characteristics, *ib.* 22-7; agreement of allied languages in their roots and grammar; borrowed words changed in being naturalized, as the Latin *histrion*, *nepos*, and *Aulus*, from the Etruscan; *maize* and *hammock* from Hayti; creative powers of language seen in Pierre Rivière's *ennapharer* and *calibène*, *ib.* 28; the name *Plon Plon* given to Prince Napoleon, and curious origin of *falbala*; additions by natural science as *gas*, *sepal*, *sulfite*, *sulfate*, and *ellagic acid*; word-making among theological enthusiasts, *ib.* 29-30; vocabularies of savages constantly changing, and words coined by them not roots, as the Kafir woman's *angoca*, *ib.* 31; basis of genealogical classification; test of linguistic kinship, and probable number of families according to F. Müller; great number of extinct languages; cause of the preservation of those of the Caucasus and the Basque of the Pyrenees; recent extinction of four Tasmanian dialects; and Etruscan only known from about 3,000 short inscriptions, *ib.* 32-5.

Samoied dialects, midway between Turkic and Finnic, consist of five main and an infinity of smaller ones; the people, perhaps, the most degraded branch of the Ural-Altai family, *ii.* 200.

Sanskrit, discovery of by Western scholars, ended the play with words, and created the science of language, *i.* 38; numerals and other words compared with Italian by Philippo Sassetti; the missionary Roberto de Nobili transformed himself into a Brahman, learnt Tamil, Telugu, and Sanskrit, adopted the cord, marks, garb, diet, and submitted to caste, *ib.* 43-44; one of his converts thought to have composed the *Ezur*, a pretended fourth Veda; fifty years later, Heinrich Roth disputed with the Brahmans in Sanskrit; in 1740, Père Pons, a Frenchman, sent home a report on Sanskrit literature; first Sanskrit grammar published in Europe by two German friars at Rome; some years before Cœurdoux and Barthélemy had written to the French Academy on the relationship of Sanskrit, Greek, and Latin, but their letter was not printed till 1808; their opinion fully confirmed by English and German scholars; formation of the Asiatic Society at Calcutta, the labours of Halhed and Sir William Jones gave an



- impetus to the study of Sanskrit and its related idioms, *ib.* 44-5.
- Schlegel (Friedrich), the poet, first laid down the fact that the languages of India, Persia, Greece, Italy, Germany, and Slavonia formed one family; his work, the foundation on which Bopp reared the science of language, i. 48-9.
- Schleicher and Hovelacque regarded the science of language as belonging to the physical sciences; compared it with natural history, i. 70; summary of Schleicher's theories and false assumptions, *ib.* 72-4; defects of Hovelacque's work, *ib.* 76.
- Schott on the affix of the Persian dative and accusative, i. 174.
- Sematology laws far less distinct and invariable, and cannot be reduced to fixed rules like those of Phonetic change; the phenomena complicated and dependent on psychological conditions; social influence and education give the same general idea to words, i. 336-37; French *juste* and English *just*; their general correspondence and different associations; "genealogies of words," growth and decay of ideas; analogy and metaphor impart new senses to words, as in the Latin *animus*, "the mind," or "soul," which originally denoted the "wind" or "breath;" proper signifi-
- tion of "impertinent" lost, *ib.* 338-9; Whitney and Pott on significant change; how words are more accurately defined shown by Latin, Greek, and German examples; influence of metaphor; Tasmanians who had no general terms perceived the resemblance of things; sensuous origin of *Divus*, *deus*, and *soul*; the various meanings of *post*, the work of analogy and metaphor, *ib.* 339-40; causes of the variations of meaning; introduction of new words; old meanings forgotten, and new ones evolved; the cause of many myths and mythological beings as *Promêtheus* and *Epimêtheus*; legends connected the distorted names of localities, *ib.* 341-3; rise of several from one original with different meanings; "natural selection" in language, *ib.* 344-5.
- Semite, from the earliest times a trader, borrowed his culture and civilization largely from the Turanian Accadians of Babylonia, with the germs of settled city life, the elements of mathematics, astronomy, religion, mythology, literature, and writing, ii. 168.
- Semites of Assyria and Babylonia the first grammarians, i. 27; but the Jewish schools produced nothing worthy of the name till the sixth century; Syriac grammar compiled by



- Jacob of Edessa became the model of all succeeding works; followed by those of Elia's of Nisibis and John Barzugi; Arabic grammar composed by Abul-Aswed about the end of the seventh century, almost perfected by Sibawaih, who speaks of 2,500 famous grammarians; labours of the Saboreans and Masorettes for the Old Testament the same as the Alexandrine Greeks for Homer, the Arabs for the Korân, and the Hindus for the Veda; the Jews formed the first comparative grammar; chief authors, *ib.* 28-30.
- Semitic languages, original home, leading characteristics, grammatical peculiarities, and sub-divisions, *ii.* 164-77.
- Sentence the unit of significant speech; words conceptual or presentative, and pronominal or representative; meanings of the words *and*, *because*, *memorandum*, explained; judgments implied in the words *humanity* and *gravitation*; the terms of a proposition, *i.* 114-15; formation of words, Taic or Siamese examples; sentence words in different relations; Semitic *kâtal* and its meanings; the exact meaning of the Grebo sounds *ni ne*, derived from the context and gestures, *ib.* 116-17; the Greek termination *ize* or *ise* in English words, *ib.* 117; the sentence the only sound basis for classifying speech, *ib.* 122; forms of sentences in various languages; Chinese, Burmese, and Turkish examples, *ib.* 123-4; foreign influence in Hungarian; position of the objective pronoun in French, Basque, and Accadian; polysynthetic fusion of a sentence into a single word, as the Algonkin *wut-ap-pé-sit-tuk-qu's-sun-noo-weht-unĕ-quoh*, *ib.* 124-25; the sentence made up of two factors, external sound and internal thought, *ib.* 132; sentence first conceived as a whole; application of gestures; grammatical relations evolved by comparison; sentence word varied by the Chinaman, Mongol, and Hindu, *ib.* 378; American tongues alone preserved the primitive type of all speech; Eskimaux and Mexican; savages unable to distinguish the particular from the universal; curious fact revealed by a morphological review of languages; local types, *ib.* 379-81.
- Serpents, why capable of producing only hissing sounds, *i.* 237, *note*.
- Shamanism, the religion of the Ural-Altai or Turanian family; every object and force in nature believed to be inspired by a spirit good, or bad, that could only be approached by a sorcerer, *ii.* 197; a higher conception of religion than

- fetishism ; work of the Shaman to neutralize the action of evil spirits, and influence the good by incantations and magic ceremonies ; belief in Shamanism retained by the cultivated Accadians after the development of a considerable civilization, *ib.* 293-4.
- Sinhalese religion and literature derived from India, ii. 76-7.
- Skipetár ("Highlander"), or Albanian, a member of the Aryan family ; large number of Greek words in the vocabulary ; theory of Latham and Poesche respecting its origin, ii. 121-2.
- Sokrates, the greatest of the Sophists, gave an impetus to Greek thought, and was employed by Plato to support his conclusion in the "Kratylus," i. 10.
- Solar explanation, inapplicable to many myths ; some relate to the storm clouds, stars, eclipses, creation of the earth, sea, and living beings ; the "Solar Theory" not to be confounded with comparative philology, ii. 271-2.
- Sonants and non-sonants, and their modifications, i. 265.
- Sound and sense ; their intimate connection in etymological research, i. 154-5.
- Sound defined ; difference between sound and musical tones ; length of the fundamental note, with its octave, fifth and fourth, known to the Pythagoreans, i. 229-30 ; Max Müller on the highest and lowest tones, *ib.* 231 ; pitch, vibration, length, and dependence on the thickness and tension of the cords or rods ; sound of a stringed instrument and trombone each peculiar to itself, *ib.* 232-3.
- Sounds formed by inspiration used in Swiss dialects, and in South African clicks, i. 283, and *note*.
- Sounds represented by the same letter of the alphabet not really identical ; Sanskrit *cha* compared with English *ch*, in church ; European scale of three short vowels, *ä, é, ö*, and the Indic single *ä*, in which three distinct vowel-sounds have coalesced ; changes of Greek in passing into Latin, i. 309.
- Sounds roughly and imperfectly distinguished by the Greeks, i. 244-5.
- South African dialects said by Bleek to be inflectional ; use of suffixes in the formation of words, as in Aryan, ii. 182-4.
- Spanish widely different from Latin in phonology and vocabulary ; regular in its grammatical forms ; probable cause of its changes in phonology, ii. 119.
- Spiegel on the influence of Semitic grammar in Zend, i. 175.
- Steinthal on Humboldt's inconsistencies and dualism ; his account of the origin of lan-

- guage; need of a psychological ethnology to penetrate "the inner forms of language," or "apperception," described by Lazarus as a "condensation of thought;" his writings suggestive, but deficient in clearness; his confused views and ambiguous use of terms; questionable metaphor; misled by a false conception of language, i. 69-70.
- Stoics perfected Aristotle's grammatical system; their labours and those of the Epicureans; line of Horace on the primitive condition of man, and the evolution of language; speech created instinctively, i. 12-13.
- Stewart's (Dugald) absurd attempt to prove that the Sanskrit language and literature were the work of the Brahmans, formed on Greek and Latin models to deceive European scholars, i. 45-6.
- Syllable, its nature and formation; open syllables and words pronounced either backwards or forwards by the phonograph; views of Ellis, Sweet, and Kudelka, on stress and glides, i. 286-9; difference of syllables in *pitch* or *tone*, *stress* and *quantity*, *ib.* 289-301; influence of climate in causing phonetic variety; effect of savage customs; corresponding sounds of the same words in allied dialects, *ib.* 301-3; Grimm's great law amended and amplified, *ib.* 304; table of equivalent Aryan sounds; early date of some of the changes; theories of Fick and Schmidt; second home of the Aryan race, *ib.* 305-6.
- Synonyms and homonyms confounded, and the former resolved into the names of different beings in the epithetic stage of language, as in *Ushas*, *Eos*, *Dahanâ*, and *Daphnê*; *Pramanthas*, transplanted to Greece, became *Promêtheus*, and had for his brother *Epi-mêtheus*, ii. 251-2.
- Syntax, or the arrangement of words in a sentence, according to Professor Erle; study of comparative accidence in advance of comparative syntax; labours of Jolly, Bergaigne, and others, i. 428-9; position of words and varied development of the germs of syntax of each family; growth of Aryan; Latin, Greek, and Sanskrit forms and usages, *ib.* 429-32; agreement, and want of agreement, in families; *pêle-mêle* order of Latin words in a sentence; place of the verb; Bergaigne on the position of the Aryan; apparent violations of the rule; Greek and Latin, *ib.* 433-4; false analogy; proper names *Damasippas* and *Hippodamas*; *Agathos* and *Daimon*; curious use of the article in Greek; proper names compounded with *Forum* and *Portus*, *ib.* 435; order of words in the primitive sentence illus-

- trate the Latin *credo* and Sanskrit *'sraddadhâmi*; reason for placing the verb at the end ; changed in English, Scandinavian, and the Romanic dialects ; the infinitive, its dependence, place, and government ; preposition ; simple and compound sentences ; connection and fusion in Aryan opposed to Semitic ; defects of both ; contrast of Greek with its manifold particles, subtle analysis of thought, and delicacy of expression during the polished period of their mental activity, *ib.* 439.
- Tell (William), the Swiss hero, a double of the Palna-Toki of Norway, and the English William Cloudeslee, *ii.* 255-6.
- Teutonic group of languages, the Gothic, Norse, Low and High German ; their range and relation to each other, *ii.* 88-94.
- Three main conditions for the production of every vowel sound ; differences of action in quick and lively utterances, and weak expiration ; the *spiritus lenis* and *asper* explained, *i.* 262-3.
- Totemism distinct from Shamanism ; bears the same relation to the Indians of North America as Shamanism to the Ural-Altai stock ; the totem, generally an animal, is the symbol and object of worship to every member of a tribe ; rationalistic explanation defective, *ii.* 294 ; eponymous heroes, and the close connection between totemism and mythology ; *Michabo*, "the great hare," from whom the Algonkin family claim their descent, really a solar hero, like Quetzalcoatl of Mexico, or Huayna Capac of Peru, proved by his epithets and attributes, *ib.* 295.
- Transitional modes of spelling, and the use of new type, *ii.* 348-9.
- Trinairgunatwamâpannairbadhyante, analysis of, *i.* 113.
- Triphthongs, existence of, disputed, *i.* 267.
- Tunguse closely allied to Mongol, is divided into three branches, *ii.* 201.
- Turkish-Tatar languages, and where spoken, *ii.* 193.
- Turkish verb, like the Finnic, rich in forms ; by means of suffixes represents the most minute and varied differences of meaning ; Turkish literature copious, *ii.* 199-200.
- Tylor on survivals in language, *i.* 118.
- Type of literary excellence varies with race ; the Chinaman prefers his own language and style to that of Plato or Shakespeare ; and Montezuma would probably have preferred an Aztec poem to the works of Æschylus and Goethe, *ii.* 68.
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- duced a considerable literature, ii. 199.
- Ural-Altaic family of languages ; their chief distinguishing feature, the law of vocalic harmony ; division of the vowels into strong, weak, and neutral ; the rule not common to all the members ; neglected by some ; and in the oldest Magyar texts anti-harmonic forms are common ; origin of this division of the vowels, ii. 202-3 ; their classification in the principal languages, *note*, 203 ; use of affixes ; other relations of noun and verb denoted by amalgamation, 204 ; languages from the first characterized by perspicacity and logical vigour, fitted the speakers to become the originators of the culture and civilization of Western Asia ; compared with the English, *ib.* 205.
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- Variations in the first and last versions of a whispered story when compared have little in common, ii. 255.
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- Vocabularies of children widely different, ii. 314-15.
- Vocal organs of animals; the human organism compared with that of the lower animals; the quadrumana, birds, serpents, insects, and fish, i. 350-3.
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