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A HISTORY OF MONEY IN ANCIENT
COUNTRIES.

A
HISTORY OF MONEY IN
ANCIENT COUNTRIES

FROM THE EARLIEST TIMES TO

THE PRESENT.

BY ALEXANDER DEL MAR, C.E., M.E.

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States; Member of the United States' Monetary
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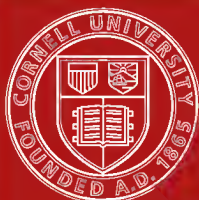
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This volume will be succeeded by one on the "History of Money in Modern Countries," a work already completed and undergoing revision for the press.

A. D.



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P R E F A C E.

THE great political revolutions which, during the half-century from 1775 to 1825, destroyed the Colonial governments in America and uprooted the feudal system in Europe, also broke down the most formidable barriers that stood in the way of international commerce. Corn, bullion, and other commodities, formerly forbidden to be shipped from one country to another, are now free to go whither price or profit may determine.

These radical changes, followed by the extensive application of steam to water and land transit, and the opening of the Asiatic ports, have ushered in a new era of commerce, which, dealing with an infinite variety of objects, stretches its arms to the remotest corners of the earth.

Among the notable consequences of this development of commerce has been the creation of a more or less common measure of value. This phrase is not used approvingly, as though a common measure of value were yet desirable; it is not used in the sense that a geographical mile or a second of time are common measures, because these measures are employed in common and simultaneously by all countries, whereas the gold and silver portion of the world's stock of money—the only portion used by various nations in common—is used by them, to a certain extent, in turns, whilst the paper and copper portions are not used in common at all. The term common measure of value is employed simply to explain the different status of money, now and formerly. The money metals are no longer sought to be monopolized by means of commercial interdicts. Restraints, indeed, still exist, but they are all soluble in price; and

these metals, wherever they may be, stand ready to become the property of any nation or nations who command the means to purchase them with other commodities. It is in this sense that they and their complementary adjuncts, paper notes, have, as a mass, become in a restricted sense a common measure of value: the metals by means of free export and coinage, and the notes by means of elastic issues and a promised convertibility. As a mass of money, it is really heterogeneous and ill-cemented, but during the intervals when it does hold together it certainly operates as a common measure of value; a fact abundantly proved by the approximate uniformity of prices in various countries at such periods.

The European system of money—if indeed that may be called a system which is chiefly distinguished by its lack of system—has thus become not merely the arbiter of the social order in a given state, it has assumed almost universal sway over the destinies of mankind, a sway in one sense more potent, because more palpable and direct, than either politics or religion. Up to the present time, China is the one important country which has not succumbed to its influence.

The study and regulation of this mighty engine concerns not only the nations to whom particular portions of it may belong; they are of importance to all the nations whom the new development of commerce has knit together. Nor can this study and regulation be longer conducted on its present loose basis of partial or fragmentary information. Money has a history which is fifty centuries old, and filled with an experience too valuable and too dearly bought to be ignored or thrown away.

From the fall of the Roman Commonwealth to the French Revolution, coins, (made partly from old accumulations of metal,) were substantially the only moneys of Europe. During this lengthy period, all general and long-sustained changes in the level of prices are attributed to the changing level of the stock of coins, which slowly but continually

diminished until the tenth century, and then slowly increased until near the nineteenth. So gradual were these changes that it has been remarked that in the first part of the fourteenth century and the last part of the eighteenth identically the same prices prevailed in at least one important country for all the common necessaries of life and articles of greatest consumption, such as corn and domestic animals and their products.¹

But with the introduction of bank and government paper notes, which only became an important part of the monetary systems of the various states of the Western world after the occurrence of the great revolutions above alluded to, this comparative permanency in the value of money has passed away. Paper notes now form an essential portion of the volume of money or Measure of Value in all countries; and in some of them it is, or has been, the only measure of the sort. Viewing the subject from a comprehensive standpoint, it may be stated that, during the past thirty years alone, the proportion of state and bank paper-money which helps to form the Measure of Value employed by civilized nations, has increased from thirty to fifty per cent. of the Entire Measure, and that the tendency—arising from insufficient supplies of the coinage metals—is toward a further increase of paper. Not only has the paper portion of money increased, the whole volume of money, comprising both coins and notes, has increased, even when compared with a vastly increased population. The volume of money in the European world, which, thirty years ago, scarcely exceeded nine dollars, or, say, thirty-eight shillings sterling per capita of population, now amounts to fourteen dollars, or, say, sixty shillings per capita.²

¹ This relates to England. See pamphlet by "A Disciple of Franklin," in "Trans. of Am. Philos. Soc.," No. 6332 of the Philadelphia Collection. Consult Thorold Rogers on "Statistics of Agricultural Prices in England."

² Del Mar's "Hist. Prec. Metals," London, George Bell and Sons, p. 220 *n.*, and M. de Malarce in "Report of the French Academy of Sciences" about 1882.

This tendency of the volume of money to increase cannot be viewed by Capital but with alarm. It is not as though money consisted, as it did during the Middle Ages, nearly entirely of coins made from a stock of metals which could only be kept up or increased by prodigious exertions and during a long period of time. It now consists very largely of paper notes, which are emitted both by governments and banks without any reference to the Whole Volume of Money, in which volume, alone, is Price susceptible of expression. In consequence of this loose system the measure of value is being continually swollen (this is not stated in reference to any particular country, but to all countries), so that it continually disturbs the natural tendency of prices towards an equilibrium. Barring occasionally brief periods of reaction, the constant tendency of prices during the period adverted to has been upward. The result of this movement is that property has passed and is still passing away, insensibly, from the hands of its original possessors and rightful owners, to be distributed among classes who never earned it, and who neither know how to keep it nor to dispose of it economically.

On the other hand, the interests of Labour forbid the consideration of any policy designed to diminish the Measure of Value. We may with justice oppose further inflation, we may put an end to those mischievous agencies which tamper with the Measure of Value; but we can never dare, we should never wish, to contract it, nor permit it to contract; for, as history abundantly testifies, a contraction of money, when production is increasing and commerce expanding, means the arrest of one and extermination of the other. And it is, perhaps, the conviction of these consequences, crudely formed in the popular mind, which lies at the basis of the many illiterate plans and ill-advised clamours for inflation, which, both in Europe and America, mark the financial and political measures of recent years.

Amid this conflict of interests and the arguments by which the pretensions and claims of each interested class

are strengthened, the student, the legislator, the magistrate, the advocate, seeks in vain for that steady light of recorded experience, those fixed monuments of history, which can alone guide him toward correct theories and practical results. To offer such a guide—howsoever much the execution of the work might fall short of the design—was one of the principal motives which led to the preparation of the present volume. If we turn from illiterate plans and popular clamours to those teachers whom the world has been led to regard as masters of financial science, instead of obtaining from them a ready solution of the difficulties surrounding the question of Money, we only encounter discordance, dogmatism, and intolerance, a condition of affairs which, it is believed, has resulted solely from the want of some general fund of information, open to all, which should embrace the monetary experience of many countries, of many ages, and of many phases of society: for if there is any one great truth which more than another is bound to impress itself upon the student of monetary history, it is this, that the evolution of money as an institution of law, is inalienably connected with the evolution of society, and that monetary systems which are quite impossible at one period may be entirely practicable at another.

Many of the prevalent fallacies concerning the nature, function, and use of money have arisen from the systems now in vogue, all of which are of feudal origin. These fallacies are similar in character to those fictions of the Common Law which were only dissipated when the older and clearer light of the Roman Law was brought to bear upon them, and they can only be successfully dealt with in a similar way. To the modern mind, money is a commodity which derives its value from the cost of production. In the free states of antiquity money was a concrete series of numbers whose value arose from state monopoly, legal limitation, and forced currency. The growth, establishment, and decay of this conception of money and its displacement by the feudal conception of it as a commodity, lie at the thres-

hold of all precise inquiries into the science of money, and must be thoroughly mastered by the student who designs to make any practical use of his researches. To afford ample opportunity for the study of this essential feature of monetary history, extended space has been accorded to the experience of China and Rome, in which two great states of the ancient world numerical systems of money have left behind them the clearest traces and most important consequences. Where the imperfection of existing evidences may lead to doubt concerning the details of the systems described, it is hoped that the conclusions at which the author has arrived will be found as worthy the scrutiny of the learned as it is confident they must awaken the attention of the curious.

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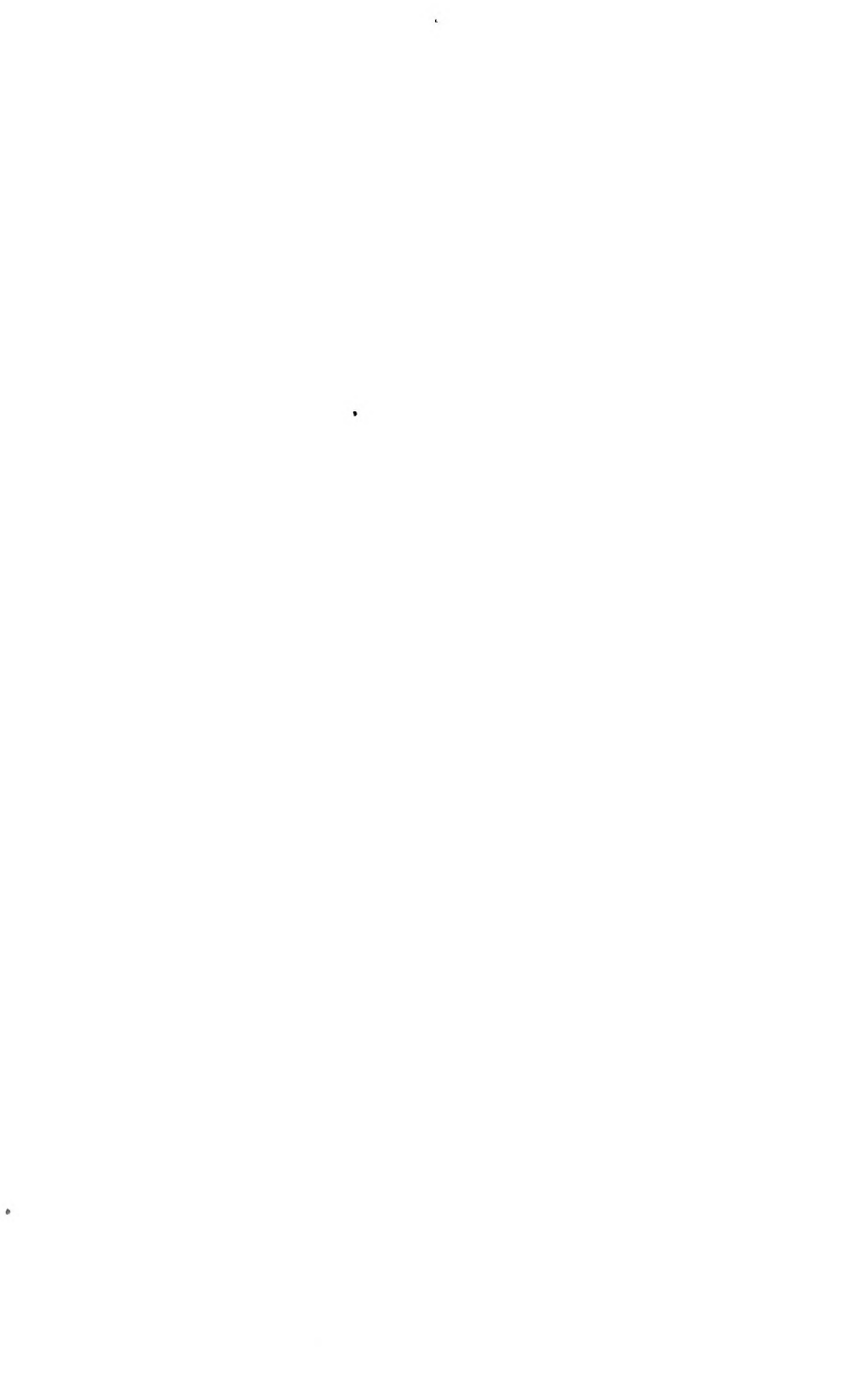
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CHAPTER I.

SUPPLY OF MATERIALS FOR MONEY AND DEVELOPMENT OF COINAGE AND PRINTING.

Money must be made of some tangible and ponderable material of ample and regular supply, capable of standing wear and tear and susceptible of being so marked as to be difficult to counterfeit—Clay—Gold—Its occurrence, diffusion, method of extraction—Used in the arts before it was used for money—Placer gold—Quartz gold—The principal gold placers of the world exhausted—The quartz mines usually unprofitable—Present supplies of gold declining—Its production at all periods of history fitful or scant—Hence it was never permanently used for money until the period of Julius Cæsar—The ancient supplies were ample at only three notable periods: the discovery of Europe by the Phœnicians, the plunder of Asia by Darius and Alexander, and the conquest of Europe by the Romans—Copper more abundant and the supplies more regular—Hence better adapted for money in ancient times—Most of the Oriental moneys were of copper, indeed it was everywhere the principal money metal until the discovery of America—Silver rarely found native, generally in ores difficult to treat, hence last to be used for money—It is widely diffused, but as silver mines yield no alluvions or other progeny, the finds of silver are more concentrated, therefore its production more fitful than gold—This fact, and the operation of mint laws has continually tended to lower its value—Cessation of these influences—Silver first permanently used for money by the Greeks—Felted paper invented *B.C. 177—First paper money B.C. 140—Introduction of paper into Europe—Not common until fifteenth century—Social condition of Europe not favourable to paper money at this period—No permanent system of openly overvalued moneys since the Roman Commonwealth—Experiments of the Venetian, Dutch, American, and French republics—The establishment of suitable

paper manufactures in Europe coincident with the influx of precious metals from America—Influence in retarding use of paper moneys—Bank and Government notes—Coinage—Cast moneys—Artistic excellence of the Greek coinages—Engraving—Printing with movable types not invented until the art of making paper was sixteen centuries old—Its influence in retarding the use of paper moneys.

WITHOUT entering upon the Doctrine of Money,¹ and confining ourselves strictly to its History, it may be said that what is commonly understood as Money has always consisted, tangibly, of a number of pieces of some material, marked by public authority and named or understood in the laws or customs: that its palpable characteristic was its mark of authority; its essential characteristic, the possession of value, defined by law; and its function, the legal power to pay debts and taxes and the mechanical power to facilitate the exchange of other objects possessing value.

Whatever view may be held of the value of money—whether it is due to the material of which the pieces are made, or to their number, or to the operation of law, or to some other circumstance²—it will be admitted that to be of practical use, money must be made of some tangible and ponderous material, as porcelain, glass, copper, gold, silver, wood, clay, leather, or paper, and that the supply of such material must have had and must continue to have an important influence upon the history of money itself.

So, in like manner, it must be conceded that whatever marks of authority it bore, it was necessary to affix those marks to it so skilfully as to distinguish genuine money from

¹ This will be fully treated in a volume on the Science of Money.

² The value of money has been attributed to a variety of circumstances, sometimes to the material of which the pieces were made; sometimes to their number, sometimes to mint, tender, tax, redemption, endorsement, or bank, or to certain sumptuary laws or customs; sometimes to the laws or customs of foreign countries; sometimes to the vicissitudes of war, or other causes threatening the subversion of existing laws; and sometimes to two or more of these causes combined.

false, and therefore that the development of coining, casting, engraving, stamping, and printing has also had an important influence upon the history of money.

For these reasons, it will be profitable at the outset of a work which must concern itself with all kinds of money, the practical and impractical, the unsuccessful and successful, to briefly glance at the conditions of production relative to the principal materials of which money, or strictly speaking, its symbols, have been made, and at the progress of invention in the art of fashioning, stamping, or otherwise marking, those materials for the purpose of money.

Of these materials the principal ones have been clay, copper, gold, silver, and paper. The principal arts relating to its fabrication have been punching, casting, and printing. Of the former, clay is so common a material, and has been so familiar to man from the earliest ages, that nothing further need be said of its production or fabrication than that the one has always been ample and the other facile, and that the art of making and stamping baked clay tablets for money is probably coincident with the earliest period of systematic agriculture.

Gold was undoubtedly the first metal produced by man. It is more generally diffused than any other. It is always found in a native state, that is to say, but slightly mixed with other metals and rarely in mixed ores. It is therefore easy to detect. It is equally easy to mine; the process for placer gold being washing in a gourd or hand-bowl, and for quartz gold, first, pulverization in a hand mortar, and second, washing in a bowl.

It would be a grave mistake to suppose that gold was originally procured for use as money symbols or coins. Such was not the case. It was used in the arts long before any kind of money or monetary symbols were invented. Gold arrow-heads, gold knives and swords, gold rings and bracelets, and golden chairs were fabricated, long anterior to the era of money. This is proved not only by such few finds of prehistoric golden objects as the avarice of con-

querors has left untouched in the old and oft plundered countries of the Orient: it is corroborated by the condition in which the aboriginal inhabitants of Africa, America, and Australia were found by modern discoverers. The negro King of Dahomey had a golden stool or throne, but no money: the North American Indians had golden ornaments and idols, but no money: and the Bushmen of Australia used golden arrow-heads, while they were so far removed from the use of money that they were not even familiar with the art of exchange.

Gold was undoubtedly first used for monetary symbols in the Orient; and that too, at a period as ancient as that of any extant scriptures or monuments; but before it was thus used, other moneys must have been long in vogue. It is a substance but poorly adapted for use as money. Although it is so widely diffused by nature that it may be found in almost any kind of volcanic rock or earth, or in any of the drift, washings, or sediments from such rocks, yet it is usually deposited in such fine particles that it is difficult and expensive to collect. Hence its supply is scant and irregular, and these are fatal objections to its use for money.

Gold is found in two ways. First, in placers or beds of gravel or sand; second, in rocks, usually quartz gashes or "veins." In all old countries the placers have long since been sifted of the larger pieces or grains of gold which they contained; and nothing is left in them, but those minute and invisible particles of gold which it did not pay, even for slave and captive labour, to collect. Among the exhausted countries are all Asia, except Siberia, all Europe, the coasts of Africa, and the whole of America except the Pacific coast of the United States, and some neglected spots in the interior of South America. It is in these few regions—chiefly Siberia, California, Australia, and the interior of Africa—that any considerable quantity of "pay gold" in placers is left. The combined annual product of these countries now amounts to less than 4,000,000 ounces. It has been declining year after year, and in spite of what discoveries of

new placers may take place in the interior of Africa, or what improvements may be invented in the art of mining, this product must continue to decline; because the African placers, no matter how inaccessible to the white race, have long been worked by the blacks on the basis of nakedness and slavery, and because no method of mining gold is so cheap as that one which only costs the exertion necessary to rob the metal from him who has already produced it. This was the origin of most of the gold now extant.

As for the gold found in quartz gashes or veins this usually occurs in quantities too minute and in situations too difficult to extract it with profit at the prevailing level of prices; a level, which, it must be remembered, has been made not by gold money alone, but by the combined influence of gold, silver, copper, nickel, and paper moneys, all more or less interchangeable and all operating together in one volume upon the mass of exchanges. Of course there are exceptional quartz mines which must pay handsomely, just as there are exceptional placer mines which did pay, and perhaps will pay for generations yet to come. But on the whole, placer mining—except in the few regions alluded to—and quartz mining, everywhere, must continue to decline; it having long been a losing industry.

If such is the case now, when the various regions of the earth are so widely opened to commerce, that what is produced in one country is free to become the property of any other which may bid the most in exchange for it, it certainly was more than once the case when each country was a world by itself, and held no other relations than those of warfare with the rest of mankind.

Gold is now scarce and irregular of supply, because the principal gold placers of the world are exhausted, and the quartz mines will not pay to work. In the ancient world, gold—except when a new placer was discovered—was scarce, not merely for these reasons, but also for other ones. It could rarely be obtained by foreign commerce; and when it did come, whether from discoveries of new

placers at home, or through the opening of a rowboat or caravan commerce abroad, it came suddenly and as suddenly stopped coming. As a material for coining, it possessed every requisite; ductility, divisibility, reuniteability, etc.: as a material for money, it failed in the most important requirements: amplitude and regularity of supply. Hence although gold pieces for use as multiples of money were occasionally employed by the East Indians and other nations of high antiquity, gold pieces for use as money itself, were probably unknown until a much later date.

The inscription on the bronze coins of Sung, B.C. 2257, viz., *good for gold*, points to the use of this metal for money multiples in China more than a score of centuries before our era, and although the inscription is ambiguous, the substantial correctness of the indication to which it points, is confirmed by the high antiquity of gold multiple moneys in India. These moneys were not in common use: that is to say, no debtor could be compelled to pay with them.

The common moneys of China were usually made of copper-bronze, and so were those of India. The gold moneys were merely multiples, probably overvalued and certainly used only for convenience in making up large sums. The permanent use of gold as legal money, cannot be positively traced back farther than the time of Julius Cæsar, although it may have been used for this purpose by Alexander the Great, by Darius of Persia, by some of the Pharaohs of Egypt, and for brief intervals by other monarchs.

The ancient method of extracting gold is the same as that still practised, excepting as to the use of mercury for amalgamation; and even as to this art, there are not wanting evidences that it was known to the East Indians, the Phœnicians, and the Greeks. The old and the new methods of obtaining gold differ only in details, not in principle. It was separated from the gravel, sand, or pulverized rock, which contained it, by means of water and its own superior

gravity; and such is still the method in vogue. The mechanical power in ancient times was the labour of starving slaves and captives, and this was quite as cheap, perhaps cheaper than either steam or water power is now.

If any era existed when the supplies of gold in Asia were sufficiently ample and regular to warrant its use for money, it must have been long anterior to the historical period, which may be approximately fixed at about thirty centuries B.C. Twelve or fifteen centuries later the coasts of southern and western Europe were explored by the Phœnicians, and the supplies of gold which they obtained from the aborigines were carried to Egypt, there to maintain a system of gold multiple money which had been based upon the at first abundant supplies of her own placers, and the expectation, equally common and fallacious in all gold countries—that these supplies would last for ever.

At this period and to the Phœnicians, Europe was, what America at a later period seemed to the Spaniards, the world's Dorado. It was valued chiefly as a source of gold and afterwards silver; and the various colonies which were founded on its shores were all planted with reference to this expectation. But when these colonies grew, as many of them did, into self-sustaining agricultural communities, the Phœnician domination was thrown off, the search for the precious metals gave place to more necessary and permanent industries, and the supplies of gold to Egypt fell off, so that, eventually, that country was obliged to relinquish the use of gold for money.

The next period when gold became common enough in any large country to warrant its use as money, was when the Persian and Greek conquerors plundered Asia of its ancient accumulations of this metal; and the final period (previous to the discovery of America) when a similar condition of affairs existed, was when the Romans plundered Europe, Asia Minor, and the northern coasts of Africa, in like manner.

Copper was probably the next metal to gold which man

learnt to extract and reduce. It is often found in a native state, it is very widely diffused, it is quite abundant. The present state of archæological research does not enable us to locate the principal copper mines of the ancients, nor to compute the quantity of metal which they yielded: but it is known that both the Chinese and East Indians commanded supplies sufficiently ample to warrant them in making moneys of this metal at a period which may approximately be fixed at twenty-two to twenty-five centuries before our era. From that time down to the Roman period, the vicissitudes of mining and of wars which altered the possession of mines, were such that copper was often too scarce in one or another country to warrant its use for money; and other expedients had to be resorted to. But on the whole, it maintained its ground longer and more satisfactorily everywhere than either gold or silver; and until the discovery of America, it was, throughout the entire civilized world, much more truly and essentially the basis of money than either of the other metals or than indeed any other substance. Viewed from this point, its history as one of the precious metals, has not received the attention which its importance deserves.

Silver is rarely found in a native state, and then only in comparatively small quantities. It is commonly mingled with other metals and minerals, forming a compound known as ore and presenting none of those attributes, either to the eye or the other senses, which distinguish it when freed from its matrices. Most of the ores of silver are difficult to reduce, a fact that bespeaks a long familiarity with the art of smelting before silver could have become as amenable to treatment as copper. It is therefore deemed quite safe to regard this one as the last of the three great coining metals which came into use. With regard to its diffusion, silver is originally as widely spread as gold, that is to say, it occurs in nearly all the volcanic rocks and always in conjunction with gold. But there is an important difference in the deposition of the two metals.

Gold is usually carried away long distances from its original place of occurrence, by the breaking down of the rocks which contain it, and their formation anew elsewhere either as other rocks, or as placers of gravel or sand, whilst silver is only to be found in the places of its original occurrence. This difference results from the fact, that gold remains unaltered and uninfluenced by the action of the elements, whilst silver is soon driven into new mineral combinations or dissipated and lost to view. A single gold belt, as the mother lode of California, may be the parent of innumerable gold districts and mines, some of them far removed from the mother lode; but a silver belt, though it be as rich as the Comstock lode of Nevada, produces no progeny. Hence the finds of silver are more concentrated than those of gold, and this fact has had no little influence in determining its relative value.

Apart from other considerations there can be but little doubt, that the average cost of producing a pound of silver, from the beginning of the world to the present time, has been far greater than that of producing a pound of gold, but silver, when it was produced at all, was produced in such great quantities, all at once, that combined with the operation of seignorage laws—a circumstance explained elsewhere¹—it fell in value from time to time and continued thus to fall until a very recent date. There are, however, strong reasons to believe that this fall has quite ended, and that hereafter silver will always continue to rise.

We are left in almost as great doubt with regard to the location and prolificacy of the most ancient silver mines as to those of copper.

Such information as has trickled down to us through the bewildering ruins of history will be found in the author's work on the Precious Metals. There is no evidence to show that silver was common enough for money in any country previous to the discovery of Europe by the Phœni-

¹ "Hist. Precious Metals," by Alex. Del Mar, pp. 229, 233, 238, 244.

cians, and the silver procured by these Argonauts of the Levant, most of which found its way to India, was insufficient for this purpose. The first great supplies of silver known of with certainty were those from the Greek mines of Laurium, and the first monetary systems positively based upon this metal were those of the Greek states and colonies. Indian silver coins of an undoubtedly far more ancient date than the remotest settlement of Greece by the Phœnicians, are still extant; but they do not bespeak a system of silver money wherein the creditor has the right to demand silver coins at their market value as metal in discharge of his claim. They were used merely as multiples, the essential standard being copper coins, or some numerary system of money, in which the number of pieces emitted, and not the material of which they were made, formed the basis of value.

Paper (felted) is said to have been invented in China B.C. 177, and pasteboard notes were certainly used for money during the reign of Wu-ti, B.C. 140.¹ Judging from the flimsy appearance of a Chinese paper note, which the author has seen, of the Ming dynasty—some fifteen centuries later—this pasteboard, though answering well enough in theory, was found to be practically inconvenient for monetary symbols, on account of its inability to stand the wear and tear of circulation. The ancient Egyptians made a sort of paper from the leaves of the papyrus, but this also, was too flimsy for use as money. That the idea of making paper serve this purpose was not wanting in remote times is proved by the quickness with which the Chinese adapted it for money, and by the fact that numerical money symbols, and also the idea that money of all kinds was symbolical, was familiar to all the nations of antiquity.

Felted paper was first brought into Europe from Asia by the Arabs about the sixth century of our era, but no European manufactures of it were established until about the twelfth century, and it did not become common until the fifteenth century. The social condition of Europe was at

¹ See chapter on China and the several authorities therein quoted.

that period wholly unfit for the use of any system of money which depended, as paper notes do, upon the rectitude and permanence of government or the proficiency of the mechanic arts. Indeed, any sort of overvalued money, unless it was overvalued surreptitiously, was impossible. Such a system had ceased to be openly used when the Roman Republic merged into an Empire; it had been repeatedly tried by the feudal lords who at various times ruled the disjointed fragments of that empire, and they had always failed. It was eventually to be restored to the service of the world by another republic. Venice had long and successfully maintained a paper system without notes; to Holland remained the task of introducing one with notes.

An emission of pasteboard tablets about the size of a silver dollar, and stamped with somewhat similar designs, was tried in Leyden during the struggles of the Dutch for freedom; but this, too, failed; and it was not until the American and French republics were established that systems of this character obtained any footing which lasted longer than a few months. Indeed, no entire system of numeraries, whether of paper or other materials, has ever been openly and avowedly attempted since the fall of the Roman Commonwealth, and it yet remains to be seen, if the power, integrity, and self-restraint of any state and the perfection of the mechanic arts are such as to render such a system as practical, politically and mechanically, as it undoubtedly is financially.

The era when the manufacture of paper suitable for circulating notes became so common in Europe as to render a system of paper numeraries mechanically possible happened to coincide with the arrival of new and great supplies of the precious metals from America, and this fact, together with the yet feudal condition of the European states, may have had its influence in retarding the use of paper for such a purpose. However, paper soon crept into use for making another kind of money—credit notes. These were first issued at about the same period in the American colonies

and in Sweden, and not long afterward by the Bank of England, since which time their use for this purpose has become common throughout the entire civilized world. India never seems to have used paper notes until the last century ; whilst China and Japan have never ceased to use them from the earliest period when the manufacture of paper was established in those countries.

With regard to the progress of coinage, or the art of impressing emblems and letters upon moneys with a punch (cuneus, whence coin), the belief prevails that this art arose in Asia Minor about the ninth century B.C., but this belief must give way before the well established greater antiquity of Indian coins ; and if the term coin may be taken to include all kinds of metallic monetary discs with emblems or letters upon them, as, for example the Chinese cast coins, which go back to a period nearly thirty centuries before our era, the prevailing belief is susceptible of being overwhelmingly refuted. However, so much attention is devoted to this subject in the following chapters that no further allusion to it is necessary in this place. At all periods and in each country where metallic moneys were used, the issuing power—commonly the State—doubtless employed the best workmen to fabricate them, so as to prevent counterfeiting ; but it cannot be admitted that their mechanical excellence was ever quite sufficient to attain this object until the era of the later Greek coinages, than which no issues of moneys were more artistic, and therefore none more difficult to imitate. Some of the earliest Chinese cast moneys were exceedingly well done, but it is believed that in spite of this fact they were not hard to counterfeit—so much fewer are the difficulties of imitating cast moneys compared with punched ones.

For many ages subsequent to its invention, coinage—and this includes both the casting and punching of coins—was invested with a sacred character. The archaic Chinese and Indian, as well as the early Greek coins, were often marked with emblems, which in the former cases are supposed to

be, and in the latter case are known to be, religious. The mints were in the temples, and the priests monopolized, or tried to monopolize, the secrets of metallurgy.¹ This custom may have arisen either from the cupidity of the priesthood to reap the profits of coinage, or solicitude on the part of the sovereign to prevent counterfeiting or to render it the more heinous. Whichever was the case, the industry and skill of counterfeiters rarely failed to tear these secrets from the temples, and there is scarcely a coinage, however antique, which was not closely imitated by contemporaneous counterfeiters.

Engraving has rarely been bestowed directly upon moneys. It has rather been reserved for the dies, matrices, types, and plates from which moneys have been punched, cast, or printed, and it will be found that this art—known to the earliest ages of civilized society—has faithfully kept pace with the opportunities which have been presented for its exercise.

This is not the case with printing, when this term is confined to the use of movable letters. Paper had been known and widely used in the Oriental world for upwards of sixteen, and in the Occidental one for upwards of three, centuries, before printing was invented; and this circumstance may not have been without some slight influence in retarding the introduction of paper moneys.

¹ Tract 6332 Am. Phil. Soc. Library.

CHAPTER II.

CHINA.

Antiquity of money greater than letters—Gold and bronze moneys of Sung, B.C. 2257—Tortoise-back, or cowrie moneys—Knife, bell, and wheel-shaped coins—Clay or porcelain moneys—Paper—Various paper moneys, from B.C. 140 to A.D. 1455—Present system: copper “cash” with silver bullion multipliers and fractional (provincial) notes—Laws affecting trade in metals—“Cash,” formerly numerical—Foreign coins—Carolus dollar—Brick-tea money—Bullion trade—Mines.

IF history be examined by the discerning eye, it will not fail to impart this lesson on almost every one of its pages, that social life at a certain phase of its development cannot go on without commerce or exchange, and that exchange, as it progresses, necessitates the use of money: or to put it in the terse language of Bastiat, society implies exchange, and exchange, money.

The phase of social life in which the use of money is implied is that one which follows after the agricultural state has begun, and before the pastoral state has entirely ceased. A proof of this is derived from the pastoral roots for the names of moneys, as *pecus*, *feoh*, etc. When society has passed beyond this phase: when its main support is a varied agriculture, when an extensive commerce and numerous manufactures have grown up on the basis of this agriculture, it is unnecessary to look for evidences as to whether money was in use or not. Money must have been in use, because such a phase of civilization is impossible without it. The niceties of exchange and division of labour which are involved in the conduct of a varied agriculture, the combination of capitals, and the partition of profits which result from an extensive commerce, and the still greater refinements of effort and result which are comprised in the

organization and conduct of manufactures, all bespeak the employment of that measure of value, that common denominator of unlike equivalents, which we call money.

There is little room to doubt that for more than fifty centuries China has enjoyed that phase of social life, and that degree of civilization which implied the use of money. To be convinced of this it is not necessary to scrutinise the regnal marks upon her numismatic remains. Her general history, her religion, her language, her archaeological monuments, all tell the same story of progress in a remote antiquity. To doubt these proofs in favour of an ambiguous passage in a classical writer of a comparatively recent age, to whom Greece or Italy was the centre of the habitable world, and when to go a couple of thousand miles from these countries in any direction, was to walk off into infinite space, is to lend the ear to doubt and close it to conviction.¹

Another point. Notwithstanding what seems to be asserted by Herodotus that the invention of the alphabet preceded the use of money—I say, seems to be asserted, because perhaps conscious that he was treading on questionable ground, his statements on both of these subjects are loose and ambiguous—it may safely be believed that the facts are precisely the reverse, and that money preceded the use of letters. This not only follows from the necessity of the case—money being of so much earlier and more pressing importance to man than letters—it is proved by two very curious facts: the earliest writings known to man invariably allude to money; whilst the earliest moneys are invariably destitute of letters. Money is mentioned in the Vedic writings, in the Code of Manou, upon the oldest

¹ Concerning some blunders of classical writers consult Barclay Head on Herodotus, Feuardent on Pliny, Dr. Robertson on Plutarch, &c. Contrariwise see a curious confirmation of the veracity of the Chinese annals in Robertson's "History of India," p. 37, and Note XVI. in connection with the discovery of Greco-Bactrian and Indo-Scythic coins in 1840 and subsequently.

monuments of Egypt, and in the Bible. But neither the Archaic moneys of India, of Egypt, nor of Greece contain a line of writing.

Among the first forms, perhaps the first permanent form, of money used in China was porcelain tablets or coins. Says Du Halde, on the money that at different times has been current in that country: "There was also money made of tin, lead, iron, and even baked earth, on which figures and characters were imprinted. It is related that after the reign of Han (B.C. 2119), a prince caused money to be made of stamped earth united with a strong glue, and taking it into his head to put down copper money, he gathered as much as he could, buried it very deep in the earth, and killed the workmen that were employed about it, that none might know where it was hidden."¹

Clay money was probably used in Archaic India, Babylon, and Egypt, and we know it was used in Siam, Etruria, Rome, Palmyra, Arabia, and other ancient countries.

Following the era of clay money came that of the permanent use of copper money, which, in China, has lasted to the present day.

Nevertheless, at numerous periods in the long history of this extremely ancient country, notable experiments have been made, either with the object of reforming the system of money in the interest of the public, or of subverting it to the necessities or cupidity of the Crown; and as such experiments are the best guides which the philosopher and legislator can rely upon for correct doctrine and enlightened law, they will be among the chief objects of research and subjects of explanation in this work.

Owing either to the poverty of her silver mines or the inability of her ancient inhabitants to work silver ores

¹ Du Halde's "History of China," ed. 1736, ii. 288. It is possible that Du Halde alludes to a prince of the *dynasty* of Han. This began B.C. 206, and ended B.C. 189. But I have preferred the Emperor indicated in the text, because the introduction of coins is ascribed to Hoang-ti (B.C. 2687). *Ibid.* i. 276.

economically, China does not appear to have ever adopted the silver standard for money. At a very remote date she appears to have tried the gold standard, and failed to maintain it, owing probably to the uncertain and fluctuating supply of the metal from the mines, and the absence of an active foreign commerce to make good a deficiency, or dispose of a surplus. This experiment took place so early as the reign of Sung, 2257-07 B.C., and is attested by the somewhat ambiguous legend on existing coins which reads "Tong King Fo," or *Good for Gold*.

Other notable experiments took place in the second century B.C., when skin and afterwards pasteboard notes were used as money, and during the ninth, tenth, eleventh, twelfth, thirteenth, fourteenth, and fifteenth centuries of our era, when various emissions of paper notes were used for the same purpose. Of these emissions, that of which we have the most definite information belongs to the reign of Hong-wu, A.D. 1368-99, and will be treated of at length in the following pages.¹

Previous to the era of Fuhi, which, according to Du Halde, commenced about B.C. 2942, the annals of China are mingled with fable. From Fuhi to the present time we possess a complete history of the sovereigns of China, with the details of their reigns, their personal character, and the circumstances of the Empire during their sway.²

The commercial character of the Chinese in very remote times, and therefore the use of money at such periods, is established, in one way, by tracing the intercourse which existed between them and the Western world. Small Chinese vases or bottles have been found in Egyptian tombs of the eighteenth dynasty, at Thebes.³ Others are

¹ Facsimiles of the notes are engraved in Du Halde's "China," Yule's "Marco Polo," and "Harper's Magazine." The author saw one (of three or four said to survive) in the hands of Mr. Douglass, of the British Museum. He valued it, for the owner, Sir Harry Parkes, at £200.

² These will be found in Du Halde's "History of China," i. 269-509.

³ Wilkinson's "Ancient Egyptians," ii. 237. The eighteenth dynasty

claimed to have been found by Dr. Schliemann, in the ruins of the Troad; but the inscriptions on the latter which are alleged, on the authority of the Chinese Ambassador at Berlin,¹ to be in Chinese, are asserted by Professor James Legge of Oxford, to be in some other language, and that they differ from Chinese writing, in reading from left to right.² Certain porcelain seals with Chinese characters, have also been found during the present century in various parts of Ireland, particularly in the Southern counties; but doubt has been thrown on the antiquity of these monuments; and although the finding of them in so strange a place has not been accounted for, it cannot be asserted that they prove any ancient intercourse between China and Ireland.³

China is believed to be alluded to in Isaiah xlix. 12, as the distant "land of Sinim." This was during the eighth century B.C. It is alluded to by Herodotus, B.C. 450; by Aristotle, B.C. 350; by Eratosthenes, B.C. 230; by Strabo, d. A.D. 25; and by Pliny, d. A.D. 79, who mentions the various Chinese products and manufactures which were imported into Egypt.

The Greeks and Carthaginians appear to have occasionally traded overland with China, viâ India, several centuries before our era. At a subsequent date, the latter began during the sixteenth and ended during the fourteenth century, B.C. The vases or bottles alluded to appear therefore to have been sealed up in the tombs for upwards of thirty-three centuries. These seals have been since regarded by Wilkinson to be spurious. "The Chinese vases in Egyptian tombs are of recent date," says Wilkinson, in Edition 1878, chap. ix. p. 154.

¹ Li-fang-pao.

² For an allusion to these vases see London "Quarterly Review" for April, 1874; and for a detailed account of them, see London "Times" for 1879. Prof. Legge's doubts with regard to their alleged character are expressed in a letter to me, dated Oxford, July 17th, 1880.

³ Prof. Legge writes me that about forty of these seals have been found in different parts of Ireland, that they were not found in burrows or mounds along with Celtic remains, but picked up or dug near the surface. He claims that such seals were first made in China during the twelfth century of our era, but herein he must be mistaken.

maintained regular commercial intercourse with the Chinese. The Romans also maintained a similar intercourse, which began about the fourth century B.C. In the third and second centuries this trade went through Palmyra, the Persian Gulf, and the Indian ports. A Roman commercial expedition to China is mentioned during the reign of Domitian, A.D. 94. Envoys from Marcus Aurelius Antoninus reached China, A.D. 166. An embassy sent by Alexander Severus, reached Canton in A.D. 220 ; other Roman embassies entered China in A.D. 265 and 287.¹ After this the Arabians were the first to visit China by sea. See Robertson's "India," p. 102.

These dates are those which have survived the wreck of time : the absence of earlier ones do not prove that no earlier intercourse existed between Europe and China. The very early use of the Chinese *abacus* and *stove* in Rome affords an evidence of this trade ;² and the imports of silks, presumed to be Chinese, into Rome, and exports of silver to "Seres," mentioned by Pliny, prove that this intercourse, at least in his day, was regular and important.³

According to Mr. Medhurst's translation of the dictionary or encyclopædia, edited by the Chinese emperor Kang-he, A.D. 1722, "in ancient times the money of China was of tortoise-shell."⁴ Kang-he's meaning of "ancient times" is defined by the fact that he himself possessed a cabinet of *coins* dating from the reign of Yaou, B.C. 2347 to his own time.⁵ The "ancient times" of tortoise (cowrie?) money seem to relate to a period anterior to Yaou. The Chinese annals

¹ For early voyages of Europeans to China, consult Martin's "History of China;" also Appleton's "Cyclopædia," v. 110.

² Martin's "China," i. 244.

³ "Natural History," xii. 18.

⁴ "Five Years in China," by Lieut. F. E. Forbes, R.N., London, 1847, p. 57. The author says that Mons. Hager, in his "Numismatiques Chinoise," translates *poei* into cowrie shells, but remarks that so far is this from being correct that the cowrie shell is unknown in China. There is an English translation of Kang-he's Dictionary by Morrison, London, five vols., pub. by East India Company. Davis, "China," ii. 388 n., says that cowrie shells, known to the Chinese as *hæ-fei*, or "fat of the sea," are used in Yun-nan and other places bordering on India, for money.

⁵ Forbes, p. 58.

carry this date back six centuries earlier than Yaou, for they state that metallic coins were used in the reign of Fuh, B.C. 2942, Shin-nung, B.C. 2827, and Hoang-ti, B.C. 2687,¹ and that during the last-named reign, both coins, weights, and measures were employed.² There may be some uncertainty in fixing the reign of these monarchs within a century, or even two centuries, but notwithstanding the suspicion usually thrown upon the validity of Chinese annals, there can be little doubt that these personages are authentic, and that they were acquainted with the use of coins.

In addition to the evidence on this head already adduced, we are informed, that during the Hia dynasty, B.C. 2207-1767, the punishment of crime was commuted with metal;³ that coins struck by Tai-Kung or Ching-Wang, B.C. 1120, are mentioned by various European writers on the subject;⁴ and that in B.C. 1000, six taels of "metal" would ransom a criminal from mutilation.⁵

These archæological and literary evidences of the early commercial character of the Chinese, and their use of coins, prepare the way for the introduction of that more positive evidence which is to be gathered from the coins themselves.

I have before me at the moment of writing, twenty trays of coins collected in China by the Rev. Dr. Justus Doolittle, an American missionary at Foo-Chow. From Dr. Doolittle's hands they passed in 1872 into those of a merchant of San Francisco, who politely placed them at my disposition for the purposes of this work.

These trays contains 464 bronze coins, the dates of which, derived from the regnal periods of the monarchs whose mortuary names they bear, range, according to Du Halde's

¹ Forbes, p. 57.

² After trying copper coins, they fell back upon clay. Du Halde, ii. 288.

³ Monseigneur Hager, cited in Forbes, p. 58.

⁴ W. Vessering on "Chinese Currency, Coins, and Paper," Leyden; Chinese "Repository," xx. 290; Dickeson, in London "Numismatic Chronicle."

⁵ Forbes, p. 58.

chronology, from B.C. 2257 to the present time. With the exception of seven coins among those of the most ancient dates, they are all round, with square or round holes, nearly always square ones, in the centre, and they vary in weight from a few grains to half a pound each.

The seven exceptional coins are of the bell and knife shapes. These are as follows :

1st. Bronze coin of Sung, B.C. 2257, bell shape ; weight about 325 grains. Inscription in ancient Chinese, as read in China, Tong King Ho. As read by Mr. H. T. Kuen,¹ Chinese Vice-Consul at San Francisco, an American academician, Tong King Fo, *For gold good, or Good for gold.*

2nd. Bronze coin of the Chau or Chow dynasty, B.C. 1122 to 245. Scimitar or knife-shaped ; length, 5 inches ; weight about 280 grains, Leu To. These coins are called Kin-taou-tseen, or money of the metal knife. Kang-he's dictionary assigns to this type a place among the earliest coinages, that is to say, among coinages that long preceded the Chow dynasty. Such coins, says the imperial writer, vary in length from three to seven inches. Some of the larger ones, he continues, have the characters Yih-taou and Ping-woo-noon, *i.e.* one knife worth 5000 (Le) of the smaller. He says, there are several kinds of these coins, one of which having the characters Yih and Taou, inlaid of gold, has also the value of 5000 Le.² The coin before me has none of these peculiarities ; but I have seen others that have.

3rd, 4th, 5th, and 6th. Four bronze coins of the Han dynasty, A.D. 9. Two are knife-shaped, rather " Yale lock key " shaped. Length $2\frac{1}{2}$ and $2\frac{3}{4}$ inches ; weight 280 to 320 grains. Two are bell-shaped, weight 220 and 200 grains. Legends : Kie To. Yih Taou. Fo Pu. Pou To.

Thornton relates that the usurper Wang-Mang, of the Han dynasty, established an innovation by imitating in his coinage the knife-shaped coins of the Chau dynasty. The coins before me prove that the imitation was not a close one. To procure metal for his mints Wang-Mang despoiled

¹ Or Kwan.

² Forbes, 59.

the tombs of coins which ancient custom had caused to be buried with the dead.

Beside the six coins described, there are twelve others in the collection before me of very ancient date. These are:—

7th. Half Tael, B.C. 178. Paun Liong.

8th. Another, same date.

9th. Another, B.C. 139.

10th. Five chue or units, B.C. 139. Ung Chue.

11th. Fifty chue, A.D. 9. Tai Chuen.

12th to 18th. Seven coins of same period.

The last twelve named coins are of the familiar "cash" type, round with square holes in the centre and $\frac{7}{8}$ to 1 inch in diameter. They are smaller than the modern cash and the square holes are larger.

In addition to these, I have seen in the collection of the Bibliothèque Nationale in Paris, bell-shaped bronze coins, measuring upwards of six inches in length, by four in width, and round bronze coins, fully five inches in diameter, and weighing a pound.

These ancient coins have been submitted to the inspection of Chinese numismatists and antiquarians, both in China, Europe, and America, and by them pronounced genuine. Among those who have passed this judgment upon them are natives of China who have been educated in European and American colleges.

In short, there are no reasonable grounds for impeaching their validity, and, until such grounds are discovered, these coins must be accepted as authentic monuments.

Thus accepted, they open a wide field for the history of money. They prove not only that money was known and used at least twenty-three centuries before Christ, but that even at this remote period representative and probably numerical systems of money were employed. The bell-shaped coin of Sung announces itself as *good for gold*, implying that gold had previously been used as money and that bronze coins were now used to represent it. Coins

Nos. 7 and 11 contain the inscriptions "half-tael," and fifty "chuen," or units of account. Chuen are now called "cash."¹ Coupled with the fact that these coins are quite light (weighing from 30 to 50 grains each), the inscriptions prove that their value was many times that of the metal they contained.² This value was probably maintained by limiting their number. In such case the system was numerical.

When we come to examine the history of money in other countries of the ancient world, we shall find that owing to the unequal distribution of the precious metals, and the obstacles to foreign commerce, commodity systems of money would have been dangerous to employ, and that, at one time or another, numerical systems were established in all of them.

That China should have employed a numerical system is therefore no matter for wonder. The same reasons that impelled other nations to do so, impelled her likewise.³ The only wonder is that she should have employed one so long ago as the period of Sung; and that at this period, almost the very outset of monetary history, we are brought face to face with a system whose advocacy and establishment form at the present day the objects of influential political parties in the United States and elsewhere.

The Chow dynasty lasted during the long period B.C. 1122-245. Towards the end of this dynasty the empire fell into decay and feudalism. It was divided into 123 different states, each probably with its own system of money.⁴

¹ Cash is of Indian origin from Karshápána, a certain coin. The coins, tokens, or numeraries, whichever they happened to be at the time, called by the English cash, were termed by the Portuguese traders *sapeca* and by the French *sapeque*. The smallest of the modern bronze coins are two-cash pieces. The Chinese name for cash is chue.

² "Copper money of a nominal value has in times of scarcity been made to represent a certain amount of rice or grain, payable at the granaries." Forbes, 63.

³ Scarcity of metal is mentioned at numerous periods in Chinese history. See Forbes, 60, 61, 63, 67, etc.

⁴ Forbes, 64. Du Halde alludes only to the imperial systems of money.

The Tsin dynasty began B.C. 245. In the reign of Che-hwang-te or Tsin-chi-hoang-ti, the unity of the empire was restored, and the building of the Great Wall completed; but this Emperor sullied the lustre of his administration by destroying all the ancient literature upon which his emissaries could lay hands. It is this destruction of original works that obscures the earlier annals of China and renders her numismatic remains peculiarly valuable.

The Han dynasty began B.C. 206, with the reign of Lew-pang, otherwise Kaou-tsoo. During the reign of one of this line, Wu-ti or Woo-te, B.C. 140, the ancient literature was restored so far as possible.

It was during the reign of Wu-ti that the first paper money of which we have an account was issued in China.¹ According to Klaproth and Forbes,² the notes were called p'i pi or skin notes, and they were made of white stag skin, a Chinese foot square, each note representing 40,000 chuen. According to Martin³ there were others of about the same date made of pasteboard; and it is said that one of the latter, which had been preserved among the relics of a temple of worship, is still in existence.⁴

Between the third century of our era and the accession of the Tsuy dynasty which began A.D. 590, with the reign of Yang-keen, we have few accounts either of the money of China or indeed any important circumstances which connect the history of the empire with that of the outer world.

The first coins extant bearing the actual name of an emperor are those of Ho-King, deposed A.D. 465.⁵ Unless this was the son of Wan-te, who (the son) reigned from 454 to 465 and then died, I cannot identify this monarch. In 605-618, during the reign of Yang-Kwan of the Tsuy dy-

¹ Nearly three centuries previous to this date, coins covered with leather or parchment were used as money in Carthage.

² Klaproth's "Asia," i. 375, quoted in "Chinese Repository," xx. 289-95. Forbes, 67. Du Halde.

³ Martin's "Hist. China," i. 173.

⁴ Private information, considered doubtful.

⁵ Forbes, p. 60.

nasty, a period of great confusion and scarcity of metal, round bits of iron, pieces of pasteboard and even articles of wear served as money¹ or media of exchange.

During the Tang dynasty, A.D. 619-907, the empire seems to have enjoyed the advantages of peace and prosperity. In the reign of Leshimen or that of his immediate successor, Tai-tsung, the Nestorian Christian Olopwen or Olopuen is said, A.D. 636, to have entered China from Judea and preached the religion of Christ; the emperor having accorded him permission to do so, and having even erected a church for his convenience; but this account, upon the strength of an alleged anachronism, has been regarded by Voltaire as a pious fraud of the Jesuit Kircher.²

Tai-tsung was an enlightened prince who gave encouragement to science and literature. His successor, Kautsung, carried the arms of China into Thibet and Persia. A subsequent emperor of this line, Yiou-tsung, who ascended the throne at some date between A.D. 713 and 757, has been called the Haroun Alraschid of China. During his reign in A.D. 740, a census of the population was taken—of itself no insignificant evidence of national prosperity and growth—the result being 48,143,600 *mouths*—probably an increase over the population of the preceding era.³

In A.D. 807 during the reign of Heen-tsung and in consequence of the scarcity of copper at that time, paper notes were issued in place of copper coins. Forbes says that they were issued upon deposits of metal money in the public coffers. They were suppressed within three years.⁴

¹ Klaproth in "Chinese Repository," xx. 289-95.

² Voltaire, "Hist. Europe," English Translation, London, 1754, vol. i. part 1, page 14.

³ Populations are rarely counted in periods of decay. Consult Essay on "Population and Specie," by the writer in Rep. U. S. Monetary Commission, vol. i. App. p. 70. A census of China was taken during the first century of our era, when the number of *mouths* proved to be 59,594,978. This number probably fell to something like 40,000,000 at more than one period previous to the Tang dynasty.

⁴ Forbes, 67, and Klaproth in "Chinese Repository," xx. 289-95.

Some Arabian travellers who reached China in the ninth century describe the metallic cash in use at the time.¹

The Tang dynasty ended in 907 and was succeeded by five dynasties, the last of which ended in 960. During all this time it has been argued that copper must have continued to become scarcer, or else the copper chuen were continually degraded, for the sake of the profits arising out of the coinage; because, it has been alleged, during the Sung dynasty which began A.D. 960, they became "so small that they were called geese eggs" and so thin that they would "swim upon the water."²

In A.D. 960, reign of Tai-tsu (Sung dynasty) the imperial treasury was constituted a bank of deposit from which notes were issued upon deposits of silver, precious articles, and other merchandise, in government warehouses.

In A.D. 997 there were 1,700,000 nominal taels of these notes in circulation; in 1021 there were over 3,000,000 taels. These notes are described as having been a foot square in size and negotiable.³ Metal was scarce at this period.⁴ During this century (the tenth) paper bills of exchange were employed in China.⁵

During the early part of the eleventh century, iron chuen were in circulation, whether as numeraries or commodities is not stated. They were probably at first highly over-valued, and being issued redundantly, fell to or near their commodity value. It was to represent these coins that the first notes of true (felted) paper were issued in China. These were emitted by a private banker in Sze Chuen province and were made payable in three years. Each note was for

¹ "Chinese Repository."

² Minister Seward's dispatch in Rep. U. S. Mon. Com. i. 545. This is an exaggeration, for I have over 100 of these cash before me. They are of bronze, measure one inch in diameter, and weigh about 20 to 50 grains each. Some of them are very thin; but neither in this respect, nor any other, do they differ essentially from the cash of the present time.

³ Klapproth and Martin.

⁴ Forbes, 67.

⁵ Martin, i. 173.

1,000 chuen or one tael of pure silver. The example of the Sze Chuen banker was soon followed by others—some fifteen in number—and by the year A.D. 1032 more than 1,256,340 nominal taels of these notes were in circulation. In that year all the bankers who issued them failed and the notes became discredited. Yet they must have continued in circulation, for we read that in 1068, counterfeits of these notes were current. The notes were called tchilse.¹

In A.D. 1131, reign of Kau-tsung, according to Du Halde and Klaproth, or of Prin-tsung, according to Martin, paper due-bills were issued by the government for military supplies.

During the reign of the same monarch a new sort of paper money called hwui tsz or exchanges was put into circulation. These notes were at first redeemable. They were in denominations of 1,000 chuen each. Later on 500's, 300's, and 200's were issued. This emission was continued during the reign of Hiao-tsung, which began in 1163. During the five years ending 1167, there were outstanding more than 28,000,000 taels of this paper, and by the end of the same year over 43,600,000 taels.² Besides these, the provincial governments issued circulating paper of their own.³ It is probable that by this time the government had suspended metallic payments and that the notes it issued were irredeemable.

During the remainder of the Sung dynasty, which continued until the Mongolian invasion, these paper emissions were increased. At the same time the three-year private bank notes which had been issued during the previous century, continued to remain in circulation. After the Mongol dynasty was pretty well established, in 1224, the

¹ Klaproth and Martin.

² Klaproth.

³ Martin. In addition to these emissions we are informed by Klaproth that in A.D. 1155, in the Tongusian kingdom of Kin, North China, copper being very scarce, paper notes were issued to replace the copper coins previously in circulation.

notes of the Sung dynasty were all "suppressed;" whether by redemption or repudiation is not stated; probably the latter.

In A.D. 1215, Genghis Khan, emperor of the Mongol Tartars, entered China at the head of a vast host, attacked and captured Peking, and, leaving an army to further reduce the empire, marched to the west and entered upon that series of astonishing conquests which rendered his name a terror to the farthest ends of Europe. Genghis died in 1227, leaving the command of his armies to his four sons, under one of whom the conquest of China was completed, his grandson Kublai-khan, otherwise Shi-tsu or Chi-yuen, ascending the throne of that empire in 1281.

Previous to the submission of the empire, that is to say in February, 1236, the Mongols revived the use of silk or paper money similar to that which had before been used "by Chang-fong, sixth emperor of the Kin" dynasty.¹

In 1260-63, and still previous to the submission of the empire, Kublai-Khan then in command of the Mongol army of occupation, issued paper notes and introduced them into those parts of China which his forces had subdued. These issues soon became redundant and fell in purchasing power. They will be distinguished herein as the First Mongol Issue.

Between 1264 and 1290 a Second series of notes were issued. Like their predecessors they were without specific limit as to numbers, and thus became in time depreciated below the level of the coins after which they were named, and for which the law compelled them to pass in the payment of debts. "Pauthier has given, from the Chinese annals of the Mongol dynasty, a complete table of the issues of paper money during every year of Kublai-Khan's reign (1260-94), estimated at their nominal value in *ting* or tens of silver taels. The lowest (annual) issue was in 1267, of 228,960 taels, and the highest was in 1290, of 50,002,500

¹ "Universal History." Modern part, vol. iv. p. 200. This was a dynasty of the kingdom of Kin, referred to in a previous note.

taels, whilst the total amount in 34 years was 249,654,290 taels.¹ A tael really meant 1,000 copper "cash" or "chuen."

The depreciation first became rapid in 1287, when the emissions were very extensive. Before this occurred the notes of the First issue of 1260-63 had been exchanged at the rate of five for one of those of the Second.

It is these notes of the Second issue that are described in the pages of Marco Polo.

This was the most brilliant period in the history of China. Kublai Khan, after subduing and uniting the whole country and adding Burmah, Cochin-China, and Tonquin to the empire, entered upon a series of internal improvements and civil reforms, which raised the country he had conquered, to the highest rank of civilization, power, and progress. Tranquillity succeeded the commotions of the previous period; life and property were amply protected; justice was equally dispensed; and the effect of a gradual increase of the currency, which was jealously guarded from counterfeiting, was to stimulate industry, and prevent the monopolization of capital. It was during this era that the Imperial canal, 1660 miles long, together with many other notable structures, were built.²

There is some little discrepancy in the dates assigned by Du Halde and Pauthier to Kublai Kahn's reign, which I am not prepared to reconcile.

No specific limits having been assigned to this emission of notes, they fell in value, until in the reign of Woo-tsung, 1309-13, a new emission, which we will call the Third Mongol, was begun. Like the Second series with respect to the First, the Third were now exchanged

¹ Col. Yule's "Marco Polo," London, Murray, 1875. I have not been able to find this table of Pauthier. Col. Yule says that in both issues (those of 1260 and 1287) "the paper money was in official valuation only equivalent to half its nominal value in silver; a circumstance not very easy to understand." The reason may have been that the note represented taels of copper chuen, which themselves were overvalued as against silver.

² Malte-Brun, ii. 69.

for the Second at the rate of five of the latter for one of the former.

Population and trade had greatly increased, but the emissions of paper notes were suffered to largely outrun both, and the inevitable consequence was depreciation. All the beneficial effects of a currency which is allowed to expand with the growth of population and trade were now turned into those evil effects that flow from a currency emitted in excess of such growth.

These effects were not slow to develop themselves. Excessive and too rapid augmentation of the currency, resulted in an entire subversion of the old order of society. The best families in the empire were ruined, a new set of men came into the control of public affairs, and the country became the scene of internecine warfare and confusion.

This condition of things did not occur all of a sudden, but became slowly evolved during the reigns of the five monarchs, between Woo-tsung, 1309-13, and Shun-tee, 1333-68.

It was at this period, viz., A.D. 1330, that the Moorish traveller, Ibn Batuta, reached China, whose paper money is described in his itinerary.¹ Sir John Mandeville was also in China at this period (about 1327); but whether it is of the reigning monarch of that country or one of his predecessors that he speaks in the following extract, is uncertain :—

“This emperor maketh no money but of leather imprinted or of paper. And of that money is some of greater price and some of lesser price, after the diversity of his statutes. And when the money hath run so long that it beginneth to waste (wear out) then men bring it to the emperor’s treasury, and then they take new money for the old. And that money goeth throughout all the country and

¹ Ibn Batuta states that gold and silver coins (foreign) were melted down. He instances the dirhem. “The Chinese,” by John Francis Davis, 2 vols. New York, Harper, 1858, pp. i. 23; and ii. 394.

throughout all his provinces. For there and (even) beyond them they make no money neither of gold nor silver.”¹

During the last days of the Mongol dynasty, in 1351, an effort was made to reform the currency; but by this time the evil lay too deep for remedy; for many kinds of paper money were in circulation—government, provincial, and private—besides many counterfeits; and the government was powerless to limit the circulation. The notes therefore continued to depreciate.

In 1368 the Mongol dynasty was overthrown, and the Ming dynasty commenced with the reign of Hung-wu. In the seventh year of his reign (1374) a new issue of government notes took place, a facsimile of one of which is published in Colonel Yule’s “Marco Polo.” It is correct as to colour, but fails to convey a truthful representation of the thin, flimsy silk paper upon which the original notes were printed, one of which, the property of Sir Harry Parkes, the writer inspected in 1883. In 1374 the notes of the Mongol emperors were still in circulation, though at what relation of value to the Ming issue is not stated.

At a subsequent date during the same reign the Mongol notes were retired from circulation. The new Ming notes read:—“This paper money shall have currency, and be used in all respects as if it were copper money.” The denominations were from 100 to 1,000 chuen. Martin states that as they were issued redundantly, it was attempted to maintain their value by forbidding the use of gold and silver; but since, in point of fact, these metals were not then coined or used as money in China, neither their use nor disuse could have had any effect upon the value of the paper notes; and Martin must be mistaken. Their value could only have been affected by their number and that of any other pieces of money then in circulation, such as copper chuen, private bank notes, counterfeits, &c.

At the outset of the Ming issues, 17 paper chuen were equal to 13 metallic chuen; by the year 1448, the issues of

¹ “Travels” of Sir John Mandeville (Ed. 1839), p. 239.

paper notes having meanwhile been greatly increased, this relation became 1000 paper to 3 metallic chuen. In 1455 the government decreed that the taxes should be paid in paper money, and forbade the circulation of coins (chuen). The Mings, so far as excessive issues are concerned, were but too clearly following in the worst footsteps of the Mongols.

Nevertheless, the condition of the empire had greatly improved. Whilst Hung-wu, who reigned 1368-99, was still on the throne, that is to say, in 1393, a census of the population showed 60,545,812 mouths,¹ although there had occurred but half a century previously—in 1342—one of the greatest famines of which mention occurs in history, when no less than 13,000,000 of human beings were destroyed in this empire alone.² But the prosperity which this increase of population evinces, gradually disappeared, and after Hung-wu the empire again fell into decay and was repeatedly subjected to the incursions of the Tartars.

In 1448, and with a view of improving the credit of the government paper notes, the circulation of metallic chuen was prohibited; but this measure proved abortive, and by the year 1455 the paper issues appear to have become entirely discredited, and metallic chuen resumed their old place in the circulation. This was the last issue of imperial government notes in China.³

H. T. Kuen (Chinese vice-consul at San Francisco) states that leather notes were issued by the Ming dynasty during the rebellion of Lee-cheong. Undated porcelain coins are still extant, stamped with Chinese letters signifying "Eternal prosperity." One in the author's possession measures about three-quarters of an inch in diameter and one quarter of an inch thick. Another one, of different type, is in the San Francisco Mint collection.

Towards the latter part of this century (the fifteenth) the population of the empire had fallen to 53,281,158

¹ Malte-Brun.

² App. Cyc.

³ "American Almanac," 1879, pp. 65-68.

mouths.¹ Even at this figure it was greater than that of all Europe.²

We now come to the period when China was opened to the maritime commerce of Europe. This was effected by the Portuguese in 1518.³ It would be interesting to know what had been the ratio between gold and silver in China previous to this event, and how such ratio came to be afterwards changed by its influence; but the data on the subject are too meagre to warrant any definite conclusions. We are informed that at about the beginning of the fourteenth century the ratio was 1 tael of silver equal to 1 mace of gold, or 10 to 1; ⁴ but there is no other datum for upwards of three centuries after this date. The ratio was, however, not important. The Chinese coined neither gold nor silver,⁵ and although the latter is at present used for money, and was probably so used, at least to a small extent, at the date mentioned (1264-94), the national policy of keeping the mines closed, which appears to have been adopted so far back as that period, and perhaps for ages before, must have caused the ratio to depend upon surrounding countries rather than the relative abundance of the precious metals within the empire. The countries most likely to have exercised this influence at the date mentioned were those which had then recently been overrun and plundered by Genghis Khan and his successors, to wit, Turkestan, Persia, Asia Minor, and Eastern Europe.

In 1596 the emperor (contrary to the advice of his ministers, and probably at the instigation of the Portuguese) ordered the opening of six mines of gold and silver

¹ Malte-Brun.

² "Discourse on Political Economy," by the writer, delivered before the Alumni of the University of California, January, 1879.

³ "Why Should the Chinese Go?" by Kwang Chang Ling; pamphlet. San Francisco, 1878, p. 5.

⁴ Klaproth in "Chinese Repository," xx. 289-95.

⁵ "The government of China issues no other coin but the base metal *token*, composed of copper and zinc with, perhaps, some lead." Davis's "China," ii. 388.

in the provinces of Honan, Chensi, and Shansi ; but six years afterwards they were closed.¹

Mr. Colwell says² that "in China, the skill of counterfeiters is such as wholly to prevent the use of coins (meaning gold and silver ones), and that vast population is—for that reason, it is said—confined to the primitive mode of weighing, in payments, all the gold and silver used in commerce." But this opinion is clearly wrong. It is true the Chinese are skilled in counterfeiting ; but they are more than equally skilled in being able to detect counterfeit coins or even impure metal. The fact is, they do use silver coins, only they are all, with the exceptions mentioned below, and when not counterfeit, coins of foreign nations. The real reason why gold and silver coins are not fabricated in China is that the money of the country is, and, except when replaced by paper notes, has always been, "cash," generally copper, but sometimes iron coins. These cash have been issued from time to time, not as commodity but numerary or highly over-valued coins, the value of which is endeavoured to be regulated by laws limiting their issue. Under these circumstances, it is only necessary to say, in reply to Mr. Colwell's theory that the money of the country whether commodity or numerary being made of copper or iron, it is impossible to introduce gold and silver coins into the circulation or to make them legal tender at any fixed ratio of value to the cash ; because the latter are composed of metals whose value in gold or silver is subject to violent fluctuations ; there being now no great hoarded stock of them on hand in the commercial world, as there is of gold and silver.

Since the opening of China to maritime commerce the changes in her monetary system have not been important. During the last years of the Ming dynasty, which ended in 1645, the empire became the theatre of internecine wars,

¹ Pauthier, "Chine," p. 405, ed. 1835.

² "Ways and Means of Payment," p. 109. He gets his information from Du Halde, ii. 287.

and the numerary cash being issued without limit both by the imperial and provincial authorities, and largely counterfeited at that, they fell to their commodity value, and, as such, formed, together with the tribute rice, the principal, almost the only, moneys of the empire.

The Tsin, or Taetsing, or Mantchoo Tartar, dynasty began in 1645 with the reign of Shun-che; and an era of peace and progress succeeded. The Russians were allowed to trade with the northern parts of the empire. Formosa and Thibet were conquered, and foreign trade was permanently opened at the seaports. A German Jesuit, Adam Schall, was appointed prime minister to the emperor; the Christian churches were restored to the missionaries (1671), and the country was surveyed and mapped out by Europeans. These reforms indicate an era of prosperity, which soon demanded a more equitable and efficient currency than copper cash; and accordingly paper money, at first consisting of private bank notes, followed afterwards by provincial government credit notes, crept into the circulation.

Towards the end of the eighteenth century the population of China had grown to perhaps 175,000,000 souls, and notwithstanding current belief to the contrary, and the pretended censuses adduced to support this belief, this must be deemed the greatest number known to have been ever attained in China, and to mark the highest point of its prosperity, which, since the period mentioned, has greatly declined. In 1875, at the beginning of the present reign—that of Kuang-soo, ninth emperor of the Tsin dynasty—the population of the empire could scarcely have exceeded 128,000,000.¹ These numbers and the condition of progress which they indicate, have, it is thought, lost their previous tendency to retrograde, and at the present time the empire, if not slowly progressive, has at least attained for a time a stationary condition.

¹ Fourth Letter of Kwang Chang Ling in San Francisco "Argonaut," Sept. 17th, 1878, and the various authorities therein adduced, including the last actual Chinese census (1761).

The monetary system of China at present consists, and for some time past has consisted, principally of cast copper or bronze cash, of which there are two classes in circulation. The first of these are the large cash, which are cast by the Imperial authorities, and circulated almost exclusively in the city of Peking and its suburbs, where no other cash is current.

It is presumed to be these coins whose composition is said to consist of six to eight parts of copper, and from four to two parts of alloy, either lead, zinc, or tin, and whose legal composition is described as follows: copper 54, tutenag (zinc) 42, lead 3.4, unenumerated 0.6; total 100. The ingredients are, however, not always the same.¹

Between these cash and silver bullion there is said to be established a legal relation of 1000 cash to the tael of silver.² But since cash are legal tender and silver bullion is not, this relation cannot be deemed effective.³

However this may be, the cash, if composed as above set forth, are, at this relation, undervalued, and silver bullion overvalued.

The second class of cash consists nearly entirely of copper, and are smaller and lighter, weighing when new, about eight to the ounce avoirdupois, and when worn, say after fifty to one hundred and forty years of use, exactly nine to the ounce. These cash are cast by the provincial authorities or by private parties under their permission.⁴

The market relation between cash and foreign dollars varies from 1200 to 1800 cash to the dollar; the variance being influenced by the local supply and demand of particular coins at the Treaty ports.

¹ Gutzlaff's "China."

² Stanton's "Laws of China," London, 1810, pp. 124-5.

³ Farming out the mintage to private parties by the imperial government is mentioned by Forbes, 65. The same author (p. 63) states that companies of merchants have been permitted to issue coins.

⁴ For size, fineness, and variableness of Chinese cash see Wiley in "Transactions of North China Branch of Royal Asiatic Society," for (about) the year 1865. The weights given in the text are from my own experiments.

The laws of China contain provisions designed to prevent the exportation, sequestration, monopolization or dearth of copper metal or copper cash and the counterfeiting of the latter. Copper metal may be used in the arts only for certain specific purposes. None is to be concealed, or sold except to the government.¹ Copper ore, copper sheathing old, and copper wares, may be exported on payment of export duties,² but not copper in ingots.

Officers of the Chinese government are forbidden (under pain of sixty blows) from retaining and accumulating coin.³

The Penal Code of China provides that when cash is cast it shall be deposited with the Board of Revenue until required for public service. "The quantity of metal coined and the periods of its issue are fixed by the Board of Revenue in order that the successive supplies of coin for the use of the people may correspond with their wants and be regulated according to the market prices of gold, silver, grain, and other articles in general use and consumption."⁴ Sir R. Murchison's opinion,⁵ why the gold mines of China were forbidden to be worked, may have been derived from these regulations.

Copper coin is forbidden to be cast by individuals under pain of death.⁶

Copper cash is forbidden to be exported abroad on penalty (to foreigners) of a sum equal to its value;⁷ but it may be

¹ Stanton's "Laws of China," p. 125, and Chinese "Repository," ii. 68.

² "Treaty between the United States and China," June 18, 1858. "Statutes at Large." Little and Brown, ed. 1862, p. 190. The export duty on copper wares by this Treaty is fixed at 1.15 taels per 100 catties.

³ "Laws of China," Stanton, p. 124.

⁴ "Chinese Repository," ii. 68, and Stanton's "Laws of China," p. 124.

⁵ Quoted by McCulloch in "Encyc. Brit." 1858, xv. 470.

⁶ Stanton's "Laws of China," p. 397.

⁷ "United States Treaty with China." Statutes at Large, 1862, p. 194. Similar enactments formerly prevailed in England. Consult the statutes of 28 Edw. III., 38 Henry VIII., and 2 Edw. VI., cited in Calvert's "Gold Rocks of Great Britain," p. 69

shipped by foreigners under bond, from one seaport of China to another.¹

No provision appears to be enforced at present against the importation of silver, which in regard to China is unimportant; for the relation established by the Chinese law is not between copper coins fabricated by the Chinese authorities and silver coins similarly fabricated (of which there are none), but between copper coins so fabricated and silver bullion.

Nevertheless, such an interdict was probably enforced in former times, for Postlethwayt, an old author, informs us that silver was imported into China, surreptitiously, in order to counterbalance the export of gold, which, being prohibited, was also effected surreptitiously.²

Martin says that "gold and silver may not be legally exported from China except in limited quantities, and in foreign metal," whilst in another place he says "the Censor of Fuhkein has appealed against this law, (permitting the exportation of the precious metals,) saying that the exportation of silver 'touches the vitals of the empire.'"

The fact is that these, in common with most of the other, laws relating to the money of China, are grossly violated. Says Martin: "A large amount is, however, annually taken away (exported) in broken Spanish dollars and sycee silver and gold." And in another place: "A Censor from Chekeang complains of the exportation of silver and yellow gold and that there is no law to punish the guilty."³

Copper metal is concealed, copper cash is either designedly or unavoidably rendered scarce at times in one place and abundant in another; ⁴ it is largely counterfeited; ⁵

¹ "United States Treaty with China." Statutes at Large, 1862, p. 194.

² Postlethwayt's "Dic. of Com.," article "Gold."

³ Martin's "History of China," i. 178, *et supra*.

⁴ Dr. Wells Williams's "Middle Kingdom."

⁵ Counterfeit cash are so common that it is customary in trade to allow five to ten per cent. of payments in cash to be made in counterfeits. Information from Mr. James White, M.P., long a resi-

and it has been surreptitiously exported by foreigners; sometimes by shiploads.¹

Another important consideration in this respect is, that whilst the Chinese authorities undervalue copper cash as against silver bullion, they overvalue cash as against rice exacted as tribute. This grain is so important an article of commerce in China that the over-valuation of copper cash in rice has the effect of over-valuing it in all other commodities except silver.

The taxes which are payable in money are collected by the tax farmers or official collectors, as the case may be, in copper cash, and by the latter paid to the Imperial Government in silver. From these transactions the collectors derive a considerable profit, for they always charge the people for the exchange more than enough to protect themselves from loss through fluctuations in the value of silver measured by cash. In 1847 it was estimated that eight-tenths of the population paid their taxes in cash, the value of which had to be remitted to the government in silver.²

It is believed that these arbitrary and complicated regulations are somewhat similar to those which prevailed in Rome during the failing periods of the Commonwealth and the Empire. There can be no doubt that the true principles of money, the causes of its value and its relations to the growth of industry, have been more than once caught sight of in China; nay, even that they have been acted on and put into practice. But owing to the absence of advanced education among the people and of strength in the government, this never continued long. The theory of money is

dent in China. Davis, "China," ii. 390, quotes from the "Peking Gazette" of June, 1824, the confession of a forger who counterfeited 7000 chue (plural, chuen) by casting them in lead.

¹ The British commercial returns show something of the export movement in copper from China.

² Consult "Chinese Repository," xvi. 275-277, and Martin's "China," i. 178.

very correctly outlined in a memorial to one of the emperors of the present century.¹ However, it was known in China ages before. At present, it is forgotten.

The cash of the empire have always been issued as numerary moneys; several circumstances have at times more or less altered this character. These are the vicissitudes of the government, which have induced it to break down the limits it had set to the emissions; its inefficiency in guarding against counterfeits, which at these or other times have had a similar effect; and the emission of private bank notes. These circumstances have frequently altered the numerary character of the cash to their commodity value. In other words, they have lowered the value of the cash to that of the metal they contained. Precisely at what several periods this occurred, and therefore at what several periods the cash and their paper representatives possessed a more or less numerical value, and at what periods a merely commodity value (that of the copper, etc., contained in the cash) it is often difficult to determine. But the general fact that the cash are or have been numerical appears to be beyond dispute.

This fact is proved by several circumstances.

I. The government mints for coining cash were stopped in the province of Fuhkien for upwards of twenty years, in Chihli for sixteen years; in Hupeh for upwards of ten years; and in Hunan for ten years; and during this time no new cash were coined in these provinces. The motive for this measure was to diminish the number and thus increase the value or purchasing power of the cash already existing. This long continued course of contraction, whose only mitigation arose from the fabrication of counterfeits, must have had a most depressing effect upon industry and population.²

II. It is proved by the enormous profits which, at some

¹ The "Chinese Repository," ii. 279, contains the memorial. It is well worthy of perusal.

² "Chinese Repository," ii. 279.

not very remote date—not mentioned, but probably within the present century—were derived by the government from the fabrication of cash. The metal contained in the cash annually coined in fourteen provinces cost 800,000 taels of silver and was coined into cash amounting by tale or number to 1,200,000 taels, a profit of fifty per cent.¹

III. It is proved by the absence of open and gratuitous coinage in China. This is an institution without which a radically material or commodity system of money is impossible. Coins that are not free to be supplied in response to the demand for their use are, or become, necessarily over-valued, and therefore to a more or less extent assume the character of numeraries.

Turning now from Chinese coins to paper money it must be stated again that no paper money has been issued by the Imperial government since the middle of the fifteenth century, or during the Ming dynasty.² Other paper money has, however, obtained circulation from time to time, and at present there are vast quantities of it in use. Of the paper money which has circulated in China during the past four centuries, namely, since the last issue of Imperial government notes, there are three classes, all of which were expressed either in cash, or silver taels at a fixed ratio to cash; and were therefore in effect, cash. These classes are:

I. Private bank notes. These are issued by private bankers chiefly in the cities. They are of all denominations from one cash to 1000 taels. They sometimes pass with

¹ "Chinese Repository," ii. 279. With reference to counterfeit moneys see Martin i. 176 and "Chinese Repository," iv. 344 and xvii. 483. Those mentioned in the passage last referred to were, some of them, light cash, and others made of lead and sand.

² *Per contra*, Mr. Sit Ming Cook, formerly Vice-Consul of China at San Francisco, informed the author that the Imperial troops were paid in silver, that Imperial government notes were then (1880) afloat and current at 90 per. cent. discount in silver, and that these notes were not legal tender, but were receivable in payment for purchased titles of nobility. For this reason they were in demand by money brokers at ten per cent. of their face value in silver.

an endorsement or "chop;" at others without. Their circulation is strictly local, and as to quantity, it rises and falls with local demand. The notes are payable on demand or in five or ten days, in cash or in taels of cash, that is to say, taels of silver at a fixed relation to cash. Failures of banks or bankers are rare. They have no connection with the government.¹

These notes are preferred to metallic cash. They are easier to carry and their redeemability is unquestioned. In Foochow in 1845 many of the mercantile firms issued similar notes for 400 cash to 1000 taels.²

Similar notes are issued by banks or bankers payable not on demand, but in five or ten days' time. These pass current as money the same as the others. Demand notes for one, two, and five cash each are also issued by the salt farmers throughout the empire. These also pass as money. The use of cheques is so common that people travel with their blank bank cheque books which can be filled up to any amount.³

II. Provincial notes. An emission of these during the seventeenth century was alluded to on a previous page. It is not known to the writer if any have been emitted since.⁴

III. Notes for brick tea used near the northern boundary. These are unimportant. Being unconnected with the cash system they will be alluded to further on under the head of "brick tea money."

Besides the cash and the various sorts of paper money which have been issued to represent them, other forms of money have been or are used in China; though only to a limited extent. These will now be briefly treated and in the order of their importance.

Silver bullion and foreign silver coins.—Neither silver

¹ Martin's "China," i. 172-3.

² "Chinese Repository," xv. 211 and xx. 292.

³ Information from Mr. Jas. White, M.P., and Forbes, p. 71.

⁴ Mr. Sit Ming Cook says there are none of these notes in circulation now.

coins nor gold coins are fabricated by the Chinese authorities. Private parties have, however, fabricated foreign coins within the empire, although such an act is contrary to law. This was done at Fuhkien about the year 1834.¹

At a later date it was reported that a similar illicit fabrication was conducted in the district of Shunliih, south of Canton, and that so many as one hundred workmen were employed in a single establishment. They used European dies and other appliances. Furthermore that an English mercantile firm at Canton had a mint there in which Spanish dollars were coined.²

Even the Crown has not disdained to engage in this business. In 1845 the reigning Emperor, Taouk-wang, caused silver dollars to be cast at Hangchow and Formosa. They were called "Soldiers' Pay."³ In the course of time the emissions became debased, when they lost credit and disappeared from circulation.⁴

Silver bullion is generally cast into ingots, in shape rudely resembling shoes; hence its name of "shoe silver." Native silver is called sycee,⁵ and, as the means of refining the metal were formerly imperfect, sycee differed in purity with the metal from various mining districts. Altogether, there were five kinds, all of different "touch," or per cent. of purity, "the best, Kwan-heang or Kwan-leang, in which the Imperial duties are paid, being ninety-seven to ninety-nine touch."⁶ At present all silver is the same, whether

¹ "Chinese Repository," ii. 445. Imitation dollars are mentioned at a later period. They were made of base metal and sometimes plated. Dr. Wells Williams, "Chinese Com. Guide," 134, and Davis, "China," ii. 392.

² Martin's "China," i. 178.

³ The later Romans called the ancient aureus, the solidus. From solidus are derived sol, sou, etc.

⁴ Martiu's "China," i. 176.

⁵ From Se-sye, fine floss silk, Forbes, 61.

⁶ Martin's "China," i. 178, and Forbes, 61. Silver of different kinds reminds one of the copper of different kinds enumerated in Pliny. In modern times all silver and all copper are the same, because they are reduced, in reckoning, to absolute purity.

from one district or another, or whether native or foreign. The name *sycee* has, therefore, a different meaning. It now simply means any silver bullion which is pure or nearly pure.

The foreign silver coins which circulate in China are chiefly Spanish and Spanish-American pieces-of-eight and dollars and American dollars and trade dollars. As these pass from hand to hand they are "chopped;" *i.e.*, marked with the seal, device, or stamp of the owner, by way of endorsement; hence the name of "chopped" dollars. When these chop marks become so numerous that there is no room on the coins for more, the coins are reduced to bullion. The value in cash of the various foreign dollars circulating in China is much subject to local caprice; a given coin being worth more or less in one city than another. It is also subject to caprice in favour of particular coinages, a dollar of one date being worth more or less than one of another, although both may contain the same weight of silver. Something of what is regarded as caprice is, however, due to difference in weight and also to the presence of a small proportion of gold (from $2\frac{1}{2}$ to 5 per cent.) present in some silver coins, particularly the Mexican and old Spanish,¹ a fact due to the imperfect assays and mintages of Spanish-American silver. The presence of this gold is certain to be detected by the superior acuteness of modern Chinese bullion dealers.²

The most extraordinary anomaly in valuation relates to the Spanish *Carolus* dollars, or more properly speaking, pieces-of-eight. These coins are no longer fabricated by the Spanish mint. The supply is thus very much limited,

¹ Speech of Senor M. Romero in the Mexican Congress, reported in the "Diario" (official gazette) October 14, 1876, and quoted in the Report of United States Monetary Commission, vol. i. App. p. 393.

² Consult as to all these particulars my Minute on "China" in Appendix to Rep. U. S. Monetary Commission; also Du Halde, Richtofen and "Chinese Repository," *passim*.

whilst the demand—due to Chinese habit—being uninterrupted, it has occurred that they have gone to a premium of 30 to 40 per cent. over Mexican dollars said to contain an equal amount of pure silver.¹ Something of this is due to the fact that these pieces-of-eight are old ones, and contain more silver than the modern Mexican dollars.

Gold Bullion and foreign gold coins.—Gold bullion is used for money to a small extent. It is cast into ingots, several of which, assayed by the U. S. Mint in 1858, weighed on the average 11.8 ounces Troy and were 0.966 fine, value \$235.50. They were intended to represent ten taels (of gold) each, which would make the value of one tael at that date, \$23.55.²

Gold leaf, thickness not stated, is said to have been used for money in China;³ but this use was probably merely local and temporary.

Bullion Trade.—During the 250 years when plate-ships went direct from Acapulco to Manila, it is stated that \$400,000,000 of silver found its way thither, and that one-fourth of this sum was shipped from Manila to China.³ From 1784 to about the year 1850 (date of Martin's work) \$100,000,000 in silver were shipped from the United States to China. Siam and Cochin China were also accustomed to send large quantities of both gold and silver to China. During sixty years of free intercourse between Japan and China, there were shipped from the former to the latter country at least \$100,000,000 in the precious metals. From all other sources during the past (eighteenth) century, China received over \$50,000,000 in the precious metals.⁴

At one time or another in the long history of this extraordinary country, either the importation or exportation, and sometimes both, of silver and the exportation of gold, have been prohibited. It is doubtful, however, how far

¹ Tooke's "Hist. Prices," vi. 680.

² United States "Finance Report," 1868, p. 62.

³ Martin's "China," i. 175.

⁴ Martin's "China," i. 176.

the government succeeded in practically enforcing these interdicts.¹

Brick tea money.—Brick tea is a mixture of spoiled leaves and stalks of the tea plant, of leaves of wild plants and of bullocks' blood, dried in ovens. These substances being pressed together in the form of bricks receive the name of brick tea. It is manufactured in Southern China. The infusion made from it is mingled with rye meal, mutton fat, and salt, and this mess is used as an article of diet by the inhabitants near the frontier which separates China from the Russian territory. Each brick weighs from 3 to 3½ pounds, and in the year 1851 they were worth about two Russian roubles each, and passed, in the neighbourhood where they were consumed, as money. Written promissory notes payable in brick tea were also employed for the purpose of money.²

Mines.—In 1838, a memorial addressed to the emperor stated that forty to fifty thousand workmen were employed in silver mining in certain specified districts of the empire; and that the annual produce was "not far from two million taels of silver."³ The same memorial adds that there are also other mines in the empire, not so rich as those named, but which probably produce more silver.

Martin, writing a few years later, says, that the working of some of the silver mines is forbidden; and that the others employ 20,000 workmen and yield \$3,000,000 a year. Also that very little gold is obtained.⁴

Randot says, that "some one has estimated the produce of the Chinese mines at 6000 kilograms of gold and 2,000,000 of silver."⁵ Otreskoff, writing in 1856, is "disposed to think that the present production of gold in

¹ Consult Postlethwayt's "Dic. of Com.," art. "Gold."

² "Chinese Repository," xx. 30.

³ Dr. Williams, "Commercial Guide," ed. Hong Kong, 1863, p. 275.

⁴ Martin's "Hist. China," i. 177. For quicksilver, see Martin, i. 379. This metal is now obtained from California.

⁵ Report of the United States Monetary Commission, i, 560.

China is about £600,000 per annum, and of silver £180,000 per annum.”¹ Baron Richtofen, writing in 1872, gives a graphic account of the impositions, robberies, and violence to which the miners are subjected, and declares that mining is impossible under such circumstances. The proceeds are divided into three parts, one for the emperor, one for the mandarins, and one for the owner, who rarely succeeds in getting his product to market. Mr. Seward says, that since 1872, the roads are more secure from highway robbers, and that it is possible that silver mining may have gained encouragement.

Baron Richtofen says, that gold is produced in at least sixty-four departments distributed throughout fourteen provinces and always at a loss. “The gold washers probably earn less than they can get for ordinary labour, and take to that occupation only when there is the least demand for field work. We can, therefore, safely assume, speaking generally, that the yield of gold is a measure of the poverty of the province.” Mr. Kingsmill says essentially the same thing.²

From these various evidences I have ventured to make the following rough estimate of the production of the precious metals in China at the two periods named. 1838: workmen in silver mines 30,000, annual product of silver \$3,000,000. 1856: workmen in silver mines 10,000, annual product of silver \$1,000,000. 1838: workmen in gold washings 30,000, annual product in gold \$3,000,000. The product in gold has since diminished.

It will probably be safe to assume the production of the precious metals in China at the present time at about \$5,000,000, one-half each of gold and silver.

¹ Tooke's "Hist. Prices," vi. pp. 761-2.

² Mr. Seward's communication. The latest information concerning the gold and silver mines of China is embodied in the following paragraph from "Lloyd's Newspaper" of June 1, 1884:—"The Empress of China has issued a decree ordering the Viceroy and Governor of Yunnan to start public companies, with a view to open all the mines in Yunnan to procure gold, silver, copper, &c."

I have now brought the Monetary History of China down to the present time. If it appears to have been treated too briefly, my apology is the difficulty of condensing events, covering fifty-eight centuries of time, into the few pages to which I am limited for the purpose. These events are full of interest to the world; and it is my sincere hope that the course which I have herein so rapidly outlined, may prove sufficiently attractive for other scholars to more thoroughly and definitely trace.

CHAPTER III.

JAPAN.

Ancient money—Earliest coins—Gold and Silver—Rice—Paper money—Copper zenni—Feudal period—Copper and Gold mines—Mining laws—Mints—Progressive period—Arrival of the Portuguese.

THE historical period and era of Japan¹ commence with the year B.C. 660.

Previous to that period its history is obscure. Some native writers are of opinion that the present inhabitants owe their origin to aboriginal Ainōs; while others regard the Ainōs as the degenerate survivors of an ancient race, which also gave birth to the Japanese, and whose history is lost.

The curved and perforated pieces of soap-stone occasionally dug up in various parts of the country, and ascribed to a pre-historical period, may have been used as money,² or not; it is difficult to determine. There is little about the appearance of the oldest known coins of Japan to sustain a conjecture that these soap-stone relics were money, unless it be the holes through the middle of them; and as to drawing any inferences in this connection from the condition of society in the remote times to which the soap-stones belong, the Japanese themselves appear to place too little reliance upon the historical accounts of their own antiquity, to warrant the act.

The analogy between the perforations in these Japanese

¹ Known to the natives as Dai-nippou; corrupted by the mediæval Chinese into Shi-pen-kue; written by Marco Polo as Zipan-gu or Jipan-gu, whence Japan.

² See "The Mikado's Empire," by Griffis, New York, 1876, p. 53.

soap-stones and in the copper coins of a later period on the one hand, and the clay scarabæ of Egypt, whose peculiar design or shape was stamped upon the early coins of the neighbouring Greek colonies, on the other hand, is certainly worthy the study of antiquaries and archæologists. It may lead to a corroboration of the view maintained by Japanese scholars, that there existed in Japan a pre-Ainō civilization of a high order.¹

Our accounts of money in Japan begin with its earliest historical date. Mr. Titsingh, a Dutch author quoted by Malte-Brun, was said to have possessed a collection of Japanese coins which went back "as far as 600 years before Christ."² These coins, if genuine, and if there is no mistake as to the date, are probably all of copper; for we hear of no gold or silver in Japanese history, either as money or otherwise, until the period of the invasion of Southern Corea; A.D. 203, from which country, it is stated, the Japanese conquerors returned home with "eighty ships well laden with gold, silver, articles of wealth, silk, and precious goods of all kinds."³ With regard to the metal of which these coins are composed, it is worthy of remark that Mr. Titsingh says that some of the coins were "engraved," a fact that would seem to point to a more valuable metal than copper.⁴

The much higher antiquity of money in China, the intimate relations between China and Corea, and the proximity of Corea to Japan, suggest the probability that money was introduced from the first into the last-named

¹ Mr. Griffis, on the contrary, insinuates that the Ainōs, some of whom still dwell in remote parts of the islands, were the aborigines, and preceded all civilization in Japan.

² Titsingh is quoted as the author of "Verhandeligen Van het Bataviaasch genoostchap." Malte-Brun, ii. 61, Philadelphia edition, 1827. Sir Stamford Raffles, "Hist. Java," i. xxvii, mentions in the same connection a Mr. C. Tetsingh.

³ Griffis, 78, 79.

⁴ Malte-Brun, ii. 59, quoting Titsingh, as cited by Charpentier-Cossigny in his "Voyage to Bengal."

country at an earlier period than the seventh century B.C., but the writer has met with no historical trace of such an occurrence.

The next mention of money occurs in the fifth to the seventh centuries of the Christian era.

In the fifth and sixth centuries the religion, laws, customs, and inventions of China were introduced into Japan, and it seems probable that among the latter were the *kinsatsū*, or small paper notes. They were emitted exclusively by the feudal lords or daimios.¹ Until a very recent period they were never issued by either the imperial or shogunatic governments.² They were probably redeemable,³ and if so, were redeemed in early times in *rice*. This grain was the standard of value in the eighth century, and probably earlier.

It is stated that "silver was first presented to the emperor in A.D. 670."⁴ It is difficult to reconcile this statement with the account of gold and silver captured in Corea, A.D. 203. Surely some of these spoils, if indeed not all of them, were delivered to the emperor.

Whether we believe that gold or silver pieces were used as money at the time of the Corean invasion, or in the seventh century, or at neither time, but that instead, *kinsatsū*, representing either copper coins or rice, were used as money at these early dates, it sounds strangely to be informed that in the eighth century "rice was the standard

¹ "For centuries past every great daimio has issued paper money current only in his *han*. There are over one hundred local varieties in the empire, of varied colours, values, and sizes." Griffis, p. 425.

² Information communicated by the Japanese Consul at San Francisco.

³ "Nanou, Japan, Lat. 37.02 N., Long. 136.58 E. August 17, 1866. At this place I first learned the fact that the princes issue, each in his own territory, paper money, taking the place of copper and silver. . . . This paper money is *redeemed* by the prince at his *yashi* (residence) in his own territory, or at Yeddo." B. B. Van Vlakenburg to the State Department of the United States.

⁴ Martin's "History of China," chapter on Japan, vol. i. p. 291.

of value and all taxes were paid in this grain," and that "the treasury consisted of imperial store-houses and granaries, as money was not then in general use."¹ Grain of any kind is greatly inferior as money to either metal or paper. Why, then, should a nation which had once learnt to employ the latter, return to the former? One answer is: irregular supplies of metal and danger (from counterfeits) of using paper; but this is not proved. Another answer is: that during the interval between the ancient times, when metallic money was exclusively employed in Japan, and the mediæval times, when rice formed some part, or else the basis for some part, of the currency, the empire sustained a decline of peace, security, and civilization, such as that which befell Europe at about the same period, and that corn-rents in Japan—for, except as to the extent that it was represented by paper-kinsatsū, corn-money seems to have been used only in the payment of agricultural rents—corn-rents in Japan are explicable upon precisely the same grounds as corn-rents in mediæval Europe.²

A review of the history of money in Japan from the earliest times to the eighth century of our era leads to the following conclusions:—

It is possible that money formed of perforated pieces of soap-stone was employed at a very remote period, and previous to the era of the Ainōs.

At the beginning of the historical period, viz., in the seventh century B.C., metallic discs were employed.

In the third century A.D. it seems probable that metallic discs were in use, and that at this date, if not earlier, some of them were of gold and silver.

In the fifth and sixth centuries A.D. the use of small paper notes emitted by the feudal lords, and, at first, probably redeemable in rice, was introduced from China.

¹ Griffis, p. 104. Agricultural incomes have for centuries past been reckoned in rice; indeed, they are still reckoned in it.

² See, on this subject, Adam Smith on Corn-Rents in England, and Hodgskin's "Travels," ii. 84, on Corn-Rents in Germany.

In the eighth century A.D. corn (rice) rents became common, and rice appears to have been the standard of value in the limited class of large transactions which the times permitted. This currency was probably supplemented by local kinsatsū and copper zenni for small change, the kinsatsū being probably redeemable in rice, and the copper zenni receivable only in retail transactions and at some fixed ratio to rice. .

The period under review—particularly the last five centuries thereof—seems to have been one of political and social decay. Among the marks and consequences of this decadence were the interruption of commerce with surrounding countries,¹ the practical overthrow of the imperial government, the destruction of inland commerce from civil war and insecurity, the prostration of credit, the era of feudalism, the emission of kinsatsū by the feudal lords, who at first liquidated them in rice, but afterwards over-issued and failed to redeem them, and paid their debts in this depreciating paper, while they collected their rents in grain.

Although some of these indications of decay are traceable so late as the eighth century, a contrary movement seems to have begun at an earlier period. Commerce was opened with China in the fifth and sixth centuries, and in the seventh, the central government of Japan resumed its authority,² and the progress of feudalism was arrested. With these changes commenced another phase in the history of money in Japan.

During the period A.D. 708-715, copper mines were discovered.³ In A.D. 749, gold mines were opened.⁴ The copper obtained from Suruga is said to have contained a considerable admixture of gold, a fact which, in the early days of their intercourse with Europeans, was probably not

¹ "And the stoppage of those supplies of copper from which the circulating zenni had theretofore been fabricated." Martin, i. 291.

² Griffis, p. 94.

³ Griffis, 111.

⁴ Ten years before this, to wit, in A.D. 739, a colossal copper figure of Buddha, fifty-three feet high and covered with gilt, was set up in a Japanese shrine. As to date of opening gold mines, see Martin, i. 291.

known to the Japanese, and of little value to them after it was known, for until quite recently they do not appear to have been acquainted with the art of separating these metals economically.¹ These facts will perhaps account for the eagerness of the Dutch to obtain Japanese copper, and for the enormous quantities of this metal which they exported to Holland.

The mediæval Japanese mining laws concerning copper are not known. Of the gold produced, two-thirds were claimed as his proportion by the emperor, and only one-third allowed to the proprietor of the land,² who, in all cases, was the lord of the feud. The actual miner, a serf or villein belonging to the soil, probably received a mere pittance of rice for his labour. No mine could be opened without express permission of the emperor, and there was a prohibition against digging beyond a certain depth.³ In recent times these rules have been greatly modified.⁴

The first mints, we are informed, were established in 1588, forty and odd years after the arrival of the Portuguese.⁵ This statement appears to need qualification; for, if the account concerning Mr. Titsingh is to be credited, metallic moneys were fabricated in Japan 600 years before Christ, and, according to other evidence, copper zenni of native fabrication were common, though not plentiful, when the Portuguese arrived. Previous to 1588, the only metallic moneys fabricated were the zenni, and some rude gold and silver pieces; the former having been cast, and the latter

¹ Martin, i. 289, and Galownin, p. 165.

² Malte-Brun, ii. 53, and Martin, i. 288.

³ Malte-Brun, ii. 53, and Martin, i. 289. The former asserts the reason for this rule to have been the desire to steady the value of the metal by regulating its production—a policy not without wisdom in a small and isolated country. The latter asserts the reason to have been the fear that the mines would be too soon exhausted.

⁴ The existing mining laws of Japan are set forth in Mr. F. R. Plunkett's Report to Sir Harry Parkes, 1876, and summarized in Griffis, 602.

⁵ Martin, i. 292, and Griffis, 286.

hammered. The meaning of the statement quoted from Martin and Griffis may therefore be, that in 1588 the first coining presses were introduced, and that moneys of gold and silver were first made in considerable quantities, and after some regular system of size, weight, fineness, and designs. Or it may mean that in 1588, metallic moneys were first systematically or exclusively made by authority of the shogunate ; those of a previous date having been fabricated chiefly by the daimios.¹

From the seventh to the twelfth centuries of our era, the money of Japan appears to have consisted of rice, supplemented by copper moneys of provincial, or yet more local, fabrication. There are no evidences of paper money during this period ; although, as its history is somewhat obscure, it is not impossible that such money may have been employed. Feudalism was still the characteristic condition of society, but the feudal system was passing away ; at least, it was not gaining ground. The physical resources of the country appear to have increased during the first part of this era and during the last to have diminished.

From the twelfth century dates the usurpation of the shogun and the establishment of the shogunate as the practical government of Japan. Feudalism was now again repressed—this time with greater energy than before. The daimios were compelled to personally reside at the seat of the shogunate ; the mikado, though respected as the supreme power, was secluded and deprived of all substantial part in the affairs of the empire ; and the usurper exercised many centralized functions, and in after years conducted all transactions with foreigners and foreign governments.

During the four centuries from the establishment of the shogunate to the arrival of the Portuguese, the money of Japan differed from what it had been during the previous five centuries. Generally speaking, it consisted chiefly of

¹ "Japan as it Was and Is," by Richard Hildreth, Boston, 1856, p. 200, n., and "Universal History," vol. ix. p. 708.

rice with copper moneys for small change. These may have been supplemented by rude pieces of gold and silver money, and kinsatsū.¹ I have not been able to determine whether the copper or other metallic moneys (if any) which circulated during this period were emitted by the shogun or by the feudal lords. Probability points to the former.

This brings the history of money in Japan down to the opening of intercourse with the Portuguese in 1542; an event that has at length had the result of bringing Japan within the family of Modern nations; while the same event, operating upon a different state of affairs in the other countries of Asia, has left them where it found them, belonging to the Ancient world.

¹ In Japan paper money was emitted from 1319 to 1331 under the daira Go Daigo No tenoo. It remained in circulation for sixty or seventy years. "Chinese Repository," vol. xx. pp. 289-295.

CHAPTER IV.

INDIA, PRIOR TO ALEXANDER THE GREAT.

India never united under one government: hence difficult to describe its monetary systems comprehensively—These systems include several instructive experiments, particularly those of Mahomed bin Tuglah, in the fourteenth century of our era—Antiquity of money in India—As ancient as in China—Proofs: from populousness and phase of civilization; from Code of Manou: from the Vedic writings; from the Buddhic writings; from numismatic remains; from language—Supply of coining metals from the mines, and from foreign commerce—Standard of money at various eras: the copper standard; the clay standard; the copper standard again—Silver money not permanently employed until A.D. 1793; nor paper money, permanently, until during the present century—Ratios of value between gold and silver, between silver and copper—Review—Historical eras of India marked by foreign invasions—Sesostris—Darius—Alexander—Seleucus—Embassy of Megasthenes—Invasion of Antiochus—Mahomedan conquest.

UNLIKE China, India has never been united by one government; hence an attempt to describe its numerous and varied monetary systems under a single view runs risk of becoming misleading. Notwithstanding the objection to such a course, the paucity of historical materials compels it to be pursued until the period of the Mahomedan conquest, when a consideration of the subject under the three great natural divisions of north-western, north-eastern, and southern India becomes feasible.

To describe a series of monetary systems extending backward for, perhaps, fifty centuries, would appear an idle task in a work which, like the present one, aims to be of practical utility, did not such a retrospect serve to prepare the mind to understand and derive instruction from the more modern systems of the series, among which are the very

interesting experiments of Mahomed bin Tuglah, a monetary reformer of the fourteenth century of our era.

The antiquity of money in India appears to be as great as in China, and is susceptible of being traced backward to about thirty centuries before Christ. The proofs of this great antiquity are derived from various sources, each of which will be examined in due order. These sources are : (1) The most ancient accounts of the population and condition of society in India ; (2) The Code of Manou ; (3) The Vedic writings ; (4) The Buddhic writings ; (5) Numismatic and other archæological remains ; (6) Comparative philology.

1. *Accounts of the population and society of ancient India.*—It is generally conceded by those who have made a study of the subject, that the race who now form the bulk of the Sudra, or lowest class of persons in India, were very anciently a numerous people, who had “attained to a high condition of civilization, so as to form large communities, to establish kingdoms, and, besides cultivating the soil, to carry on extensive commerce ;”¹ that the Hindoos entered India from a foreign country, and having possessed themselves of the soil, they reduced the Sudra, or aboriginal inhabitants, to serfdom ; that they brought with them the Sanscrit language ; and that all this happened more than three thousand, and possibly more than four thousand five hundred years ago.² At later, though still very ancient periods, the populousness and commercial phase of India are proved by Manou, by the Vedic writings, by the Indian remains found in Egyptian tombs of the fifteenth century B.C., and, lastly, by Herodotus.³

A people may exist in the pastoral state without the use of money ; it may enter upon the agricultural phase of social

¹ “The Land of the Veda,” by Rev. Peter Percival, London, 1854, p. 31.

² Lieut.-Gen. Briggs, F.R.S., as quoted in Percival, pp. 29-32.

³ See extracts from the Code of Manou further on in the text ; Wilkinson’s “Ancient Egyptians ;” Herodotus, lib. iii.

existence before the necessity of employing money becomes overpowering; but when, as in the present case, the agricultural phase has continued so long that manufactures and foreign commerce have begun to develop themselves, it is ventured to be assumed that no large society could long hold together without the agency of money,¹ and therefore, that such a society which did hold together, must, of necessity, have employed money of some sort; not merely commodities used in voluntary barter, but money, that is to say, either commodities, symbols, or numeraries, stamped by public authority, and used as the common means of payment and legal or customary expression of price. That India, at the time it was invaded by the Hindoos, contained a population sufficiently dense and civilized to require the use of money, there can be but little doubt, and, upon the strength of the implication which these facts convey, it is regarded as quite safe to date back the use of money in this country to, at least, the period of that event.

2. *The Code of Manou.*—Amongst the most ancient literary monuments of India are the civil and religious institutes commonly known as the Code of Manou. The age ascribed to this work—varying usually with the cosmogonical belief of the commentator—is from the sixteenth to the ninth century B.C., the former being the view of Mr. Colebrooke, and the latter that of Sir William Jones and Mr. H. H. Wilson.² As a mean between these discordant opinions it has been decided to adopt the view of M. Vivien de Ste. Martin, who, after a very careful consideration of the subject, has

¹ "Society implies exchange, and exchange, money." F. Bastiat, "Harmonies of Polit. Econ." This is certainly the case when society, as in India at the period referred to, is not only exceedingly numerous, but advanced in civilization beyond the early agricultural into the manufacturing and commercial phase.

² Messrs. Max Müller and Cowell hold very extreme views on this subject. See Marsden's "Numismata Orientalia," edited by Edward Thomas, London, 1874, p. 5. It is to be remarked that, in the title of the edition of this work published in 1876 the word "Marsden" is replaced by "International."

assigned the era of the extant Code of Manou—not that of Manou himself—to the twelfth or thirteenth century B.C.¹ Like all civil and most religious codes, this one has evidently undergone modification, and part of this modification may possibly be traced down to so late a date as that assigned to the entire code by Max Müller. Among the unmodified, or at least most ancient portions, would however seem to be included all those to which are prefixed such phrases as, “This law was enacted by Manou,” chapter viii. section 139; “I will next propound the established law concerning assault and battery,” viii. 278; “The names of copper, silver, and gold weights which are commonly used among men,” viii. 131, &c.²

That the equivalents alluded to in the last paragraph were handed down from a higher antiquity than that of the extant code appears to be also implied in the fact that while the order of importance in the paragraph is, 1st, copper, 2nd, silver, and 3rd, gold, in the table which follows it is 1st, silver, 2nd, gold, 3rd, copper. This bespeaks rearrangement of some previous table.³ What is far more certain, however, is that the table relates to moneys as well as weights.

Omitting the first portion of this table, which relates to minute equivalents of mustard seeds and barley corns, and adapting Marsden’s English equivalents, determined after the studies of several distinguished metrologists, the table stands as follows: ⁴—

¹ “Chronicles of the Pathan Kings of Delhi,” by Edward Thomas. London, Trübner, 1871, 8vo. p. 168.

² “The Code of Manou,” trans. by Sir Wm. Jones, ed. by G. C. Haughton, London, 1825.

³ Marsden holds that alteration in the Code is implied in the use of two discordant systems of enumeration in the table of weights and moneys, viz., the binary and decimal. There is no doubt that the Code has undergone many changes; but this particular reason for thinking so is far from being conclusive. It is possible that the binary and decimal systems were used simultaneously; and if not, it is probable the change was made long before the era of the Code now extant.

⁴ Marsden’s “Numis. Orient.,” p. 13.

CODE OF MANOU.

Silver Weights, or Coins.

	English grains.
1 Rati	1.75
2 Rati = 1 Máshaka	3.50
32 Rati = 1 Dharana (from <i>dhri</i> , to hold), or 1 Purana (<i>purana</i> , old)	56.00
320 Rati = 1 Satamana	560.00

Gold Weights, or Coins.

5 Rati = 1 Másha ¹	8.75
80 Rati = 1 Suvarna	140.00
320 Rati = 1 Pala or Nishka	560.00
3200 Rati = 1 Dharana	5600.00

Copper Weights, or Coins.

80 Rati = 1 Kárshápána	140.00
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Elsewhere in the Code of Manou there are references to the precious metals, that is to say, gold, silver, and copper, which point to a higher estimation of them than of mere commodities. The italics in the following examples do not appear in the original text:—

“Of old *hoards* and precious minerals in the earth, the king is entitled to *half*, by reason of his general protection and because he is lord paramount of the soil,” viii. 39.

“From a junction (combined use?) of water and fire, arose gold and silver,” v. 113.

Of a witness it says: “By speaking falsely in a cause concerning *gold*, he kills the born and the unborn”—an extreme anathema, viii. 99.

“Let the judge cause . . . a merchant to swear by his cattle, grain, and *gold*,” viii. 113. Other classes of persons are to swear by other characteristic or important objects.

“Day by day must the king, though engaged in forensic

¹ Silver *máshas* are alluded to in the Code, viii. 298; “a *másha* of gold,” in viii. 319; and a plant called a *másha*, in ix. 39. Wilkinson translates the *Egyptian* word *masha* as weights or balances, and *mer masha* as superintendent of weights or balances. See his “Ancient Egyptians,” Scribner’s Am. Ed. i. 285.

business, consider the great objects of public measures, and enquire into the state of his . . . *mines of precious metals*," &c. viii. 419. The precious metals are meant, of course, to include copper.

"Robbing the *gold* of a priest," ix. 235, and stealing "sacred *gold*," ix. 237, are classed with the highest crimes. A similar solicitude and high regard for sacred gold occurs in chapter viii. and elsewhere. The words which follow the quoted clauses in chapter ix., namely, "Such is the ordinance of Manou," seem to indicate that, whatever may be the date of the Code which has come down to us, gold was held to be "sacred" so far back as the time of Manou himself.

"*Debasers of metals*" are classed with rogues, ix. 258. "The most pernicious of all deceivers is a *goldsmith* who commits frauds; the king shall order him to be cut piecemeal with razors," ix. 292.

We now come to plainer implications of, and allusions to, money.

"If he speak falsely, through covetousness, he shall be fined a thousand *panas*," viii. 120. As no reference is here made to gold, silver, copper, clay, wood, or any other substance of which these *panas* may have been composed, the fact was probably of no importance, and this could only have been the case when the *panas* were money.¹

The prices of commodities are to be fixed by the king, viii. 402. This clause not only implies the use of money, but also that the whole sum of money in use, as related to the number of exchanges to be effected by it, had

¹ The word "money" occurs in many places in the English translation of the Code, e.g. viii. 212, 213, &c. This word in any document older than the dedication of the temple of Juno Moneta as a mint in the city of Rome is an anachronism, although an unavoidable one, because in English there is no other well-known term for *nummus*, "numerary" being too technical. For the reason that "money" in the Code of Manou is an anachronism, and is not warranted by the original Sanscrit text, no attention has herein been paid to its appearance in the translation.

undergone, or was subject to violent or injurious fluctuations. There could have been no other reason for the enactment of such a law.

“Usurers” are mentioned in viii. 102, and a tax of 5 per cent. on the profits of sales, in viii. 398—both of which passages are regarded as implying the use of money.

The law of usury or interest is set forth at some length in viii. 140, and in the section which follows it. Alluding to the very proper regulation that the scale is “in proportion to the risk,” the rates are fixed as follows:—on pledges, $1\frac{1}{4}$ per cent. a month; without pledges or security, 2 per cent.; from a priest, 2 per cent.; a soldier, 3 per cent.; a merchant, 4 per cent.; and a mechanic or servile man, 5 per cent. Compound interest is forbidden altogether, viii. 245. While it is true that usury or interest may be a payment in commodities for the loan of other commodities, yet it is held that, where the usurious transactions are so numerous as to call for the use of a refined scale of payments like the above one, and a scale wherein no provision is made for the deterioration of the things loaned, they relate not to commodities, but to money. The employment of pledges also indicates the use of money. Whatever doubt there may be on the subject will certainly be dissipated by a subsequent paragraph of the same chapter, which reads as follows:—

“Interest on money must never be more than enough to double the debt;” on grain, fruit, wool, animals, or other things in kind (translated “same kind”), “it must never be more than enough to make the debt quintuple.”¹

Whilst in making this distinction between a just rate of interest on money and on commodities Manou commits an error of principle which is not to be passed unnoticed, it is held that this passage conclusively establishes the inference that, when the extant Code was written, money was, and had been for a long time, in use in India.

¹ This law is repeated in the “Damathat,” a commentary on the Code of Manou (“Damathat,” Eng. trans. p. 88). There was a similar law in Pharaonic Egypt (Rawlinson’s “Herodotus,” ii. 136 n.).

3. *The Vedic writings*.—These scriptures have been assigned to so remote a period as the thirty-second century B.C.¹ With more moderation they are attributed by Ste. Martin to about the year 1200 B.C.²

In the Rig Veda Sanhita, 4th ashtaka, 7th adhyáya, sukta xlvii. verse 22, an allusion is made to purses of gold. In verse 23, purses and lumps of gold are mentioned in a connection that appears to indicate money. Marsden, p. 33, supposes that the passage refers to stamped lumps of the value of a *suvarna*. In another part of the Vedas, allusion is made to *dinára*,³ a name long used in India for that of a coin or sum of money. From India it made its way to Persia and Arabia as the *dinar*, and to Rome as the *denarius*. From the *denarius* it became corrupted into the *denny* and *penny*, for which coin or sum of money its original initial letter, *d*, is still in use in England.

The Sutras of Panini, a Vedic work which is assigned to a period ranging from the twelfth to the sixth century B.C., speaks very distinctly of coined money, and derives *rúpya* from *rupa*, *i.e.* struck, or coined. It is from this word that the modern *rupee* is derived.⁴

The *Mahábhárata*, sometimes called the Fifth Veda, is an epic composition whose subject is a great war that occurred about B.C. 1400. The date of the poem itself is not determined, but it is beyond all doubt earlier than the fifth century B.C. It makes frequent and unmistakable mention of money.⁵

4. *The Buddhist writings*.—The next allusions to money in Indian literature occur in the institutes of Buddha. The age of these scriptures is variously ascribed to periods between the eleventh and sixth centuries B.C. The weight of evidence, however, is in favour of the more modern date.

¹ Dow's "Feristah," p. xxvii.

² Marsden, "Numis. Orient.," p. 5.

³ Marsden, "Numis. Orient.," pp. 34, 35.

⁴ Marsden, "Numis. Orient.," p. 39; Sutra, v. 2, 119.

⁵ Some of the passages appear in Marsden's "Numis. Orient."

The *Sramanas* contain an ordinance forbidding the touching of gold or silver.¹ Whether this singular interdict is to be attributed to an observed immoral influence exercised by mining for the precious metals, or was part of a system of clay or copper moneys, the integrity of which demanded the prohibition of all other moneys or materials out of which moneys might be made, or whether it had some other origin or object, is not to be gathered from the account of it before us. Mr. Ball recently noticed that, in Laddak, in the Punjab, the Buddhists, not daring to search for gold, had abandoned the industry to certain Mahomedans from Bali, and, evidently unaware of the interdict in the *Sramanas*, he ascribes the avoidance of gold mining to a desire not to neglect agriculture.²

The Buddhist scriptures, in other places, are full of allusions to moneys and coins, many of which allusions have been collected together by M. Burnouf.³

A commentary on the *Vinaya*, which (the commentary) is supposed to have been written about the fifth century of our era, mentions gold, silver, copper, wooden, and lacquer moneys, the latter being of lac or resin with a figure stamped upon them; but, aside from its allusion to these singular moneys, the passage is assigned to too recent a date to have any bearing upon the present inquiry.⁴

5. *Numismatic Remains*.—Modern archæological discovery and research have done much to elucidate the early history of money in India. The credit of the former belongs chiefly to Englishmen; of the latter, to the French and Germans.⁵

¹ Del Mar's "Hist. Prec. Met.," p. 345.

² V. Ball, "Geological Survey of India," part iii., on Econ. Geol. London, 1881, p. 213; and Cunningham's "Laddak," p. 232.

³ Burnouf, "Introduction à l'Histoire de Bouddhisme," Paris, 1844, pp. 91, 102, 103, 146, 147, 236, 238, 243, 245, 258 n, 329 n, 597.

⁴ Marsden, "Numis. Orient.," p. 42.

⁵ "In England the medals (coins) of the East have never been thought worthy of attention. . . . We must seek for information in Continental rather than English publications." Wilson's "Ariana An-

Numbers of ancient Indian coins have been unearthed in various parts of the country, chiefly, however, in Bactria, the Punjab, and generally the more northern regions; few having been found below Allabahad.¹ By far the greatest number of those found in north-western India were of stamped copper, although many were of gold, silver, billon, plated copper,² bronze, brass, cast copper, nickel, tin, and even lead. In Bengal the principal money finds have been of cowries, the metallic moneys being comparatively few.

Some of the coins in these various finds belong to an archaic period, one that must have antedated any of the foreign invasions of India. This inference rests upon the rude and unconventional forms and types which the coins present, and upon the absence of symbols belonging to any known political or religious system. Upon first seeing the Behat coins,³ the learned Prinsep cautiously ascribed them to the early part of the Christian era;⁴ but a closer study induced him to attribute them, without reserve, to a period anterior at least to the Greek invasion of the fourth century B.C.⁵ They are entirely independent of the Greek type of coins, and undoubtedly preceded them.⁶ Still later on,

tiqua," p. 27. The principal English contributors to Oriental numismatics are Masson, Prinsep, Maj. Cunningham, Gen. Ventura, Col. Stacey, Col. Tod, Marsden, Wilson, and Thomas.

¹ Marsden, "Numis. Orient.," p. 37.

² Plated copper coins of Indo-Scythic kings of the second and first centuries B.C. "Essays on Indian Antiquities of the late James Prinsep," edited by Edward Thomas. London, Murray, 1858, 8vo. ii. 89, 214.

³ Found by Capt. Cautley, in 1833, near Behat, the ancient capital of a district extending down the Doab of the Ganges and Jumna below Hastinapura, and westward along the last-named river, and along the foot of the Himalayas to the Punjab. The coins were of silver and copper, chiefly the former, and belonged to periods beginning with the most ancient archaic time, and ending with that of Buddhism. Consult Prinsep's "Essays," i. 204, and Wilson's "Ariana Antiq.," pp. 16, 20.

⁴ Prinsep's "Essays," i. 202.

⁵ Ibid. pp. 208, 209.

⁶ Marsden, "Numis. Orient.," pp. 35, 36, 43.

Prinsep says: "We may infer that at or about the era of Manou, the Hindoos were already in possession of such a scheme of exchange as recognized the use of fixed and determinate weights of metal, not only as general equivalents and measures of value, but further, that the system had already advanced so far as to adopt small and convenient sections of metal into the category of current money; and that the punch-marked pieces may be taken to exemplify the first germs of improved commercial and fiscal aptitude expressed by the transitional movement from normal weights to absolute coins." The view herein assumed by Prinsep, that these coins were the earliest moneys of India, may or may not be correct; it does not affect his arguments that they were ante-Grecian, and that they were also ante-Vedic.

Says Thomas: "They were the produce of purely home fancies and local thought, and have no reference to either the Veda, the doctrines of Buddha, or any other religious or political belief or tradition."¹

Says Wilson: "They extend downward from the most ancient period, until that one which immediately preceded Buddhism."²

Says Marsden: "We can produce flat pieces of metal, some round, some square or oblong, adjusted with considerable accuracy to a fixed weight, and usually of uniform metallic purity, verified and stamped anew with distinctive symbols by succeeding generations, which clearly constituted an effective currency long before the ultimate date of the engrossment of the Institutes (Code) of Manou."³

A large hoard of this class of coins, supposed to have belonged to the remote Pandu race (a sort of Indian Druids), was found in 1807 in Coimbatore.⁴

From a careful study of the types of the archaic coins of

¹ Thomas, in Marsden, pp. 58, 59.

² Wilson's "Ariana Antiq." pp. 16, 20.

³ Marsden, p. 52.

⁴ Walter Elliott, "Madras Jour. of Lit. and Science," 1858, p. 227.

India, from observations based upon the respective methods of coining these coins and those of the western world, and from the fact that the finds of Græco-Bactrian coins always included some of these dissimilar, and evidently older coins, it was concluded by Marsden that the various steps of the art of coinage in India, both as to stamping and casting, "must have been effected before the advent of the Greeks."¹

Thus much with respect to the numismatic evidences of the antiquity of money in India. With regard to the indications afforded by the relative numbers of coins found of copper, silver, and gold, no safe dependence can be placed upon them. It is well known that where copper coins will corrode and disappear from the action of the elements, silver, and especially gold ones, will survive. Moreover, as it does not appear that either silver or gold coins were ever used as money in India until very recent times, but only as adjuncts to or multipliers for the copper coins, it follows that the silver and gold coins were overvalued, and therefore that it did not pay to melt them down; whilst, on the other hand, whenever, indeed, the copper coins themselves were not overvalued—as against commodities, which might have been done by means of limiting their emission, or by an arbitrary regulation of prices—they were worth as much in the melting-pot as in the form of money, and immense numbers of them were doubtless melted from time to time.²

6. *Comparative philology*.—From this source are obtained still further proofs of the antiquity of money in India.

Among the archaic coins found at Behat, only one possesses what appears to be alphabetical characters, and these resemble the Lat, or most ancient form of Sanscrit.³

In allusion to the term *kasu*, corruptly *cash*, meaning coins, or coined or cast money, it is stated that the study of

¹ Marsden, p. 55.

² An instance of this sort (the melting of copper coins) is supplied by Tavernier, and relates to Persia, A.D. 1664. Marsden, p. 53.

³ Prinsep, i. 210.

Dravidian roots in the existing Tamil language tends to “prove that coined money was in use at the period of the compilation of the text of India’s earliest lawgiver.” This carries it back to the period of the oldest Veda, and it may have been in use ages before.¹ The occurrence of the word *dinar* in both the Vedas and Buddha is another proof of the same character.²

We can now advantageously survey the evidences of the antiquity of money in India. They are derived from so many independent sources, and some of them are so strong, that it will be difficult to successfully impugn their validity. They certainly prove the use of money, nay, of coined money, in India, long before the date assigned to it in Asia Minor (Lydia), a date which, by the way, rests solely upon the testimony of Herodotus, and the conjecture—perhaps well enough founded—that certain unlettered coins discovered in Lydia and Greece are those to which the Greek historian refers. That the Lydians and Greeks coined money at the date assigned to them is not what is doubted herein, but that they coined the first moneys known to man. This is an assumption which, in the face of Chinese and Indian history and archæology, should no longer be accorded a footing.³ It not only shuts out all the ancient history of money, it asks us to believe that the earliest

¹ Marsden, p. 22; also see note 2, p. 77 of the present work, on Kārshāpana, or Kālāpanu.

² Marsden, pp. 34, 35.

³ Yet this is one of the most recent authoritative opinions on the subject. Says Mommsen: “From all that is to be gathered from the remains of antiquity, both historical and traditional, it is established beyond a doubt that money was first made in Asia Minor, and that the first moneys were of gold. . . . The most ancient moneys (*monnaies*) are incontestably the staters of Phocée, of Cyzique, and of Cesus.” “Histoire de la Monnaie Romaine,” par Theodore Mommsen, traduite de l’Allemand par le duc de Blacas. Paris, Fenardent, 1865, 3 vols. 8vo. vol. i. p. 1. It is needless to say that this sweeping assertion is overwhelmingly contradicted both by oriental literature, philology, and numismatics. Lenormant blindly follows Mommsen, and with much more heat than becomes a numismatist.

moneys were of gold, and that their value was regulated by the cost of producing this metal, both of which assumptions are quite erroneous.

Supply of coining metals from the mines.—From Mr. Ball's able survey of the economical geology of India it is quite clear that, although indications of gold are to be found all over the country, from Thibet to Malabar, yet that the placer deposits were exhausted at a very early period—probably before that of the Vedic writings—except of what little gold the freshets brought down each year into the river valleys, always an insignificant supply. The gold quartz deposits, if not naturally shallow, which is usually the case,¹ were not capable of being worked by the natives to more than a superficial depth.² The silver deposits were few and inaccessible to all except the inhabitants of the extreme northern regions.³ The copper deposits of India were more ample and more widely diffused; yet copper was always scarce in Bengal, and difficult to obtain in the Dekkan: facts which were due to the infrequency of the deposits, to the political disunity of the country, and to the bad state of the roads.

¹ The author is prepared to assert, after a lifetime of study and practice as a miner, and after having personally inspected nearly every important auriferous region of the world, that it contains but few gold quartz districts which have paid to work at a depth exceeding 300 or 400 feet.

² The ancient East Indians worked their quartz mines down from 50 to 70 feet, in some instances 100 feet, and in a very few 150 feet. In recently found excavations exceeding this depth, the excess was the work of their successors, the Mahomedans. Allusion is made to ancient gold mines in the ranges of the Hindoo Koosh, Belur Tagh, and Altai, by Heeren, in his "Asiatic Nations, i. 47.

³ Sir Roderick Murchison had previously alluded much more favourably to the argentiferous resources of India, especially to the "wealth" of the Kulu Valley of the Vasour country, between the Beas, Sainji, and Parbutti rivers, and of the Manikaru mines; but Mr. Ball's opinion on the subject is entitled to the most weight. An old silver mine was found at Perwán, lat. 35.9, long. 69.16, near the Hindoo Koosh. Others are mentioned by Ouseley, p. 225; in Erskine's "Baber," pp. 139, 146; and by Masson, iii. 166.

Supply of coining metals from foreign commerce.—It has been conjectured by at least one antiquarian that in very remote times commercial intercourse existed between India and the silver-producing countries of America.¹ Without assenting to an opinion so little susceptible of convincing proof, it is tolerably well settled that commercial intercourse prevailed between India and the silver-producing countries of Europe. Evidences exist of Indian trade with Egypt fifteen centuries B.C.;² with Babylon and Phœnicia, and therefore with Greece and Spain, previous to the seventh century B.C.;³ and with all these countries, by way of Palmyra, at a later, though still very ancient date.⁴ By all these channels of commerce silver was transported from Greece and Spain to India, although in what quantity cannot now even be estimated. In the time of Pliny, the annual shipments of silver to India and China were given at a sum which modern commentators have computed as equal to about three hundred thousand ounces.⁵ Assuming this computation to be correct, and that two-thirds of the silver was destined for India, it yet remains too insignificant in amount to have been of any practical assistance towards the maintenance of a system of silver money in any considerable portion of India. In the very much more

¹ Such is the opinion of Mr. Treadwell, of Brooklyn, New York, an antiquarian who has devoted many years to the study of this subject.

² Wilkinson's "Ancient Egyptians," ii. 237.

³ Yeat's "History of Commerce," p. 25. At that period Greece and Spain possessed the only considerable silver mines in the world.

⁴ Robertson's "India."

⁵ Pliny, "Nat. Hist." xii. 18: "Minimâque computatione millis centena millia sestertiûm annis omnibus. India et Seres, peninsulaque illa (Arabia) imperis nostro adimunt. Tanto nobis deliciæ et feminæ constant." This sum has been variously translated at from £70,000 to £800,000. As this equivalent depends upon the value of the numerical sestercium, in metal coins, at a given time, and as both of these factors are undeterminable, the translation is purely chimerical. On this subject, consult Del Mar's "History of the Precious Met.," p. 191. Many of the silver coins exported to India were filled in with iron or lead. Lenormant, "La Monnaie," i. 234.

ancient period under review the shipments of silver to India must have been even less than they were in the time of Pliny.

After all conceivable sources of supply, both domestic and foreign, are considered, there does not appear to have been enough, either of silver or gold, obtainable in India after the period of the Hindoo invasion to have maintained a system of money composed of these metals at cost of production ; and it must be admitted that no such system could have prevailed throughout any considerable portion of the country.

Standard of money in India.—Taking together the various evidences before us, it would appear most likely that the earliest money of India was made of copper. Of this money no traces now remain, except such as are to be found in the archaic languages and literature of the country. The fitful and uncontrollable supplies of copper from the mines, and the difficulties of transport, must however have soon caused it to be abandoned for use as money, and to be supplanted by some other substance more amenable to control. Before this took place it could hardly fail to have been perceived that the number of pieces, rather than the quantity of material in them, was what affected prices, and no doubt many unsuccessful experiments were made with the view of enabling light coins to do the work of heavy ones—unsuccessful, because coins are easily, and at that period were sure to be, counterfeited. The fixing of prices enjoined in Manou, viii. 402, is a proof of such an experiment. But even after the adoption of mint monopoly and overvalued copper coins (an expedient which every nation of antiquity has tried at least once), the supplies of copper metal must have been too irregular for a permanent government to endure, and this must have compelled all such governments to have recourse to some other material for money.

The material out of which money or monetary symbols can safely be made—no matter in what age or country—must combine the following essential qualities :—

1. *Abundance*.—It must be sufficiently abundant to enable a suitable number of pieces to be made from it.

2. *Certainty of Supply*.—The supply must be regular, and not subject to interruption from the chances of mining discovery, from private monopoly, the seasons, the conditions of transport, nor the vicissitudes of war.

3. *Divisibility*.—It must be readily divisible into small pieces of uniform size and appearance.

4. *Plasticity*.—It must be sufficiently plastic or impressible for the pieces to take suitable marks of authority certifying their legitimacy.

5. *Durability*.—It must be capable of standing a considerable amount of wear and tear.

In archaic periods no substance combined these qualities so well as clay, and it is, accordingly, of this substance that all of the earlier moneys of any extended or permanent use were made.

As it may be difficult for those whose reading has taught them the easy creed that money has always been made of gold, silver, or copper, to believe that populous and civilized countries have ever entirely dispensed with these metals and employed far different materials to embody money, it is deemed essential in this place to adduce those authorities upon the analogy to be derived from whose testimony this assertion is made.

Says Du Halde: "It is related that after the reign of Han (B.C. 2119), a prince caused money to be made of stamped earth united with a strong glue, and, taking it into his head to put down copper money, he gathered as much as he could, buried it very deep in the earth, and killed the workmen who were employed about it, that none might know where it was hidden."¹

Says Humphreys: "It will be at once obvious that some other species of money preceded the use of coins."²

Stieglitz says that the most ancient moneys of the

¹ Du Halde's "Hist. China," ii. 288.

² Noel Humphreys' "Ancient Coins," p. 15.

western world were scarabæ of clay or stone.¹ In this opinion he is supported by S. Quintino.²

Suidas says that the moneys of the early Romans were scarabæ of baked clay.³

And to strengthen this testimony it may be added that porcelain coins or moneys of China, clay coins (probably) of Assyria and Babylon, terra cotta coins of Palmyra, and glass coins of Egypt and Arabia, are still extant. They will be described in this work under the heads of the countries to which they severally belong.

With regard to the affinity of clay dies to metal dies, and the derivation of mint stamps from the presumed earlier use of seals, the celebrated Thomas Burgon, in the course of an essay on Representations on (upon) Ancient Moneys, has said: "As the act of impressing a seal or signet was an understood sign of solemn compact from the most early periods, and as engraved seals and signets were undoubtedly in general use long anterior to the invention of coining, it appears highly probable that the original idea of impressing a stamp on the uncoined lumps of gold or silver was derived from the common application of a seal to wax. The earliest coins" (not moneys, generally, but coins) "may be therefore looked upon as pieces of sealed metal, which in fact they are, it being well known that at first, coins were impressed only on one side."⁴

Marsden, writing on the same subject, has said: "The universal employment of clay for almost every purpose of life naturally led to marked improvements in the processes of stamping and impressing the soft substance nature so readily hardened into durability and indestructibility. . . . Yielding metals were speedily subjected to a similar process; for the transition from the seal to the die would demand but a single step in the development of mechanical appli-

¹ Stieglitz, "Catalogus Numorum Veterum Græcorum," Christ. Ludov. Stieglitz, Leipsig, 1837, pp. vi. and 2.

² Humphreys, "Ancient Coins," p. 17.

³ Ibid. p. 17.

⁴ "London Numismatic Journal," 1837, p. 118.

ances. In effect, the first mint stamps were nothing more than authoritative seals."¹

Both of these writers alluded to Assyria and Babylonia, whose clay seals they knew to be older than the supposed origin of metal coinage in Lydia.² Whilst the affinity of clay and metal moulds or dies alluded to by them is of interest in this connection, the derivation of mint stamps from the assumed earlier use of seals cannot be admitted without reserve. Money and even coined money is probably older than the art of writing, and certainly as old as the use of seals. Many of the supposed seals of Babylon are, in all probability, coins; but whether they are seals or coins, they are fifteen centuries later than the copper coins of Sung,³ and therefore at least that interval of time later than the origin of stamped money.

If it be objected to the assumed use of clay coins in ancient India that no such coins have yet been found, it is to be replied that when Henry wrote his "History of Britain" no coins had been found of the Scots, Picts, or Welsh of the Anglo-Saxon period; yet that the ancient Welsh laws on coinage, which still survived, proved that such coins must have existed.⁴ Similarly, when Mill wrote his "History of India," no coins had been found in that country of a date prior to the Mongol conquest, a fact that led that author into the extraordinary conclusion that none had ever before been used in India.⁵ Since the publication of Mill's "History," myriads of such coins have been found.

It remains now to show how it was financially practicable to employ clay coins or tablets for money. With this object in view, it was merely necessary that the state should assume the monopoly of their fabrication, that they should

¹ Marsden, "Numis. Orient.," p. 56.

² See note 3, p. 69 of the present work.

³ See chap. ii. herein on the History of Money in China.

⁴ Henry, "Hist. Britain," iv. 263, 282, 283.

⁵ Mill, "Hist. India," ii. 183.

be rendered an exclusive and unlimited legal tender in all payments, that their number should be specifically and permanently limited, and that counterfeiting should be successfully kept down. History and analogy combine to assure us that these regulations will confer a value on any money, no matter of what material it may be composed, and that they will sustain that value without any other variation than that which may be occasioned by the greater or less frequency of the exchanges. Practically, and in order to maintain prices at the accustomed level, the number of such coins, tablets, pieces of paper, or what not, should not exceed the number of copper, silver, or other pieces which they may have been made to supplant.

If such a system of money existed in India—and there can be little doubt that it once did—it remains to show by what means it came to an end. These are to be found in the comparative ease with which clay tablets can be counterfeited and the difficulty of preventing unlawful additions to the circulation, and in the temptation on the part of a despotic and irresponsible government to surreptitiously increase the emissions of such a highly overvalued money. The inconveniences arising from the weight, cumbrousness, and liability to breakage of clay tablets, or the discovery of new mines of copper, or of other metals suitable for coinage, or the conquest or re-occupation of old ones, may have hastened its downfall. Whatever the cause or causes, it is quite clear, both from the Veda and Manou, that at the date of those writings the standard of money in India had returned to copper. Says Marsden: “The entire text of Manou proves that the standard of money, when metallic at all, was always of copper, a metal which in remote times was superior to any other for the purpose, on account of its more ample and steady supply—that of gold or silver being deficient and irregular.”¹

This view is, no doubt, substantially correct; yet, considering the long period covered by the mutations through

¹ Marsden, p. 53.

which this ancient and probably oft-altered code of Manou has passed, it is reasonable to suppose that more than one experiment was made during this period to economize the use of copper, or avoid the inconvenience of its variable supply, by resorting to the use of overvalued moneys, whether of clay, wood, lacquer,¹ or copper itself. In the end, however, these experiments gave way to the copper *kárshápana* standard,² as set forth in Manou. The scarcity of *kárshápana* appears to have been eked out with multipliers composed of overvalued silver and gold coins, and perhaps dividers composed of lead coins, cowries, almonds, or something of the sort; but the standard in India, as we understand it, was essentially and permanently of copper.

With certain interruptions occasioned by experiments which will be noticed in their proper place, this system of ancient India, similar to that of Japan previous to 1853, and of China at the present day, continued down to the year A.D. 1766, when it gave way to the regulations introduced by the British East India Company.

Before closing this account of the monetary standard in India, it is worth noticing that, except as to the Isle of France, which can scarcely be considered as part of India, no paper money was ever issued in this country until the year 1861 of our era.

The Hindoos of India had, in this respect, the example of China before them, and the Mahomedans of India that of China, Persia, and other countries; yet no effort appears

¹ Wooden and lacquer moneys are mentioned in the present text under the head of Buddhist testimony.

² *Kárshápana*: copper coins which, in the time of the extant Code of Manou, are calculated to have weighed about 140 grains each. *Kárshápana* appears to have always meant copper coins, except in Ceylon and on the western coasts of India, where it is applied to gold and silver ones (Marsden, p. 41). This diversity of custom may be explained either by supposing that *Kárshápana* became a generic term for money, or that the copper coins were overvalued. In this respect it will be observed that the gold coin (?) *Suvarna*, of 140 grains, and the copper coin *Kárshápana*, of 140 grains, were both of the same value, namely, 80 *rati*.

to have been made to utilize printed paper for monetary purposes. This may have been due to frequent wars and changes of administration, to the absence of a suitable material for making paper, or, as is most likely, to the inability of the people to read.¹

Ratio of value between the coining metals.—The few notices and inferences concerning the ratio of value between the metals, which are to be gleaned from the ancient history of India, are too unreliable for use as the basis of any precise inferences. It is probably safe to assume that, previous to the Phœnician and Babylonian commerce with India, silver was more valuable in that country than gold;² that during that commerce, or at least during the earlier portion of it, silver was exchanged for gold at an equal value, weight for weight; and that, owing to the prolificacy of the Phœnician silver mines in Spain and the Laurium silver mines in Greece, the value of silver continued to fall until at about the period of Alexander's invasion of India, when it stood in India at probably about 2 silver = 1 gold. As for the ratio used by Herodotus in computing Darius' spoil in Bactria and the Punjab, this was the ratio prevailing in Greece and not in India. From Alexander's time, owing to the establishment of systematic commerce between the East and West, the ratio in India gradually

¹ In China everybody is compelled to learn the art of reading; in India it is forbidden by the Brahminical code to instruct the Sutra, or most numerous class of the people. "Land of the Veda," by Rev. Peter Percival, London, 1854, p. 40.

² The superior value of silver to gold in very ancient times is attested by Boeckh, "Polit. Econ. Athen." i. 6. After any long interruption of commerce between the East and West, this superior value asserted itself. The ancient inhabitants of Germany valued silver more than gold. Tacitus, "German." 5. In the time of Nadir Shah, A.D. 1749, the Kurds gave gold for silver, weight for weight. Ritter, "Erdkunde," 395, in Wm. Roscher's "Polit. Econ.," New York, 1878, i. 356, and note 10. He adds "copper," but this appears incredible. A similar ratio of exchange is said to have prevailed in recent times between the Chinese and Indians (Tavernier's "Travels," Eng. ed. ii. 2, 23, 156); but this must have been quite local and temporary.

widened, until in the fifth century of our era it probably stood at 5 or 6 silver=1 gold, and there remained until the opening of the sea route to India by the Portuguese was effected.

As for the ratio between copper and silver, our information on the subject is too meagre to warrant any general conclusions. During the Mahomedan domination it is estimated by one author to have stood at 60 to 120 for 1; but the present writer believes that copper was more valuable—how much more, cannot be determined with precision.¹

Reviewing the history of money in India, we find that money was employed by the aborigines prior to the Hindoo invasion; that it was employed successively by the earliest Hindoos, and by the earliest Brahmins and Buddhists; and that, in short, there is no period of written history so remote that it does not contain allusions to some kind of money. We find that the supplies of the coining metals in India were so irregular and precarious, that overvalued moneys of clay, wood, and other substances were probably experimented with at very remote periods, to give place at last to copper coins; and that, substantially, copper metal, coined, may be regarded as having been the standard of value from at least the period of the Hindoo invasion to the British conquest.

In proceeding to divide the further history of money in India into convenient eras, it will be found that these are best determined with reference to the great foreign invasions which from time to time have changed the dynasties and altered the destinies of the country.

The next after the Hindoo invasion is that one imputed to Sesostris of Egypt, about B.C. 2000.² After a careful examination of the subject by Dr. Robertson, that historian was forced into the conclusion that the account of this expedition which has come down to us is apocryphal.³

About the year 525 B.C., Darius Hystaspes, King of

¹ Consult Festus; Letronne; Peyron; Thomas; and Lenormant.

² Diad. Sic., i. 34. ³ Robertson's "India," p. 7, and note 1.

Persia, appointed Scylax of Caryandra to take command of a squadron of boats fitted out at Caspatyrus, toward the upper part of the navigable course of the Indus, and to fall down its stream until he should reach the ocean. This task Scylax performed, though the obstacles he encountered lengthened the period of the expedition to two and a half years. The account he gave of the populousness, fertility, and high cultivation of that region of India through which his course lay, resulted in its being invaded about the year 521 by Darius himself; and although his conquests do not appear to have extended beyond the district watered by the Indus, he returned to Persia after having imposed tributes which were equal in amount to nearly a third of the whole revenue of the Persian monarchy.¹

So far as the conquest of Bactria and Ariana are concerned, these tributes may have been paid, as Mr. Mill argues, in grain.² Herodotus does not specify the mode of payment. But as to the Indian tribute he is explicit, and says it consisted of 360 talents in "gold dust," and estimates the value of this, according to the Greek ratio, at "thirteen times the value of silver."

I am inclined to believe that if such a tribute was exacted, it could not have been paid for more than a very short period. Columbus, Cortes, Pizarro, and the other conquerors of America tried the same thing, *i.e.* to exact a permanent tribute of the precious metals from the peoples whom they had subdued—and they all failed. After the usual preliminary plunder of trinkets and robbery of graves, the gold tribute must have come either from the placers or the river bars. The former are always exhausted of their principal contents when a country is first opened to that phase of civilization which demands the use of metals; the accumulations of the latter are too meagre to satisfy the requirements of a conqueror.

The invasion of Alexander the Great occurred about the

¹ "Herod.," iv. 90, 96, and 166.

² Mill's "India," ed. 1820, i. 280.

year B.C. 330. This commander crossed the Oxus, subdued and ravaged Bactria, climbed the Hindoo Koosh, descended into the Punjab, defeated Porus on the banks of the Hydaspes (Chelum), and thus made himself master of north-western India.

Like that of Darius, Alexander's army did not advance far beyond the Indus. On the banks of the Hyphasis (Béyah), his troops, worn out with fatigue, satiated with slaughter, and overladen with spoil, demanded to be led back to Persia; and their leader was fain to submit to their wishes. He retreated in boats or rafts down the Indus to the ocean, and thence marched overland to Persia; whilst his fleet, under Nearchus, sailed up the Persian gulf, and reopened a long forgotten channel of commerce between India and Europe.

The gold and silver spoil of this expedition, must have consisted of trinkets, jewellery, idols, furniture, and mural ornaments. To appease the clamour of his men for a speedy division, Alexander coined it in his camps.¹ Although, on account of the native standard of money being copper, there were probably but few gold or silver coins in this spoil, yet the total quantity of these previously in circulation (as multipliers), was so small, that there is evidence of an extraordinary scarcity of these metals for a long time after the conquest; an inference gathered from the subsequent use of overvalued nickel coins (about three-fourths copper and one-fourth nickel) by Euthydemus and Agothocles, kings of the Bactrian Greeks.² These coins were also used as multipliers.

About the year B.C. 312, Seleucus Nicator, a Greco-Babylonian monarch and one of the successors of Alexander, is said to have conducted an expedition into India, which penetrated further than Alexander's had done;³ although this is doubted by Robertson.⁴ Desirous of cultivating

¹ Marsden. A circumstantial account of Alexander's line of march will be found in Wilson's "Ariana Antiqua," p. 165.

² Marsden, 43.

³ Justin xv. 4; Pliny vi. 17.

⁴ Robertson's "India," note 12.

friendly relations with the sovereign of the Gangetic regions, Seleucus accredited to him, as ambassador, one Megasthenes, who, after reaching Allabahad, continued to reside there for several years. He is probably the first European who ever beheld the Ganges.¹ His account of the country, published after his return to the West, furnished the source of most of that information concerning India, which Diodorus Siculus, Strabo, and Arrian have transmitted to us.

About the year B.C. 200, Antiochus the Great of Syria, after subduing Parthia and Bactria, entered India and, concluding a peace with one of the sovereigns of the country, received from him a present of elephants and money and retired.

From this time until the Mahomedan invasions, which commenced during the seventh, and ended with the conquest of the country in the eleventh century, no Western powers acquired any territory or established any dominion in India.

In view of these various conquests of India and their several degrees of importance, it has been determined to divide the monetary history of the country into two other portions, the first of which will cover the period from Alexander the Great to the Mahomedan conquest, and the second from the latter event to the present time.

¹ Robertson's "India," p. 33.

CHAPTER V.

INDIA, FROM ALEXANDER THE GREAT TO THE MAHOMEDAN CONQUEST.

Futility of depending upon Greek or Latin authors for the history of this period—Aid to be derived from Chinese authority—From archaeological authority—Character of the Indian trade with the West—Trifling proportion of silver shipments—Supply of coining metals from the mines—Modern numismatic finds—The *topes*—Misleading inferences to which such finds may point, unless studied with caution—Ancient Indian custom of coining: 1, gold and silver multipliers of copper moneys; 2, gold, silver, and other coins for commemorative and proclamatory purposes—These practices found their way to Rome—Actual standard of money in India during the period under review—This was copper, with gold and silver multipliers, in Northern, and copper, with cowrie divisors, in Southern India—Abnormal camp coinages of invaders—These had no effect upon the copper standard—Rise of the Arabian power in the seventh century—Rapid conquest of Egypt and Persia, and monopolization of the Indian trade—The Italians carry a portion of the trade through Tartary, and afterwards submit to Mahomedan exactions and trade in Alexandria—The Crusades, and their influence in concentrating the Indian trade at Constantinople—Its engrossment by the Venetians—The Genoese capture Pera, and compel the Venetians to again trade through Alexandria—Capture of Constantinople by the Turks, and end of the Genoese trade with India—Rivalry for this trade leads to the discovery of the sea route by the Cape, and of America—Silver shipments to India during the Middle Ages—The Mahomedans invade India—Gradual progress of their arms, until they completely conquer the country in A.D. 1001—Imperceptible influence of this conquest upon the monetary system of India—The standard remains of copper.

THE examination and comparison of the fragments left us by Greek and Latin authors, or their monkish censors of the Middle Ages, was for a long time ranked among the highest efforts of learning. Modern research

has done much to overthrow this view by proving that the classical authors, particularly where they treat of affairs in countries other than their own, are often too unreliable to repay the effort to reconcile their discordant accounts.¹

An instance has already been given where reference to Chinese annals supplied a link in the chain of history, which subsequent numismatic research proved to be authentic.² Archæology has supplied further information, and the industry and patience of Prinsep and others in deciphering inscriptions in the dead and forgotten languages of India has resurrected a number of philological evidences, which add their testimony to the rest, and, combined with the closer study of Arabian authors, serve to throw a strong light upon the obscure portions of Indian history.³

From the conquest of Alexander to the Mahomedan invasions, several commercial routes were opened between India and the West, among the most important of which were those by the Persian Gulf viâ Bassora, by the Red Sea viâ Berenice and Alexandria, and overland by Samarcand and Palmyra, or viâ the Caspian and Euxine Seas. The trade

¹ Arrian's account (in Greek) and Quintus Curtius' (in Latin) of Alexander's invasion of India both state that money formed part of his spoil. Arrian, vi. 16, 4; Quintus Curtius, viii. c. xii. 14, 15; see also iii. c. xiii. 16, and v. c. ii. for meaning attached to *Signatus* (Consult Marsden, 6, 7). On the other hand, Arrian (v. 4) says the Indians with whom Alexander was engaged were without gold; while Pausanius the traveller, second century A.D., says (iii. c. xii. 3) that no coins were in use in India (trans. of T. Taylor, London, 1824, vol. i. p. 264)! Strabo is still more extravagant. "Gorges, the miner of Alexander" is his authority for the statement that "the Indians, unacquainted with mining and smelting, are ignorant of their own wealth." Strabo, xv. i. 30; see Dr. Robertson's criticism on Plutarch, Robertson's "India," p. 306.

² See chap. ii. p. 15, note 1, of present work.

³ The principal writers upon the history of India, from Alexander to the Mahomedan invasions, are Megasthenes, fourth century B.C.; Diodorus Siculus, B.C. 44; Strabo, died A.D. 25; Arrian, A.D. 140; Cosmus of Egypt, sixth century A.D.; and the two Arabian travellers of the ninth century A.D., edited by Abu Zeid al Hasan, of Siraf. See Robertson's "India," 331.

was successively engrossed by the Egyptians, the Greeks, the Babylonians, the Persians, the Romans, the Persians again (sixth century A.D.), the Arabians of the seventh and eighth centuries, and the Italian republics. The exports from India were chiefly cottons, spices (mainly pepper), silk, precious stones, ivory, and tortoise-shell. The exports from the West were chiefly woollens, linens, glass vessels, wine, and the precious metals, chiefly silver. Allusion has already been made to the possible quantity of the latter, which, at the utmost, could have been but trifling.

As to the supply of coining metals from the mines, no change can be discerned from the condition of affairs that existed before Alexander's invasion. From Gorges' exaggerated account it is probable that although the Hindoos were far from being "ignorant" of mining, their mode of treating silver ores was inferior to that which had been acquired by the Greeks in dealing with the refractory calamine deposits of Laurium. With regard to gold washings, no improvement upon the most ancient method was possible, and as to gold quartz, it was rather a question of ability to excavate the rock below certain depths, and of the continuance of the deposits, than of art in extracting the metal from the ore. In neither of these respects, however, could the Hindoos have learnt anything from contemporaneous nations until after the Mahomedan conquest.

In dealings with the monetary systems of this period, the most important guides to their proper understanding are the numismatic finds and comparisons, which have rewarded the labours of modern archæologists. The bulk of these finds are represented in the following list:—

Era. B.C. about	Dynasty.	Character of coins found.
330 to 312	Perso-Bactrian Satrapy	Gold, Silver, Copper.
312	Seleucus of Babylon, in Bactria	Gold, Silver, Copper.
310	Bactrian	Gold, Silver, Copper.
256 to 98	Greco-Bactrian	Silver, Copper.
100 to 40	Indo-Scythic	G. C. and P. C. ¹
100 to 40	Indo-Parthic	G. S. C. and P. C.

¹ Prinsep, ii. 89, 214, and Wilson's "Ariana Antiq."

Era.	Dynasty.	Character of coins found.
B.C. about 85 to —	Indo-Scythic Kings of Kabul (Kadphises and Kanerkes)	Gold, Copper.
A.D. about 161 to 319	Gupta	G. S. C. (the latter overvalued). ¹
226 to 632	Sassanian	G. S. C. Billon.
6th-8th cent.	Gupta	
10th cent.	Brahmin kings of Kabul and Punjab	Silver, Copper.
10th-12th cent.	Rajput coins, W. and N.W. India	Gold, Silver, Copper.
11th & 12th cent.	Kanauj coins	Gold, Silver, Copper.
12th cent.	Ghazni, N.W. India	G. S. C. and Brass.

G., gold; S., silver; C., copper; P. C., plated copper.

Some of these coins were found in circulation, others in buried hoards, amongst them a single find of 35,000 coins in brass boxes,² whilst others, again, were found in temples, tope, and other secure places of deposit.

Gold, silver, and copper coins have been secured of all the dynasties mentioned, together with the following exceptional pieces: a gold slug, weighing 2593 $\frac{1}{2}$ grains, of Eukratides, Greco-Bactrian line, B.C. 185; ³ nickel and copper coins of Euthydemus and Agathocles, two other monarchs of the Greco-Bactrian line; billon coins of the Sassanian dynasty; and cowries; the two last-named specimens coming from the Manikyala tope in the Punjab.⁴

A large proportion of all the finds hitherto made in India have been in the Punjab. Whether this resulted from the superior opportunities or industry of the antiquarians stationed in that region, or the comparative scarcity of ancient coins, cannot yet be determined. The period from

¹ "The Maháwanso," one of the Buddhist books, states that the Brahman Chánakya, a minister of Chandra Gupta, "with the view of raising revenues, converted (by recoinage) each kahápana into eight, and thus gained eighty kotis of kahápanas. Turnour's "Maháwanso," Ceylon, 1837, p. xl., and Max Müller's "Sanskrit Literature," p. 289; from Marsden, 45.

² These were found in 1853 at Korch Bahár, three miles south-west of Decahatta on the Dhurla ("P. K. D." 114, 115).

³ Akber, A.D. 1550, coined a gold slug worth 1000 rupees.

⁴ In this tope, opened in 1830, were found mingled together cowrie shells, gold coins of the Kadphises and Kanerkes, Roman consular coins shortly before the Christian era, and copper coins of the Sassanian line. Marsden, 35, 36, and "Ariana Antiqua," p. 15.

the fifth to the tenth century of our era is also but slightly represented. No safe inferences can be drawn from these circumstances.

The *tope* was a species of shrine built of solid masonry, and having a small apartment in its remotest interior, to gain access to which the entire pile had to be perforated. The purpose of the structure was evidently the preservation of the sacred relics and valuable historical signs found within them.

From the emblems found in or upon the *topes*, they are conjectured to be all of Buddhic origin, and from these and other indications, their date is assigned to the period from Buddha until about the fifth century of our era.¹

Because gold and silver coins, among others, have been found of nearly all the dynastic lines of India, it would be rash to assume that coins of these metals were used by them as money. Many of these coins have been found in the *topes*, a fact that of itself, and in the absence of contrary evidence, appears to indicate rarity, as is certainly the case with regard to the Roman coins and sacred relics found with them. Others of these gold and silver coins have been mingled in very small numbers with copper coins in vast quantities; and a considerable proportion of them are unique or nearly so.

Bearing in mind the ancient and long accustomed use of gold and silver coins in India as multipliers for copper moneys, and the comparative scarcity of these metals, whether from the poverty of the mines or the remoteness and difficulty of obtaining further supplies by means of foreign commerce, it is regarded as quite safe to conclude that these coins were either used as multipliers or else for commemorative or proclamatory purposes. The entire history of India is a protest against the assumption of their use as money.

¹ The Ceylon *topes* are identified as belonging to the fourth, third, second, and first centuries B.C., whilst others belong to later dates—that of Hidda, five miles south of Jelalabad, in Afghanistan, having contained some Roman coins of the Lower Empire, A.D. 407-74. Marsden, 35, 36, 43.

As the use of coins for multiplying, and also for memorial and notarial purposes—the latter would be called medals in modern days—are subjects that have an important bearing upon the history of money, it is deemed essential at this point to refer to them more particularly.

Until the Mahomedan conquest—and then only in those parts of the country completely subjected to the conquerors—the sovereigns of India did not claim or enforce the prerogative of coining gold or silver. It was a privilege conferred upon anybody who chose to ask for it, and who agreed to fabricate the coins of a given weight and fineness.¹ This clearly points to their use as merely multipliers of the standard copper moneys fabricated by the State, precisely as Spanish and other foreign coins, having no legal function, are to-day used by the Chinese to multiply sums in their standard copper *cash*. This custom appears to have found its way from India to Rome, where it appeared in the license accorded to the various *gens* to coin *denarii* of silver, having no legal tender function. Whenever these multipliers were overvalued by law, the government, of course, monopolized their coinage.

At certain periods of the Mahomedan supremacy in India, whilst attempts were being made or contemplated, to change the long time standard of money from copper to gold and silver, the prerogative of coining these metals was asserted and enforced by the sovereign, but this exceptional practice did not long prevail, and the common license of coining gold and silver was resumed. Traces of it are to be found from the remotest era until very recent times.² The fact that the value of the gold and silver could only be

¹ Marsden, 57.

² The sovereigns of the Dekkan and others accorded to village goldsmiths and others the privilege of coining gold and silver with the royal devices. "Pathan Kings of Delhi," p. 344. This custom was noticed by Ferishtah, 1357-74. "Bombay Text," i. 537. And so late as 1832, before the British East India government had been extended to all parts of the country, it was extensively practised in Central India. Sir J. Malcolm, "Central India," 1832, ii. 80.

expressed in copper coins is sufficient to prove that they were not the standard money of the country. Their function was simply that of representing large sums of coppers. The most significant evidence of royal accession or conquest in a country whose inhabitants were entirely illiterate, was the appearance of the new sovereign's superscription on the coins, and as this announcement could not, with convenience, be made on the copper coinage, on account of its great extent and diffusion, it was made on the gold and silver multipliers. A curious proof of this custom was afforded by the action of the Persian general of an Indo-Mahomedan army, who having been victorious over the Turks, and being suspected of high treason, diverted suspicion from himself to the king's son by coining and circulating pieces with the latter's superscription.¹ This custom can, however, be traced to the earliest period of lettered coins, both from the distinct proofs that copper was always the standard of money, and the rarity of gold and silver pieces and their fineness, which latter quality unfitted them for the wear and tear to which circulating money is subjected.²

Says Thomas: Some (perhaps many) of the Mahomedan coinages of India constituted merely "a sort of numismatic proclamation or assertion and declaration of conquest and supremacy." Where printing was rare and reading uncommon, a new gold and silver coinage, and a change in the prayers for the royal family were the most effective and rapid means of proclaiming the accession of a new ruler.³

This custom also found its way to Rome, and is to be traced in some of the otherwise superfluous coinages of that empire.⁴

¹ "Pathan Kings of Delhi," p. 34.

² The gold and silver coins of the Korch Bahár find were 981 to 990 fine, and in general the Delhi and Calcutta coins of these metals were 990 to 996 fine. "Pathan Kings of Delhi," 114-15.

³ "P. K. D." 1 and 111.

⁴ "Were every other record destroyed, the travels of Hadrian might be known by his coins alone." Gibbon, "Decline and Fall of the Roman

The standard of money in India during the period under review remained substantially what it had been during the previous one. There are not wanting indications—to be derived from the plated coins of the Indo-Scythic monarchs, the over-valued coppers of the Gupta race, and the billon coins of the Sassanian dynasty—that efforts were made at various times to change the standard from copper to silver, or from copper to a numerical system; but all these efforts appear to have failed. So few particulars are left to us of these experiments, that the causes of their failure can only be surmised at as having resulted from the insecurity of the governments which tried them, the backwardness of the art of coining, or the absence of any well defined monetary principle to support them. In all cases the standard of money reverted to copper. In Northern India the copper pieces were supplemented by gold and silver multipliers, in Southern India by dividers of cowrie shells;¹ a fact which, by the way, points very clearly to the higher value of copper in the south, and the proximity of copper mines to the north.

It is true that certain abnormal coinages of gold and silver took place from time to time as the result of invasions and conquests, and for the purpose of enabling the conqueror the more readily to divide the plunder of the expedition among his followers. We know that camp coins were struck by Alexander, by the Greco-Bactrian kings, and by others; but it must not be forgotten that even these coins, no matter what their number, were only multiplying tokens; that they did not derive their value from the materials out of which they were composed so much as from the quality which the law or immemorial custom conferred

Empire.” “With the assistance of coins you teach posterity the events of my reign.” Theodoric the Goth, in “Cassiodorus.” Humphreys’ “Ancient Coins,” London, 1850, p. 2.

¹ “P. K. D.” 110. Marsden (37) says that cowries formed the bulk of the currency between the beginning of the Christian era and the Mohamedan dynasty of A.D. 1203.

upon them of being exchangeable for a specified number of copper coins or cowries, which formed the real monetary circulation of the country.

The advent of Mahomet and rise of the Arabian power gave a new direction to the commerce between India and the West, and eventually subjected the former country to a new set of conquerors, whose dominion lasted until its present subversion by the British.

So rapid was the spread of Mahomedanism, that within a few years of the Hegira, Omar, the second in descent from Mahomet, conquered both Egypt and Persia, and thus secured the two principal gates of the lucrative commerce with the East. To obtain the productions of India without being obliged to subject themselves to the humiliating and ruinous exactions of the Arabians, the Christian states of Europe were obliged to conduct their trade through Tartary, a course that subjected it to great inconvenience, expense, and danger.

Towards the close of the seventh century the Italians so far conquered their aversion to the Mahomedans, as to purchase Indian products in the markets of Alexandria; and this city again became the principal emporium of the Indian trade until the occurrence of the Crusades in the eleventh century. At this period, and by assisting the crusaders with sea transportation for their armies, the Italians secured the valuable privilege of buying in the markets of Antioch and Tyre those products of India which found their way to the West by the Persian Gulf.

In 1204 the Venetians, by taking part in the reduction of Constantinople, secured the exclusive privilege of the Indian trade which centred at that great city, and acquired, with the Peloponnesus and some of the islands of the Archipelago (portions of the Greek empire), a complete chain of settlements from the Adriatic to the Bosphorus. With these advantages the route by Constantinople and the ports of the Euxine Sea became the most economical. The Genoese conquest of Pera in 1261 broke up this trade, and

compelled the Venetians to resort once more to Alexandria, where the duties levied on the transit of Indian goods by the Soldans of Egypt amounted to one-third the value of the commodities. Nevertheless the trade was so lucrative, that the Florentines in 1425 petitioned for and obtained a share of it. At this period the most valuable goods were transported by the Persian Gulf, Bussora, and Bagdad, and the heavier ones, including spices, by way of the Red Sea, the Nile, and Alexandria. In 1453 the Turks conquered Constantinople, and the Genoese trade came to an end. The rivalry for the trade to India had now become so intense, that every means were resorted to in order to command it; and it is to this feeling, far more than to any hope of glory in the discovery of new lands, or the propagation of religion, that is to be ascribed the patronage of Henry II. to Vasco de Gama, and of Ferdinand and Isabella to the immortal design of Columbus.

Among the articles of European production which were exchanged for Indian products and fabrics during this period were gold and silver, chiefly the latter, which, being produced from the Saxon and other German mines, and coined by the Easterlings, whence its name of sterling silver, made its way from Bruges, the principal entrepôt of the Hanseatic League for the trade with Southern Europe, to Italy, and thence to India. The quantity of silver which thus found its way to the East is not susceptible of being estimated with accuracy; but it will probably not be wrong to regard it as having been far too small to have any effect upon the monetary systems of India, and barely sufficient to eke out the demand in that country for bangles and other trifling articles of jewelry.

The conquest of Persia had scarcely been effected by the Mahomedans, when they began that series of incursions into India which ended with the entire conquest of that country three centuries later.

Mr. Thomas more than once remarks that the sole object of the Mahomedan conquest was plunder, an inference which

he derives from the haste of the conquerors, who coined their gold and silver spoil in camp, and before the metals were properly separated or refined. Nay, that they even coined their copper spoil.¹ But this may have been said of Darius, of Alexander, indeed of all the conquerors of India; it may likewise be said of the British. Mr. Thomas also holds that the Mahomedans did not even pretend to conquer for the sake of religion. Here I think he is mistaken. There was no want of religious pretence in this or any other conquest of India, not even in that by its present masters. With these speculations, however, this history has little to do. The essential point to consider in respect of the Mahomedan conquest is whether its circumstances were such as to bring about any change in the monetary system of the country. No indications of any such change are to be perceived. After every conquest, after every expedition for spoil, there was a melting down of jewelry and ornaments, and a fresh coinage of gold and silver multipliers; but the spasmodic supplies of metal thus converted from the arts into coins were more than counterbalanced by the cessation of mining during the prevalence of hostilities; and no addition can be discerned to the quantity of gold and silver in circulation. The bulk of the exchanges continued to be made in copper coins, in billon valued in copper coins, and in cowries, which latter were used as dividers for copper coins.

¹ "Pathan Kings of Delhi," 169, 174.

CHAPTER VI.

INDIA, SINCE THE MAHOMEDAN CONQUEST.

The Mahomedan Conquest led to attempts at monetary reform and deeper and more systematic mining—Increased, but insufficient supplies of silver—Billon coins—Method of notation—Liability to error in translating Indian sums into gold or silver moneys—Distinction between the tank and tankah—Minute gold coins shot from catapults for purposes of bribery—Bad state of the roads, and difficulty of gathering the tributes in kind—Attempt of Mahomet-bin-Tuglah to alter the standard from copper to silver—Failure of the scheme—Doubts as to the true date of this experiment—Apparent adoption of silver payments—Thomas's opinion that the real standard was copper—Decline of power of Pathan kings of Delhi—Invasion and plunder by Timon the Tartar—Renewed scarcity of coinage metals—Efforts of Bahlol Lodi to sustain prices by means of highly overvalued copper coins—The particulars of this experiment not known—Fall in prices—Minute gold coins—Return to copper standard—Advent of the Portuguese—Discovery of America—Influx of silver into India for gold and spices—New stimulus afforded to mining—Gold and silver become more plentiful—Akbar's experiment—Failure—Return to copper standard—Detached portions of the Mongol empire—The Dekkan—Bengal—Ceylon—European conquests in India—Continued influx of silver—Invasion and plunder by Nadir Shah—Renewed influx of silver—Establishment of gold, and afterwards of silver standard, by East India Company—Mode of determining weight of sicca rupee same as that adopted for the American dollar—Momentous consequences of changing the Indian standard—Stoppage of Bank of England—These consequences still in action—Local systems of money at the beginning of present century—Introduction of paper money—Continued influx of silver recently interrupted by operation of railway system—Existing monetary system of India—Comparative scarcity of precious metals—Difficulty of maintaining silver standard—Impracticability of gold standard—Estimates of quantity of precious metals in India.

THE Mahomedan conquerors of India, after firmly establishing their power, directed their attention to the industrial affairs of their kingdoms, including the coinage. The invasions and disturbances which had preceded the

conquest had laid bare the defects of a system involving gold and silver multipliers. When these were overvalued, as to some extent they generally were when issued by government, they were exposed to the danger of becoming excessive, either from the cupidity of the coining power, or the activity of counterfeiters. When this excess, or the fortunes of war and the coinage of bangles and other spoil, reduced their value to that of the copper coins which they represented, they were liable to be made up into bangles again. In this way, and also from the continually changing ratio between gold and silver, due to the small and frequently disturbed stocks of these metals on hand, the various moneys of India had become greatly confused. The Mahomedans would have preferred to change the standard entirely from copper to silver; but this was impracticable, and a half measure which, like most half measures in monetary systems, only engendered doubt and hastened failure, was substituted instead. This was the introduction of a billon *jital* of a value between the largest copper coin and the smallest silver multiple, and the use of this piece as a common denominator of value.¹ However, the legal ordinances which valued all gold and silver coins in copper, and thus established a copper standard, were not changed: so that the requirement or custom of using the new billon piece as a denominator, while it seemingly did so, did not really change the pre-existing system.

To substitute a piece even of this base character for copper coins, involved a material increase in the supplies of silver; and this could only be effected by stimulating the yield of the mines. Accordingly a new impulse to this branch of production is to be observed at this period. The experience gained by the Arabians of the Hedjaz was made use of in India, the excavations both in the silver and gold mines were deepened, improved means of draining them were adopted,

¹ The *jital* or *chital* is the common money of Hindostan, says the "Tabakat-i-Nasiri," a Moslem work of the thirteenth century. "Pathan Kings of Delhi, 110.

and greater care was bestowed upon the treatment of the ores.¹ These measures may have led, for a time, to an increased yield of the precious metals, but it soon relapsed into its former dimensions and silver, at least, became as scarce as before.

The new coin, known in the Punjab as the *dehliwálla*, after the name of the place where it was first fabricated and elsewhere as the *jital* or *chital*, now became the general denominator for all sums of money. It was usually composed of about forty-two grains of copper, and from twelve to fourteen grains of silver, and derived its value from the legal regulation which made it equal to a given number of copper coins.

It was in this billon coin that all sums of money were expressed. For example "a *lak*" (100,000) meant in India 100,000 *dehliwállas* or *chitals*; just as "a million" means in France a million francs, in America a million dollars, and in England a million pounds sterling.

The precise value of the *dehliwálla* can neither be determined from the quantity of metal it contained, nor the quantity contained in the copper coins which it represented; unless it is also known how much the latter were overvalued by the operation of mint, maximum, or other sumptuary laws.

To show the risk of error involved in translating sums of money from one currency to another when the *laws* upon which they are respectively based are but imperfectly known—a species of error into which, as we shall see further on, all translators of ancient Roman sums have fallen—it will be interesting to adduce in this place two instances from the history of India during the period under review.

In the reign of Tiraz III., 1351-88, a certain farmer of revenues, one Imod-ud-din, was said to be worth 13 *kross* of *tankahs*. A *kross* is ten millions. The *tankah* was a silver coin. Originally it weighed about 175 grains of fine

¹ The Arabians were certainly acquainted with the amalgamation process, and perhaps introduced it into Persia and India.

silver, and in this form it was the type of the modern *rupee*, which is of about the same weight.¹ During the early part of the thirteenth century a great portion of the newly coined *tankahs* were reduced from 175 to 166 grains, and in subsequent issues, under the name of *dirhems*, the lower weight was more or less closely adhered to.² At this weight, and at the European ratio of silver to gold, 13 *kross* of *tankahs* would be worth about £13,000,000 sterling, and this is the value given to this sum by Mr. Thomas.³ Such a translation is incredible. Even if the value of silver to gold be assumed at the Indian ratio, the result would be about £6,000,000, which is also incredible, and suggests that the sum meant, if indeed it was not so expressed,⁴ was 13 *kross* of *tanks*: the *tank* having been a copper coin of the same period, weighing about fifty-six grains,⁵ and worth, if not overvalued, and at the presumed Indian ratio of copper to silver, something like an English halfpenny or American cent. This would make Imad-ud-din's fortune equal to £26,000, or \$130,000, and if, as is probable, the *tank* was overvalued, the equivalent would have probably ranged between £30,000 and £50,000, either of which sums would have been a large fortune at the time. But such speculations are little better than guess-work.

At a later period, when the effort to keep up the supply of silver was abandoned and the emissions of dehlwallas

¹ Marsden, 36. The *tankah*, *dirhem*, and *rupee* are substantially the same coin. The *aduli*, of 140 grains fine, first minted in the fourteenth century, was a degraded *tankah*, which, however, subsequently disappeared from the coinages of India.

² "P. K. D." (Pathan Kings of Delhi), 114.

³ "P. K. D." 296.

⁴ There was a billon *tankah*, called *tankah siáh* or black *tankah*, to distinguish it from the *tankah nukrah*, or white *tankah*, which was of fine silver. In many Indian dialects *tank* means money in general, and *tankasálá*, a mint. The Russian word *dengi*, money, is attributed to the same source. "P. K. D." 47, 117.

⁵ The copper *tank* is supposed to be the same with the *dharana* or *purana* of Manou. "P. K. D." 363, 408.

grew smaller, the copper coins resumed their previous position in the monetary system, and not only continued to form its basis but again gave to it its denominator. This was either the *kas* or *follis*, as Hindoo or Moslem regulated the coinage.¹ Under the Mongul kings the common denominator was the *dam*, an overvalued copper coin of similar character.

In 1526, Baber or Bábar, a Mongul king and conqueror of the Punjab, stated that his revenues amounted to "52 kross." As a *kross* is ten millions and the *dam* was the common denominator of the time, this term is assumed to mean ten million *dams*. Mr. Erskine, in trying to reduce this amount to English money, "was constrained to leave it an open question between no less than *five* several amounts ranging from £1,300,000 to £52,000,000."² A subsequent study of extant coins and contemporary histories, led Mr. Thomas to translate this sum into £2,600,000,³ but the determination is by no means satisfactory.

As for the revenue of Abul Fazl, stated at 3,62,97,55,246 *dams*, Mr. Thomas, after numerous trials, gave it up as quite untranslatable.⁴

Going back to the establishment of the Mahomedan conquest, it is to be observed that a complete series of coins are now extant of all the dynasties up to the present time, and that these more or less all include gold, silver, and copper coins, the former used as multiples and the latter as standards. In many cases the copper coins were overvalued by means of mint and sumptuary laws.

To extricate the sovereign from the consequences of this overvaluation, it was customary to exact the revenues in kind, an undertaking of no little difficulty in a country where

¹ "The *follis* or *feloos* were always the representative of price." Hamilton's "Mussulman Laws of India," ii. p. 563.

² Erskine's "History of India," i. 542.

³ "P. K. D." 387.

⁴ "P. K. D." 387. The following specimen of notation is from the reign of Buhlol Lódi, A.D. 1451-88: 5,84,00,50,000 reads 5 arabs, 84 kross, and 50 thousand. "P. K. D." 351.

almost the only practicable avenues of commerce were the rivers and canals.¹

In Bengal, the system of a copper standard with cowrie dividers and gold and silver multipliers remained unchanged. It unfortunately happens that those who have communicated to us any knowledge of this system have valued the cowries not in the copper coins to which they were the nearest related by law, but either in the silver or gold ones from which they were the farthest removed by law, but which were more familiar to our informants.

The common "money" of Bengal, says Ibn Batuta, an Arabian traveller of the fourteenth century, is composed of cowries. A *bustus* is a *lak* of cowries, and four *laks* go to a gold *dinar*. On other occasions he states the equivalent at 12 *laks* of cowries to the gold *dinar*.

In Orissa, which is the next kingdom south of Bengal, the following scale of values prevailed during the early part of the Mahomedan rule: 1 kh'wans = 16 to 20, say 20 *puns*. 1 *pun* = 4 *boories*: 1 *boory* = 5 *gundas*: 1 *gunda* = 4 cowries; hence $20 \times 4 \times 5 \times 4 = 1600$ cowries. This was the value of a silver *rupee* of that period. In 1740, a *rupee* fetched 2400 cowries; in 1756, 2560 cowries; in 1833, 6400 cowries; in 1845, 6500 cowries. These figures are derived from accidental allusions in books of travel, and not from any systematic averages of values during the years mentioned. Until the entire monetary systems of which these cowries formed a part are rescued from oblivion, particularly their relation to the copper coins, and the relation of the latter to commodities, their value in the silver and gold multipliers of the periods named, can serve no practical purpose.

Among the many curious monetary phenomena of this period is the following one:

Alladin, 1295-1315, while besieging Delhi, shot gold

¹ A similar custom prevailed in Sumatra in the early part of the seventeenth century. Beaulieu's Expedition, "Mavor's Voyages," ii. 270.

coins from his catapults, and thus conquered the city by bribery.¹

The coins thus shot were said to have been *mans* and these are explained to have been the same as the more modern *fanams*. The *fanam* contained about six grains of gold (similar to the old California 25 cent gold piece). There were also $\frac{1}{2}$ and $\frac{1}{4}$ *fanams*; but whether these were coined in gold is not stated. These minute gold coins were known collectively as "star" or "spangle" gold.²

We now come to the first Indian experiment in money of which we have any tolerably explicit account: that of Mahomed-bin-Tuglak, king of Delhi, 1331-51.

Upon the accession of this sovereign the condition of the roads was so bad that the royal tributes in kind accumulated at Deogir, instead of going on to Delhi, and at Deogir they were captured by insurgents.

To avoid the recurrence of such a catastrophe and at the same time to unite, by means of a new and uniform monetary system, the somewhat disjointed members of his kingdom,³ Tuglak appears to have entertained the following scheme of finance:—1st, to alter the standard from copper to silver; 2nd, to render money more abundant; 3rd, to levy the tributes in money instead of produce. In pursuance of this scheme he began operations by debasing the silver coins with copper, not perhaps with the design of circulating them at a material overvaluation, but of rendering the silver or quasi-silver pieces more numerous, and with the view of ultimately retiring the copper ones. Finding that the numerical increase of the billon pieces had no other result than to make a given sum of money heavier than before, he had recourse to overvaluation.⁴ This device appears to have succeeded so well that it led to further and further debasement of the silver and billon coins, until

¹ "P. K. D." 157.

² "P. K. D." 170.

³ The kingdom of Delhi at this period was composed of twenty-three feudal provinces, never free from local wars.

⁴ "P. K. D." 116.

finally the silver metal entirely disappeared from every coin below the *tankah*, and all the minor coins became altogether of copper or brass, which by means of maximum laws were highly overvalued.¹

If no other means of payment had been lawful than these highly overvalued brass coins; if the number issued had been specifically limited, no matter to what extent, and the limit publicly proclaimed and rigidly adhered to; and if it had been impossible or exceedingly difficult and dangerous to counterfeit them, they would doubtless have fully served the purpose in view.

But all these circumstances were against Tuglak. He permitted the circulating of gold dinars and coined new ones, and gave them both the function of money at a legal and unchanged ratio to other moneys, as in the previous reigns;² he placed no limit on the coinage of the overvalued brass coins, or if he did, this limit was not proclaimed or not adhered to; and he took no sufficient guards against counterfeiting. There were no finely-executed vignettes or figures on the coins; only coarse arabesques and letters, which were easily imitated.

The consequence is readily foreseen. The number of pieces was so rapidly and enormously multiplied, both by the government mints and by counterfeiters, that in the course of three years they fell to their metallic value, and the whole scheme came to an end.

It is recorded that when this result seemed inevitable, Tuglak promised to redeem the overvalued coppers in silver at par; and that he actually carried out this promise, heaping the redeemed coins in vast mounds within the fort of Tuglakadad (Delhi), where they were to be seen a century later.³

How the means were obtained to effect this redemption

¹ "P. K. D." 240.

² The *dinar* of gold and *dirhem* of silver were of the same, or nearly the same, weight, and valued at eight for one.

³ "P. K. D." pp. 231, 246.

is not stated. Confiscation of the property of rich offenders and discovery of hidden hoards are alluded to, as where Tuglak obtained 437 million miskals of gold by confiscation and 40 bahárs of gold (each of 333 *mans*) by discovery;¹ but this is doubtful, first, because the sums, however large they appear, must have been, from the known scarcity of gold, really small; and second, because it was not gold but silver that was needed to redeem the brass coins. The impracticability of suddenly coining an adequate quantity of silver is also overlooked. Possibly a solution of the difficulty is to be found in the supposition of redemption, not at par, but at a greatly reduced rate, and in gold coins, not silver ones.²

It is to be regretted that Col. Yule in so popular a work as his superb edition of Marco Polo was bound to become, has thought fit to allude to this notable and instructive monetary experiment in a strain of derision that hardly befits the professed scholar.³

From the fact that no notable rise in prices is said to have followed this experiment in money, and that the public works and reforms of this reign were few and unimpor-

¹ "P. K. D." 245.

² The scale of weights used in the reign of Mahomed-bin-Tuglak, said to have been derived from the "Atharva Parisishta," a Vedic work dating "some centuries" B.C., is given by Mr. Thomas, as follows: 1 *drona* = 4 *atham* = 16 *prastham* = 512 *palam* = 32,768 *masha* = 163,840 *ratis*; though it is difficult to see of what possible interest the fact can be in connection with monetary systems, all of which were confessedly based more or less upon numbers (in maximum laws, overvaluation, artificial ratios of value, &c.), and very little, if at all, upon weights.

³ As might be expected under such circumstances, Col. Yule exhibits the utmost ignorance, not only of the character of the transaction, but of its particulars. He says that Tuglak's monetary scheme was "in professed imitation" of the Chao notes of Cathay, whereas it had not a single feature in common with them, except overvaluation of some of the pieces—a feature that may be discerned in the monetary system of Col. Yule's own country and time: indeed, of every known monetary system, except those imaginary ones which are to be found depicted in the works of political economy.

tant,¹ whilst they were exceedingly numerous and noteworthy in the succeeding reign (that of Firaz Shah, 1351-88),² it might be suspected that the date of the experiment had been misapprehended. This could easily be the case if the date was derived from numismatic researches; for it was a common practice at that time—as indeed it is still the practice in some countries—to use old dies in the fabrication of new coins. Numerous instances of this sort are adduced in Mr. Thomas's "Pathan Kings of Delhi," both before and after Tuglak's reign, the latest one being that of the East India sicca rupees, which were all coined as though they had been issued in 1779. But the true date seems to be well settled by the reference in Ibn Batuta.

Speaking of a period during the reign of Mohamed-bin-Tuglak before any highly overvalued copper or brass coins formed part of his monetary systems, Mr. Thomas says:—"The standard, if any distinct conception of its meaning, as we understand it, existed at all, seems to have been based upon the primitive copper currency, which was of such universal distribution as to be confessedly less liable to fluctuation than gold or silver."³ In another place he says, "The real pervading currency of the realm consisted of billon-money and copper pieces."⁴

Allusion has already been made to the reign of Firaz Shah, 1351-88, and nothing further appears worthy of note

¹ "P. K. D." 261.

² "P. K. D." 260.

³ "P. K. D." 231, in Marsden, 60.

⁴ "P. K. D." 53. Shaikh Mubarak, an Egyptian traveller of the fourteenth century, has left us a complete scale of moneys of one portion (probably the earlier) of the reign of Mahomed-bin-Tuglak, as follows:—4 fals of copper = 1 káni, jital, chital, or dehlwalla; 2 káni = 1 do-káni, or sultáni; 6 káni = 1 shash-káni; 8 káni = 1 hasht-káni; 12 káni = 1 duwazdah-káni; 16 káni = 1 shánzdah-káni; 64 káni = 1 tankah of silver. "P. K. D." 219. It will of course be understood that the relation between the shánzdah-káni of copper and tankah of silver is wholly artificial, and has no necessary connection with the commercial relation of value between copper and silver metal.

concerning it except that at its close the monetary system consisted mainly of copper and billon coins, with a few silver *adalis* of 140 grains fine, and gold dinars of 175 grains fine, at 8 for 1. The *adalis* were accorded the same value in gold as the old tankahs of 175 grains, and the ratio between gold and silver in the *adalis* and *dinars* was consequently $6\frac{1}{2}$ for 1. The principal billon coin, the dehlwalla, weighed about 50 to 55 grains, of which 12 to 14 grains were of silver; the principal copper coin weighed 66 grains.¹

Up to about the middle of the fourteenth century the kingdom of Delhi appears to have increased in territorial dominion, population, and industrial resources, and afterwards to have declined. Bengal, the Dekkan, and other tributary provinces, all became independent, until they were united again under the powerful reign of Akbar, 1550. Meanwhile all these provinces established monetary systems and issued coins of their own of gold, silver, and copper.²

Among the Pathan kings of the fourteenth century, the reign of Alladin is distinguished for many fine public works and political reforms; whilst his plunder of the Dekkan is said to have brought a vast accession of gold to Delhi. It would appear, however, that this gold was coined only to be left a prey to the victorious Timur in 1398.³

This conqueror so entirely denuded India of the precious metals that Bahlol Lódi, 1450-88, "was obliged to improvise a new compound copper currency to supply the demand for money."⁴ The particulars of this experiment, however, have not been preserved, except that the *paisa* or *buhlóli* was identical in weight with the double *karsha* of remote antiquity, namely, 280 grains, and that this piece was equal to five degraded *tankahs* or *dharanas* of 56 grains each; coincidences which, at present, are of merely numismatic

¹ "P. K. D." 174.

² "P. K. D." 330, and onwards.

³ "P. K. D." 171, 174, 234. By the Code of Manou, the king's share of booty is one-half; among the Mahomedan princes it was one-fifth. Was this the origin of the Spanish Quinto?

⁴ Marsden, 16.

interest.¹ Copper and silver in the coinage of this reign appear to have been valued at the ratio of 64 to 1;² but this may not have been the true value of these metals.

The scarcity of the precious metals occasioned by Timur's conquest eventually had the effect which Buhlol Lódi had foreseen and tried to prevent by means of an overvalued coinage; it resulted in a general fall in prices. In the reign of Baber or Bábar, a Mongul king of Delhi, A.D. 1526, gold coins weighing not over 10 or 12 grains were put in circulation.³ In the reign of Shir Shah, an Afghan king, who in 1540-45 temporarily regained Delhi from the Monguls, the billon coins were abolished, and a new coinage of copper and silver coins was made at the ratio of 72·6 to 1.⁴ But these measures were of no avail. The country from continual wars and frequent ravages was hopelessly poor in everything, and poorer in the precious metals than in anything else: so that all measures looking toward their promotion to the office of money proved so ineffectual that they never reached this stage.

In 1498 Vasco de Gama rounded the Cape of Good Hope, and reaching India by sea, opened a route for commerce with that empire, so much easier, cheaper, and safer than any that had previously been used, as to completely change the destinies of the country and its relations to the general affairs of the world.

Wherever the Portuguese penetrated they found the ancient system or systems of copper money in vogue. A considerable display of gold and silver was made in and about the Courts;⁵ but there were few coins of those metals in circulation among the people. The first operation of

¹ "P. K. D." 361.

² "P. K. D." 364.

³ "P. K. D." 7, 378.

⁴ "P. K. D." 404, 410. For scarcity of gold and silver coins in Dehli at this period, see "P. K. D." 360, 408.

⁵ See Sir Thomas Roe's "Embassy to the Great Mogol," in 1615; Bingley's "Collection," vol. ii.; and a curious relation of Commodore Beaulieu, in Mavor's "Voyages," ii. 240, which describes the court of the tyrant of Achen in 1619.

the new-comers was to plunder the coasts; but after this brigandage had aroused sufficient resistance to render it dangerous, they began to trade, at first, by exchanging their stolen silver for gold at the Indian ratio of 6 to 8 for 1, and afterwards by paying for spices in reals of European metal.¹

It was a strange coincidence of affairs that, at this period, opened to Europe a populous country accustomed to the use of the precious metals, and yet comparatively devoid of them, and at the same time another one replete with these metals, but unaccustomed to employ them for money. But for the fortunate discovery of America within a few years after De Gama's opening of the Cape route to India, the latter would have become of little practical value, and the Indiau trade have soon dwindled to the narrow limits which had confined it for upwards of thirty centuries.

During the first half-century after the discovery of America the shipments of metal from that continent consisted chiefly of the gold trinkets, effigies, and furniture plundered by the Spaniards from the helpless inhabitants; but from 1545, when the rich silver mines of Potosi were opened, the shipments became chiefly of silver, and so large a proportion of this metal began to be shipped to India that before the close of the century the Spaniards regularly despatched two ships a year laden with £200,000 in silver from Acapulco to Manila, whence it found its way through the Portuguese factories to India.²

One of the results of direct European commerce with India was to impart to the precious metals in the last-named country a commercial value which had hitherto been but imperfectly realized. This not only led to increasing importations of silver, but to a renewed activity in native mining, the combined results of which is seen in the great develop-

¹ Bills of exchange, locally known as *hoondees*, were found by the Portuguese in use among the Indians. Raynal, in Ganilh's "Polit. Econ." 324. The ancient Babylonians used them. Lenormant, "La Monnaie," i. 118.

² Del Mar's "Hist. Prec. Metals," p. 193.

ment of coinage which now began, and in the constantly-recurring tendency to abandon the copper standard. A marked instance of this kind occurred in the reign of Akbar the Great, 1555-1604.

This monarch, the sixth in descent from Timur, recovered Delhi from the Pathaus, conquered the whole of N. W. India to Kabul and Kandahar, and merged all these kingdoms, together with several provinces of the Dekkan, into one great empire.

Amongst his monetary measures was the creation of thirty-five mints for gold coins, ten for silver, and numerous ones for copper; the interdiction of the private coinage of gold and silver, the imposition of a seignorage of $5\frac{1}{2}$ per cent. on the coinage of gold and silver, and an attempt by means of billon pieces to bring silver into more common use, preparatory to a change of standard from copper to silver.¹ This attempt, however, was a distinct failure; not so much from a scarcity of silver metal, which now came in more and more freely from America and Europe, as from the difficulty, in so large and yet so dis-united a country as India, of circulating the new coinages and retiring the old ones without disturbance. The general ignorance and poverty of the people, whose exchanges were few and small, and who had become so accustomed to measure value by means of a copper denominator, as to regard the introduction of billon and silver coins with indifference, if not distrust, had also much to do with the failure of this experiment.

The mint regulations of this reign are the earliest ones of which we now possess the entire text, and these enable us to distinctly discern that the real basis of the system was the copper *dam*, weighing 5 *tanks*.² The old silver

¹ "P. K. D." 421, 428.

² "Prinsep, "Useful Tables," p. 69. "Certainly in Akbar's time, when theory was more distinctly applied to the subject (of a monetary standard), *copper* was established as the authoritative basis of all money computations." "P. K. D." 231.

tankah of 173 grains now (A.D. 1543) called the *rupee*, was valued in the law at 40 *dams*,¹ and when a given sum was expressed in silver *rupees*, or gold *dinars*, it essentially meant only so many *dams* as the law declared these pieces to be worth.²

Until the mint regulations of the British East India Company swept away the whole of the native monetary systems, and eventually replaced them with a single system based upon the silver rupee, this experiment of Akbar was the last one of any note connected with the indigenous moneys of India.

Turning from the important kingdom of Delhi, and the almost universal empire of India that grew out of it, to those minor political divisions of whose monetary measures history has preserved some fragments, it is to be observed of the Dekkan, that up to the thirteenth century but few coins of any kind appear to have been minted; the currency, as shown in previous chapters, appearing to consist almost entirely of cowries, which, because they were not marked as money, were probably valued with reference to some marked pieces; in archaic times, perhaps of clay, in later times probably of copper metal. We hear of the first mints about the year 1300, when they were established in seven leading cities.³

Bengal, from about the middle of the thirteenth to the commencement of the fourteenth century, was independent of Delhi; but no essential alteration appears to have been made in the long time monetary system of that kingdom, which was of copper coins with gold and silver multipliers (chiefly the silver *tankah* or *dirhem* of 166 grains), and cowrie dividers.⁴

Toward the middle of the fourteenth century, Alladin of Delhi ravaged Bengal and carried to his capital a large booty in the precious metals.⁵ Notwithstanding this loss,

¹ Prinsep, "U. T." 18, 69.

³ "P. K. D." 146.

⁵ "P. K. D." 234.

² Marsden, 54.

⁴ "P. K. D." 260.

the coinage of silver and billon pieces in Bengal appears not to have ever ceased,¹ a fact which may be attributed in part to the yield of native gold mines and the proximity of others in Malacca, Sumatra,² &c., and in part to the superior advantages of Bengal as an emporium for exchanging a portion of this gold for Chinese silver.

Ceylon has yielded to numismatic researches, a few specimens of ancient gold coins and a fragmentary series of gold, silver, and copper ones, which stretch back to about the beginning of our era; but so little is known of the monetary systems with which these coins were connected, that in the present state of our information upon the subject, it would be futile to attempt to draw from them any conclusions of a practical value.³

The hook money of Ceylon, and other maritime portions of the East, all of which kind of money is believed to have originated in Laristan, a desert portion of Persia, deserves some mention in this place. It was first noticed in Persia during the sixteenth century, in Ceylon during the seventeenth, and in other places during the seventeenth and eighteenth. The pieces are formed of silver wire of a fish-hook shape, stamped with a die and weighing from $72\frac{1}{2}$ to 170 grains each. They are usually called *larins*; but in Ceylon are known as *ridi*, *i.e.* silver.⁴

¹ "P. K. D." 261.

² Beaulieu observes with regard to Sumatra that the natives "have rich gold mines which they know not how to work, and, therefore, satisfy themselves with collecting the particles of that metal deposited by the floods in ditches and trenches." It would be interesting to know what improvement upon this method of placer mining was known to the worthy Commodore. Mavor's "Voyages," ii. 233.

³ Consult Prinsep, i. 87, 421, "Jour. Asiat. Soc." "Num. Chron." &c. Except the silver hook money mentioned in the text further on, no silver coins of Ceylon, earlier than the Dutch coinages of the eighteenth century, had been found at the date of Mr. Davids' researches. "Ancient Coins and Measures of Ceylon," by T. W. Rhys Davids, in "International Num. Orient."

⁴ Sir John Chardin, "Voyages," Amsterdam, 1835, iii. 128; Robert Knox, "Voyages," London, 1817, p. 197.

Turning now from these detached portions of India to India as a whole, it is to be observed that whilst the initial proceedings of the Portuguese and other European adventurers of the sixteenth century, consisted in plundering or otherwise acquiring so vast a quantity of gold and silver (chiefly gold from Japan), as to set on foot an important movement of these metals from the Orient to Europe,¹ it is evident, from its rapid decline, that this movement was chiefly supplied from hoards or from superficial placer mines and unimportant river washings. So far as India is concerned, it quite ceased before the opening of the seventeenth century, when the movement in the opposite direction is to be observed in full flow. From this time to the middle of the eighteenth century, India received from Europe several hundred million dollars in bullion, chiefly silver, a movement which was afterwards greatly accelerated by Nadir Shah's invasion and plunder of India in 1749.²

The urgent demand for silver which the movement previously alluded to evinces, also gave rise to renewed efforts to extract the precious metals from the native quartz mines; but these efforts, notwithstanding the improved methods and appliances introduced by the Europeans, do not appear to have met with results of sufficient importance to arrest the flow of silver from Europe and America.

These arrivals of foreign silver again and again altered the ratio of value between that metal and gold, and gave rise to recoinages so numerous, as to have caused India to appear to be a country overflowing with the precious metals, whereas in point of fact no large country was so devoid of them.³

The year 1766 marks the most important occurrence in

¹ Del Mar's "Hist. Prec. Met." p. 195.

² The spoil of Nadir Shah, including the Peacock's Throne and Kohinoor diamond, both of which frequently figure in accounts of Indian spoil, is valued in Haydn's "Dic. Dates" at the preposterous figure of £625,000,000!

³ In 1640 gold *pagodas* and *fanams* were coined in great numbers at Ikkeri, Mysore. Lock, on "Gold," p. 307.

the history of money in India, and one whose practical consequences are far from being exhausted at the present time. This was the successful change of the standard of money by the East India Company, from copper to one of the precious metals employed for money in Europe.¹ The metal chosen at first was gold, but after a brief experience, which ended in 1793, the company changed the standard from gold to silver, which latter metal has formed its basis substantially ever since.

In this year the company having determined to adopt the silver rupee as their integer of account and basis of money, weighed a number of those coins which were found in actual circulation, and after determining the average weight, which was found to be 173 grains (or thereabouts), they ordered the mintage of a new rupee, the sicca rupee, of this latter weight.² This was precisely the same course as that which a few years previously had been adopted by Jefferson and Hamilton in determining the weight of the new American dollar.³ The East India Company, however, went further than the American statesmen. Instead of adopting a new design, they (holding in mind the ignorance of the natives) adopted the familiar Mongul type, and even decreed the continued use of Shah Alam's name and date, 1779, which was ordered to appear on all the company's mintages, no matter what their real date happened to be.⁴

The effect of altering the monetary standard of India was to bring it at once into correspondence with the monetary system of Europe; and it now became only a question of commerce and time, when prices in these two important, but diverse portions of the world should attain to more or less the same level. One of the first and altogether unforeseen results of this momentous step, was such a drain of bullion from England, that within a few years it caused the most important banking institution in the world to suspend

¹ Marsden, 54.

² "P. K. D." 330.

³ Del Mar's "Hist. Prec. Met." Appendix to chap. vi.

⁴ Prinsep's "Useful Tables," p. 24.

“specie” payments for twenty-four years, and involved a train of other consequences as wide and as deep as the entire ramifications of European commerce and finance. This subject will, however, be treated of in another place.¹

At this period (at beginning of the nineteenth century) the monetary system of India may be said to have consisted of: 1. Copper coins (*follis*), the standard of value to the natives. 2. Silver coins, the principal one of which was the silver *sicca rupee*, the standard of value to Mahomedans and Christians. 3. Gold coins, minted in very small numbers. The principal one was the *mohur* of the same weight as the *rupee*, and valued in rupees according to the European ratio of gold to silver. 4. Inferior commodity moneys in various localities.

This general system is described in Dr. Kelly’s *Cambist*, published in the early part of the present century. The inferior commodity moneys were as follows :

Various inferior commodity moneys used in the Indies and Indian Seas.

Place.	District.	Material of Money.
Calcutta . . .	Bengal. . . .	Cowrie shells.
Cambay . . .	Malabar Coast . .	Almonds from Persia.
Falfoe . . .	Coast Cochin China	“Cash” of tutenague.
Goa. . . .	Malabar Coast . .	Tin (cast) coins.
Junkceylon . .	West Coast, Malay	Tin (cast) coins of singular shape.
Magindanao . .	Philippine Islands .	Pieces of cotton cloth.
Maldivo Islands	Off Cape Comorin .	Pieces of silver wire called <i>larin</i> .
Mauritius. . .	Isle of France . . .	Convertible government paper notes (1820).
Sooloo	Sunda Islands . . .	Cotton-cloths with paddy (rice in the husk), for small change.
Tappanooly . .	Island of Sumatra .	Cakes of gum benjamin, buffaloes, brass wire, beads and salt.
Variou	Siam	Cowries (Postlethwayt).
Variou	Gujerat	Persian almonds (Tavernier).

¹ For full description of the present system of money in India, consult Prinsep’s “Useful Tables,” p. 18.

In Bombay, in 1774, the legal ratio of silver to gold was nearly fifteen to one; afterwards, thirteen to one, and in 1800 fifteen to one.¹ This system lasted until 1835. On September 1st of that year a new silver coin containing 165.92 grains of pure silver, and called the Company's rupee, was coined in supercession of the numerous varieties of rupees (Sicca, Surat, &c.,) which were previously current. A gold coin of precisely the same weight was also struck, called the Mohur. But the same law provided that thereafter silver should be the sole standard of value. In 1841 the double standard was again permitted until December, 1852, when it was finally abolished.²

Mr. Newmarch, while conceding that there are no means of ascertaining by any authentic data the amount of silver money in India, deems it "quite conceivable that the mass of silver (so used) may amount to 400 millions sterling,"³ an estimate too guarded for practical use. There is nothing to warrant one-half of this sum.

In 1835 to 1875 inclusive, there were received into British India, chiefly from Europe, 1,200 million dollars-worth of silver, and 530 millions of gold. Of these sums 1,000 millions of silver and 515 millions of gold were retained in the country. Of the latter very little or none (\$50,000,000)⁴ remains in the form of coin, the rest having been consumed in the arts. Of the silver, about 100 million dollars are to be counted in treasuries, banks, &c., and there are, perhaps, 100 to 150 millions more in the hands of Europeans; the natives possessing little or no silver coin.

Beyond the European settlements and large cities, but little gold or silver was in circulation in 1863; nor has this state of affairs materially changed.⁵

¹ Kelly's "Cambist," i. 94.

² Tooke's "Hist. Prices," vi. 722.

³ Ibid. 723.

⁴ "Br. Parl. Report on Silver," Ques. 938, 945, and App. p. 6.

⁵ Few or no silver coins outside of cities even as late as 1863. W. Nassau Lee, "Drain of Silver to East." Same up to 1876. "Br. Parl. Rep. on Silver," 1876.

It would, in my opinion, be a liberal estimate to reckon the amount of silver and gold coin in India at the present time at \$300,000,000 or £60,000,000, of which not more than one-sixth is gold.

As for Mr. Daniell's estimate¹ of five hundred million pounds (\$2,500,000,000) gold in India, it is simply preposterous. The entire stock of gold coins in the *world* does not equal this sum.

The systematic introduction of paper money in India dates from 1861. Previous to that year there had been small emissions by the three government banks of Bengal, of Madras, and of Bombay, which circulated rarely elsewhere than in the three cities in which the banks were established. In 1861, by a decree of the British Government of India, the three directors of the mints of Calcutta, Madras, and Bombay were severally made chief commissioners of paper money, charged with the emission of government paper money in exchange against silver in coin or bullion. Of the silver thus to be received, 400 lacs of rupees, or such sum as the government might subsequently decide, were to be invested in government bonds to form a reserve or guarantee for the notes emitted. The notes were declared legal tender money, within their respective presidencies. Those who deposited silver in ingots or foreign coins were to be at the expense of its conversion into rupees. A later decree provided that all persons depositing silver in bars or specie would be given a receipt for the value thereof (deducting in case of bullion the cost of mintage), bearing a date at which the bearer would be entitled to receive notes in exchange. In March, 1862, an engagement was made with the banks mentioned, for a period of five years, giving them, instead of to the commissioners, charge of the emission of paper money and obliging them to establish agencies to that end at the most important points in the three presidencies. Thus, ten centres of emission were

¹ "Gold in the East," by Claremont J. Daniell, of the Bengal Civil Service, London, 1880.

established, and the notes were of the denominations of five, ten, twenty, fifty, one hundred, five hundred, and one thousand rupees. By 1866, the circulation of these notes had reached the sum of \$50,000,000. The following table shows the paper circulation at the periods understated :—

	Amount of Paper Circulation.
1868	\$45,346,000
1869	49,798,000
1870	52,364,000
1871	52,185,000
1872	65,535,000
1873	64,324,000
1874	55,730,000
	<hr/>
Average	\$55,040,000

A review of the history of money in India brings to light certain facts and considerations of present importance.

It is evident that until the advent of the Portuguese in India, and excepting the Greco-Bactrian coinages, neither gold nor silver was in common use in any part of that vast country for money ; that even at the present time, coins of these metals are for the most part employed only for exchanges between Europeans, and in the largest commercial transactions ; and that the entire sum of silver and gold money in India does not exceed one dollar per capita of population. So that if the level of prices in India is ever to approximate the general level of prices in the western world, vast supplies of the precious metals must yet be forthcoming, or else a monetary system must be devised for India which shall be independent of the precious metals.

It is evident that the native mines cannot be expected to furnish these supplies. Mining can no longer be carried on by slaves, but must be continued, if at all, upon the basis of commercial profit. But whether by slaves or freemen, the silver mines of India are few and unprolific, and have been long since worked out to reasonable depths.

The gold placers, the source of her immense supplies of this metal in ancient, mediæval, and modern times, are completely exhausted. The gold quartz mines, as proved by numerous ancient and mediæval workings, and by the notable failures of 1882,¹ are shallow, and have all been carried below the level of profit.

Nor can these supplies come from hoards. Whatever gold or silver India has from time to time possessed has been plundered from her. Darius, Alexander, the Mahomedans, the Monguls, the Portuguese, Nadir Shah, and the English,² have all taken part in this plunder. As for what remains in the form of bangles and trinkets, it is too trifling to consider with reference to money, which, when made of gold or silver, requires not only a large stock of these metals to begin with, but also perennial supplies to make good the losses by abrasion, caprice, or accident.

As for establishing a monetary system in India which shall be independent of the precious metals, I consider it, for many reasons, quite impossible. Even her partial independency of these metals, which has been contrived through the use of convertible bank and government notes in British India, cannot probably be materially extended amongst so poor and backward a people as the Indians, without grave risk of failure.

The only practicable resource which remains for India is to extend her issues of silver and gold coins, and to obtain her supplies of the precious metals (chiefly silver) from the West; and this policy must continue to exert, as it always has exerted, a powerful influence towards causing an appreciation of silver as compared with gold in the western world.

¹ In 1879 I doubted that the gold mines of the Wynaad would furnish any supplies. "Hist. Prec. Met.," p. 6. In 1880 I predicted their "utter collapse." "N. Y. Mining Record," August 7, 1880. This collapse occurred in 1883.

² The gold and silver spoil of Hastings, Clive, &c., is included in the commercial movement of the precious metals between India and Europe.

Taking into consideration the fact that the world's supplies of the precious metals are at the present time declining, while its demand for them is increasing,¹ the influence of India must also extend beyond the appreciation of silver ; it must tend to appreciate the value of both gold and silver as compared with commodities ; in other words, its tendency is to occasion a gradual and general lowering of the prices of commodities in the western world. Thus far, this tendency has been nullified and overcome by the great expansion of Paper Money in the West ; so that, as a matter of fact, prices have risen rather than fallen ; but unless new means are devised to still further and safely expand this important portion of the general measure of value, the commercial world must look forward to falling prices and numerous failures.

Aside from the general supplies of money (not loans of money from one power or country to another, but supplies from mines, mints, and authorized printing presses), and the general demand for its use, which in the western world may be assumed to have attained an equilibrium, the measure of India's future influence upon prices must be the development of her commercial intercourse with the West, and this may be approximately determined by observing the increasing traffic which flows through the Suez Canal, whose incapacity to accommodate its present volume is attested by the recent very serious discussion of a proposal to construct a second water way through the Egyptian isthmus.²

¹ "Hist. Prec. Metals," p. 182. See also Mr. Goschen's letter to London "Times," 1883.

² It has been alleged that during the quarter of a century ending with the year 1868, ingots of copper were imported into India and hoarded therein, or used as money ; and that after the opening of California and Australia, this custom ceased. This statement is inexact, it also lacks confirmation. See J. Ross Browne, "Mineral Resources of the United States," Washington, 1868, p. 207.

CHAPTER VII.

ARIANA. BACTRIA. CAUBUL. (KABUL.) AFGHANISTAN.

The boundaries of Ariana as given by ancient writers—It includes the more modern Bactria, Caubul, and Afghanistan—At present rather an ethnical than political division of the earth—History of money in Ariana connects it with India—Includes the Greco-Bactrian empire—Brief history of Ariana, and its connection with India—Ninus—Semiramis—Darius—Alexander—Its various dynasties, down to modern times—Character of its ancient population—Development of agriculture and commerce—Ariana the supposed birthplace of the human race—Supplies of precious metals from the mines—From commerce—Successive standards of money—Clay—Copper—Numismatic finds—Exceptional coins—Experiment of Kanerkes with overvalued coppers—Scarcity of silver after the Greco-Bactrian monarchy—Nickel coins—Longevity of bad money—Punch-marks on coins.

ARIANA was a term used by the Greek writers to mean all that country extending from the Aral on the north to Beloochistan on the south, and from Yezd in Parthia (Persia) on the west to the valley of the Indus on the east. It includes the ancient Greek kingdom of Bactria, and the more modern empires of Caubul and Afghanistan.¹ This country has been so often divided between the contending monarchies which surrounded and composed it, that it must be regarded at present, and for many ages past, rather as an ethnical than a political division of the earth. Numismatists are asked to look upon it as the habitat of the oldest monuments—the Indian archaic coins—as yet known to man; archæologists to recognize it as the seat of the oldest literature, the Vedic scriptures; and ethnologists to proclaim it the cradle of the human race. Whether Ariana

¹ H. H. Wilson, "Ariana Antiqua," London, 1841, 4to, pub. by the East India Co., pp. vii. and 214.

was ever a united empire, inhabited by a homogeneous race or not, is a matter of little consequence in the present relation. From the period of the earliest connected history known to us, it was the home of several warring races and the theatre of continual conflicts ; it is now a country long since ruined and decayed.

The principal interest which belongs to the history of money in Ariana connects that country with India, and also with the Greco-Bactrian dynasty. In order that these relations may be the more clearly understood, it will be necessary in this place to introduce a brief sketch of the history of the country.

The earliest classical record of Bactria relates to its invasion by Ninus, King of Assyria, and the second husband of the famed Semiramis. This event is assigned by chronologists to about the year B.C. 1975. It is said that Ninus invaded Bactria with an army of two millions of persons, and after defeating its king, Oxyartes, he annexed it as a dependency to his Assyro-Persic empire. Upon the decay of this empire, Bactria regained its independence, which it enjoyed until it was subdued by Cyrus of Persia. Its next rulers were Sphendadates (who falsely impersonated Tanyoxartes, the youngest son of Cyrus) and Darius Hystaspes. This brings it into the domain of accepted history. As for the story of Ninus and Semiramis, though it rests upon as good evidence as any one of the numerous accepted classical predicates about money, the chronologists throw the same sort of doubt upon it as they do upon the story of Sesostris. It was too long ago ; therefore it could not have happened.¹

Both the expeditions of Darius Hystaspes and Alexander the Great connect the history of money in Bactria with that of India and Persia. Upon leaving Bactria Alexander appointed a Persian, one Artabazas, to rule the country as a

¹ Consult Wilson's "Ariana Antiqua," p. 126 ; Haydn's "Dic. Dates ;" "The Universal Biography," art. "Ninus ;" and Dr. Robertson's "India," note vi.

satrapy in his name. In B.C. 312 this satrapy was overthrown by Seleucus Nicator, who ruled the country for two years, and then was forced to retire from it, leaving it independent. In B.C. 256 it fell under the rule of the Greco-Bactrian line, and afterwards under the various dynasties set forth in the note at foot.¹

¹ The following list of the dynasties of Bactria also shows the character of the coins issued by each sovereign, which have thus far been found and deciphered:—

Period. B.C.	Sovereign or dynasty of Bactria.	Character of coins found.
330	Artabazas	—
312	Seleucus Nicator of Babylon	—
310	Independent sovereigns of Bactria	—

Greco-Bactrian Line.

256	Theodotus I.	G. S. B.* C.
240	Theodotus II.	G. S. B.* C.
220	Enthydemus	G. S. C. N. †
190	Demetrius	S. C.
181	Eukratides	S. C.
147	Heliokus	S. C.
147	Lysias	S. C.
135	Amyntas	C.
—	Queen Agathokleia	S. C. N. †
140	Antimachus	S. C.
130	Philoxemus	S. C.
135	Antialkides	S. C.
125-20	Archibius	S. C.
126	Menander	S. C.
120	Pantaleon	C.
110	Apollodotus	S. C.
100	Diomedes	C.
98	Hermæus	S. C.

Indo-Scythian Line.

100	Mayes	C.
80	Palirisus	C.
75	Spalyrius	C.
60	Azilises	S. C.

* B. Billon coins.

† N. Nickel-copper coins.

Although the countries composing Ariana are more familiar to modern readers as pastoral than as agricultural states, it must not be forgotten that this has not always been the case ; and that in ancient times this country was not only famous for its agricultural development, but actually gave its name to the plough (*aratrum*).

Mr. Elphinstone estimated the population of Caubul in 1809 at fourteen millions, and although this was no doubt an exaggerated number at the time, there are many evidences, both in its archæology and literature, to prove that the population of Ariana in not very remote times greatly exceeded this figure.¹

Period. B.C.	Sovereign or dynasty of Bactria.	Character of coins found.
50	Azes	S. C. P-C.*
—	The " Kings of Kings "	S. C.

Indo-Parthic Line.

30	Venones	S. C.
—	Undophenes	C.
—	Gondophares	C. P-C.*
—	Abagasus	C.
—	Kodes	S.

Indo-Scythic Princes of Caubul and Jelalabad.

85	Kadphises	G. C.
60	Kadaphes	G. C.
24	Kadphises II.	G. C.
—	Kanerkes	G. C.
—	Konorano	C.
—	Ooerki	G.
—	Baraoro	G.
—	Sassanicus	S. C.

No silver coins of this dynasty until Sassanicus.

¹ For Mr. Elphinstone's computation consult Mr. Greggor's "Geographical Dictionary," ed. 1846, art. "Caubul."

* P-C. Plated copper coins, from the size of a sixpenny piece to that of a florin, English.

Ariana was also at a very early date a commercial country. This is proved by the Vedic writings and the Code of Manou, both of which are believed to have been brought into India from Ariana;¹ and by its geographical position. It was the earliest, and for many ages the only route between India and the silver-producing countries of the West, and what supplies of coining metals it failed to produce from its own mines were afforded by the caravans that passed through the country from Europe to India.

Gold mining was pursued in Ariana in very remote times. The text of the Vedic writings, the allusions of Herodotus, and the researches of modern geologists and numismatists combine to settle this fact beyond question. Here originated that sacred character of gold mentioned by Manou; that attribute of royal metal which has clung to it through all the ages, and is found in a charter so late as that of Queen Elizabeth of England; and that fable of the ants with which Herodotus puzzled the learned world until very recently, when it was found that he had stolen it from the Mahábhārata.²

Says Von Humboldt:—"The old Indian mythologists make the ruler of the North (Kuvera) likewise the god of riches; and it is remarkable that the residence of this deity (Alakâ) must be sought for not on the Himalaya itself, but on the Kailâsa, beyond the Himalaya, in Thibet. Still further to the north-west, beyond the mountain chain of the Kuen-

¹ "Land of the Veda," and authorities cited therein.

² Amongst the many attempts made by the learned to reconcile this fantastic story of Herodotus with truth, the most ingenious is that by Mr. Ball, who informs us that the "ants" were men clothed in sheepskins (wool outward); the ant-hills, huts, whose lower part is below the ground, and surrounded by a raised hillock of excavated earth; and the horns pickaxes of buffalo-horns used by the miners; that the elevation of the place is 16,000 feet above the sea, &c., &c. It is a pity that the discovery of the story in the "Mahábhārata" destroyed all this superstructure of "classical learning;" see "Mahábhārata," Sabhá "Parva," printed edition, vol. i. p. 375, in "Ariana Antiqua," p. 135. The quotation mentions the "drona" as a gold weight.

lan, which separates the districts of Laddakk and Khotan, Heeren places, and I think with much probability, the great golden sand deserts visited by the Indians, bordering on Kaschmir, and containing ants less than dogs, but larger than foxes. It is on the western declivity of Bolor, that the most recent and intelligent explorer of this *terra incognita*—Alexander Burnes—has described the gold-sand beds of Durwazand and the upper course of the Oxus.”¹

Except of that small quantity of metal with which the annual freshets enrich the valleys of every gold-bearing stream, Ariana has long since been exhausted of its gold deposits, and although not far removed either from the silver mines of the Caucasus or the gold ones of Semiritchinsk, the country has been remarkable for its poverty in respect of the precious metals ever since the invasion of Alexander the Great, nor is there any evidence to prove that it was rich in them before that time.

The earliest moneys of Ariana were probably the clay tablets already mentioned, and these were followed by copper coins with gold and silver multiples, a system that, with few breaks, has continued to the present time.

These breaks are indicated by the exceptional coins of certain reigns: the billon coins of the two Theodotuses, the nickel coins of Euthydemus and Agathokleia, the plated coins of Azes and Gondophares, and the highly overvalued copper coins of Kanerkes. The last-named ones, and the doubtful inscriptions upon them, afford us the only clue to the history of monetary experiments in Ariana.

These copper coins of Kanerkes are precisely like others of the same monarch of gold, which bear the legend in Greek letters, but in an unknown language, NANA (OR NANAIA) PAO KANHPKI KOPANO. Although NANA (OR NANAIA) has been conjectured to relate to the name of a tutelary goddess of Armenia (!),² it is probably the name of the coins, both because it appears in both the gold and copper coins, and

¹ Baron Von Humboldt, “Fluctuations of Gold,” 1837, p. 26.

² “Ariana Antiqua,” p. 362.

because it is alluded to in the Prakrit drama called the "Mrich-chakati" and the Sanscrit "Mitakshara."¹

These allusions clearly prove that the coins were so highly overvalued as to invite counterfeiting, and this could only have been the case with the copper coins, because they were the only ones in common circulation, the gold ones being necessarily scarce. To overvalue the copper coins, it was necessary to fix a legal scale of prices for commodities; but this was common in all eastern countries (see Manou, viii. 402), and probably long preceded Kanerkes' attempt to fabricate his gold multiplier out of copper.

No further account of this experiment appears. It need only be observed that the view of it here taken is fully supported by the collateral evidence of the numismatic finds. These indicate great scarcity of the precious metals, and the almost entire absence of silver after the decline of the Greco-Bactrian monarchy, and the cessation of active intercourse with Greece. Of the Indo-Scythic line, only three kings coined silver, and one of these mingled with it plated coins of copper. Of the Indo-Parthian line only two kings coined silver, whilst another issued plated copper; and of the Indo-Scythic kings of Caubul no silver coins at all have been found, except one or two of the last one (Sassanicus). It is a curious instance of the longevity of bad money, that many of the (once) silver-plated coins of Kanerkes, of which the original emissions seem to have been very plentiful,

¹ A passage in the "Mrich-chakati" alludes to "this filcher of broad pieces." The accompanying comment calls a Nánáka "a coin with the mark of Siva." "Mrich-chakati," act i. sc. 1. The text of the "Mitakshara" directs that the fabricators of false coins shall be punished, as also the assayer who gives a false valuation. The passage reads: "The falsifier of weights, copper-grants, measures, and also of the Nánáka." And again: "The assayer of Nánákas, who calls that which is genuine an imitation, or fails to detect a counterfeit, is to be punished in the highest degree." "Mit. Vyavahára," p. 80 (Wilson calls this work "Tajnavachya's legal dicta"). These works are ascribed to a remoter period than Kanerkes' coins, so that they must have related to Nánákas older than his. And he may have got his hint for imitating them in copper from these very works. Consult Wilson's "Ariana Antiqua."

have been found in active circulation, or in the hands of money-changers in the larger towns of Hindostan.¹ Another curious fact in the same connection is that the Mahomedan invaders of the seventh century punched the coins which they found circulating in Afghanistan with their own devices, a practice known in China as affixing a "chop mark."²

This brief history of money in Ariana would be incomplete without some further reference to the antiquity of Manou, and the use of the precious metals for money, whether gold, silver, or copper; because all through the dim lines of remote history there appears to run a thread that points out the Aryan, the follower of Manou, as the gold-hunter, the argonaut, the pioneer, *par excellence*, of antiquity.³

The Code of Manou has already been discussed, but Manou himself has not been. The Arians revered Manu; the Thibetans, Mani; the Indians, Manou; the Siamese, Manu; the Lydians, Manes; the Phrygians, Manis; the Egyptians, Menes; the Cretans, Minas; the aboriginal Germans, Mannus. All these names are evidently the same. He was always a god, a law-giver, a hero. Dates, eras, epochs, are almost everywhere lost, and where they are not lost they are obscured by prejudice or religious bigotry; but a single positive date relative to Manou has survived. This fixes his era at B.C. 2950, 3643, or 3893, accordingly as

¹ "Ariana Antiqua."

² Ibid. p. 110. The coins found thus punched were of the Sassanian (Persian) dynasty, A.D. 226-632.

³ The "Institutes of Timur," which profess to have been written by this conqueror about the beginning of the fifteenth century, very plainly show that at that period the country had long since fallen into a pastoral state. They are written in the Biblical style, and are only fitted for a people of scanty numbers and uncertain habitation. A single ordinance, however, might well be re-enacted at the present time: "And I ordained that to every bureau of the departments of government an accountant should be appointed, and that he should keep a journal of the daily expenses, and of the receipts and disbursements." "Institutes of Timur," Oxford, 1783, p. 307.

Manetho's Egyptian dynasties are computed.¹ At a very remote date we find bodies of men—Lydians, Phrygians, Phœnicians, Greeks, and others belonging to Aryan races—pushing out in all directions into the desert wilds of aboriginal Europe in search of gold, silver, and copper. Inachus, Jason, Cadmus,—all these are evidently treasure-hunters—whose deeds, clothed in the hyperbole of newly-found letters, formed the basis of ancient mythologies. It was the same class of men who subsequently discovered, robbed, and depopulated Spanish America, who ravaged the East Indies, who scoured the high seas for treasure-ships, and who, when there was a law even for pioneers, ransacked California and Australia in the name of industry.

¹ Del Mar's "Hist. Precious Metals," p. 3, and authorities therein cited.

CHAPTER VIII.

EGYPT.

The gold mines of Egypt—Their vast extent—Changes wrought upon the face of the country by mining—The Bisharee region—Origin of Egyptian civilization—Nubia the land of gold—Analogy to Italy, Gaul, and California—The mining districts—The Bisharee mines—Immense excavations—Their antiquity—Probably coeval with the first colonization of Egypt by Indians—Placers impoverished and quartz worked so early as B.C. 2830—Described by Diodorus—Further mining discouraged by Diocletian—Antiquity of money in Egypt—Probably derived from India—No coins of the early gold period remain—Probable moneys of the period between the decline of the gold mines and conquest of the Persians—The gold rings not money—Nor the gold plates—Scarab money—Stone nummulites—Iron money at Kordofan—Its Sanscrit name—Its resemblance to certain Chinese and Aztec coins—The Persian coinage—Since that period the money of Egypt has been that of its conquerors—Glass coins of the Fatimite caliphs—These in use so late as the eighteenth century. Originally issued as numerical money, they eventually, from reckless over-emissions, became nearly or wholly worthless.

BEFORE proceeding to discuss the development of money in Egypt, it is important to ascertain with some degree of precision the extent, resources, productiveness, and conditions of mining for the precious metals in that country, and as these matters have not hitherto enlisted much attention from scholars and miners, and there is therefore no comprehensive literature on the subject, it becomes necessary to devote some space to it herein.

It may, perhaps, appear surprising that the Nile, which, from time immemorial, has been regarded chiefly as a great agricultural stream, should be classed among mining rivers; yet there is ample warrant for so doing. Not only this; but its history as a mining river appears to be more ancient, and—considering the geographical changes it has

brought about—it is certainly more important than as an agricultural one.

In the remotest historical period the Nile, though never a rapid stream below the junction of the Blue River, had, undoubtedly, a greater fall than at present. The country-rock, which appears at numerous places along its bed, did not form, as now, merely rapids, but cataracts. This their ancient names attest. The hills of Sennaar and Nubia, which now are destitute of timber and water, were once wooded; and from their flanks flowed numerous feeders, which, after enriching the soil, added their floods to the Nile. These feeders now flow underground, through the mining debris which underlies the sand of the plains.¹

The Bisharee or gold country was once cultivated,² and populous.³ Much of it is now, and has been since the time of Cambyses,⁴ a desert of sand and gravel. The Nile, which now washes the Arabian side of the valley, formerly skirted the Libyan side.⁵ From lat. 27° 40' N. to the sea, a portion of Egypt was at one time a morass.⁶ It was like

¹ Klunzinger's "March through the Desert, from the Nile to the Red Sea," contains many allusions to these streams, *e.g.*, "Channels are seen on the sides of mountains, traces of brooks, of waterfalls, of the beds of rivers, some of them strewn with wide valleys of embouchure. Nay, along the very summit of the mountain mass runs a regular watershed, from which waters must run either westwards into the Nile valley, or eastwards into the Red Sea," p. 230. "The soil in which we are marching is not loose sand, but very solid gravel," p. 216. New York, ed. 1878.

² "The soil is naturally black." Dio. Sic., iii. 1.

³ "That the valley was once a busy scene of life is evidenced by the numerous ruins and ancient Egyptian sculptures hewn on the rocks." Klunzinger, p. 235. Edrisi, A.D. 1150, calls Wady Al-aki, a "fertile settlement."

⁴ Herodotus, iii. 25, alludes to the grassy region followed by the "bare sands."

⁵ Herodotus in "Euterpe" says this change was effected by a canal cut by King Menes. There are still some traces of an ancient river bed along the western hills. Consult Rawlinson's "Herod." and DeJardin in Reclus's "Earth," p. 371.

⁶ Herod. in "Euterpe."

the delta of the Po,¹ and covered with trees.² This was probably during the first era of mining, and before the river was diked by Menes. It is now all dry land and treeless. The Nile once emptied into the sea, a little below where Cairo now stands. At the present time it runs ninety miles farther, through a Delta whose vast dimensions owe their foundation to the operations of those multitudes who for generations were employed in washing the sands of the Bisharee region for gold.³

After the era of mining, which had bestrewed the plains of Lombardy with sand and gravel from the mining regions of Piedmont, the annual floods of the Po were able to cover the mining deposits with layers of loam, which, in the course of ages, became sufficiently deep to restore the ancient agricultural character of the country.

Not so with the Nile, which, from Fazogle, in lat. 12° N., to the Delta, had scarcely enough fall for this purpose. Consequently, the ruin brought upon Nubia was irreparable; and its inhabitants were driven for support to the narrow valley of the Nile proper, where agriculture had to be conducted under conditions that led to the permanent enslavement of the people and to those extraordinary systems of government and religion which have exercised such a potent influence upon the destiny of the world.⁴

Next to a comprehensive study of these systems, nothing

¹ Baird Smith, "Italian Irrigation," p. 134, on the marshes of Lombardy during the Middle Ages.

² Marsh, 455 *n.*

³ The certainty that at least a portion of the vast quantities of gravel and sand which can be seen to have been washed down from the Bisharee region, must lie beneath the loam which now covers the Delta, invalidates all calculations concerning the supposed age of the earth which have been derived from observing the depth of the formation. Indeed the entire topography of the country has been changed, largely by mining; and this in turn has led to industrial and social consequences which have deeply affected the history and the fate of nations.

⁴ Buckle, "Hist. Civ.," i. 65.

so well marks the uncertain nature of Egyptian agriculture,¹ and the abject and defenceless character of the people who had to depend upon it for support, than the frequency of their subjection to foreign conquerors, and the number of alien dynasties to which Egypt has been compelled to submit.²

This furnishes a curious contrast with China, which during forty centuries has not changed the nationality of its dynasties half-a-dozen times.

The civilization of Egypt, like that of all ancient countries, appears to have begun in the hilly regions, because in the early stages of society these portions of a country are the most secure.³ Beside this general theory, there are particular evidences to support such a conclusion in the case of Egypt. Before the Delta assumed its present vast proportions, the only considerable agricultural surfaces in Egypt were in the Fork, anciently called the Island of Meroe, and in the plains below the foot-hills of Nubia. The edifices and works of art discovered in Meroe, and else-

¹ The system of culture simply consists of waiting upon the annual overflow of the Nile to fill the irrigating canals, and when the river has subsided, of maintaining the level of the water in the canals and reservoirs by pumping, bailing, and ladling. This work, and the digging of fresh canals, engrosses the labour of the people for months. Without this incessant struggle with nature the lands would become uncultivable, and even with it the result is doubtful; for if the next overflow of the river exceeds thirty feet in height, everything on the land is demolished and swept away; while if it falls short of eighteen feet the harvests fail and famine ensues. Del Mar's "Egypt," p. 11.

² During the course of twenty-six centuries these have been no fewer than sixteen in number, with an average duration to each dynasty of not more than 165 years, as follows:—Conquests of Egypt: B.C. 700-800, Ethiopians; B.C. 525, Persians under Cambyses; B.C. 411, Independent Egyptian kings; B.C. 351, Persians; B.C. 332, Greeks under Alexander; B.C. 30, Romans under Augustus; A.D. 616, Persians; 626, Romans; 639, Arabs; 1171, Turks; 1250, Mamelukes; 1517, Turks; 1798, French under Napoleon I.; 1801, British protectorate; 1802, Turkish protectorate; 1804, Independent Pachas, Mahomet Ali; 1881, European protectorate.

³ Henry C. Carey, "Polit. Econ.," and authorities quoted.

where in Nubia and Upper Egypt, appear to have preceded those which have been found in the lower country. The Egyptians and Nubians are regarded as of Indian origin, their physical appearance, their complexion,¹ their pyramids and earliest edifices, their ecclesiastical and political institutions, and the origin of some of the plants and many of the articles of commerce found in their tombs, all point to this conclusion.²

The term Nubia appears to have originated in Egypt, where *Nob* or *Nub* signifies gold, hence Nubia, the land of gold.³ In a similar manner the term China originated in Europe. Malte-Brun regards Nubia as the Ethiopia supra Egyptum of the ancients. It embraces the foot-hills of the mountainous ranges that constitute a great part of Abyssinia, whilst Egypt is a country of low plains bestrewn with sand. The three distinguishing characteristics of all great gold-mining countries are here apparent: the sierras, Abyssinia; the foot-hills, Nubia; the plains, Egypt; the connecting link between them all, the Nile. Analogous geographical surroundings characterize those other great mining rivers, the Po, the Rhone, the Rhine, and the Sacramento. Like Italy and California, Nubia has also its coast range. These mountains separate the Bisharee country from the Red Sea, and rise to an altitude of 6000 feet.

Below the foot-hills of Nubia is a vast expanse of sand and gravel, known as the Bisharee or Great Nubian Desert.⁴ This, as we shall presently see, was once the centre of the greatest gold-mining works known to the ancient world. According to Diodorus, Book iv., the Pharaohs derived from this region in gold and silver,⁵ a sum which Mr.

¹ That they were not black like the Ethiopians is noticed by Pliny.

² Del Mar's "Egypt," p. 4. On the Nubian origin of Egyptian civilization consult McCulloch, "Geog. Dic.," ii. 428, Buckle, "Hist. Civ.," i. 65, and Rawlinson's "Herod.," ii. 30.

³ "App. Cyc.," xii. 438.

⁴ McGregor, ii. 271; McCulloch; Malte-Brun.

⁵ The silver mines appear to have been in the coast range on the

William Jacob computes to have been equal to £6,000,000 per annum. If this computation can be depended upon, the Nubian mines were as prolific as have since been those of either Italy, Spain, Brazil, Russia, Australia, or California.

In Lower Nubia, in or about the same latitude as the Second Cataract of the Nile, lie "vast and fertile, but neglected plains, which it is conjectured were, at some remote period, reached by the inundations of the Nile."¹ If the inundations of the main stream could have reached these plains at any former period, they certainly can reach them now that the bed of the river is higher than it ever was before.² So that the Encyclopedist must be mistaken as to the cause of the desolation noticed. The fact is, that anciently Nubia was watered by numerous small streams that flowed into the Nile, and were employed to irrigate these deserted plains—once the Lombardy of Africa—but which, after they had been diverted by the gold miners, and their sources of supply cut off by the destruction of the forests in the foot-hills for mining timbers, fell into the condition of "washes," which now are only flooded for a brief period during the rainy season, March to May,³ and are dry for the remainder of the year.⁴ These "washes," or dried-up water-courses, are called by the Arabs "wadys."⁵ Besides these are the underground rivers alluded to in Reclus, 278. Without surface rivers, there are, of course, no irrigating canals.⁶

Red Sea. "App. Cyc.," xii. 437. A silver "forge"—query, furnace—is mentioned as having been found at Shendos, on the Nile. McCulloch, "Geog. Dic.," ii. 428.

¹ "App. Cyc.," article "Nubia."

² At Thebes it has been raised seven feet in 1700 years, and at the Delta more than half as much. Marsh, "The Earth as Modified by Man," p. 520.

³ Malte-Brun says the weather is scorching from January to April, and that it rains from June to September. "App. Cyc." says there is no rain in Lower Nubia, and that in Upper Nubia it rains from March to May.

⁴ Lock on "Gold," p. 6.

⁵ Marsh, 623.

⁶ McGregor, "Statistics," ii. 267.

Such is Nubia to-day. Its hills have been levelled into a plain of sand and gravel; its alluvial soil has been washed into the Nile, which has transported it a distance of a thousand miles to fill up the morasses,¹ and form the Delta of Egypt; its forests have been cut down; its rivers have been either dried up or submerged; and where man has not indeed abandoned it, he has degenerated to the level of a savage. The Arabs call the natives *Berbers*, a term equivalent to the Roman word *barbarian*, and possibly of the same origin. Treachery, dishonesty, drunkenness, and filth characterize the men, and vulgarity and licentiousness the women,² many of whom are worked as beasts of burden, to plough the land or tow the boats on the Nile.³ Both sexes go naked, and the money of the country is a sort of broom-corn, called *dourra*.⁴

Gold has been found in nearly every region tributary to the Nile, from the Equator to the First Cataract. The following summary of these regions affords a brief view of the information which has been collected on this subject.

Darfoor.—Hon. Robert Curzon in his "Armenia," London, 1854, p. 120, says that some years previously he met at Assouan, a European from the mountains beyond Darfoor, lat. 12°, long. 26° East, who showed him several strongly made iron-bound chests full of gold from that region. Some of the gold was in nuggets, but most part in the form of rings the size of bracelets, and others of the size of large heavy finger-rings, all of pure gold. These rings were passed in Darfoor as money, and were of the same

¹ Above the Delta Egypt was anciently all morass. Herodotus in "Euterpe," cited in Marsh, 455 n.

² The Bisharee are dishonourable, faithless, and vicious. Klunzinger's "Upper Egypt," p. 262; Malte-Brun, ii. 470; McCulloch, "Geog. Dic.," ii. 427.

³ McGreggor, "Stat.," ii. 271.

⁴ McGreggor, "Stat.," ii. 267. Belzoni in Malte-Brun, ii. 470, says all commerce is by barter; Malte-Brun, ii. 470, says that tribute is paid in cloth.

form as those used for a similar purpose by the ancient Egyptians, and of the rings found in Celtic countries, including ancient Britain.¹

Kordofan.—This region lies between Darfoor and the Nile. It abounds with auriferous placers, which are washed by slaves.² Thirty years ago the trade in gold was monopolized by the pasha; but gold was sold clandestinely at the rate of \$8 in silver for 430 grains of fine gold, equal to \$17.30 per oz. Troy, or about 15 per cent. under the mint value.³

Takale District, White Nile.—Sheiban, modern Seizaban, on the west bank of the White Nile, within the Takale or Takla district, in the Kordofan country, lat. 12° N., is spoken of by Pinkerton as a placer gold country. At Luca, apparently in the same district, as well as at Sheiban, gold, probably gold-dust, in quills, is the only money.⁴

Shoa.—Albuquerque, a Portuguese commander, gold-hunter and pirate, landed on the coast of Abyssinia about the year 1510, and at once proceeded to ransack the country for gold. Amongst the means which he employed was to enslave the living in the mines, and plunder the graves of the dead. His rapacity and cruelty left so strong an impression on the natives, that up to a very recent date, 1841, and perhaps even still, the use or possession of gold is strictly forbidden in the kingdom of Shoa. The monopoly of the gold trade by the sovereign of that country may have something to do with this interdict. In spite of it, however, gold is sold surreptitiously for about nine silver dollars per ounce Troy.⁵

Fazoglu Country on the Blue Nile.—The Suakin mer-

¹ It is greatly to be regretted that Mr. Curzon's statement is not more definite. The weight of these rings, the marks, if any, upon them, and the equality of weights in rings of like size, would all have been matters of interest in connection with the suspicion that they were used as money.

² Yet it uses an overvalued iron money. See farther on.

³ McGregor, "Com. Stat.," ii. 272.

⁴ Lock on "Gold," p. 5.

⁵ Harris in McGregor, "Com. Stat.," ii. 348, 354.

chants deal in gold brought from this region, which is in lat. 11° N. In October, 1838, Mahomet Ali left Cairo in a steamboat to visit this country. The mines proved to be near the confluence of the Blue Nile and the Fazangoro. After inspecting them, he left a colony to work them for wages, and laid the foundation of a town near by, to contain fifteen hundred families; but the mines failed to pay, and the town has gone to ruins.¹ The previous productiveness was due to the fact that the mines were worked by slaves, who were paid nothing for their labour but blows.

Kaffa.—In the Kaffa country south of Abyssinia, lat. 7° N., it is said that gold is found so plentifully that it is not much dearer than silver.²

Sasu Country on the Takaze.—Adowa is in Abyssinia, about fifty miles from the Takaze, and in lat. 14° N. Gold is one of the principal articles of the transit trade through this place, and of the export trade from Abyssinia generally.³ Some of this gold probably comes from the Kaffa country. Cosmos, a Greek writer who visited Ethiopia (Abyssinia) about A.D. 535, gives an account of this trade, which, in his time, appears to have centred at Axum, which was the capital. The gold came from a country called Sasu.⁴

Meroe.—Strabo, xvii. 2, 2, while describing Meroe, says, "there are also mines of copper, iron, gold, and various kinds of precious stones." This reference is applicable not merely to Meroe, which is an alluvial plain containing no gold mines, but to the whole of Nubia. The mention of gold mines in connection with Meroe may have been derived from the fact that Shendy, lat. 17° N., was a mart for the gold of the Upper Nile regions. It is so still, the price of gold being \$16 an ounce.⁵ Sennaar on the Blue Nile, lat. 13° , is also one. Price of gold, \$12 an ounce.⁶

¹ McGregor, ii. 273.

² Herr Camill Russ, in "Lond. Geog. Mag.," 1878, p. 228.

³ Lock on "Gold," p. 5.

⁴ Jacob, 39.

⁵ McCulloch, Geog. Dic. art. "Nubia."

⁶ Ibid.

Bisharee Country.—The mines of this region are reserved for a more extended description farther on.

Below the Cataracts.—There are no gold mines below the cataracts, says Engelhardt. The first or lowest cataract is in lat. 24° N., and this, therefore, is the northern limit to the gold mines of Egypt.

Somali.—The above list comprises all the gold mines in the valley of the Nile (except the Bisharee) from the 11th parallel, which may fairly be regarded as the extreme southern limit of Egyptian authority, to the 24th parallel, north of which no mines have been found. Besides those of the Nile Valley, there are numerous gold mines in the surrounding countries, other than those mentioned by Herodotus,¹ which are supposed by Rawlinson to have been in the Somali country. This is on the south coast of the Gulf of Aden. At the present time there are some small lots of dust shipped from Leila and Berbera, long. 45° E.² There are gold mines also in the Kaffa country previously noticed, and others in the coast range of the Red Sea.

We now come to the principal gold region of Egypt, and the greatest of all antiquity.

The Bisharee Mines.—These auriferous mines are in the Bisharee country, situated in the great Nubian bend of the Nile, between lat. 20° and $22^{\circ} 40'$ N., and long. $32^{\circ} 30'$ and $35^{\circ} 20'$ East.³ The quartz veins have a course N.W.-S.E. In the Pharaonic period the produce of these mines was sent down the Nile.⁴ In the Ptolemaic it was transported to various ports on the Red Sea, among them Berenice, lat. 24° N., a distance of about 260 miles from the most productive mines. This place is now a mere ruin.

The Bisharee country forms the foot-hills to the sierras

¹ "Thalia," iii. 17, 23.

² Lock on "Gold," and "App. Cyc.," article "Berbera."

³ Lock, pp. 9, 10, from Linant de Bellefonds' map.

⁴ The shipping port was Edfou, or Apollinopolis Magna, or Redesiah, in lat. $24^{\circ} 58'$. It was ten days' journey N.W. from the mines. Opposite to Edfou was Bahayreh.

of Abyssinia. The sierras are 12,000 to 15,000 feet, whilst the highest of the hills is about 6,000 feet in altitude. The latter gradually diminish until they melt into the plains of Egypt.¹

According to Linant de Bellefonds, there are remains of gold mines at the following places in the Bisharee region :

Oum Guereyatte; Ceiga, 22° 30' N., 33° 50' E.; Gebel Offene; Gebel Abdulla; Gebel Matchouchelennaye; Gebel om Cabrille; Tamille; Gebel Essewed; and Gebel Tella-tabd. All these are situated in the country of the Cawatil Arabs, between about 21° 30' N. and 32° 50' and 34° 20' E., and were discovered by Linant de Bellefonds.

Oum Tayour; Wady Sohone; Wady Hagatte; Wady Affawe; Wady Daguena; Wady Camolit; Derehib, 21° 40' N., 35° E.; and Wady Chawanib. These are in the country of the Mansour Melecat Arabs, lying east of the foregoing and west of 35° 20' E., and were examined by Linant de Bellefonds. At Dershib the quartz excavations are of immense extent.

Raft; Kelle; and Absab. These are in the country of the Foukara Arabs, between 20° and 21° N. and about 32° 30' E., and were all examined by Linant de Bellefonds.

Water.—Among the water resources now traceable are the following wadys:² Al-aki (anc. Akita); Sohone; Hagatte; Affawe; Daguena; Camolit; and Chawanib. It seems probable that in remote times all these wadys were running streams. There are also numerous small streams that, in flood-time, swell into devastating torrents and lose themselves in the desert, to make their way underground to the Nile.³ There are also numerous wells to tap the underground streams.

¹ "App. Cyc.," article "Egypt;" McCulloch; Reclns, 318.

² "Wady is applied by the Arabs to all torrent courses." Rawlin. Herod., *n.* to iii. 26.

³ Klunzinger's "Upper Egypt," and Lombardini in Reclus, 278. The Arabian geographer Edrisi relates that he saw quicksilver used for amalgamating gold in the mines of Al-aki. Humboldt, "Fluctuations of Gold," p. 11.

While Ælius Gallus, governor under Augustus, about B.C. 25, was absent on a military expedition against the Arabs, the Ethiopians took Syene, Elephantina, and Philæ. On his return the Roman governor forced the enemy back to Pselchis,¹ which place he took, as well as Ibrim,² after travelling over the same hills of sand that had once overwhelmed Cambyses' army. After Ibrim, he took the capital, Napata, and razed it.³

Antiquity of the Bisharee Mines.—Next to the mines of the Altai mountains of India,⁴ the Bisharee mines of Egypt are probably the oldest in the world; and in view of the Indian origin of the Egyptians, and the distant researches and conquests which have been made by the leading nations for the acquisition of gold, it seems not at all improbable that there existed a close connection between the discovery of the Egyptian mines and the original settlement of the country by Asiatic races.

At what era this occurred cannot be determined with any approach to certainty. Scholars of the present age are no less anxious to find a place in chronology for Adam and Eve, than were Hecateus and Herodotus to assign an actual era to Hercules and Venus; and the entire current of literary and archæological research is vitiated by the unwarrantable intrusion of personages whose only legitimate domain lies within the pages of theological and mythological history.

If conjecture be admitted where dates are thus confused, it appears likely that the Bisharee mines were worked as early as the era of Menes, which is variously assigned to from twenty-nine to thirty-nine centuries B.C.; for in the

¹ Modern Dakkeh.

² Above Meroe.

³ "It is generally placed at the east extremity of that great head of the Nile which skirts the desert of Bahiouda, and near Mount Brikel. Amongst the ruins which probably cover the site of the ancient Napata are two lions of red granite, one bearing the name of Amneph III., the other Amuntuonch. They were brought to England by Lord Prudhoe, and are now in the British Museum." Note to Bohn's ed. of "Strabo."

⁴ Heeren's "Asiatic Nations," i. 47.

time of that monarch or lawgiver, the Nile was diked, and from the character of this river and its surroundings there could have been no necessity to dike it until mining had surcharged its waters with sediment.

The supposed antiquity of these mines derives support from the fact that even at the period of Menes gold had been used for money in India;¹ that Menes was an Indian conqueror and lawgiver; that the Indian Code of Manou, still extant, and assigned variously to from the fifteenth to the thirty-first century B.C., is evidently re-compiled from a much older code, now lost; that commerce between India and Egypt existed from the remotest times mentioned in history or derived from archaeological remains; that an Egyptian expedition to India is attributed to Sesostris, B.C. 2000,² and from other considerations.³

However this may be, the Bisharee mines are known to have been worked for quartz so long ago as the twelfth dynasty,⁴ which Lepsius assigns to the period B.C. 2830. From the fact, understood by every miner, that quartz is never worked so long as the placers contain the smallest practical quantity of metal, and judging from the experience of Italy, Spain, and Brazil—where extensive placer deposits were worked, as in Egypt, by the hand labour of slaves—the Bisharee placer mines were at least two hundred years old when the quartz was worked under the twelfth dynasty of the Pharaohs. This carries the era of their discovery back to the thirtieth century B.C.; and they may be much older.

The next date at which these mines are known to have been worked is under the eighteenth dynasty, about B.C. 1548. They were also worked under Thutmes III. of the

¹ See chap. iv. of present work.

² Diodorus Siculus, i. 34.

³ Consult Rawl. Herod. App. to Book II. chap. viii.

⁴ Mariette Bey, "Histoire Ancienne d'Egypt;" "Encyc. Brit." 9th ed., article "Gold," p. 96; Agath. in Dio., iii. 12-15; Jacob's "Hist. Prec. Met.," p. 31.

eighteenth dynasty ;¹ under Seti Sethos, or Sethosis, of the nineteenth dynasty, B.C. 1443 ; and Ramses, or Rameses II., son of Sete, B.C. 1324.²

All these dates are derived from inscriptions on the neighbouring rocks and temples, and possess the highest archæological value.

The vast sum of “ silver and gold money ” which is said to have been contained in the treasury of Rhamsinitus,³ a monarch whose era is attributed by Rawlinson to the eighteenth dynasty, points both to the working of the Bisharee mines for gold, and to commerce with India for silver.⁴

The quantity of gold amongst the spoil (jewellery and works of art, not money) carried away from Egypt by Cambyzes, about B.C. 526, part of which was regained by Ptolemy Eucyetes, B.C. 346 ; the extent of the tribute imposed by Darius, which was 700 talents in gold (?), besides 7,000 talents-worth of corn and the produce of Moeris ;⁵ and the annual revenues of Ptolemy Auletes, the father of Cleopatra, which were “ 12,500 talents ” a year,⁶ imply—if these treasures are meant to be expressed in gold—the production of this metal upon a large scale.

In the reign of Ptolemy Philopata, B.C. 180-170, the Bisharee mines were visited by Agatharcides of Cnidus, who has left us a brief account of them.⁷

By this time the placers had been thoroughly exhausted and probably re-washed, and the mining was entirely in quartz.

In B.C. 50 the Bisharee mines were visited by Diodorus

¹ Mines of Derehib.

² Wilkinson and Rawlinson.

³ Herodotus, ii. 121.

⁴ The former are the only mines known to have been worked at that period whence any large supplies of gold could have come ; the latter is the only country which could have supplied any considerable quantity of silver. The Phœnician supplies of silver appear to have come at a later date.

⁵ Jacob, 30, from Herodotus, iii. 91.

⁶ Strabo, xvii. 1, 13.

⁷ See Agath. in Dio. Sic., iii. 12-15 ; Jacob, 31.

Siculus. He says:—"On the confines of Egypt and the neighbouring countries there are regions full of gold mines, whence, with the costs and pains of many labourers, much gold is dug. The soil is naturally black, but in the body of the earth there are many veins of shining white quartz, glittering with all sorts of bright metals, out of which those appointed to be overseers cause the gold to be dug by the labour of a vast multitude of people. For the kings of Egypt condemn to these mines not only notorious criminals, captives taken in war, persons accused of false dealings, and those with whom the king is offended, but also all the kindred and relatives of the latter. These are sent to this work, either as a punishment, or that the profit and gain of the king may be increased by their labours.

"There are thus infinite numbers thrown into these mines, all bound in fetters, kept at work night and day, and so strictly surrounded that there is no possibility of their effecting an escape. They are guarded by mercenary soldiers of various barbarous nations, whose language is foreign to them and to each other, so that there are no means either of forming conspiracies or of corrupting those who are set to watch them. They are kept to incessant work by the rod of the overseer, who often lashes them severely. Not the least care is taken of the bodies of these poor creatures; they have not a rag to cover their nakedness; and whoever sees them must compassionate their melancholy and deplorable condition, for though they may be sick or maimed or lame, no rest nor any intermission of labour is allowed them. Neither the weakness of old age, nor the infirmities of females, excuse any from the work, to which all are driven by blows and cudgels; until, borne down by the intolerable weight of their misery, many fall dead in the midst of their insufferable labours. Deprived of all hope, these miserable creatures expect each day to be worse than the last, and long for death to end their griefs."¹

¹ Dio. iii. 1-6. See also Dio. i. 49.

After having been worked successively by the Egyptians, Persians, and Greeks, the Romans worked the Bisharee mines; but by this time even the quartz mines were probably in a very exhausted condition.

Diocletian, about A.D. 296, issued an edict in Egypt committing to the flames "all the ancient books which treated of the admirable art of making gold and silver," apprehensive, as we are assured, "lest the opulence of the Egyptians should inspire them with confidence to rebel against the empire."¹

The historian insinuates that the interdicted works were devoted to alchemy, a science whose name appears to indicate an Arabian, and therefore a later origin, than the period of Diocletian. Be this as it may, alchemy in its earlier developments included both metallurgy and mining, and there can be no doubt that, assuming the story to be true,² the interdict of Diocletian was aimed at the delusiveness of gold mining, and not at the black art.

During the Roman period the Bisharee mines were visited and described by Cosmos, a Greek writer, A.D. 535.³

During the Arabian period they were visited or described by Edrisi, A.D. 1099-1164; Aboolfidda, King of Hamah in Syria, 1273-1331; Ibn-al-Wardy, d. 1358;⁴ Macrizi, 1385; and Massandi, of the fourteenth or fifteenth century,⁵ all Arabians. These writers allude to the Bisharee country as the "land of Bega."

In recent times these mines were visited by Belzoni, Linant de Bellefonds, and Mahomet Ali, the last of whom reopened and worked some of them for a short time, but without success.⁶

Having thus traced, as accurately as the paucity of

¹ Gibbon, i. 441, from John of Antioch.

² Crevier, "Hist. des Emp. Rom.," xi. 254, voc. Diocletian, discredits the story entirely, but gives no reason for so doing.

³ Jacob's "Hist. Prec. Met.," p. 39.

⁴ Malte-Brun, ii. 469.

⁵ Quatremere in Jacob, 31.

⁶ McCulloch, ii. 427, and Rawlinson's "Herod.," note to ii. 23.

materials permits, the history of gold mining in Egypt, we are now better prepared to follow that of money.

It has been asserted by competent authority that not a single metallic coin has been found in the ruins of Egypt.¹ If the word coin is restricted to a piece of money struck by the *cuneus*, this assertion must be accepted as correct; but as a coin is commonly taken to mean any kind of metallic money, the absence of coins in the archæological remains of Egypt has caused it to be generally believed that the Egyptians were ignorant of the use of money, and has furnished an additional ground for the erroneous theory that money was invented by the Lydians or the Greeks.

The Egyptians were not only familiar with the use of money, they probably had several kinds of it; and, moreover, possessing the most extensive and productive gold mines which are known to have been worked at any certain period of antiquity, they furnished to other nations, including the Indians, the material out of which they too could make money.

Egypt derived its civilization from India, and conferred it in turn upon Greece. Both of these countries, the former at a period probably anterior to the settlement of Egypt by an oriental race, were familiar with the use of money. Long after the settlement of Egypt, an active commerce was maintained between that country and India. This is proved by the presence of indigo, tamarind wood, and other Indian products in the tombs of Egypt, which remained unopened until a recent date.² At a later period, and before Egypt was invaded by the Persians, an active commerce and social intercourse existed between Egypt and Greece, the latter being a country where it is admitted money was in common use. Under these circumstances, with India behind it and

¹ Rawlinson's "Herodotus," i. 559. Layard says the same of Assyria. Upon removing the obelisk from Egypt which now stands in Central Park, New York, Commander Goringe announced that beneath the monolith he had found some ancient Egyptian coins, but he seems to have been mistaken.

² Wilkinson's "Ancient Egyptians," ii. 237. Some of these finds date as far back as the eighteenth dynasty, or the fifteenth century B.C.

Greece before it, and both countries using money, it cannot be supposed that Egypt was without it.

The state of society in Egypt also bespeaks the use of money. The principal industry of the country was agriculture; the arts had reached a high degree of proficiency; the population was numerous and highly civilized. These are conditions which it is held have never existed, and never could exist, without money. Even the brief and formal literature of the tombs bespeaks the use of money; for it tells us of contracts for the sale of lands, stipulations for a rate of interest, and prices for the manumission of slaves. Such transactions are inconceivable without money.

On the tombs at Thebes are sculptured slaves weighing certain rings in a scale, the weights representing, as many ancient weights did, some animal, as a lamb, a lion, a bull, &c. These rings are decided, both upon the evidence of the neighbouring cartouche, and upon analogy derived from the finding in the tombs of numerous plain gold rings, too large for use upon the fingers, and too small for the wrists, to be money.¹ This I cannot admit. The fatal objection to their being regarded as money is that they have no mark of authority, no sign, no symbol, no peculiarity of shape; nothing to distinguish them from pieces of bullion, or from ornaments of some sort. Moreover, there is no analogy in the types of other moneys to afford strength to the belief that these rings were money. The Indian type of money was a round piece of metal with a square hole in it. The African and Celtic types were pieces of metal of a horseshoe shape, more precisely like the capital letter C. The Indian money was marked, the African and Celtic moneys were not; but, in the latter case, the peculiar shape was itself the mark, as is proved by the fact that such pieces still circulate in some parts of Africa.²

¹ Wilkinson's "Anc. Egypt.;" Smith's "Dic. Bible," art. "Money;" Dickenson, in "London Num. Chron."

² The writer has one of them in his possession. It is made of copper, is $3\frac{1}{2}$ in. in diameter, and weighs about five ounces.

Finally, these pieces are represented as being weighed, and this, perhaps, is the strongest of all arguments that they were not money. Bullion needs to be weighed, for it is its weight that determines its value; whilst the value of money, provided it is genuine, and not clipped or sweated, is not derived from its weight, but from the whole number of pieces at issue—a fact very much better known to the ancient than to the modern world. Nor can it be argued that the Egyptian rings were being weighed to determine their validity, for this can only be done with one piece at a time; whereas the sculptures represent a number in the scale together.

“Count Caylus mentions the small pieces of gold sometimes found under the tongue and sometimes in folds of the drapery of Egyptian mummies, as possible money.”¹ A similar objection to the one first above advanced is to be made against regarding these pieces of gold as money: they have nothing to distinguish them from other pieces of gold, no peculiar type, no mark of authority.

That gold was once used as a material for money in Egypt is amply attested by the extent of its placer mines, but I am inclined to put this period back to a very remote date, probably more than thirty centuries B.C. The reasons, already given at length, are briefly these: the diking of the Nile, attributed to the age of Menes, could hardly have been called for unless the regimen of the river had been disturbed by long continued and extensive mining operations. Placer mines are soon exhausted of their coarse gold, and this forms the bulk of the product. Hence it is believed that the main portion of the vast operations which the present remains attest, were conducted at or near the period assigned to Egypt's great law-giver. It is true that the placer mines continued to be worked at later periods, but the close of their most productive era is marked by the prosecution of quartz mining under the twelfth dynasty, which Lepsius assigns to the period B.C. 2830. Quartz mining, even in

¹ Humphreys' "Ancient Coins," p. 19 n.

these days of giant powder and compressed air drills, is rarely attempted whilst the neighbouring placers continue to remunerate the miner. From these considerations it follows that the era of gold money in Egypt had long passed away when the weighing of gold rings was sculptured on the tombs of Thebes, or when any of the gold rings or flat pieces of gold which have been found in the tombs were deposited therein. If such is the case, it should not be a matter of wonder that no examples of this money have been found. At the period of the gold rings, the ancient tombs and places of deposit had probably been rifled so often of their precious contents that not a piece of the ancient money remained.

The next appearance of gold money in Egypt was when Cambyses introduced it from Persia, about B.C. 525. But what had happened during the twenty odd centuries intervening? Had the Egyptians continued to till the earth, to fabricate an endless variety of useful objects, to carry on an extensive commerce, to maintain a social order, both industrious, peaceful, and refined, without the use of money? This is not only inconceivable, it is refuted by the evidence of the papyri rolls, which record numerous money transactions. The only question is, of what did this money consist?

The Egyptians possessed several substances out of which they might have made moneys:—

1. Pasteboard. The *cartonage*, or case fitting close to the bodies of the mummies, was made of this material. Boats were also made of it.¹

2. Parchment, which was used in Egypt at least 1200 years before the era of Eumenes of Pergamus.²

3. Rolls of leather were used to write upon in consequence of the high price of papyrus.³

¹ Wilkinson, ii. 396, and ii. 97.

² Ibid. ii. 99. The word "parchment" is from "Pergamena" or Pergamus.

³ Ibid. ii. 99.

4. Pieces of pottery, wood, and leather were frequently used to write upon; also stuccoed cloth.¹

5. Wooden tablets, covered with wax, were long in use among the Romans, as well as the papyrus; and the inner bark of trees and pieces of linen had been previously adopted by them about B.C. 440.² Why not also the Egyptians?

6. Papyrus. It was a government monopoly.³

7. Nummulites. Many portions of the limestone rocks through which the Nile cuts its way, and of which the pyramids are constructed, consist of masses of fossil nummulites, easily detached from their surrounding matrices. The author has in his possession a number of these interesting stones. They are in shape exactly like a Grecian coin, round, almost flat, and thicker in the centre than at the edge, which is bevelled and, like the rest of the surface, smooth. They range in size from that of an English sixpence to a crown. Nothing could have been more admirably adapted for money than these pieces, a fact which their name sufficiently attests.⁴ They only needed a mark of authority imprinted or cut upon them, and a government virtuous enough to restrict their issue and strong enough to prevent the money mark from being counterfeited.

8. Scarabæi. The immense number of stones and pieces of baked clay or porcelain which have been found in Egypt, cut or moulded into the shape of beetles and tortoises—known to archæologists by the name of scarabæi—suggests that these were used in that country as money.⁵ This view is confirmed by other considerations. The Indians who traded with Egypt used cowries for money; the Chinese, who also traded with Egypt at a very remote period, used “tortoise” (probably cowrie) shells for money. This system, which dates as far back as the twenty-eighth

¹ Wilkinson, ii. 99.

² Ibid. 100.

³ Ibid. 99.

⁴ Nummulite is from *nummus*, money.

⁵ Consult Quintinos, Stieglitz, Humphreys, and the other technical and highly qualified authorities previously quoted. *Per contra*, see Wilkinson's “Egypt,” ii. 341.

century B.C., and may be earlier, was revived during the Tsin dynasty, which ended B.C. 201,¹ and continues in some parts of China to the present day.

Unless these shells were marked by authority they could only pass at their commercial value ; if marked, their value would be determined by their number. Whether marked or not, they offered a type—that of the tortoise back—which is to be found on many of the Egyptian scarabs and the early Greek coins, and strongly suggest that the former were used as money. I am inclined to the belief that nearly all of these substances were at various times during the period referred to employed in Egypt for money.

It is evident that after the gold mines ceased to be productive, the country was left without any certain source whence supplies of the money metals could be obtained ; for the cessation of the gold product must have been soon followed by a cessation of the supplies of silver obtained through commerce with India or Phœnicia. Seven millions of civilized people living within a narrow space of territory, and therefore engaged in constant exchanges, were not going to lie down and submit to commercial decay and social retrogression simply because the supplies of a particular metal had ceased ; and the suggestion that the nummulites, or the clay scarabs, or some other like objects, were resorted to for the purposes of money, acquires a high probability.

Overvalued Iron Money of Kordofan.—As going to prove the likelihood that the ancient Egyptians were familiar with numerical money, as well as to preserve in an appropriate place the record of certain interesting coincidences which may yet develop into proofs concerning the migration of races, mention should be made of the iron money still used in Kordofan.

These pieces vary in weight from 121 to 428 grains each, yet they are all of similar value ; a fact which proves that the latter is determined by number and not by weight. They go at a para each, forty paras making a piastre, and

¹ Kang-he's "Dictionary."

one hundred piastres exchanging for a pound sterling. Each piece will exchange in American money for one and a quarter mills.

These pieces are called *kashasba*, a word of Sanscrit origin, whose use suggests intercourse, direct or indirect, between India and Kordofan, and therefore Egypt.

Their shape is that of a bird on the wing, more exactly like the section of a mushroom. This is the shape of certain very ancient Chinese coins which the author has seen in the numismatic collection of the Bibliothèque Nationale at Paris. It is also the shape of certain tin coins found in Mexico by Cortes, one of which is preserved in the same collection.¹

Turning away from the interesting speculations suggested by these facts, and resuming the consideration of money in Egypt, that country appears to have conducted its exchanges with cowries or scarabs, supplemented possibly at later dates by Lydian or Greek coins for foreign commerce, until the Persian conquest, when it was supplied with a national coinage, of probably very limited extent, by Cambyzes and Darius.² Aryandes, who was governor of Egypt under these reigns, struck silver coins in imitation of the gold darics of his sovereign. For this he was condemned to death.³ The next coinages in Egypt were executed under the Ptolemies, who struck both gold and silver, chiefly the latter; the silver mines of Laurium by this time affording steady supplies to the world.⁴

From this date forward the money of Egypt has been

¹ Consult Holroyd in "London Num. Chron.," vol. i.; Humphreys' "Ancient Coins," ed. 1850, p. 16; and Wilkinson's "Ancient Egyptians," ed. 1878, ch. ix. p. 246.

² The earliest certain Egyptian coins commence with Cambyzes, although it is likely that copper coins were used prior to the Persian conquest. "Ency. Brit.," ed. 1858, art. "Numismatics." This last, however, though only an opinion, is that of Madden ("Jewish Coinage," p. 9), who founds his opinion on Herod., iv. 166.

³ Herod., iv. 166.

⁴ Silver was coined at Athens B.C. 512. Aristot., "Econ.," ii.

that of her conquerors, and calls for no especial mention except during the reign of the Fatimite caliphs, A.D. 909—1171.

This money was made of glass, and was used—possibly continuously, but certainly at intervals—for upwards of six hundred years, for it was current under the Mameluke sultans so late as the year 1766. It will not be disputed that these pieces derived their value from their number, and not from the worthless material of which they were composed. It is greatly to be regretted that no records have been preserved of the emissions, and the effect of such emissions upon prices. It is possible that the Fatimite caliphs were virtuous or wise enough to restrain these emissions within proper limits, and even to make publicly known what these limits were; but it is too much to suppose that their successors pursued a like enlightened policy. In all probability, the glass coins of Egypt followed the fate of all overvalued moneys in ill-governed or ignorant countries; they were issued without number and without limit, until they either fell to the value of the material which composed them, and which, in the case of glass, clay, or paper, would in the end render them useless for money, or were issued to such an excess as to fall to a very low value, and serviceable only in the smallest and least important exchanges.¹

¹ Lenormant, "La Monnaie," vol. i., p. 94, contends that the Pharaonic *outen*, so frequently mentioned in the papyri, was a copper weight; whereas it is evident from the very examples he gives that it was a coin or sum of money. It is possible that like the French livre and English pound, the Egyptian *outen* was a weight as well as a sum of money.

CHAPTER IX.

PERSIA, ASSYRIA, BABYLON, AND PALESTINE.

Little known of the monetary histories of these countries—Persia never an important mining country—Darins—The Mahomedan era—Overvalued copper system of Kai Khátú—Its failure—Melting of copper coins mentioned by Tavernier—Assyria has left no numismatic remains—Babylon—Her moneys of baked clay—Palestine anciently a pastoral country, using cattle for money—Conjectural system of money during its agricultural and commercial period—No coins struck previous to the Maccabees—The Roman and Mahomedan conquests—Interesting experiment of the Urtuki Turkomans—Silver-plated dirhems and gilt dinars—Failure of this system, and causes of same—Restoration of the silver dirhem—Merging of Palestine into the Turkish monarchy.

ALTHOUGH numerous coins of Persia and a few relating to the other countries included in this chapter have been found, so little is known of their monetary histories as scarcely to warrant allusion to them under a separate head. The account here given is, however, furnished in order to provide a suitable place in the work for such future discoveries as may occur in connection with the subject.

Persia, apart from those regions which are supposed to have anciently formed a portion of Ariana, does not appear to have ever been an important mining country ; at least, but little mention is made of it in this respect in the various works which have fallen under the author's notice. Strabo, xv. ii. 14, says that one of the rivers of Carmania brought down gold dust, a fact that goes but a small way towards conferring a mining character upon the country. Of similar little import is the statement of a modern German mining engineer, that formations of quartz rock not known to contain any payable gold are to be found near Zengan.¹

The earliest notice which has come down to us concern-

¹ Lock, on "Gold," p. 366.

ing the monetary history of Persia relates to the conquests of Darius Hystaspes and his coinage of the well-known gold darics, an act that implies not only previous familiarity with money, but also with coins. As these events have been treated upon elsewhere at sufficient length, no further allusion to them is necessary in this place.

Between the era of Darius and that of the Mahomedan princes of the thirteenth century of the Christian era, an infinite number of coinages took place in Persia both of copper, gold, and silver, chiefly the former, but few or no details have reached us concerning the monetary systems to which these coinages pertained.

In A.D. 1294, one of these princes, Kai Khátú, observing the mischiefs occasioned to his country by the scant and spasmodic supplies of the precious metals, matured a plan which, had the government and social condition of Persia, and the perfection of the mechanic arts, been such as to render it practical, might have greatly promoted the welfare of his subjects. But such was not the case, and in the course of two brief months the scheme utterly failed. Its main feature was to substitute overvalued copper coins for gold and silver ones. But as no specific limit was assigned to the emission of coppers; as the latter, in point of execution, were far from being difficult to counterfeit; as no interdict was enforced against the concurrent circulation of gold and silver coins; and as the government was weak and despotic, and the people enslaved and ignorant, no confidence was felt in the value of the new coins, and they were refused almost as soon as issued. The prince's own nephew, Ghazàn Khan, governor of Khorasàn, openly set the example to his subjects of refusing to accept them, and after this they rapidly fell into disrepute.¹

¹ For details, consult Malcolm's "Persia," i. 430; D'Ohsson, iv. 101; De Guignes, xvii. 267; Langle's "Mem. de l'Institute," iv. 115; Price's "Mahomedan History," ii. 596; De Sauley, in "Journal of the Asiatic Society," 1842; and Prof. E. B. Cowell, in "Jour. Asiat. Soc.," Bengal, 1860, p. 187.

That numerous other monetary experiments have been made from time to time in Persia, there can be little doubt.¹ The country has rarely or never been in a condition to successfully maintain a numerary system, and it has quite as seldom been able to control such adequate supplies of gold, silver, or copper, as would ensure the continuance of a metallic standard, even when the coins were made of copper. No details of these experiments have, however, found their way into western literature.

Assyria, though one of the oldest of the Asiatic monarchies between India and the Occident—Oppert assigns the date of its mythical foundation to the thirty-sixth century before Christ, while Clinton dates its real foundation from about the twentieth century B.C.—has left no remains of its doubtless very numerous monetary systems. It was an agricultural and commercial country, its inhabitants were highly civilized, and its annals extend downward to the seventh century B.C., when Nineveh and the Assyrian government both fell beneath the conquering arms of Babylon.

Babylon, the ancient Chaldea, was a monarchy of equal antiquity with Assyria, the dates assigned by modern commentators to its foundation varying between the thirty-fifth and twentieth centuries B.C. A more reliable proof of its antiquity is derived from the fact that its astronomical registers, dating back to B.C. 2234, were sent for inspection to Aristotle. The territory of Babylon was under an advanced state of agriculture; it was a commercial country; its inhabitants were highly civilized. Although its annals extend downward to the year B.C. 538 or 536, yet only slight and doubtful remains are left to us of any of the numerous monetary systems which so long a history and so highly developed a condition of society imply.

No coins have ever been found, either of Assyria or

¹ Tavernier, 51, quoted in Marsden, 53, says that in A.D. 1664 the Persians melted down their copper moneys known as cashbekes. There must be a curious history behind so strange a circumstance.

Babylon ; yet mention is frequently made in the clay tablets upon which the public annals of these countries were inscribed, both of sales of property for money and of loans of money upon interest. It is difficult to escape the conviction that the moneys of these empires were made of baked clay, and that many of the exceedingly numerous so-called seals or signets of this material which have rewarded the researches of Layard, Loftus, and Botta, are in fact moneys. Such certainly seems to be the character of some of those found at Nimroud, and now in the British Museum. They are small cylinders of baked clay, about an inch in length, and impressed with the figure of a king slaying a lion. If they were seals and not moneys, they would surely present a greater diversity of type, and have been made of some harder and more valuable material than clay. Their resemblance to the clay moneys of other countries is a strong argument in favour of attributing this character to them.

Palestine, whose importance to the world is derived from religious rather than political considerations, is not known to have ever had a monetary system until the era of the Maccabees. It was a pastoral more than an agricultural country, and until a comparatively late period neither its people nor its government were of that settled character which bespeaks the necessity of money. The sums in shekels mentioned with regard to Abraham's purchase of Machpelah, and elsewhere in the earlier history of the Hebrews, were weights or quantities—not coins—of silver. Such infrequent exchanges of property as the inhabitants found it necessary to make, were effected by means of cattle, which, as in all pastoral countries, formed a rude but convenient medium of barter.

Following this period, several centuries elapsed before the era of the Maccabees ; and during this time the Hebrews had become so much of an agricultural and commercial race, their dynasties had become so well established and their civilization so far advanced, that some form of money more convenient than cattle must have come into use. If con-

jecture may be allowed to fill the place left vacant by history, this money consisted of clay cylinders, after the example of Babylon, with perhaps gold or silver coins or rings from Phœnicia or Egypt as multipliers. Such a theory, however, has to contend against the belief that no Phœnician coins have been found of an earlier date than the Persian rule,¹ and no Egyptian rings with a monetary mark upon them.

In the mediæval ages, when Palestine, after a long subjection to Rome, had passed into the possession of successive races and dynasties of Mahomedans, to become at length an object of regard to the Christian world, it was the scene of a monetary experiment more interesting than any which is known to have preceded it in that country. During the period A.D. 1084-1257, Palestine was governed by the Urtuki Turkomans, who, having commercial relations with the Greek and other Christian peoples of the coasts of Asia Minor, had coined certain of their moneys to suit this trade. These moneys consisted of gold dinars and silver dirhems with Arabian inscriptions on one side, and European, usually Byzantine designs, on the other. Besides these, they coined during the twelfth century a series of overvalued copper fals for domestic circulation. These fals were plated with silver and called dirhems, for which coins they were ordered to pass. With a view to deter the too cautious creditor from testing the thinness of the plating, they bore this inscription: "Cursed be he who tests this dirhem;" but this device not proving effectual, the plating in subsequent coinages was omitted altogether. In a similar way other copper coins were gilded and ordered to pass as dinars.

History affords us no information with regard to the fate of this monetary experiment, but it is not difficult to portray it. Neither the character of the government, nor the state of society among these or any other of the Syrian tribes, were such as to render an overvalued money practicable. The emission was made without specific limits, and no

¹ Madden's "Jewish Coinage," p. 10.

assurances which their governments were capable of conveying would have been sufficient to allay the fear that, whatever the limit, it would not be suddenly and secretly exceeded.

The condition of the mechanic arts afforded no security against the fabrication of numberless counterfeits, and the inability of the great mass of the people to read lent every facility to the circulation of false money. In short, every circumstance was unfavourable to the maintenance of an overvalued system of money. It was not the outgrowth of an intelligent desire to improve or reform the monetary system, but merely the desperate resource of a monarch whose power rendered him incapable of controlling an adequate supply of the precious metals for his country, or whose poverty or dishonesty drove him to essay an untimely and disastrous scheme of finance.¹

No real silver dirhems were minted by this government during the progress of the overvalued copper system, nor until the year A.D. 1200, by which date it is presumed the copper dirhems had fallen to their ingot value.

From this time forward the monetary history of Palestine presents no details of interest, until it came to form part of that pertaining to the Turkish Empire at large.

¹ The view taken in the text, that the copper dirhems were ordered to pass for silver ones, is that which is supported by Dr. Karabacek, in the "Numismatische Zeitschrift" of Vienna; see Bd. i. for 1869, pp. 265-300. On the other hand, Mr. Poole, in an essay which appears in the "Numis. Orient.," opposes it, though with singular weakness of argument. He says: "Though the weight of evidence leans heavily to Dr. K.'s side, it must be *admitted* that his point is not yet *absolutely* proved!"

CHAPTER X.

ABORIGINAL EUROPE.

The coasts of Europe discovered by Phœnician gold-hunters—The interior probably colonized from Asia at a later period—Proceedings of the discoverers—Destruction of forests—Derangement of water-courses—Captivity of the natives—Different habits of the mining colonists and the agricultural colonists—Traces of these habits to be found in the character of the nations who have sprung from them—The monetary systems of Northern Europe were of the bronze bell and ring types, and came overland from Northern Asia, whilst those of Southern and maritime Europe were based on gold and silver—Introduction of Greek types of moneys about the sixth century B.C.

THERE is every reason to believe that the discovery and colonization of Europe occurred in nearly the same way as afterwards did that of America.

Twenty centuries before the Christian era much of the continent of Europe was covered with primeval forests, which man had not as yet learnt to cut down and convert to his use. On the borders of these woods, on the sea shores, the lake shores, and the river banks, roamed tribes of savages similar to those who, thirty centuries later, were found in America, and who, like them, lived on mast and wild animals, painted themselves, scalped one another, and worshipped the devil. Upon the prairie lands, and in regions where the natural clearings were of ample extent, there dwelt a more settled population, whose occupation was pasturage and agriculture, chiefly the former.

About the seventeenth or eighteenth century B.C., the southern and south-western shores of the continent were first coasted by some Phœnician Eric or Columbus, and settlements were afterwards made in Greece, Etruria, Gaul, and Spain, with the object, not of colonization, but of con-

quest and trade. Like that of the later Spanish settlements in America, this trade was chiefly for the precious metals, which, in the days of Phœnician empire, meant gold, silver, copper, and tin, and we may reasonably surmise that in their acquisition the Phœnicians paid as little regard to the rights of nature or humanity as the Spaniards afterwards paid to them in America. Forests were hewn or burnt down, rivers were turned or filled with mining gravel, and the land was torn up and ransacked in every direction. Peaceable natives were conquered and entombed alive in their own mines,¹ others were slain while defending their homes against the newcomers, and others again captured and led away to a distant and cruel slavery.

Following these earlier adventurers came regular colonists. Both Greece and Etruria were settled from Phœnicia. These colonists partook to some extent of the character of the discoverers and adventurers who had preceded them. They retained their mining character, they spurned agriculture, and preferred buying their supplies of food in Egypt to raising it themselves. They were brave, reckless, adventurous, and cruel; they fought one another with ferocity; they imperilled their lives for the most trifling advantages; they pushed their way into the forests and explored the newly found continent from the Mediterranean to the Alps; they forced the natives into their mines and slew them without remorse. On the other hand, they had their own women with them, which their predecessors had not; they reared legitimate offspring; they built permanent homes, and they introduced the social influence of the mechanic arts and the refining effects of letters.

These Phœnician colonists had been slaves in their own country, for such was then the condition of all the peoples of Asia; they were slaves to nobles and priests—just as the people of India remain to-day. The motive of their voyages to Europe, and of their subsequent settlement therein, was not alone wealth; it included liberty. Like

¹ Yeats' "Commerce," p. 20.

the Spaniards who flocked to America in the sixteenth century, they had been either slaves or vassals in the old country; in the new one they were freemen and lords. With the advancement of agriculture in the new settlements came a more orderly state of affairs, and one that conformed more nearly to that which the colonists had left behind them in Phœnicia. Yet wages were higher, land was much more easily acquired, and exceptional fortunes more frequently made than in the mother country.

Whilst Phœnicia was founding colonies in Europe, she was trading by sea and land with India.¹ She exchanged her Spanish silver for Indian gold in Babylon, and with this merchandise went the tale of its origin—a tale that, by exciting the cupidity of the Tartars, Indians, and other nations, to whom northern Europe was accessible by land, led to the conquest of the new continent from that direction, and eventually to the subversion of Phœnicia itself.

The so-called Indo-Germanic emigration could not have been an emigration at all. Europe was undoubtedly approached from the north as it had been from the south, at first by discoverers and explorers, and afterwards by armed colonists, who in the south went to subdue and despoil and in the north to conquer and displace. The same remarkable difference that afterwards distinguished the southern and northern colonists of America, distinguished those of Europe. The southern colonists were adventurers and miners, the northern were conquerors and agriculturists, and while it was the policy of the former to enslave the native races and of the latter to destroy them, precisely opposite effects followed—enslavement ended in destruction and the attempt to destroy in amalgamation.

There can be little doubt that the original difference herein pointed out between the characters of the northern and southern colonists of Europe has made such marks

¹ Glass beads were made in Sidon for the Spanish trade. Yeats, 17-20. Bactrian gold dust was exchanged by the Phœnicians in Babylon for western silver. Yeats, 25.

upon the polity, the genius and history of these peoples, that traces of them may be discerned to this day.

From the number of mines of this era, say B.C. 1700 to 800, in the south, and the absence of any in the north of Europe, and from the greater extent to which the northern nations, as compared with the southern and maritime ones, relied for support upon agriculture, it appears probable that the monetary systems of the former followed types which were introduced from China, Northern India, or Tartary, while those of the latter were based on the more precious metals to whose search they were indebted for the origin of their settlements. Some remains of the bell and ring types of money have been found in the Swiss Lake Dwellings,¹ and both of these types are from China and India.

I have not been able to trace the bell type moneys farther west than is indicated by these instances, but the ring type, which was common in Egypt, has been traced to the western coasts of Africa, where it is still in circulation, and to the confines of Britain, where it was used by the ancient Celts.² This ring money appears to have circulated throughout aboriginal Europe until the Greek types were introduced, about the sixth century B.C., by the Ionians and others, through the various settlements which they founded on the coasts.

¹ "Smithsonian Report," 1865, p. 376-7, on the palafittes of Lake Neuchatel, by E. Desor, with designs by A. Favre-Guillarmod. This essay contains a drawing of a piece of bronze bell money found in one of the lake dwellings.

² Noel Humphreys, "Ancient Coins;" Sir John Lubbock, "Pre-historic Times;" Napoleon's "Cæsar," p. 116.

CHAPTER XI.

GREECE AND GREEK COLONIES.

In Greece generally the supplies of the coining metals were always irregular—Gold and copper had to be imported, whilst the silver mines were controlled by Athens—Hence the other Greek states were compelled to employ numerical moneys—Phœnician commerce and money—Probable antiquity of coined money in Greece—Concededly older than Lyeurgus—His memorable system of iron numeraries; its permanence; its beneficial effects—Blunder of Plutarch—Decline of Sparta, and fall of its numerical system—Ionia—System of overvalued iron discs—Byzantium—Iron system—Its decline—Growth of corporations—Marseilles—Athens, first period—The Peloponnesian war—Issue of overvalued coins—These supplanted by a numery system of copper discs—Downfall of Athens and of her numery system—The Thirty Tyrants—Syracuse—System of overvalued coins a failure—Due to her inferior civilization and despotic government—Athens, second period—Fall of the Thirty Tyrants—Recovery of Attic liberty, power, and wealth—Rehabilitation of the numerical system—The Social War—Weakening of the State—Fall of the numerical system—Restoration of cattle, corn, and coin money—Growth of corporations—Seeds, leather, and other base moneys—Hopeless condition of the State, and final destruction of its free institutions.

SPEAKING of Greece generally, her supplies of metal for the purposes of coinage were always irregular. The supplies of gold were very scant, and these came mostly from Lydia. Copper had also to be fetched from abroad. There were some unimportant gold mines in Thrace, which were captured by Cimon of Athens about B.C. 464, but these, together with the equally unimportant ones of Thasos, had been worked out in ancient times by the Phœnicians. At about the same time, that is to say in B.C. 467, Athens had a contest with the Edoni for certain gold mines, but without its adding to her metallic resources. In point of fact, Greece never possessed more than one great deposit of the coining metals, and this consisted of the numerous silver mines

at Laurium. As these mines were monopolized by Athens, the other Greek states found it more convenient to employ numeraries than to rely on Athens for silver. This expedient was resorted to so commonly, and at so many different times, as to familiarize the Greek mind generally with the idea that money was an institution of law, and hence the name of law, prescription, limit, numbers, or *nomos*, was the generic name always conferred upon it.

The numerary systems of Greece probably began with the overvaluation of silver coins, a proof of which appears in the countermarks found on some of them. These were designed to give them circulation in other cities than those of their fabrication,¹ an expedient that would hardly have been necessary if they passed for their bullion value only. The mines of Laurium were the property of the government,² and the coinage of money, as pointed out in a previous chapter, was conducted in the temples and under the supervision of the priests.

In view of the great antiquity of metallic moneys in China, India, and Egypt, and of the extensive and peculiar commerce of the Phœnicians, it is difficult to believe that the last-named people were not acquainted with the use of coins, and equally difficult to believe that the Greeks, who descended from them or mingled with them, were not also acquainted with coined money long before the period assigned to its invention by Herodotus and his modern commentators. Julius Pollux does indeed intimate that coins were used by the Greeks fourteen centuries before our era, but this authority has been slighted in favour of the more specific testimony rendered by Herodotus.³

It is for this reason that all the archaic Greek coins have been ascribed by the numismatists to a date which

¹ Humphreys' "Anc. Coins," p. 4.

² Xenophon, "De Vectigale."

³ The learned Boeckh admits gold and silver to have been in use in Greece at the time of the Trojan war—say from B.C. 1200 to B.C. 1400. Boeckh, "Political Economy of the Athenians," p. 766.

agrees with the account of this author, and the oldest of these coins have thus been attributed to Phidon of Argos, about B.C. 862. Even this date, however recent it may be with reference to the invention of metallic money in Greece, is nevertheless sufficiently remote to render it probable that coins were known and in use in Greece before the time of Lycurgus.

Sparta.—The difficulty of obtaining sufficient and regular supplies of the metals for coinage, or else the desire to emancipate his country from the trammels of a metallic basis of valuation, induced Lycurgus, about the ninth century B.C., to insert a clause in that constitution, whose establishment marked the rise and pinnacle of social progress in Sparta, providing for a system of numerical money, the concrete symbols of which consisted of a limited and specified number of iron discs. These, while red hot, were dipped in vinegar, to render them unmalleable and useless for any other purpose than money.

In order to prevent the limits of this system from being exceeded, the production and importation of gold and silver and their use as money were absolutely forbidden.¹ Such of these metals as the Spartans happened to capture in war or came by in other ways, they deposited with the Arcadians for safe keeping. The danger attending all public accumulations of the precious metals is exemplified by what occurred in this instance; for, says Athenæus, the Arcadians were no sooner entrusted with this treasure, than they picked a quarrel with the Lacedæmonians, with the express view of seizing upon it as part of the spoils of war.² It must not be supposed that the iron discs of Lycurgus passed merely for their value as iron metal, else there would have been no

¹ Athenæus, vi. pp. 23, 24.

² The discredited story in Herodotus, iii. 56, would imply that gold was used for some purposes by the Lacedæmonians in the time of Polycrates of Samos (about B.C. 540), or else it could not have been reported that they had accepted such money from that monarch to raise the siege of Samos.

good reason for excluding gold and silver adjuncts from his monetary system, nor any reason whatever for immersing the discs in vinegar to render them useless in the arts. The discs were doubtless highly overvalued, so that each one was capable of purchasing many times its own weight in ingot iron. To maintain this overvaluation, it was necessary to limit the whole number of discs at issue.¹

To the refined mind of the ancient Greeks, it was not difficult to understand and put in practice such a system of money, and we shall find this system imitated in many of the Greek states and colonies; but to the honest Plutarch, who appeared nine or ten centuries later, and who could see nothing more in a monetary system than an uncertain and unknown number of ounces of metal to be exchanged as commodities for other commodities, the numerary system of Lycurgus was entirely incomprehensible, and, in order to deride it most effectively, he invented the silly story that it required a cart and a team of oxen to transport the most ordinary sum of the Spartan money. Like many another false thing, this story has passed current for nearly twenty centuries, perhaps for the reason that it has not been worth anybody's while to contradict it.

There is every reason to believe that the monetary system of Lycurgus maintained its ground for upwards of three and a half centuries, and in fact that it remained in vogue so long as Sparta continued to be a progressive state, and fell into disuse only when, after having long held the hegemony of Greece, the Lacedæmonians were compelled to relinquish it to Athens, B.C. 479.

After this date the fall of Sparta was so rapid, that although at the period of the Persian war she had eight thousand citizens, to say nothing of her Pericæci and Helots, yet in the reign of Agis IV., B.C. 244-240, she could only boast of seven hundred citizens, of whom one hundred alone possessed most of the landed property of the State.

¹ Their numerical character is fully recognized by Boeckh, "Political Economy of the Athenians," p. 763.

The crime of Gylipus, B.C. 360, and the decree offered upon its exposure, viz., "That no coin of gold or silver should be admitted into Sparta, but that they should use the money that had (formerly) long obtained," shows that as this decay of the State and weakening of credit went on, gold and silver coins at or near their bullion value gradually crept into circulation again as money. The failure of the decree to pass, is conclusive that the iron numerary system was no longer practicable.¹

Ionia was a Greek democratic republic in Asia Minor, founded by Atticans about B.C. 1150, and comprised, among other possessions, the twelve cities of Miletus, Myus, Priene, Ephesus, Lebedus, Colophon, Teos, Erythræ, Clazomenæ, Phocæa, Chios, and Samos, on the islands of the same names. To these was afterwards added Smyrna. Numerous colonies, issuing from the original twelve, built towns along the coast, and in time extended to many parts of the Mediterranean and Euxine. Ionia early became the rival of Greece in civilization and progress.²

It is to this period of progress that must be ascribed the emission of a numerary money in Clazomenæ mentioned by Aristotle.³ This money was stamped upon twenty talents-weight of iron discs. The number of the latter is not stated. To each of them was given an arbitrary value, probably equal to that of the same weight of gold. Boeckh says silver, but this would make the total too small.⁴

¹ As the power and wealth of the State declined, it is probable that excessive and secret emissions of her overvalued iron discs were made, until their value at length fell to that of the material which composed them. If there is any truth at all in Plutarch's account, it relates to this declining period in the history of the iron money, and not, as he puts it, to their entire history.

² Appleton's Cyc., art. "Ionia," and Putnam's Encyc., art. "Thales."

³ Aristot., "Economics," ii. pp. 2, 16.

⁴ "The iron having been put into circulation, and having thus supplied the place of silver, the amount of ready money in the State was not diminished. The iron money performed the same service in the State which silver had previously done, and the silver which remained could be employed for the purposes of foreign commerce. To that

Clazomenæ was, however, not of sufficient commercial importance, nor far enough advanced in the scale of civilization, to maintain such a system of money. The pieces were subject to counterfeiting, to the smuggling of foreign-made imitations, and to the influence of powerful citizens who may have caused the emission to be increased or decreased to suit their own interests. We hear of their redemption in silver and the resumption of metallic payments, and this took place doubtless long before the conquest of the Ionian republic by Cræsus of Lydia, at which period, if not before, the progress of Clazomenæ was arrested and its credit destroyed.¹

Byzantium was originally founded by a band of Megarian colonists, B.C. 658; it was destroyed by the Persians about B.C. 500; and re-colonized by a body of Dorians and Ionians after the battle of Plataæ, B.C. 479. At this period the civilization of the two parent states to which it owed its origin had attained its highest point. The new colony rose rapidly to affluence and power. It obtained possession of the grain traffic between the Euxine, Greece, and Egypt; and its fisheries were so abundant as to procure for its harbour the name of the Golden Horn. It was during this period, B.C. 431-404, that the favourable condition of its civilization and credit enabled it to employ a numerical money. This consisted of discs of sheet iron having an impression on one side and known by the Doric appellation of *sidareos*,² the best substitute for paper notes which the condition of the mechanic arts at that time permitted.

It is observable that as the resources and credit of the government declined, its money was supplemented by correlative issues. A bank was chartered, upon which monopolies and other important powers were conferred; and

extent the iron money was identical in its uses with the paper money of modern times." Boeckh, 763.

¹ Cræsus reigned B.C. 568 to 554. Rawlinson, in Appleton's Cyc., art. "Cræsus."

² Boeckh, p. 769, and Heeren, vi. p. 168.

it is probable that the issues of this bank, which at first may have consisted of highly overvalued gold or silver coins, and afterwards of similar coins less highly overvalued, gradually usurped the place of the government numeraries as money. "All persons were prohibited from buying or selling money elsewhere (than with this bank) under penalty of forfeiting the sums thus sold,"¹ a provision that is deemed to afford ample ground for the foregoing inferences.

In the course of time, and as the decay of the colony proceeded, the credit of the bank must have fallen, its power to prevent counterfeiting and smuggling must have diminished, and with it the ability to render its issues current at any value above that of the metal they contained.

Marseilles was founded by the Ionian Greeks about B.C. 1100, and from its situation near the mouth of the Rhone commanded the trade between the towns along that auriferous river and the Levant. It is only worth alluding to in this connection as having been the channel through which coins of the Greek type were introduced to the Gaulish tribes.²

Athens. First Period.—The hegemony of Greece lost by Sparta and gained by Athens during the period between the battle of Platae, B.C. 479, and the Peloponnesian War, B.C. 431-404, marks the zenith of Attic civilization. This was the era of Pythagoras, Æschylus, Pindar, Simonides, Sophocles, Plato, Pericles, Thucydides, Euripides, Themistocles, Cimon, Aristophanes, Phidias, Anaxagoras, Socrates, Hippocrates,³ Democrates, and Xenophon. It was when Herodotus read his immortal history in the Council, and women hastened to Plato's garden, there to drink of his pure philosophy.

Although the progress of Athens in letters and arts,

¹ Boeckh, 772.

² Martin's "Hist. France."

³ Hippocrates lived B.C. 460-359. The progress of medical art which his work evinces, betokens refinement, a close observation of nature, and comparative freedom from superstition.

during the period of her hegemony was regular, the most brilliant of its ages was that of Pericles, whose administration, as we may call it, lasted from B.C. 469 to 429. To this age belong the temples of Theseus, the Wingless Victory, the Odeum, the Parthenon, the Propylæa, the Erechtheum, and the magnificent system of public works designed by the sculptor Phidias.

During this age Athens was so rich that she possessed in her public treasury a sum of silver (Athens first coined silver about B.C. 562) equal to over a million sterling; a sum of gold embodied in the statue of Minerva equal to more than half a million sterling; annual revenues from tributary states equal to another half million; besides a sum equal to £700,000 recently expended in public works.¹

As the Peloponnesian War went on, the once ample metallic resources of the State became so reduced, chiefly through payments to the troops, who were on foreign territory, and for whom supplies of metal had to be purchased abroad, that an overvalued system of coins was resorted to. This was during the archonship of Antigenes, B.C. 407.² These coins were made of the base gold and copper composition contained in the statue of Victory. The credit of the State stood so high that even this base money was lowered without opposition or complaint. In a subsequent year, during the archonship of Callias, about B.C. 405, a numerary money was fabricated of copper discs, highly overvalued. These were the first copper discs or coins of Athens.³ They circulated concurrently with the commodity coin called the *chalcûs*, just as the "greenbacks" of the United States circulate side by side with commodity silver coins of like denominations.

The Peloponnesian War terminated B.C. 404 with the surrender of Athens to the Spartan general Lysander, with the abolishment of her democratic government, and with

¹ These sums are according to Dean Smith, and are given in Jacob, p. 19.

² Boeckh, 765.

³ Matthew Raper, p. 533.

the establishment of the Thirty Tyrants under the control of Sparta. The walls of the city were destroyed, the arsenals and dockyards demolished, and the progress and credit of the State arrested. With the latter fell her numery money, which shortly afterwards was decried and possibly liquidated, as we hear of no complaint of loss from its employment. This took place probably within the year of its emission.

Syracuse.—A counterpart of the experiment made at Athens was essayed about the same time at Syracuse, but with both different means and results. Syracuse was a Greek colony founded B.C. 734, and had passed through the political phases of feudal oligarchy and monarchy into that of a republic, when, coming into contact with the overwhelming power of Carthage, it was crushed and reduced to a tyranny under Dionysius, B.C. 405.

Whether the idea was derived from Plato, who visited the court of Dionysius at this period, or from the frequent trials of numerary moneys which had been made in the Greek states, is not known; but Dionysius, about B.C. 387, issued tin coins overvalued four times, and, upon another occasion, silver coins overvalued twice. These he compelled to be accepted under penalty of death.

The inferior civilization of Syracuse, as compared with Athens, is marked by the character and fate of this experiment. Had Syracuse possessed the freedom and credit of Athens, it would not have been necessary for any metal possessed of value in the arts to be put into these moneys, nor to have enforced their circulation by a penalty. The complaints to which this tyranny gave rise prove that the fear of even this penalty was insufficient to retain the coins in circulation at their nominal, and they probably soon fell to their commodity, value, and at a loss to the unfortunate citizens. The difference between the civilization of Athens and Syracuse is sufficient to account for the entire willingness of one to adopt a wholly numerical money, and the reluctance of the other to accept even a partly numerical one.

Athens. Second Period.—The fall of the Thirty Tyrants occurred during the year of their accession, B.C. 404, and with their fall the freedom and progress of Athens and the credit of her government and citizens were restored.

Although deprived of the islands of Lemnos, Imbros, and Scyros, the Athenians gradually acquired new possessions. Ten years later, viz., B.C. 395, the powerful alliance between Athens, Bœotia, Corinth, and Argos, induced some of the allies of Sparta (namely, Eubœa and the Chalcidians in Thrace) to revolt and join the former.

Conon's victory at Cnidus procured them many other tributary cities and islands. Thrasybulus conquered Lesbos, restored the power of Athens on the Hellespont, and even the payment of the sound dues levied at Byzantium. Indeed the greater part of the Asiatic Greek coast, the most of the islands, and even distant Rhodes, were once more placed under the rule of Athens. Her former political relations were for the most part restored; her former tributes were re-exacted; once more she manifested her naval supremacy, and almost all Greece became subject to her. Although the fatal peace of Antalcidas, B.C. 387, deprived her for a time of some of these possessions, they were all regained by the campaigns of Timotheus, Chabrias, and Iphicrates, and by the civic exertions of Callistratus.

Notwithstanding the losses which she had sustained by the Peloponnesian War, Athens was still a wealthy state. Twenty-six years after the war, to wit, in B.C. 378, an assessment showed the value of taxable property to be 5750 talents.¹ Upon this basis Boeckh has calculated the value of all the property of the citizens at not less than 30,000 to 40,000 talents,² or say 30,000,000 to 40,000,000 dollars.

So early as B.C. 371, Sparta conceded to Athens an equal participation in the hegemonia by sea and land, and by the year B.C. 364 her power again extended from the Thracian

¹ Polybius.

² Boeckh, 636.

Bosphorus to Rhodes, over the islands, and over many of the cities on the continent.¹

This was the period of Demosthenes, Plato, Socrates, Diogenes, Aristotle, Æschines, Apelles, Calisthenes, the building of the Lyceum, &c.

During this period, B.C. 390-350, the rehabilitated republic, then governed by Timotheus, the son of Conon, issued a numerary money composed of copper discs highly overvalued. These were receivable for all payments, the public dues included, and were nominally redeemable, at an indefinite time, in silver, a promise of whose performance we have no record.²

The termination of the Social War, B.C. 355, left the progress and credit of Athens again prostrate, to rise no more; and with her power fell her numerary money, and in its place crept the use of coins and other commodities.

Again it is observable, that as the credit of the State declined, there sprung up to supplant it the credit of corporations. We hear of a "State Bank in Ilium, in the third or second century before Christ,"³ probably the former, and of its paying ten per cent. per annum for the use of money. To this bank was probably accorded, in the spirit of such an age, certain privileges, such as the monopoly of exchanges, collection of the revenue, and the minting of coins. These would have afforded it an opportunity of substituting its own overvalued money in place of that of the State.

The Delian and other temples, acting in their corporate capacity, also became lenders of money,⁴ and still later on, individual bankers and money-changers and lenders are mentioned as being established at Athens,⁵ all of them, no doubt, patriotically assisting to support the national monetary system of corn, cattle, and coins. Even the shopkeepers lent their valuable aid in support of this system, and we read of lead, leather, and other base moneys, which it

¹ Boeckh, pp. 537, *et seq.*

³ *Ibid.* 182.

⁵ *Ibid.* 176, 196.

² *Ibid.* pp. 399, 766.

⁴ *Ibid.* 415.

appears were issued by them at this period to eke out the scarcity of silver.¹

But the glory of the State had departed, its liberties had been destroyed, and its monetary system,² sharing the fate of its other institutions, had gradually fallen into the same condition that at a later period marked the moneys of the feudal ages.

¹ Madden, p. 14, and Boeckh, p. 769.

² The former numery system is thus alluded to by Aristotle:—"Nomisma (money) by itself is a mere device which has value only by nomos (law) and not by nature; so that a change of convention between those who use it, is sufficient to deprive it of value and its power to satisfy our wants."—Aristotle, "Politica."

"By virtue of voluntary convention nomisma (money) has become the medium of exchange. We call it nomisma, because its efficacy is due not to nature but to nomos (law), and because it is always in our power to control it."—Aristotle, "Ethica."

CHAPTER XII.

CARTHAGE.

Foundation and progress of Carthage—Commercial enterprise—Settlements and factories on the western coasts of Europe—Trade with Britain and the Orient—Treaty with Rome—Embassy to Athens—Numerary money—Conquest of Spain—Mining fever—Carthage becomes aggressive, and engages in foreign wars—Fall of her numerary money—Her gold and silver excite the cupidity of Rome—Punic wars—Defeat of Carthage—Her destruction and disappearance from history.

A RECENT writer, in summing up the few materials which have come down to us of Carthaginian history, says, "There are still extant the text of three treaties with Rome, the log-book of an adventurous Punic admiral, some precepts of an African agriculturist, a speech or two of a vagabond Carthaginian in one of Plautus's plays, a few inscriptions buried twenty feet below the surface of the ground and lately dislodged by the efforts of archæologists, and a few coins whose numismatic value is questionable. These, with some aqueducts and substructions too massive to be destroyed, are the only native or semi-native sources from which the story of the great Phœnician empire-city can be constructed."¹

It is true that the materials of Carthaginian history are not abundant, but they are by no means so scarce as here portrayed.

Carthage was founded by the Phœnicians during the ninth century B.C., and before the sixth century, when she made her first treaty of commerce and navigation with Rome, she had explored the coasts of western Europe as

¹ "North American Review," June, 1879, p. 682.

far as the British Isles, founded numerous settlements or factories in Spain, Gaul, and Britain, and conducted a regular commerce, in which tin figured as a prominent article, between the Cassiterides and the Orient. To these evidences of commercial enterprise is to be added that striking mark of political progress implied in the sending of an embassy to Athens, in the fifth century, for a copy of the renowned Institutes of Solon.

It is to this progressive period of Carthaginian civilization that with the greatest probability must be ascribed the use of that peculiar money mentioned in the Socratic dialogues, imputed to Æschines:—

“The Carthaginians made use of the following kind (of money): in a small piece of leather, a substance is wrapped of the size of a piece of four-drachmæ; but what this substance is, no one knows except the maker. After this, it is sealed (by the State) and issued for circulation.”¹

The era of Æschines is fixed at B.C. 430-350; the “leather” may be reasonably conjectured to have been parchment; and the mysterious substance either tin, or a compound of tin and copper. The size of a four-drachmæ piece was about the same as that of an English penny.

There can be little doubt that this was a numerical money, one whose value arose from a specifically limited number of pieces in use; because the substance of which it was made was concealed from view and could only be ascertained—if at all—by perforating or removing the parchment enclosure, and thus rendering the pieces worthless. It is evident that their value did not arise from that of the substance which composed them.

How long and under what circumstances this peculiar money lasted, we have no means of determining, but it probably went out of use within a half century after the gold and silver mines of Spain were opened, about B.C. 408, and regular supplies of these metals began to make their

¹ “Dialogue on Riches.”

appearance in Carthage. By this time the prosperity of Carthage had made her aggressive. She had invaded and subdued the entire Iberian peninsula; she had attempted the conquest of Sicily; and she had aroused the enmity of Rome by landing an army in Italy. A numerary money was efficacious enough at home; it would not serve for foreign wars, nor for the payment of allies, nor the wages of mercenaries,¹ nor for shipments to the Indies. Nor was it deemed worth while to maintain a dual system of money, the numeraries for home use and the precious metals for foreign. The conquest of Spain had bewitched her people, as it afterwards bewitched the Romans, and as that of America, at a later period, bewitched the Spaniards. Nothing was thought of but rich mines, sudden wealth, and the conquest of the world. It was probably at this period, when an eager cupidity had usurped the place of reason, that the Carthaginians abandoned the numerary system which had served them so well, and in its place adopted a coinage of those glittering but delusive metals, whose pursuit was soon to lure them to national extinction.²

In less than a century afterwards, the metallic wealth of Carthage began to excite the cupidity of Rome, who had by this time learnt the sources of her rival's riches and the varied and extensive commerce with the Orient to which it had given rise. In B.C. 265 began the First Punic War; in B.C. 207 ended the last one, when Spain and the trade of the Indies fell into the hands of Rome, and the Punic power was definitely overthrown. In B.C. 146, when Carthage was sacked and demolished by Scipio Africanus the Younger, all the silver found in the city amounted to less than two tons in weight; ³ the net results of an empire

¹ Polybius, i. 164, says the Carthaginian mercenaries were paid in gold.

² The introduction of gold and silver money into Carthage, and its fatal effects, are noticed by Heeren, iv. 144.

³ Pliny, "Nat. Hist.," vi. 132, gives it at 4370 pounds.

which, having attained the ripe age of six centuries, obliterated itself, for ever, through a single mistake of policy.¹

¹ On Carthaginian history, consult Heeren, vol. iv.; R. Bosworth Smith's "Carthage and the Carthaginians;" Napoleon's "Cæsar," pp. 106-8; Diodorus Siculus, lib. v. chap. 2; and Polybius, book i.

CHAPTER XIII.

ETRURIA.

Roman accounts of the foundation of Rome fabulous—Rome an ancient city of the Etrurians—Origin, grandeur, and social progress of Etruria—Agriculture, commerce, arts, money—Type of the latter copied by the Romans—Copper coins the principal money—Scarabs—Numismatic remains.

CRITICAL history has long since discarded the fable that Rome was founded by Romulus in the eighth century B.C., and that to forward this enterprise the founder made it a place of refuge for outcasts. That Romulus augmented his following by such means is not doubted; only the outcasts, instead of being invited to build a new city, must have found one already built; for the Rome that Romulus pretended to have founded was already an ancient city, the capital of Etruria, and known by the name, either of Roma or Pallantium.

The origin of the Etrurians or Etruscans is involved in much obscurity. Their language, arts, and archæological remains point to Pelasgian sources. The general outline of their history appears to be connected with that of early Lydia and Greece, and all these countries seem to have been colonized by related bands of adventurers, who spoke the same or similar tongues, and brought with them from some distant Eastern country a knowledge of mining and of Oriental customs. The date of these colonies or conquests must be placed somewhere between the eighteenth and fifteenth centuries B.C. In the fourteenth century the Etruscans (Tourshas) invaded Egypt, either on their own account or as the allies of some other Pelasgian race. In the eleventh century (about B.C. 1044), Etruria was overrun

by the Tyrrhenians—also a Pelasgian race—who, after having amalgamated with the Etrurians, formed that composite race which fell beneath the arms of Romulus.

At the date of the Roman Conquest the Etrurians had long since passed beyond the pastoral state, and were extensively engaged in agriculture, manufactures, and commerce. They traded with interior Europe, and sent ships to Greece, to Cyprus, to Asia Minor, and to Egypt, whence they conducted a commerce with India, some evidences of which have been found in ancient Etruscan tombs. Many of their works of public improvement evince a high state of civilization. They drained lakes by cutting tunnels through the heart of solid mountains; they constructed maritime canals in Venetia; they excavated immense numbers of tombs in the rocks; they sculptured the latter with bold inscriptions, to some of which dates were attached; they diverted the course of rivers, both for irrigation and mining purposes; they erected imposing public monuments and constructed the Cloaca Maxima, the credit for which has been wrongly given to the Romans; they fashioned works of art of exceeding beauty; and such of their social institutions as their conquerors have suffered to escape what was intended to be an universal oblivion, point to a degree of advancement which, among contemporaneous nations, had been elsewhere attained by Greece alone. Indeed, the social position of woman—which is always deemed to be a fair test of international progress—was higher in Etruria than in Greece. The Etrurians had a national literature, books, a drama, poetry, and schools. They were eminent in agriculture, military tactics, medicine, metallurgy, and astronomy.

The story of their overthrow is involved in as much obscurity as their origin. It is supposed that Romulus was a leader of the Alba Longa, a powerful tribe of the Latin aborigines, who, impatient of the restraints imposed upon them by the Etrurians, seized a favourable opportunity to rise and subdue their masters. After Pallantium had been surprised and captured, Romulus reduced the Etruscan

inhabitants to an inferior caste, who were permitted, from motives of policy, to nominally participate in the government, and from whom the conquerors did not disdain to copy many of their social institutions.

Among the latter, there can be little doubt that the Romans adopted the Etruscan system of money, though precisely what this was at the time of the conquest is not clear. It consisted in part, at least, of large bronze cast pieces; but whether these were overvalued or not, or were supplemented by other moneys or not, does not appear from the evidences now extant.

That the Etruscans employed some sort of money is not only implied by the conditions of their social life; it is also to be inferred from their mining operations,¹ their intercourse with Egypt and India, and their trade with Cyprus; and, finally, it is proved by their archæological and numismatic remains.

Among the latter are immense numbers of scarabs, which, bearing in mind the use to which these objects are believed to have been put in Egypt, may reasonably be supposed to have been used for money in Etruria. So common are these scarabs that even at the present day new ones are continually brought to light, especially near Chiusi and Sarteano, after a heavy rain.

Owing to the falsification and destruction of Etrurian history and monuments by the Romans, Etrurian coins are difficult to be distinguished from Roman ones. Ovid ("Fasti," i. 229) ascribes the prow on the Roman coins to Etruria—in itself satisfactory evidence of the use of money by the last-named country. Notwithstanding the confusion produced by this copying of types—indeed, it may have been an adaptation of the coins themselves—many coins have been recognized as belonging to an earlier period than the

¹ Homer mentions the exportation of copper from Temesa. The mines of Enna (the modern Castro Giovanni) in Sicily were worked in very remote times (Humphreys, "Manual," i. 251). The most important copper mines were, however, in Campania and Tuscany.

Roman conquest of Pallantium. Among these are said to be a copper quincussis—or what has been taken for such by the numismatists—found in the Apennines, and a number of copper coins found in the reservoir of the ancient baths of Vicarello.¹

¹ For other information concerning the history and civilization of Etruria, consult the following works: Dureau de la Malle, "Econ. Pol. des Romains;" Napoleon's "Cæsar," i. 116, 117; Adam's, "Rom. Antiq." p. 503, and Appendix A.; Geo. Dennis, "Cities and Cemeteries of Etruria;" Niebuhr, "Hist. Rome;" and Müller, "Hist. Rome."

CHAPTER XIV.

ROME GENERALLY.

Difficulties in studying the details of the monetary systems of ancient Rome—Destruction of contemporary laws and historical works—Blunders of Pliny—Errors of modern historians and commentators—Common theory of the subject—The historical theory—The legal theory—Reasons for doubting these theories to be adduced farther on—Views herein entertained with regard to the true character of the monetary systems of Rome.

A NCIENt history, or so much of it as has survived the wreck of time, presents two glaring defects. It is mainly occupied with the description and fortunes of persons, and the details of battles and sieges. It passes too lightly over the growth of knowledge and invention. These defects are due to various causes. Ancient history has had to pass the barbarous and bigoted censorship of some of its own eras, and later still, of the Dark Ages. The books which contained facts or considerations beyond the comprehension or belief of these ignorant ages were destroyed. Thus many of the most important subjects treated by the ancients have failed to be communicated to us in the wrecks of their literature. Another cause of defect arises from the probability that the most important subjects of social life were never fully treated by them at all. This neglect—a natural one—is due to the peculiarities of societal growth and decay.

The most valuable knowledge is acquired, and the most important discoveries are made in the most progressive countries of each given age, as, for example, Greece and Rome during their republican eras, and Great Britain and the United States at the present time. The means of growth,

the business of life in such countries, absorb the energies of its inhabitants. Their work is to "make history," not to write it. Especially was this the case with the progressive countries of ancient times, whose societary organisms were less complex, less differentiated than are similar societies of the present time, and whose inhabitants were less free to gratify their literary tastes.

In such a country literature met with little encouragement, and its pursuit was apt to be unprofitable. It was only when societary growth ceased or paused, that literature and its allied pursuits began to flourish, and it was here that man's record of his own achievements commenced—it is here that written history usually begins.

But when such time arrives, it is too late for history to be truthful, diffusive, and exact. The most valuable, because the most refined elements of this history are forgotten and wanting, only the grosser ones remain, and, in time, these too will be forgotten and lost. Even where no dark ages supervene, where no widespread physical catastrophe occurs, where no destruction of literature takes place, so meagre an account remains of past achievements and their real character, that when a period of growth recurs, nearly the whole course of progress has to be climbed again. Even the knowledge embalmed in unconnected words, the most imperishable of monuments, because the easiest preserved and the least exposed to accident, is apt to be lost.

Instances have occurred where the entire language of a people has been corrupted and changed in the course of a single lifetime.¹ And even where a written literature preserves the use of words, it fails to retain their significance. The words will remain, but the gamut of meanings through which they have passed will have disappeared. Nothing but their latest and most corrupt form and use will survive. The casket will exist, but the precious jewels that it contained will have been swept into forgetfulness and oblivion.

¹ Max Müller.

Hence it is that the history of ancient nations, as that history is written and handed down to posterity, contains but little of real value: it is written too late and lacks precision. And hence it is that if we would profit by the experience of nations, we must summon to our aid, not merely the skeleton-like chronicles of the past, we must recall with the help of archæology and the light of critical reason, the tissue of events that has perished. In a word, we must as nearly as possible resuscitate and rehabilitate all the facts, and not depend upon the few and often unessential ones that have accidentally survived a period of decadence, ignorance, and vandalism.

In endeavouring to perform this task with regard to the monetary history of Rome, the difficulties to be overcome are very great. Her laws, as enacted from time to time, are nearly all lost. She has, indeed, left her numismatic remains to guide us, but unfortunately she has also left her postfactum chronicles to mislead us, and such a mass of blind and mistaken commentary rests upon these chronicles, that to sweep both commentation and chronicles aside and reach the truth, but imperfectly established by the fragments of her archæology, is a task of no easy accomplishment.

More than this: the peculiar conception of money which we moderns inherit from the Dark Ages, has also assisted to hide the truth from us. This conception has rendered it difficult for us to believe that any system of money radically different from the ones with which we are familiar was possible to be established or maintained in Rome or any other important state.

The common view of the monetary systems of Rome, founded upon the chronicles of Pliny and the views of more modern historians and commentators, is, briefly, as follows:—

1. That before the time of King Servius Tullius, who reigned B.C. 578-534, the money of Rome consisted of crude copper metal in bars or ingots. Servius was the first to

make an "impress" upon this metal. The fraction of the monetary system he established was the *As*, which weighed exactly one Roman libra or pound and hence went also by this name as well as the other.

2. That for three hundred years, during which period, according to the same popular belief, most of the surrounding nations employed gold and silver coins for money, Rome continued to use copper coins of the weight mentioned above, and at their value as copper, although at that time, so far as we can now determine, that metal bore no higher weight relation to silver metal than it does now.¹ At the scale of prices then current this money must have been exceedingly heavy and cumbersome.

3. That about the year B.C. 269, silver was first coined in Rome; that the first silver coins were called denarii, weighing each one-sixth of a Roman *uncia* or ounce, and ordered to pass current with the *Ases* at the rate of ten *Ases* for one denarius, which made a weight relation of about seven hundred and twenty to one.²

4. That in B.C. 250, the *As* was degraded to one-sixth of a pound. The weight of the denarius and its tale relation to the *As* remaining unchanged, the weight relation became changed to about a hundred and twenty to one.

5. That in B.C. 216, the *As* was degraded to one-twelfth of a pound, the denarius to one-seventh of an ounce, and the latter ordered to pass for sixteen of the former. This changed the weight relation to about a hundred and twelve to one.

6. That in B.C. 207, a gold piece was coined called a *scripulum* or *scruple*, weighing $18.22916\frac{2}{3}$ grains, and valued at twenty *sestercii*, or five denarii, which made a weight

¹ The only instance of this relation—apart from that which is shown in the mooted case of the Roman coinage—which appears to have come down to us from the period in question, is derived from coinages in the time of Aristotle, B.C. 384-322. This relation is 140 of copper to one of silver (Boeckh, "Polit. Econ. Athen." p. 47).

² Arbuthnot, regarding the denarius as one-seventh of an ounce, made the weight relation 840 to 1. Adam ("Roman Antiq.") says 1,000 for 1.

relation of 17.2 of silver in the denarius to one of gold in the scruple.¹

7. That by the Lex Papirius about B.C. 130, the As was degraded to one twenty-fourth of a pound or half an ounce. The weight of the denarius and its tale relation to the As remaining unchanged, this would make the weight relation of copper to silver about fifty-six for one.

8. And that in the time of Julius Cæsar the gold aureus was coined at the rate of forty to the pound and its legal value fixed at twenty-five silver denarii.

For the sake of perspicuity these various details will now be arranged in tabular form; and as they are based chiefly upon the narrative in Pliny's "Natural History" it has been deemed appropriate to call them collectively the Plinian view of the Roman monetary systems.

The Plinian View of the Roman Monetary Systems.

Approximate date. B.C.	Political Indicæ.	Legal weight of coins. ²			Legal ratio.	
		Copper As. Gr.	Silver Denarius. Gr.	Gold Aureus. Gr.	Silver to Copper as 1 to	Gold to Silver as 1 to
556	Servius Tullius . .	5250	none	none	—	—
269	Ogulnius and Fabius	5250	72·9167	none	720	—
250	First Punic War . .	875	72·9167	none	120	—
216	Fabius Maximus . .	437½	62·5	none	112	—
207	Claudius and Livius	437½	62·5	131½ ³	112	17·143
130	Lex Papirius . . .	218¾	62·5	131½ ³	56	17·143
49	Julius Cæsar . . .	218¾	62·5	131½ ⁴	56	11·9

¹ Boeckh, "Polit. Econ. Athen." p. 44.

² Not the actual weight, which sometimes differed slightly from the legal.

³ Deduced from the scruple of this date, weighing 18·23 grains, or 7½ to the aureus, which latter piece was not coined until a later date. The scruple was coined by fourteen specified *gentes* or families, who possessed or usurped this right (Colquhoun, "Civil Law," iii. 154).

⁴ The aureii of this date still extant weigh only 124½ grains, and are believed by some numismatists to have been coined at 125 grains, or

This is the Roman monetary system as framed by Pliny, and generally accepted by modern historians and commentators. A somewhat different view has been expressed by Colquhoun, an eminent commentator on the Civil Law. He says:—

“In the earlier ages of Rome the currency appears to have been exclusively copper, but as the wealth of the new state increased, a silver coinage was introduced, and ultimately—though at a comparatively late period—gold pieces; notwithstanding which, copper—that is to say, an alloy of copper—must be considered as the standard of value.”

Although Colquhoun’s language is far from being clear, it appears to mean that copper (or bronze) at its bullion or commodity value was the standard money, with gold and silver coins as auxiliary pieces, having no legal relation to the former, and therefore no legal value or function of legal tender. If this be its meaning, it differs with the Plinian view, for according to the latter a double standard of silver and copper existed from B.C. 269 to B.C. 207, and a triple standard of gold, silver, and copper from the last-named period to that of the Empire.

But this is saying the least. For reasons which will be set forth at length hereinafter, it is maintained that neither of these views, nor, indeed, no view that assumes the Roman monetary system during the period of the Commonwealth to have consisted of metals coined at their commodity or bullion value, will stand the test of criticism. It is believed that these reasons, and the arguments accompanying them, will establish the fact that the Roman monetary system was a numerary one, and that the numismatic relics which have been so long regarded by the learned world as copper coins were essentially irredeemable notes

twice the weight of the denarius. Humphreys, 383, says that the first aurei weighed 130 grains. Colquhoun’s “Civil Law,” iii. 154, says the most ancient aureus we possess was coined under Julius Cæsar, and weighs $121\frac{1}{2}$ grains.

stamped (for lack of paper) on copper, and devised and designed to pass in the exchanges for a much greater value than that of the material of which they were composed.

Moreover, that the silver denarii were (at first) also overvalued, passing for more raw metal, whether silver or copper, than they would have exchanged for had they been reduced to crude bullion. In other words, that originally the denarii were irredeemable notes passing for other irredeemable notes, just as in recent years an United States Treasury draft might have been drawn for a given sum of irredeemable "greenbacks." And, finally, that these measures of ancient Roman finance were maintained by specifically or practically limiting the emission of copper Ases, or nummi.

This view of the monetary systems of Rome may conveniently be thrown into the following summary form:—

I. That Rome possessed several monetary systems before the time of Servius Tullius.

II. That the system of Servius Tullius, dating from about the year B.C. 556, was based upon large circular Janus-faced coins, specimens of which are still extant, and that these coins were, at first, overvalued, if at all, only to a small extent.

III. That these coins were gradually lessened in weight without correspondingly increasing their numbers, and thus became highly overvalued, and passed for more than the copper contained in them was worth.

IV. That from about the year of the Gaulish invasion, B.C. 385, until about the year B.C. 269, the monetary system of Rome consisted of *copper nummi*, formerly known as Ases; that the whole number of these nummi was limited by the senate; that they were a full and exclusive legal tender for all purposes; and that they were rendered secure from counterfeiting by the artistic beauty and mechanical excellence of the pieces and the vigilance of the law officers.

V. That from B.C. 269 to B.C. 250, the foregoing numerical system was modified by the introduction of silver

multiples, called *denarii*, overvalued, and devised to represent groups or sums of copper numeraries.

VI. That from B.C. 250 to B.C. 216 this modified numerical system was altered only by lowering the weight of the *nummus*, an alteration altogether nominal, and of no more consequence than could have been a change in the *size* of the modern American "greenback."

VII. That from B.C. 216 to 207 the monetary system was again nominally, though not really, modified, by again lowering the weight of the *nummus*, by recoinng the *denarii* at one-seventh instead of one-sixth of an ounce, and by altering the legal relation between these coins from ten for one to sixteen for one by tale.¹

VIII. That in B.C. 207 the numerical system was definitely terminated by the free coinage of silver, and its adoption as a full legal tender commodity money. The copper *nummi* were not lowered in weight but degraded in function by reducing them to qualified legal tenders or "tokens." They were henceforth, until the Augustan era, known as *Ases*. A gold multiple was coined called a *scruple*.

IX. That about B.C. 170, the assumed date of the *Lex Papirius*, the weight of the copper *As* was reduced to half an ounce—a mere nominal change in such a system. The weights, function, and ratios of the silver and gold pieces were not changed.

X. That about B.C. 46, Julius Cæsar coined the gold *aureus*, admitted gold to unlimited coinage, and adopted it as the sole standard of value—the silver and copper pieces remaining at the same weights as before, but restricted in

¹ The Rt. Hon. G. J. Goschen, in an address before the London Institute of Bankers, April 18th, 1883, said (Pamphlet, p. 15) that the reason of the Roman laws for the relief of debtors was that "they never had an expansive currency." During the Republic, the money of Rome, though not an expansive, was nevertheless an expanding one—a difference pointed out farther on (see chapter xviii.), and one which the distinguished gentleman may have held in mind.

coinage and degraded in function to the rank of qualified tenders.

XI. That in the earlier days of the Empire, probably during the reign of Augustus, a modified numerical system was again introduced by restricting the coinage of gold coins and promoting the copper nummi to full legal tender-ship, and that substantially this system survived, possibly with other modifications, until about the third century, when it was finally destroyed by the adoption of a gold, silver, and copper commodity money; that this last-named system continued until the Dark Ages, and has survived in many countries to the present time.

It will be convenient to arrange these views also in tabular form :—

Critical view of the Roman monetary systems from the earliest period to that of the Empire.

Approximate Year. B.C.	Political Era.	Weight of Copper As. Rom. oz.	Number of Ases to one Denarius.	Weight of Silver Denarius. Troy Gr.	Weight of Gold Aureus. Troy Gr.	Weight ratio of Silver to Copper Metal in Coins as 1 to
753	Early regal ¹	—	—	none	none	—
556	Servius Tullius	—	—	none	none	—
—	Uncertain date	3·8 ²	—	none	none	—
385	Gaulish invasion	3·5 ³	—	none ⁴	none	—
—	Uncertain date	3·0 ⁵	—	none	none	—
269	Ogulnius and Fabius . . .	2·5 ⁶	10	72·9167 ⁷	none	150
250	First Punic War	2·0	10	72·9167	none	120 ⁸
216	Second Punic War	1·0	16 ⁹	62·5 ¹⁰	none	112
207	Claudius and Livius . . .	1·0	16	62·5	131·25 ¹¹	112
170	Agrarian and Social Wars	0·5	16	62·5	131·25	56
46	Julius Cæsar	0·5 ¹²	16	62·5	125·0	56

¹ See next chapter.

² The actual weight of a number of so-called Ases of this period, as given by Humphreys, is $3,856\frac{1}{2}$ grains Troy, or about 8.8 Roman ounces; but there is reason to believe that these were sesterces.

³ See chapter on "Republican System."

⁴ According to Colquhoun, silver tri-drachmas coined by gentes were

For the sake of keeping in mind these systems I have ventured to distinguish them by the following names:—

circulated in Rome at this period. If so, they could have had no legal value, and passed only as bullion. See Pliny, xxxiii. 3, 40; Livy, viii. 11; Ep. xv. cited in Adam, 425.

⁵ Le Normand suggests about 4 ounces, $1,762\frac{1}{2}$ grains, for the weight of the As at about this period.

⁶ Pinkerton on "Medals," i. 162 (ed. 1808) holds that the As of the year when the denarius was first issued weighed 3 Roman ounces, or, say, $1,312\frac{1}{2}$ grains. I am inclined to the opinion that Ases of this weight were cast previous to this date.

⁷ Gibbon, 4to ed., iii. 460.

⁸ Boeckh, 47, says 140 for 1; but this is because he reckoned the denarius at $62\frac{1}{2}$ grains, whereas it weighed nearly 73 grains at this period, or 6 to the ounce (Gibbon, iii. 460).

⁹ The relation of 16 Ases to 1 denarius continued from this date to Justinian's time, perhaps later. For soldiers' pay the relation was 10 to 1. Pliny xxiii., 13. But Matthew Raper, in his "Inquiry," p. 551, advances reasons for the belief that the denarius was again commonly rated at 10 Ases (or nummi) after it had been rated at 16.

¹⁰ From the period of the Second Punic War to that of Nero, the Roman pondo or libra of silver was coined into 84 denarii, equal to $62\frac{1}{2}$ grains each. About the period of Nero, 96 denarii were coined from a libra (Boeckh, 24). Such, perhaps, was the law; but it was not the fact.

¹¹ Adam (p. 428) says the aureus was first called *aureus nummus*, and "was equal in weight to two denarii and a quinarius." On p. 427, he says a denarius was valued at 10 Ases, and a quinarius at 5 (afterwards 16 and 8 Ases respectively); hence 2 denarii and a quinarius equalled $2\frac{1}{2}$ denarii. This would make the weight of the first aurei $156\frac{1}{4}$, instead of $131\frac{1}{4}$ grains each. Yet, on p. 428, he distinctly says that "at first forty aurei were made from a pound of gold." The gold aurei of this period were too pure to admit of the explanation that the difference consisted of alloy. The discrepancy must, therefore, remain unexplained.

¹² It is not improbable that at about this period the As piece went out of circulation. Humphreys assigns the disappearance of the As to the reign of Augustus.

Period B.C.	Name of System.	Character of System.
753 to 556	Archaic and Regal	Various systems, as in next chapter. Circular copper coins of indefinite numbers, <i>i.e.</i> commodity money, cast with a double-faced Janus on one side and the prow of a galley on the other.
556 to 385	Servian	
385 to 269	Republican	Radical numerary system of limited emission. These numeraries were of bronze, circular in shape, and of superior workmanship.
269 to 250	Patrician	Bronze numeraries. The limits of the emission are now relaxed, and family denarii of silver begin to circulate at the rate of 1 for 10 of the numeraries.
	.	
250 to 216	First Punic War	Similar to last. The numeraries are reduced in weight, and their emissions increased.
216 to 207	Second Punic War	Similar to last. The numeraries are again reduced in weight, and emissions increased. Silver denarii now pass for 16 Ases each.
207 to 170	Scipion	The standard is now substantially silver bullion. The bronze coins still pass for something more than their ingot value. A gold multiple, "aureus nummus," is introduced.
170 to 46	Social Wars	Gold, silver, and bronze moneys; mixed systems.
46 to 31	Julian	Gold standard for money. ¹ The bronze numeraries, after having fallen from excessive emissions to their commodity value, were now sent in large quantities to the provinces, there to be received at an overvaluation.

¹ The temporary fall of gold in silver which occurred at Rome was induced by the plentifulness of Cæsar's spoil in Gaul, coupled with the inability of the Roman mints to coin it with despatch. But for the last-named fact, the former one could not have had the effect imputed to it.

CHAPTER XV.

EARLIEST MONETARY SYSTEMS OF ROME.

Notwithstanding the opinion of Pliny, it is evident that coins and other moneys were used in Rome long before the era of Servius Tullius—The term “pecunia”—The copper ingots ascribed to Servius Tullius were of an earlier or later date, and were not moneys, but commercial ingots, and probably Etruscan—The *æs* of copper probably never weighed an *æs* or *libra*—The pound sterling never weighed a pound, nor the French *livre*, a *livre*—No system of money ever existed in which coins permanently passed by weight, because the value of coins is due to their numbers, and not to their weights—The so-called *æs* (of the Janus-faced type) was a *sesterce*, and belongs to the era of Servius Tullius.

“**K**ING SERVIUS was the first to make an impress upon copper. Before this time, according to Timæus, only the raw material was used at Rome (for money).”

In this passage Pliny asks us to believe that for a period of nearly two centuries, namely, from B.C. 753 to 566, the Romans used raw copper as a common medium of exchange, and that the idea of casting it into masses of a uniform weight and type, or of stamping it with some conventional mark—either of which acts would have converted it into money—never occurred to them, or to those from whom their copper was obtained.

It has already been shown that money was used by the Phœnicians, Egyptians, Greeks, and Carthaginians, in short, by all the important nations with whom the early Romans were familiar; it has even been shown that it was used in Italy—and therefore in Rome—during the Etruscan era; the art of casting ingots of a uniform weight and type could not have been unknown to the Etruscans, who produced

copper from their own mines, and doubtless supplied it to the Romans; nor could the casting of marked ingots have failed to occur to the Romans themselves, who were workers in bronze implements, vessels, and ornaments, who possessed a system of weights and measures, and prosecuted a foreign commerce important enough to require the building of a new port at Ostia,¹ and the making of commercial treaties with Carthage;² yet in spite of all this evidence the modern world has deferred to the authority of a careless and discursive author, who lived upwards of six centuries after the era to which he alludes, and whose opinion is derived from a source which was dubious in Pliny's day, and is wholly beyond modern reach.

There are, indeed, emergencies in the histories of all countries, when the most uncouth and unsuitable devices or substances are used for money, as tenpenny nails in Scotland in 1776, rum in Australia previous to 1850, and turnips in Philadelphia in 1865; but these were not lawful moneys, nor did they long remain in use. If Timæus referred to some such exceptional instance in the monetary history of Rome, there can be no objection to the acceptance of his statement; but if it be regarded as applying to Rome permanently and by force of law or long-established custom, it must be rejected as untenable.

That money was used by the Romans long before the period of Servius Tullius there can be no reasonable doubt. It is not only proved by the evidences already adduced, but

¹ Before the Roman era the seaport of Rome was at Dragoncello, on the Tiber, about twelve miles below the city (Antonio Nibby, in Hare's "Days near Rome," p. 288). In the time of Ancus Martius, B.C. 638-614, a new port was built at Ostia, two miles further down the river.

² The first treaty with Carthage was made B.C. 509. "By this treaty the Romans and their allies engage not to navigate beyond the Bonum Promontorium (a cape situated to the north of and opposite Carthage, and now called Porto-Farino). . . . The Carthaginians undertake to respect the Ardeates, Antiates, Laurentes, Circeii, and Tarra-cini, indeed all the Latin peoples subject to Rome" (Polybius, iii. 3).

also by others. Several eminent numismatists are of the opinion (based on allusions in classical authors) that the early Romans employed wooden tallies, clay tablets, and stamped discs of leather, for moneys.¹ Suidas even supposes the clay tablets to have been of the scarab type used in Egypt. The isolated position of the early Romans, and their lack of copper mines from whence to procure regular and ample supplies of the material for copper or bronze moneys, render this opinion all the more plausible. Nor was the prevailing phase of civilization such as to make a system of overvalued moneys impracticable. The form of government was an aristocratic republic. Under Numa, B.C. 714-675, the lands gained by conquest were parcelled out among the people, instead of only to chieftains, as before. The public works attest great proficiency in the mechanic arts. Among these were the wall of circumvallation, the Capitol, and the Circus Maximus. The artistic excellence evinced in these works may have had not a little to do with the destruction of the overvalued moneys which are presumed to have been in vogue during a portion of the period under review. Systems of this character are liable to be broken down by counterfeiting, and unless the resources of the government are kept abreast at all times with the progress of the arts among its citizens and in foreign countries, it cannot hope to successfully maintain such systems. That this was the fate of the overvalued moneys, if such existed, of early Rome, is rendered the more probable from the views advanced by the learned Dr. Adam, who supposes the artisans of this period to have consisted of the conquered Etruscans, as yet not reconciled to the ascendancy of the Romans. It may therefore be presumed that they were not indisposed to assist in undermining the monetary systems of their conquerors by counterfeiting their overvalued moneys.

“Many of the fines imposed by ancient laws, even at

¹ Suidas, Stieglitz, Quintinos, Noel Humphreys, &c. The leather moneys are doubted by Boeckh, “*Polit. Econ. Athen.*,” p. 769.

Rome, were levied in cattle.”¹ This neither asserts nor proves that the Romans used cattle for money. The ancient laws of Rome were those of Etruria and, possibly, of archaic Etruria, and old terms and forms were retained long after their usefulness had ceased. The Romans of the regnal period probably construed a fine of an ox to mean so many pieces of money. Pliny proves this himself in his dissertation on the survival of words derived from *æs* and from the formality of using the balance in sales of slaves.

“The form of a sheep was the first figure impressed upon money, and to this fact it owes its name, ‘pecunia.’”² Judging from analogy, pecunia is more likely to have been derived from that use of cattle which antedated any kind of money. This is certainly the case with *fee*, *shekel*, and other similar terms. If this view be admitted, pecunia gave rise to the sheep rather than the sheep to pecunia. Indeed the word, like *saccara canda* (sugar candy), *damajan* (*demijohn*), and *cash*, may have come from the most remote eras.³

Following too literally the text of Pliny, some numismatists have regarded as money, and ascribed to the period of Servius Tullius, certain square and oblong masses of copper found in Italy. It will be shown herein that these masses are of either an earlier or later date than Servius Tullius, and that they were not moneys, but commercial ingots.

These masses, of which a few are still extant, are of cast copper, and vary in length from one to five inches, and in thickness from a quarter of an inch to an inch. Their weight varies from about half-a-pound to five pounds, Roman.⁴

¹ Pliny, xxxiii. 3.

² Pliny, xxxiii. 13.

³ *Saccara canda* is found in the most ancient Sanscrit writings (Draper's "Civilization"). *Damajan*, together with the object it represents, is to be found sculptured on the Pharaonic tombs of Thebes (Wilkinson's "Ancient Egyptians"). *Cash* is from *karshápána*, a coin or weight in the time of Manou, and mentioned in his "Code."

⁴ In addition to these pieces, "others are mentioned by ancient authors

Many numismatists have doubted that these ingots were at all Roman, and have ascribed them to neighbouring Italian states.¹ Indeed, the only reason for ascribing them to Rome is the mischievous passage in Pliny from Timæus. Respect for the antiquity of this literary fragment alone renders it necessary to discuss its credibility.

It has been noticed by critical observers that the effigies or symbols on these ingots, though apparently rude, are the work of highly finished artists, and are really rude only in the respect that they are designed with a bold and free hand. This circumstance assigns the pieces to a period either long before or long after that of Servius Tullius; for, although artists of this era evinced skill in some respects, they were wanting in that mastery of delineating human and animal forms which first manifested itself in the Greek schools of the sixth century B.C., and only made its way to Rome at a much later period. The copper masses in question are of this character. No inferior artists could have fabricated them; they are rude, but it is the rudeness of genius.²

The vast size and weight of these masses forbids the belief that they were used as money, or if thus used, in any wider sense than cakes of salt in Abyssinia, or bricks of tea in China are so used at the present time. These commodities are indeed used as moneys, but not generally throughout the empires to which they respectively relate, nor exclusively, nor by legal provision, but as voluntary and convenient media of exchange by the people of remote and sparsely settled districts, to which metallic coins seldom find their way, and where the commodities of which these masses are made are common and indigenous.³

As previously stated, the weight of some of the copper masses of Rome which are still extant is not less than five

of the great weight of one hundred Ases," or libras (Humphreys' "Manual," i. 254).

¹ Humphreys' "Manual," i. 257.

² Le Normand in Humphreys' "Manual," i. 257 and 261.

³ See chapter on China.

pounds.¹ It is difficult to believe that such a cumbrous mass of metal was used as money, and far more easy to suppose that it was merely an ingot of copper cast into this form for commercial convenience, the effigy being no more nor less than a trade or deposit mark.² It is not impossible that these masses were used as money; nay, it is not improbable that they were so used, provided the supposed use be limited to the neighbourhood of the copper mines where the ingots were cast, or to the sense in which pig-iron was, and pig-iron "warrants" are still, used as a medium of exchange in the iron districts and markets of England and Scotland. What is disputed is that they were the common or the legal, or the only money of the Roman state, either at the period to which they are erroneously ascribed, or at any other period.

In certain remote pastoral districts of ancient Italy no doubt but that cattle were employed as money; in the fishing districts perhaps dried fish were similarly employed, just as seal-skins are still used in some parts of Norway, and cod-fish in Iceland; and in the neighbourhood of the copper mines of Italy it is not unlikely that these great masses were used for a medium of exchange in certain special

¹ The weight of the so-called quincunx in the Earl of Pembroke's collection is 27,662 grains Troy. This may or may not have been a quincunx, indeed there is nothing to prove that it was not a market weight or a mere commercial ingot, or an ingot deposited in the *ærarium*. The piece alluded to by Humphreys, i. 253, as having been "seen" by the Duc de Luynes, may be mythical, or the duke may have been mistaken as to its age.

² M. Le Normand, the most recent authority on the subject, is of opinion that these masses should be regarded simply as ingots, bearing a national symbol or seal as a guarantee of their weight. He holds that the square ingots were cast even after the issue of the circular *As* and for the convenience of stowage in the national *ærarium*. Bronze armour and other spoils of war of this metal were invariably cast into ingots of this form on their transport to Rome. At the triumphs of S. Papirius Cursor over the Samnites, B.C. 295, some 233,000 pounds of bronze were brought to Rome, and only 1,330 pounds of silver, though the Samnites were then a richer and more luxurious people than the Romans (Humphreys, "Manual," i. 255).

classes of transactions. But for all other transactions it is believed that coins or numerical moneys were used in Italy from the very outset of its historical period.

The extreme fewness of the specimens extant afford another proof that the copper masses in question were not money. Coins of a far more ancient date, and of a small size, and for both of these reasons much more likely to have been lost, have been found in considerable numbers; whereas but isolated specimens of these great masses remain, and no assemblage of them has ever been discovered.

Their irregular weight is another argument against their admission as coins or money. In numerical moneys irregularity of weight is unimportant; because the value of the pieces, whether of metal, leather, glass, clay, or paper, is due to their legal course and limited numbers. In commodity moneys irregularity of weight is intolerable and impracticable, and unless it is confined within very small limits, must speedily lead to the downfall of the system. One of the essential conditions of a commodity system is that all the pieces of the same denomination shall contain, approximately, a like quantity and quality of the commodity that forms its basis. This is not the case with the copper masses in question. They vary in weight enormously, and, indeed, I have not been able to ascertain that any two of them are alike. Even when coins are clipped, the clipping must proceed with more or less equality, or else there would be too great a choice between the various pieces, to be disregarded. In other words, the clipping would naturally come to be general and uniform. Should it prove to be otherwise, the system would fall; for although in times of a diminishing money people will be less particular than at others as to the kind of money they take, no one would be likely, at any time, to accept half a pound of metal when a full pound was his due, nor to pay a full pound if half a pound would answer the same purpose. The discrepancies in the weights of the copper masses under review are even greater than is here supposed, and are far too great to admit

of the plea of their having been unlawfully diminished in weight.

The low value of copper as compared with other commodities,¹ coupled with the great weight of the masses under consideration, furnishes another proof that they were not money. The further they were carried from the copper mines or the place where they were fabricated into ingots, the more they would be worth; thus their value as metal would differ with almost every mile they travelled. In those days of difficult and expensive transportation this difference would be so great, that while in one district they would only pass as coins for their legal value, in the next one they might pass as metal for twice as much. A money of this character would be intolerably inequitable and inconvenient, and it is hardly to be supposed that, with the then recent example before them in Lacedæmonia of the successful use of numerary money, the Romans would have endured so cumbrous and troublesome a system of money as the one under review, when they had a remedy so close at hand.

If it be urged in reply to these arguments that in modern countries copper has been used for money at or near its market value as metal, it is to be observed in reply that (1) the ingots were marked, and (2) that all such experiments failed after a trial of brief duration compared with the long period during which the supposed Roman ingot system is assumed to have lasted.²

¹ The commentators of Pliny make copper worth in weight 1,000 for one of silver; but, as shown in another chapter, there are reasons for believing that the true ratio was about 140 for one. This is a low enough value for the present argument.

² The Swedish copper ingot system lasted from 1673 to 1763. During nearly all this time the ingots were deposited in bank, and represented by printed paper notes, and during the rest by copper coins overvalued ninety-six times.

The Weimar copper ingot system of 1715 was introduced by the Swedes, and was similar to their own.

The Russian copper ingot system lasted but for a single year, 1755-6. Before and after that the copper ingots (roubles) were overvalued.

With reference to the amorphous copper ingots found in Italy, regarded as money, and ascribed to the ante-Servian period of Rome, such ascription is purely fanciful and erroneous.¹

At one time, according to Pliny, the As of copper weighed exactly one libra.² He supports this opinion, not by adducing the actual coins and their weights, but by reference to words and phrases employed in ancient Roman laws and customs.³

This opinion is easily refuted. There is not a single one of the numerous so-called Ases extant which weigh exactly or nearly exactly one libra, and this assertion includes both the copper masses above referred to and the heavily circular so-called Ases of the Janus-faced type.⁴

I say "so-called" Ases because, as will be argued in a future chapter, these last-named pieces were really not Ases, but sesterces of $2\frac{1}{2}$ Ases, the mark 1 upon them signifying one nummus, and not one As, as is commonly supposed.

Nay more, it may be confidently asserted that no system of money ever existed in which the coins passed by weight instead of tale, or wherein the coins preserved for more than a very brief period the names and weights of well-known measures of weight, as the libra, or pound, or ounce. The object of conferring the names of libra, pound, or ounce upon coins is not to denote, but to misrepresent their true weights.

I am very well aware that, at least in recent times, it has been proposed by certain thoughtless persons to make coins

¹ One of these numismatic shams appeared in Scott's Catalogue of Schieffelin's coins, New York, March 3rd to 8th, 1879.

² The weight libra of archaic and imperial Rome differed. See the Introduction to vol. iii. of Bohn's "Pliny."

³ It must be remembered in this connection, that all the public records and books in Rome were destroyed when the Gauls set fire to it.

⁴ The weights of a great number of these pieces are given by Raper, Le Normand, Humphreys, and others. Some of them in private collections I have myself weighed.

of even weights, and to call them by the names of such weights, and it may be that similar projects were entertained in ancient times; although this is doubtful; because the ancients were far better acquainted with the nature of money than we are, and were not so apt to entertain impracticable ideas on the subject.

The objection to such a system is two-fold. First, the practice would lead to confusion in contracts and exchanges; for example, as to whether a pound weight of money or a pound weight of something else was meant; and second, because the value of coins is derived, not from their weight, but their numbers and legal functions—a fact well known to the ancients. Suppose, for the sake of an extreme illustration, that but one hundred coins, each called a “pound,” and weighing exactly a pound of gold, were in existence in any important country, and that all debts and contracts in such country were legally dischargeable only in such “pounds,” it would follow that each of the coined pounds would rise in value to that of thousands, perhaps millions of pounds of uncoined gold, in deference to the urgent and universal desire to obtain them for the purposes of making payments. Such an extreme case would of course never arise in fact, because a system so limited would be too intolerable to be borne by any people; but it serves to elucidate the principle that the value of coins arises from their numbers and functions, and not, as is commonly supposed, from their weight. Practical examples in point are to be met with in the actual moneys of all countries. The Carolus silver dollar of Spain, now no longer coined, and therefore practically limited in numbers, though it weighs but a few grains more than the recent dollar of the same country, is worth nearly half as much again.¹ The American silver dollar of 1804, weighing exactly the same in pure silver as the dollar of to-day, is worth from \$250 to \$1,000,

¹ These coins circulate chiefly in the treaty ports of China. The value of the Carolus dollar in Shanghai varies from \$1.35 to \$1.50 in American silver dollars, which are of like weight.

or several hundred times as much.¹ The silver dollar of to-day, of unlimited function and weighing 371 $\frac{7}{8}$ grains in pure silver, is worth more than the silver trade dollar, whose weight is 382 $\frac{1}{2}$ grains pure. The legal tender of this coin was formerly limited to five dollars in any one payment, but since 1877 it has been entirely demonetized.

As this history proceeds, it will be observed that the Romans and Greeks, back to the earliest times, were well aware of this principle of money, and therefore were not likely to have ignored it in practice, except perhaps during some brief interval of time, when war or civil commotion interrupted the ordinary course of affairs, and destroyed the integrity of the government and the mints. It may be confidently assumed that they did not ignore it for so long a time as is inferentially assigned by Pliny to the supposed "As libralis," namely, from the foundation of Rome, B.C. 753, or from the reforms of Servius Tullius, B.C. 566, to the defeat of King Pyrrhus, B.C. 274.

As for the notion that the coin or sum livre of France ever weighed a livre weight, or the coin or sum pound sterling of England ever weighed a pound weight, there is no warrant for it in fact, and it merely arises from the same faulty method of reasoning from names, that induced Pliny to connect "stipes pondera," &c., with a supposititious As that weighed exactly one libra. The fact, in all these cases, was, that the name of a superior weight was given to the coins in after times in order to convey an exaggerated notion of their value, and not because they ever actually weighed as much. This is proved by the fact that the names "livre" and "pound," attached to coins or sums of money, are of much later dates than the same names attached to weights, and of later dates than other names² previously used for the same coins or sums.

The fraction of money in France when the livre weight

¹ But few of these coins are extant, the majority of the mintage having been lost in the war with Tripoli, where they were sent to pay the crews of the United States' men-of-war.

for commodities was established by Charlemagne was the silver denarius, denier, or denny. The fraction of money in England when the pound weight for commodities was adopted by William of Normandy was the silver penny. In both countries the livre or pound employed at the mint was the Easterling or Saxon pound of 5,400 grains Troy. In both countries twelve dennies or pennies in tale equalled one sol, sou, or shilling, and in both countries *in after times* twenty sols, sous, or shillings in tale equalled a livre or pound (coin or sum).¹ Thus 240 pennies (coins) equalled a pound (coin or sum of coins). From this fact it has been inferred that out of a pound of pure or nearly pure silver were coined 240 penuies, and therefore that the weight of a silver penny was originally $22\frac{1}{2}$ grains; but although so many as 12,000 of these coins have of late years been found in a single place, and the specimens extant are very common, none of them are of this weight. The silver pennies of Charlemagne contained about 20 grains, and of the earliest Anglo-Norman kings about 18 grains;² and as time went on they weighed less and less. Not one specimen of the penny has ever been found that weighs 240 to the livre or pound of pure silver, and this is very strong evidence that no livre or pound, coin or sum of coins, ever weighed a livre or pound weight of that metal.

In like manner the fraction of the monetary system of Rome at the period now under review was the As, and it may have been called the As libralis, though whether this name was attached to it at that time or afterwards is uncer-

¹ Humphreys' "Manual," ii. 428.

² Tooke, vi. 416, bases a lengthy argument on the erroneous assumption that the penny of William of Normandy weighed the 240th part of a pound weight of silver .925 fine. Following James on this subject, he also omits the debasement of the silver coinage in A.D. 1175, quoted by Maddox, i. 278, from the Norman Chronicle, and, in short, blunders in many ways. In this respect, however, he is not without a numerous company among writers on *prices*. Indeed, since money is always national and prices nearly always local, all general principles of money based on prices in one place are to be accepted with extreme caution.

tain; but it can be confidently assumed that the As never weighed a libra. None of the square or oblong Ases (so-called) weigh a libra. They vary from about half a libra to about five libras. As to the circular Ases (so-called), Humphreys (i., 257) says that none of them are above $9\frac{1}{2}$ ounces.

From these various evidences it may be assumed that the copper masses under consideration were not used permanently as moneys or media of exchange, and that, if used at all, they were either employed exclusively near the copper mines, or as a temporary device, or, like the Swedish ingots, as bank reserves, which were represented in the circulation by more portable and convenient symbols, as silver coins,¹ wooden tallies, or the like.²

Accuracy in relation to the monetary systems of early Rome is not to be expected in such an account as Pliny has afforded us.³ It must not be forgotten that this author wrote under the censorship of a despotic emperor, whose interests might have been averse to any precise recital of the monetary systems that preceded his own,⁴ and that Pliny, in this instance, wrote of events which, in his day, were some six or eight centuries old, and that he was neither a political economist, nor a financier, nor a numismatist. No one would look for accuracy in the description of one of the

¹ Dureau de la Malle, "Econ. Pol. des Romaines," says that there are Roman silver coins which are as old as Servius Tullius, i. 15.

² Copper bronze was employed in early Rome for both arms and tools. It was indispensable in war, and to invite accumulations of it the government may have received it on deposit at the *ærarium* as money and issued wooden tallies to represent it. Similar devices have been tried in modern times. For an extended account of wooden tallies, and the manner of their use in the exchequer of England under the Norman kings, see Maddox's "Hist. of the Exch.," ii. 254.

³ Bude and other learned critics have pointed out numerous errors in Pliny's account of the moneys of Rome.

⁴ There is evidence of censorship in Pliny's meaningless invective against the "criminal" who first coined a gold denarius. An instance of censorship in modern monetary history is given by Tooke, vi. 375, with reference to Paucton's "Métrologie" of France.

monetary systems of the Dark Ages from the pen of a modern naturalist, however eminent; and it is difficult to see why accuracy should be expected in the case of Pliny.

This author may have drawn a part of his scant data on this subject from some old and careless scripture of the early Etruscans, just as some people to-day infer the use of coins by the early Hebrews from the English translation of Abraham's purchase of Macpelah.¹

There is no evidence either in the circumstances of the Roman state, or in the appearance of its numismatic remains, both of which are better known and can be more fully discussed to-day than in Pliny's time, to warrant the belief that any essential change was made by Servius Tullius in the Roman monetary system; and the entire foundation for Pliny's statement—if indeed there was any historical foundation for it at all—may have been that Servius ordered a new coinage or casting of coppers, or subjected the monetary system of his day to some new regulation or reform of which no precise information has come down to us.

Upon a review of the facts and considerations which belong to the history of money during this period, I am inclined to the opinion that the monetary system of Rome during the Etruscan era consisted of gold, silver, and copper coins, and that this system was continued by Romulus and his successors so long as sufficient supplies of these metals were received from the mines or derived from the operations of commerce. Gold was obtained by washing the sands of the Tiber, and silver from commerce with Greece and Carthage; but copper, at that period, could only have been obtained from distant Cyprus, or conquered from the Etrurians. The difficulty of procuring supplies of this metal probably led to the use of copper coins, overvalued, like the iron ones of neighbouring Sparta, or the parchment-covered discs of Carthage. With the growing scarcity of copper, clay, or terra cotta coins, leather discs and wooden tallies may have been tried as moneys. The failure of these systems probably led to re-

¹ On the Biblical narrative, see Dr. Spiers' "Anachronisms."

newed efforts to command ample supplies of copper. These efforts resulting successfully, probably led to a copper ingot system, in which the ingots were deposited in the *ærarium* and represented in the circulation by tallies or discs.

The evidence of their use is so meagre as to suggest only a brief usage of tallies and discs for money. It is, therefore, not likely that they were twice used, first as numeraries, and afterwards as representatives of copper ingots ; but only once and either in one of these ways or the other.

The ease with which these numeraries or representatives, whichever they were, could be counterfeited, probably led to the adoption of a copper commodity system of money consisting entirely of the Janus-faced circular coins, of which so many are still extant. These may have been adopted before or after the reign of Servius Tullius—there is no evidence to establish their date, nor is it of material importance. The substantial fact appears to be that they were in use at some time during the era to which the name of that monarch is herein attached, and that they and the silver coins indicated by Dureau de la Malle are the oldest moneys of Rome of which we have any positive knowledge and remains.

CHAPTER XVI.

THE SERVIAN SYSTEM, B.C. 566-385.

The large cast coins of Janus-face type formed the basis of the Servian system—These coins were originally but slightly overvalued—Weighing, at first, possibly, so much as nine ounces, they gradually fell, with open coinage, to about one-half or one-third this weight, when their fabrication was limited, and the outstanding pieces rose in value to several times that of the metal they contained—This induced counterfeiting, which imperilled the system and led to the coins being struck instead of cast.

KING SERVIUS TULLIUS reigned from B.C. 578 to 534. In 566 he promulgated a new code of laws or constitution for the state. It will be convenient to regard this date as that of the commencement of the Servian system of money.¹ Its termination must have occurred at about the period of the Gaulish invasion, B.C. 385.

The large circular copper pieces (probably sesterces of $2\frac{1}{2}$ Ases) of the Janus-face type, undoubtedly formed the basis of the Servian system.² The mode of reckoning by Ases belongs to this period, and so does the style of art which characterizes the pieces named. It is entirely wanting in that excellence which distinguishes the coins of the (later) republican era, when the influence of Greek art of the

¹ So intimately is a monetary system related to the constitution of a state, that, in modern times, at least, there is scarcely an instance of change in the one without a coincident change in the other, and it is believed that this must have been also the case in ancient times.

² M. Le Normand, as quoted in Humphreys' "Manual," i. 257, ascribes the earliest circular As to B.C. 385, but herein he differs from the majority of numismatists, who recognize it as Etruscan. He has no other warrant for his surmise than a doubtful inference from the unreliable text of Pliny.

fifth and fourth centuries B.C. had had time to make itself felt in Rome.

The first-named pieces have the double-faced Janus on one side, and the prow of a galley on the other. They are destitute of any other designs than these and the one mentioned below, and consequently fail to show either their date or denomination. Some numismatists have assumed them to be of a period subsequent to Servius Tullius, because this enables them to ascribe the oblong copper ingots to the era of that monarch, and thus conform to Pliny. They are also assumed to be *Ases*, because Pliny says that the two-ounce copper pieces of the first Punic War had the Janus face and galley prow. After what has been set forth in the previous chapter, it is perhaps hardly necessary to remark that these assumptions are without sufficient warrant. The figure "1", or upright dash, on the pieces, may mean one sesterce instead of one *As* as generally assumed.

Of the many large circular pieces still extant, none have yet been found to exceed nine and a half Roman (which are assumed to be the same as the modern avoirdupois) ounces in weight. If these pieces or any fraction of them were ever called *Ases librales*, it was not because they weighed a pound, but because, like the pound sterling and the *livre française*, they did *not* weigh one.

If the Janus-face pieces were indeed *Ases*, they were overvalued to the extent of the difference between the weights of those now extant, and twelve ounces, and at the Roman mint were delivered to the public in exchange for a pound of raw metal, the difference in weight constituting the seignorage exacted by the government. This hypothesis would account for the use of the expression, *As libralis*. I am inclined, however, to the belief that the seignorage exacted was more moderate,¹ and that these pieces, as will be explained hereafter, were probably not *Ases*, but sesterces.

¹ Niebuhr denies and Boeckh affirms the exaction of seignorage by the Romans (Boeckh, 26).

As time went on, and it was perceived that pieces weighing less than nine and a half ounces¹ passed as readily as those of full weight, the suggestion could not have failed to present itself, that copper metal could be economized, and the pieces rendered more portable and handy, whilst every purpose of money would be subserved by making them lighter. Such a suggestion has only to occur in order to be acted upon; and accordingly the weight of the coins was repeatedly lowered until, at about the period of the Gaulish invasion, it had fallen to three ounces or thereabouts.²

We have the evidence of prices to assure us that, down to about the year B.C. 452, the Ases, though they may have been greatly reduced below their original weight, remained substantially a commodity money. This result would naturally have followed from the non-limitation of their coinage. Had there been limitation, the value, instead of depending on that of the commodity of which they were made, would have depended on their number. Indeed, when it is borne in mind that the coins of this period were cast, not struck, it seems improbable that, even were it so designed, their emission at any great rate of overvaluation could have been successfully and permanently limited. This reasoning may not appear to be altogether conclusive. The Chinese have had cast numeraries which lasted for at least twenty years.³ But these pieces were much superior in execution to the Roman Ases of the period under review. Therefore, the argument that coins rudely cast could not

¹ This is the actual weight of a number of extant pieces examined by Noel Humphreys. The weight of a similar piece in an excellent state of preservation, and kindly submitted to the examination of the writer by a coin collector in San Francisco, was $7\frac{1}{2}$ ounces Roman.

² Pliny says the As of the first Punic War weighed two ounces; but it is evident that Pliny's information on this subject was secondhand and erroneous. A gradual lowering of the coins previous to the first lowering recorded by Pliny, is admitted by Le Normand, cited by Humphreys, i. 258, and by McCulloch, "Encyc. Brit.," art. "Money."

³ See chapter on China.

have been permanently highly overvalued, is not without weight.

To return to the evidence of prices: by the *Lex Menenia* A.U.C. 302 (B.C. 452) it was enacted, that in imposing fines, a sheep should be estimated at ten Ases, and an ox at one hundred.¹ If we regard the Ases of this period as weighing about one-third of a Roman pound, and as but moderately overvalued, the relation between ingot copper and cattle, as indicated by these prices, agrees with their value in silver during the Empire, provided the meanwhile changed relation of copper to silver be taken into account. A conclusion so natural as this one is, appears to confirm the various steps by which it is reached, and amongst these is the valuation of the As at or about that of the metal it contained.

But this evidence does not stand alone. There is a passage in Livy which runs as follows:—

“There was as yet (B.C. 406) no coined silver: some of them (the patricians) conveying their weighed (heavy?) bronze to the treasury in waggons, rendered their contributions very showy.”²

This statement, which related to the contributions made to pay the army, is usually held to imply that, at the date referred to, the current money of Rome was so bulky as to need conveyance in waggons; and that, being bulky, it was not greatly overvalued.

To this implication it might be replied:—

1. That money is not mentioned in the passage, but only bronze metal, out of which money would have had to be made, whether it was overvalued or not.

2. That even if the bronze metal had been bronze money, the fact would not disprove overvaluation; for a large sum (sufficient to pay off an army) in bronze coins, however much overvalued, would suffice to fill several waggons; just as a large sum in paper notes of small denominations would require a similar conveyance at the present time.

¹ Festus in “*Peculatus*.” Savagner’s translation, p. 409, identifies this ordinance with the time of Tarpécia.

² Livy, iv. 60.

3. That even if the bronze metal had been non-overvalued coins, the fact would not prove that the money of the time generally was not overvalued; for this lot of metal might have been coined especially for the army, who could not hope, in the foreign countries to which they might be ordered, to employ overvalued metal as money without great loss. In after times instances occurred in Rome during the existence of both numerical and mixed systems of money, when silver coins non-overvalued, and others of extraordinary over-weight compared with their denominations, were struck for "soldiers' pay."

4. Seventeen years later than the date referred to by Livy, a transaction took place which shows that gold was used for a certain payment and that it was weighed: but these facts do not prove the use of non-overvalued gold, nor, indeed, any kind of gold money in Rome, since it is well established by other evidences that the first gold coins employed in that commonwealth were struck so late as B.C. 207. The transaction referred to occurred in B.C. 389. A ransom of one thousand pounds of gold was agreed upon between the Romans and Gauls, the latter being under Brennus I., who had besieged the capital. This gold was weighed. Whilst it was in the balance Camillus repudiated the bargain, gave battle to the enemy, and saved both capital and ransom.¹ This gold had been collected from the temples and the women, and was afterwards restored to its owners.

5. Livy wrote four centuries after the events alluded to, and should not be held too closely to his text, especially in technical matters, and in relatively unessential particulars. His "treasury waggons" might have been in fact a single chariot, without any damage whatever to his general character for veracity as an historian.

But notwithstanding all this, I am inclined to regard the passage from Livy as substantially correct, and as meaning that the patricians made their contributions in copper or bronze coins which were but slightly, if at all, overvalued.

¹ Livy, v. 48.

Accepting the passage as correct, it enables us to bring down the era of the commodity or else slightly overvalued As to the year B.C. 406.¹

Between this date and that of the Gaulish invasion must have commenced that high overvaluation of the As of which other evidences will be given as this work proceeds, and of which the first, in order of time, is afforded by the prices of cattle.

At this period, says Gibbon,² ten Ases would buy a herd of cattle. How many cattle a "herd" consisted of, we can only conjecture, but assuming that it did not include less than ten cattle, and that the As of this period had fallen from a quarter to a sixth of a Roman pound in weight, it is evident that it was highly overvalued; for if reckoned merely as metal, ten Ases at four ounces each would make but $3\frac{1}{3}$ pounds weight: a consideration obviously too small for a herd of cattle, however limited in numbers. It therefore appears to follow that the As of this period was highly overvalued.

To render such overvaluation effective, it was only necessary to limit the coinage of the pieces, and there can be little doubt that such a measure was in fact adopted at this period, and that, consequently, the purchasing power of the coins rose above that of the metal they contained.

In the course of time this overvaluation probably led to counterfeiting, and this, again, to the fabrication by the government of improved pieces, of more artistic design, and struck with the *cuneus*. The period of this last-named reform removes the era of the struck pieces to that of republican Rome.

¹ In B.C. 406 ten Ases were paid for a day's wages for three foot-soldiers or one cavalry-man. Consult Merivale, iii. 537; Niebuhr, ii. 438; Momsen, "Röm. Tribus," p. 43, and Del Mar's "Hist. Prec. Met.," p. 27.

² Gibbon's "Rome," 4to. ed., iii. 419.

CHAPTER XVII.

THE REPUBLICAN SYSTEM, B.C. 385-269.

This system really lasted from B.C. 385 to B.C. 207—Reasons for limiting its duration herein to B.C. 269—Its characteristics were government monopolization, and limitation of the emissions of money; one kind of money; high overvaluation of the material used for making the symbols; and security against forgery—Summary of arguments employed to support this view of the system—The arguments stated at length.

THE period to which it has been determined to assign the Republican system of money in Rome, commences with the Gaulish Invasion and ends with the appearance of the Family denarii, the date of which, following the Plinian text, has been fixed by modern numismatists at B.C. 269. Even if this date be correct—we have no reason to doubt it—the Republican system of money was not terminated by the circulation of the Family denarii; because the latter were not legal tenders. The Republican system, therefore, really lasted until B.C. 207, when silver coins were first made legal tenders and a gold scruple was struck;¹ in

¹ It is perhaps rather to the destruction of the numerary system than the coinage of gold, both of which occurred at the same time, that Pliny referred in this otherwise unmeaning sentence:—"The next crime committed against the welfare of mankind was on the part of him who was the first to coin a denarius of gold, a crime, the author of which is unknown," xxxiii. 13. In chap. 2 he calls gold "a bane for the human race," and in chap. 3 exclaims, "Would that gold could have been banished for ever from the earth, accursed by universal report, reviled by the reproaches of the best of men, and looked upon as discovered only for the ruin of mankind." The preference which he next affects for barter appears to be a veiled satire upon the use of gold for money in the place of *nummi*, the former being really a barter of one commodity for another, the latter the determination of relative value by means of numbers. It is evident that Pliny wrote under the surveillance of a censor.

other words, it lasted continuously and without legal modification for upwards of one hundred and seventy-eight years. It was also maintained in a certain way for a long period afterwards. So far as can be ascertained the Republican nummi were never demonetized nor decried. Beginning with say B.C. 207, their fabrication was arrested, and they were gradually supplanted by other moneys: but they probably continued to remain limited legal tenders until they found their way into the treasury and were melted.¹

Notwithstanding these facts and inferences, it has been deemed more convenient to confine the duration of the Republican system to the period when it was both unmodified by legal provisions and unaffected by usage.

The characteristics of this system were the monopolization of the fabrication of money by the government; the specific limitation of the emissions; the singleness of money, there being but one kind for all purposes; the peculiarity of the material out of which the symbols were fabricated; and the means taken to secure the latter against counterfeiting.

The material selected was copper, and the means to prevent forgery was to strike instead of cast the pieces, to employ the highest resources of art in the preparation of the dies, and to threaten the severest penalties of the law to forgers. The pieces were then overvalued, at first, by denominating each one of them, which, by the way, weighed less than an As of the period, a *nummus*, equal in law to $2\frac{1}{2}$ Ases.² This overvaluation was permanently supported by specifying the limit of issue in the law, and maintaining

¹ This conjecture, if well founded, will account for the rarity of the Republican copper nummus in numismatic collections, compared with that of the As which preceded it, and of the coins which followed. In 1873, the United States Government adopted a similar policy with regard to its silver dollars. Their coinage was stopped, but they remained full legal tenders, until, by an unwarrantable construction of law, which was incorporated into the Revised Statutes of 1873, their tender was limited to five dollars. Rep. United States Silver Com., vol. i., App. p. 90.

² Matthew Raper.

such limit in the practical operations of the mints. The overvaluation was afterwards enhanced by holding to the limit, after the growth of population and exchanges had called for its enlargement; in other words, by limiting the supply after the demand had increased.

With regard to the probable origin of this system, some remarks will be offered hereinafter, but it should be stated in this place that the nummi were not obsidional coins, nor coins of necessity. They were evidently instituted and maintained on principle, and with a clear perception that their value depended upon numbers, and not upon the material of which they were composed.

In supporting these inductions the author has a double task to perform: he has not only to construct the true edifice, but at the same time to pull down the false structure which has been erected upon the mischievous text of Pliny. This circumstance will explain the method he has adopted in the following array of arguments, some of which are employed to prove the true theory, and others to disprove the false.

1. Monopoly, restricted emission, and overvaluation of copper pieces by the state.
2. Absence of complaints about repeated reductions in the weights of these pieces.
3. Unrestrained coinage of gold and silver by Roman gentes.
4. Monopoly of copper mines by the state.
5. Restrictions upon commerce in copper.
6. Varieties of qualities of copper employed in fabricating the pieces.
7. Lack of uniformity in the weights of the pieces.
8. Abundance and cheapness of copper metal.
9. Plentifulness of copper implements and utensils in Rome.
10. Inferiority of copper to gold and silver for commodity money.
11. Amplitude of gold and silver supplies to Rome.

12. Preposterous coinage relation of silver to copper.
13. Difficulty in accounting for certain mint operations.
14. Incredibility of prices and sums relating to this period, and mentioned in ancient authors.
15. The example of other states.
16. Advice of publicists.
17. Extreme danger of a commodity system of money at this period.
18. Allusions to a numerical system in the literature and laws relating to the period.
19. Generic word for money used by the Romans.

These points will now be taken up and briefly treated in the order indicated.

1. Monopoly, restricted emission, and overvaluation of pieces. The fabrication of the pieces of this period was monopolized by the state.¹ They were all stamped S. C., meaning *Ex senatus consulto*.² This expression is translated by Dr. Adam, "by decree of the Senate," and paraphrased by Humphreys as indicating "the act of the Senate which directed the emission."³ Such power was indeed exercised by the Senate up to the last moments when it possessed any power at all.⁴ But in later times it had not the significance which it had during the consular republic; for then the pieces marked S. C., were the only legal tenders in circulation, whereas, later on, these legal tenders were coupled with others not emitted under restric-

¹ See Eckhel in Humphreys' "Ancient Coins," p. 145.

² Humphreys' "Ancient Coins," p. 145 and 150.

³ Humphreys' "Ancient Coins," p. 145.

⁴ "Though the emperors coined gold and silver independently, copper could only be coined *ex senatus consulto*, by decree of the senate." (Humphreys' "Ancient Coins," p. 150.) This mark of the senate will be found on all the copper nummi after the period of the Gallic invasion, B.C. 385. It will rarely be found on silver pieces until after the conquest of Spain, nor upon gold ones until nearly a century later. The As coins were discontinued under Gallienus. "Ency. Brit." p. 383. Consult also Rear-Admiral Smyth, p. 7; Humphreys, 127, 145, 150, 162; and Gibbon, 121, 270.

tion by the Senate, such as the silver and gold coins, first of the patricians, afterwards of the Senate, and lastly of the emperors.

There is no indication in all Roman history, up to the time of Caligula, that any attempt was made or permitted on the part of any person or corporation, except the Senate, to fabricate the copper pieces which passed as money in Rome. Humphreys' "Manual," i. 269, says: "The great national coinage of copper remained to the end of the empire, in charge of the ancient Senate, while the coinages of gold and silver were considered prerogatives of the emperor."

The pieces were of uniform design, and executed with such art and mechanical skill, that they have rarely failed to excite the admiration of numismatists; facts that of themselves point to monopoly and limitation of the coinage.

As to overvaluation we are informed that different pieces were fabricated in each district or colony of the republic, that these pieces were distinguished from others by peculiar mint marks, and the pieces belonging to each place were kept there, probably by being rendered uncurrent or subject to a discount elsewhere.¹ Such control and restriction would not have been necessary with a commodity system in which the pieces passed at their value in metal.

According to the advice of Mæcenas to Augustus, B.C. 28, it appears that none but Roman coins were permitted to circulate in the provinces.² Such a regulation could only be of advantage to the state when the coins were overvalued. We are further informed that the Romans sent their copper coins to displace the gold and silver of conquered countries.³ If the copper coins were not overvalued this action would not only have been meaningless, but mischievous. If on the other hand they were over-

¹ Humphreys' "Ancient Coins," p. 167. There is an exception to this rule, mentioned on p. 169.

² Adam, 122, who cites Dio, lii. 29.

³ Humphreys, 127 and 150.

valued, it would have been a profitable transaction. Spain, which produced enormous amounts of silver for Rome, was deluged with her copper coins,¹ and the writer himself saw them in common circulation in the former country so late as the year 1847.

Although these transactions relate to periods subsequent to the Republican system of money while it remained unmodified, they belong to what afterwards remained of that system, and therefore are pertinent as proofs of its existence.

2. Absence of complaints about repeated reductions. According to Pliny, the copper As was reduced three times: according to the evidence of the pieces in the possession of numismatists they were reduced many times. Yet nowhere in Roman history do there appear any complaints of these reductions, and only in one place, viz., in Pliny's rambling narrative, are any reductions mentioned at all. This singular circumstance is readily accounted for, if we regard the system of money as numerical; for in that case the reductions had no significance, no more than reducing the length or thickness of a "greenback" note would have had while the latter was irredeemable. But if the system was "intrinsic," then the reduction of the copper pieces which constituted the fractions of the Roman measure of value, was of tremendous importance, and could not have failed to cause the most serious revulsions of prices and trade. When the Roman system, during the decay of the Commonwealth and rise of the Empire, did become "intrinsic," and any degradation or debasement of the current coin was attempted—as in the time of Livius Drusus, and afterwards under the emperors—history did not fail to record the fact and its consequences.² Why, then, should it have failed to do so

¹ Humphreys, 309.

² "Vopisens saith: 'The steps by which the (Roman) State descended were visible most by the general alteration of their coins; and there is no surer symptoms of consumption in a state than the corruption of money.'"—Speech of Sir Thomas Rowe at the Council Table of England,

with regard to the monetary system of the Commonwealth, unless the same was numerical and the reduction of the copper pieces was of no importance, beyond the saving of a certain quantity of metal to the state? As, according to the Plinian view, the As still remained a full legal tender, such an act would have suddenly altered all debts, obligations, and contracts to the extent of five-sixths of their amount, and completely deranged all the relations of society. It could scarcely have occurred in any country, certainly not in a republic, as Rome then was, without occasioning the most violent commotions. On the contrary, history mentions nothing of the sort. No complaint arises, no protest is made, no outcries are heard. It is left for Pliny, three hundred years later, to record this momentous fact, which nobody appears to have heard of, and to which none of the myriads who were affected by it offered any objections. The idea is simply incredible.

3. Unrestricted private coinage of silver and gold by gentes. In the year B.C. 269 there commenced to be coined in Rome a vast number of silver pieces, and in B.C. 207 certain gold pieces, known to numismatists as gentes coins. These pieces were not coined by the state, but by the numerous patrician families, whose names have been ascertained, and whose insignia are found upon the coins. It has, moreover, been determined that the state did not coin either silver or gold until some time after these metals had been coined by the gentes, and that the gentes coins were not legal tenders, though it is conceivable that they might have been received by the state for religious or other special dues. Their primal function, however, was to reward the retainers of the gentes who served as soldiers in the armies of the republic. The Roman gens were constituted something like the Scottish clans: to each one

in July, 1640, quoted in Harris on "Coins," ii. 10. "Antoninus Augustinus rather suspected that money had more to do with the 'distemper' of the Roman Empire than the Huns and Vandals." Greaves on "Coins," 317.

belonged, not only the patrician whose name it bore, but also his family, his adherents or retainers, and his slaves.¹

When Rome commenced its policy of foreign conquest it became necessary for the gentes, who alone supported the burden of war,² to pay their adherents in money made of a material that would insure its circulation in foreign countries, and light enough to be convenient for transportation abroad. This accounts for the emissions of Family denarii. The origin of their tale relation to the As, as given by Pliny, may be explained by the necessity of devising a portable and exportable equivalent for the As, in which last-named money the rate of soldiers' pay had been expressed in the law of B.C. 406.³ Silver coins were familiar to the Romans since, at least, B.C. 317, for at that date the silver tridrachmas of Magna Græcia appeared in Rome,⁴ and silver metal was to be obtained, and was obtained, if not from the mines, at least through commerce or conquest. The fact that it was not permitted to form part of the monetary system of the republic, and that the gentes were permitted to coin it without restraint, is therefore regarded as a proof that the monetary system stood in no need of silver; and this could only have been the case if the copper pieces were overvalued, and the system was numerical. Otherwise the cumbrousness of the As—no matter whether it weighed three ounces or nine, it would only have passed in a commodity system for its contents of copper metal—would have been intolerable.

4. Monopoly of copper mines by the state. The restriction upon mining, mentioned by Pliny,⁵ is quite sufficient to indicate that the mines were under the sole control of the

¹ Napoleon's "Cæsar."

² Dionysius of Halicarnassus, iv. 20.

³ This law first granted them any pay at all. Of course to pay the soldier in overvalued silver denarii was to cheat him, and no doubt this was done. As to date of this law consult Adam, 329.

⁴ "Festus," in Humphreys, 316.

⁵ Pliny, iii. 24, and xxiii. 21.

state, and that no mining was carried on without its express permission, and upon such conditions, including that of production, as it might deem proper to dictate. Its plain meaning is that no mining was permitted to private individuals. The state itself could, if it saw fit, mine for the copper that it might have needed for monetary symbols or any other purpose.

Depping says the mines were first declared government property and taxed during the consulship of Cato the Elder, B.C. 195.¹ The passage of Livy upon which this statement is founded relates to certain mines in Hither Spain, and runs as follows: "Having restored quiet in the province, he (Cato) settled the iron and silver mines on such a footing that they produced a large revenue; and in consequence of the regulations then made, the province daily increased in riches" (for the Romans).² No allusion whatever is made to copper mines either in Spain or elsewhere.³

5. Restrictions upon commerce in copper. It appears from a passage in Cicero that the Romans were not unfamiliar with the policy of restricting the commerce in the substances of which the symbols of money were composed.⁴ It is therefore not improbable, though we are without any positive evidence on this point, that they restricted the commerce of copper during the consular republic and the prevalence of the numerical system of money.

6. Variety of qualities of copper employed in fabricating the pieces. Pliny informs us that sesterces and double Ases⁵

¹ Depping, ii. 75.

² Livy, xxxiv. 21.

³ Jacob's statement, p. 76, that, "There is no information to be gained respecting the mode in which the few copper and iron mines they (the Romans) then possessed (about B.C. 260) were administered," is far too sweeping. The copper mines of the Romans were not few but many (see point 8), and the mode of their administration, as seen in the text, was a monopoly.

⁴ Orat. pro L. Flacco, cap. 28.

⁵ Were these the "great sesterces" alluded to in Tacitus, i. 8? If so, they belong to the numerical system, and were, properly speaking, not multiples of the As, but of the nummus.

were made of "aurichalcum," a superior sort of copper, while Ases were made of Cyprian copper, which was of an inferior quality. He assigns no date to this distinction of coins, but as he informs us that the mines of aurichalcum had been long exhausted, and that this variety of copper had been superseded by the Marian or Corduban (supposed to have been obtained near Cordova, in Spain), which variety was almost as excellent as aurichalcum, it is to be inferred that it relates to a time which comes within the period now under review.¹ Not only this, but assays of the coins still extant show that the material of which the various copper coins of this period were made was different. These inferences and facts are fatal to the theory of a commodity or "intrinsic" system of money; for, according to a rule of Aristophanes, erroneously credited to Gresham, a difference in the standard of intrinsic coins, when the coinage is open or "free," will occasion the melting and disappearance of the more valuable ones. When the coinage is not open or "free," the system is one of monopoly and restriction, and partakes of the numerical character.

7. Lack of uniformity in the weights of the pieces. Says Humphreys: "No As of the circular form has at present been discovered of the full weight of the oldest described by the ancients, viz. twelve uncia."² The heaviest pieces of this coinage (known as the uncial) weigh $9\frac{1}{2}$ Roman ounces ($3856\frac{1}{4}$ grains).³ These pieces are regarded by Humphreys as Ases, but a comparison of them with the Sicilian cast coins of the same period proves them to be either sestercii of $2\frac{1}{2}$ Ases,⁴ or dupondiarum of 2 Ases. This makes the As of

¹ Pliny, xxxiv. 2.

² "Ancient Coins," p. 128.

³ Ibid. 129. Humphreys adds: this type "appears to have been also the most abundant, as the great majority discovered of the earlier periods are of this weight."

⁴ The "Encyc. Brit.," 8th ed., art. "Numismatics," p. 383, and Humphreys, "Manual," 301, assert that the copper sestercus was not coined in Rome until after the time of Julius Cæsar; but this is an error. See Pliny, xxxiii. 17.

the period weigh either $1542\frac{1}{2}$ grains, or else $1928\cdot12$ grains, probably the former.

Pinkerton asserts that when the denarius was first issued, B.C. 269, the As weighed only 3 uncia, or $1312\frac{1}{2}$ grains.¹

Anthon says that Ases of 11, 10, 9, 8, 3, $1\frac{3}{4}$, and $1\frac{1}{2}$ oz. are still extant. Humphreys says there are circular Ases of $9\frac{1}{2}$, 8, $7\frac{1}{2}$, 7, and 4 oz., and other odd weights.

If these statements and inferences are to be relied upon, it is impossible that the Roman monetary system of this period could have been "intrinsic." For it is essential to all "intrinsic," or commodity systems of money that every piece of like nominal value shall be of the same weight and fineness of metal or other material.²

These data also corroborate a conclusion previously reached herein. Pliny ascribes the first lowering of the As to the year B.C. 269, and says that it was suddenly reduced from one pound to one-sixth of a pound. The coins extant prove that the As was lowered previous to the Gaulish invasion to 3·8 oz., and in B.C. 269 to $2\frac{1}{2}$ oz.; and there might have been, and probably were, other intermediate reductions.

8. Abundance and cheapness of copper metal. At this period, if not before, copper was cheap and abundant, and therefore almost as unfit for a commodity system of money as would be the blank paper upon which, at the present date, Government notes are printed. It was not worth in silver any more per pound than is now the "distinctive" paper upon which such notes are printed. It was abundantly produced in various parts of Italy, in Campania, Tuscany, and Sicily, and many of the mines worked at that period, at first by the Etruscans, and afterwards by the Romans, remain productive at the present day.

However, it was not until long after the commencement of the period, during which, according to the Plinian view, Rome employed copper for money at its ingot value, that

¹ "Essay on Medals," ed. 1808, vol. i. p. 162.

² Pliny proves himself to have been aware of this principle in the story which he narrates in book vi. chapter 24.

she conquered the countries which possessed these important and productive mines. It would have been a singular and ruinous policy, had the Romans adopted for money, at that time and at its commodity value, a metal over the production of which they did not exercise substantial control. It can hardly be supposed that they possessed so little foresight as to employ for money copper coins at their ingot value, whilst Etruria and Sicily held control of the principal copper mines of Italy, and would have thus been enabled to withhold from their enemy the material out of which he had obliged himself to coin his monetary symbols.

9. Plentifulness of copper implements and utensils. Although the art of reducing iron ores was known to the Egyptians, Greeks, and Romans long previous to the period under review, iron was so rare a metal, that except for blades and cutting edges, it was not in common use before the second Punic war. The usual material for the fabrication of weapons, tools, implements, utensils, and works of art, was copper or bronze.¹ Had the monetary system of this age been "intrinsic," an enormous mass of copper or bronze would have stood ready at all times for conversion into money, and this fact would have endangered the steadiness of prices, and exposed to entire subversion all those relations of society which are affected by prices. As history fails to note any such derangement—and it is difficult to believe that it could have occurred without notice—it is reasonable to infer that the monetary system of the Republic was not subject to it, and, therefore, that the coinage was overvalued and monopolized by the state.

¹ Pliny, in book xxxiv., gives a circumstantial account of several thousand bronze statues in and about Rome, also of bronze furniture, &c. On the hypothesis of a commodity system, these works of art absorbed so vast an amount of the metal by which the value of all property and debts was measured, that it is inconceivable that it should have been allowed to remain uncoined. Imagine the financial effect at the present time of withdrawing or sequestering a relatively equal mass of gold or silver from the circulation of the world!

10. Inferiority of copper for commodity money. Had the money of Rome at this period been "intrinsic," it would certainly have been made of gold or silver rather than copper; the last-named metal being in many respects inferior to the others, for the purpose mentioned. Chief among these are its liability to corrosion, its relative plenti-fulness, the absence of any great stock on hand, and the difficulty of protecting copper coins from counterfeiting. To meet the difficulties here presented, it has been imagined by Colquhoun that the precious metals were exceedingly scarce in Rome, just as to meet similar difficulties in the case of Sparta, Plutarch imagined that it required a yoke of oxen to haul ten minæ in the ancient iron numeraries of that country. So far is Colquhoun from being correct, that Rome, during the period of her copper money systems, possessed no inconsiderable quantity of the precious metals in her public treasury (the *ærarium sacrum*);¹ while both gold and silver coins of foreign fabrication, and numerous silver coins of domestic fabrication, were employed in Rome from hand to hand, either for commercial payments to foreign merchants, or for religious purposes, or the use of soldiers, as previously conjectured. These coins were not money, and their use in Rome, coupled with the fact that at the period in question, gold and silver money was employed by several of the nations with which Rome was then connected by commerce, proves that it was neither scarce nor difficult to procure.

Says Humphreys: "The Romans adopted copper in contempt of the gold and silver of their neighbours, which (metals) they were acquainted with, but would not adopt; for according to Festus, foreign money of gold and silver circulated in Rome in the earliest period."² These coins were, however, not money in Rome: they were simply merchandise.

¹ "Dict. Universelle du XIXth Siècle," art. "*Ærarium*."

² Humphreys' "Ancient Coins," p. 130. The fac-simile of a silver tridrachma, which is believed to have circulated in Rome about B.C. 317, is shown on pp. 136 and 137 of the same work.

11. Amplitude of gold and silver supplies. Had the Romans of the Commonwealth not purposely designed to avoid the establishment of a commodity system of money, it is natural that they would have selected for their system the best instead of one of the worst materials out of which to fabricate their monetary symbols; gold or silver, instead of copper. A comparatively small quantity of the precious metals would have enabled them to fabricate coins of convenient sizes and denominations. Their resources in this respect were ample. They had not restricted their mining supplies as had modern Russia, when the latter resorted to a copper currency; they had not parted with a long hoarded stock of bullion, as had modern Sweden when the latter resorted to copper ingots and paper certificates. They were not destitute of gold and silver mines, as were the modern North American colonists when they resorted to paper bills. On the contrary, as Pliny testifies, "Italy yields to no country in the abundance of mines of all the several kinds of metals,"¹ and the mining interdict to which he next alludes, was probably not enacted until the time of Spartacus. Placer gold was obtained from the rich mines of Piedmont, from the Maremma and the valleys of the Tiber and its affluents, and from Aquileia, while quartz gold came from the foothills of both the Alps and Apennines, from the former of which localities it is still produced.²

The precious metals were also obtainable by commerce. Greece and Carthage had silver and the Gauls had gold, to spare, at that period; and Rome traded with all of these countries. Ample supplies of the precious metals were

¹ Pliny, iii. 24.

² In the author's "Rape of the Earth," the entire history of gold mining in Italy is traced from the operations of the Etruscans down to the present day. The date at which the mining interdict of the Senate was repealed is also fixed in that work. For other references on this subject, see Livy, xxxiv. 21, and Depping, ii. 75. On the gold mines of Aquileia, consult Polybius, xxxiv. 10, and Strabo, iv. vi. 12. On the silver mines of Italy, consult "Report of the United States Bureau of Statistics," No. 29, for the year 1869, p. 283.

thus to be procured had Rome needed them for her monetary system ; and that she preferred to do without them and to substitute copper in their place, can only be credited upon the hypothesis that the latter was not employed on the level of a commodity, but was highly overvalued, so that comparatively light and small coins were made to answer all the purpose of exchange. To maintain such overvaluation it would have been necessary to limit and perhaps to specifically limit the emissions of coins ; and it is precisely this combination of circumstances that constitutes a numerary currency.

12. Preposterous relation of silver to copper. According to Pliny, who evidently derives his opinion from the etymology of the word denarius, rather than from any circumstantial knowledge of the monetary system of the period, the value of the earliest silver denarius was ten Ases. These denarii are said to have been coined at the rate of six to the ounce, or seventy-two to the pound weight of silver. If the Ases weighed a pound each, and ten of them went for a denarius, as Pliny maintains, this would make the relation of value between silver and copper as 1 is to 720.

The actual average weight of these denarii, as deduced from many thousands of them still extant, prove that they were originally coined seven to the ounce or eighty-four to the pound. Assuming Pliny's tale ratio and weight of the As to be correct, this makes the relation of value between the metals as 1 is to 840.

The learned Dr. Adam asserts¹ that the denarii were "at first" coined one hundred to the pound. Still assuming Pliny's tale ratio and weight of the As to be correct, this would make the relation of value between the metals as 1 is to 1,000, and such is Dr. Adam's conclusion.

It will now be shown that the least incredible of these three relations of value is quite preposterous, that the actual relation of value between silver and copper was about 140 for 1, and, therefore, that if the denarius passed for ten

¹ "Roman Antiq.," p. 427.

Ases, the latter did not weigh above $2\frac{1}{3}$ Roman ounces each, instead of a pound as Pliny states. Moreover, that if the denarius passed for ten Ases, and the As coin had the same value as a pound of uncoined copper, the As coin was over-valued in the coinage laws about five times.

The first thing to examine is the evidence concerning the actual market relation of silver to copper at the time. This evidence will of necessity have to be obtained from countries other than Rome, because, if the views herein maintained are correct, there was little or no silver in Rome to make a market with, not on account of any difficulty in obtaining it, but for the reason that the monetary system of the Republic did not permit the use of silver coins or bullion for money: it was not legal tender, nobody was obliged to accept it in payment, and there was therefore little or no demand for it.¹

Says Boeckh, "in the most ancient times (of Greece) the average relation of the value of copper to that of silver was as 300 to 1."² This evidence is not applicable to the period under review. The "most ancient times" of Greece was many centuries earlier than the republican period of Rome. It was not until some centuries after these "most ancient times" that any copper coins at all were made in Greece. "In the Greek series the earliest copper (*i.e.* copper coin extant) is supposed to have been issued in Macedonia by the king *Æropus* about the year B.C. 397.³ "The oldest copper coins of Athens do not ascend beyond B.C. 400, although we find copper coins attributed to Gelo of Syracuse, a Greek colony in Sicily, a century earlier."⁴ As copper mines abounded in Greece even so far back as the era of Cadmus, and as down to the fifth century B.C.

¹ In B.C. 156, the Roman treasury possessed altogether 17,410 pounds of gold bullion, 22,070 pounds of silver bullion, and 6,135,400 in "numerate," or bronze sesterces. Pliny, xxxiii. 17. This, however, was after the Republican era.

² Boeckh, 47.

³ Humphreys' "Manual," i. 195.

⁴ Madden's "Jewish Coinage," p. 37; Raper; Boeckh; Humphreys.

there existed no such ready market for the metal as there would have been had it been convertible into money, it is not to be wondered if previous to that date it was comparatively cheap. Hence the extremely low value deduced by Boeckh (and not upon any very sure grounds at that) must not be held to have any pertinence when applied to the period at present under review, and when the use of copper at Rome, both in the coinage and for other purposes, afforded it a ready market. The passage in Boeckh is thus not only inapplicable as regards its date; it is also inapplicable as regards analogy of surrounding circumstances.

The next evidence relates to the era of Aristotle: "In Sicily in the time of Aristotle, B.C. 384-322, according to the value of the new talent, the value of copper seems to have been fixed at 140 to 1 of silver."¹ As it is the market value of copper in silver that forms the subject of inquiry, this evidence is also defective; for it is derived from the Sicilian coinage, in which the value of the two metals was fixed arbitrarily, and it may therefore not indicate their market value.

"During the dynasty of the Ptolemies (B.C. 322-47), the relation of the value of silver to that of copper in the inexact method of coining which prevailed, seems to have been that of 60 to 1."² This evidence has the same defect as the last. It relates to the metals in coins, and unless open or free coinage existed for both metals, the relation may have been arbitrary.

It is also defective in not relating to a sufficiently precise date.

Upon the basis of a reward offered for the discovery or remand of two fugitive slaves from Alexandria during the reign of Ptolemy Philadelphus, B.C. 220, Letronne calculates the relation of copper to silver at 60 to 1.³ This evidence does not relate to the period under review.

Dr. Arbuthnot was of opinion that at the period of the first Punic War, B.C. 264-41, the relation of copper to silver

¹ Boeckh, 47.

² Ibid.

³ Letronne, 13.

was the same as in 1729—about 60 to 1. This evidence does not relate to the period under review.

In choosing between these various imperfect evidences, which are all that appear to be attainable on the subject, the preference is accorded to the second one, or the Sicilian ratio in the time of Aristotle; and for the following reasons:

1st. It relates to the period under review.

2nd. Sicily was much nearer to Rome than Egypt, a fact of no little significance in those days of difficult ocean commerce and frequent piracy.

3rd. Sicily was a large original producer of copper metal. It is not known how much copper was produced in Egypt.

4th. Sicily was an ally of Rome: Egypt was not.

5th. The early monetary systems of Sicily and Rome so closely resembled one another, that some numismatists have supposed the latter to have been borrowed from the former.¹ Both systems were at that time "intrinsic." Whilst Rome is believed to have afterwards changed her intrinsic system to a numerical one, that of Sicily, at least in principle, is known to have remained unchanged. It was essentially an intrinsic or commodity system at the period under review. In such a system and in a small and unimportant country, the coinage ratio of the metals cannot be permanently fixed without regard to the market ratio in other countries; and for this reason the coinage ratio adduced is believed to very closely indicate the market ratio.

Assuming this view to be correct, it appears that the market ratio of copper to silver in Rome, was about 140 for 1, and not 720 for 1, as deduced from the text of Pliny.

Indeed, if the hypothesis that the copper coins were "intrinsic," is regarded from the most direct point of view, namely, that of the known coinage ratio in Sicily and the coinage ratio in Rome, as deduced from Pliny, it must appear to be untenable: for it requires it to be believed that while the Sicilian mint was exchanging a pound of silver for

¹ Humphreys and authorities cited.

140 pounds of copper, the Roman mint, not three hundred miles away, was willing to pay 720 pounds of copper for it.

So far as the ratio between the silver in the early denarii and the copper coins of the same period is concerned, it is impossible that the coinage ratio of copper to silver should have been higher than the market ratio. The denarii were not legal tenders. To use Pliny's phrase concerning the Illyricum coins in Rome, they could only be "looked upon as an article of merchandise."¹ Hence they could not have been overvalued in the copper coins. Indeed there could have been no overvaluation of silver coins in the copper coins of Rome until the coinage of silver was undertaken by the state, and the coins were declared to be legal tenders.

But while the silver coins were not overvalued in the copper ones of this era, there can be no doubt that the latter were highly overvalued as against copper metal and all other commodities, except silver, which latter having come into the hands of the patricians, at first from the capture of Tarentum, B.C. 273,² and afterwards from the conquest of Spain, was coined by them at the same rate of overvaluation with reference to other commodities as was the copper of the state. When, in B.C. 207, this usurped privilege obtained the sanction of law, and the silver denarius became a legal tender, the republican system of money, already handicapped since B.C. 269, came definitely to an end.

13. Difficulty in accounting for the subsequent operations of Caligula. It is related of Caligula, who reigned A.D. 37-41, that he was the first to break through the restrictions of the Senate relative to the emission of the copper nummi,³ that he stopped the provincial mints, so as to

¹ Pliny, xxxiii. 13.

² "Here the Romans found *for the first time* the plunder of an opulent city . . . carriages loaded with plate and other ornaments of silver and gold." Flovus, in Ferguson's "Hist. Rome," i. 106.

³ Humphreys, "Ancient Coins," 155.

monopolize the coinage of the nummi himself;¹ and that he proceeded to coin them as rapidly as possible. These proceedings relate to a period long after the assumed rise and fall of the numerary system of Rome; but they prove that at the time they happened, the nummi must have been again overvalued, or else that Caligula was a fool for his pains; more likely the former. If the nummi were overvalued in Caligula's time, the fact lends strength to the opinion that they had been overvalued at a previous date, viz., during the Commonwealth, when the power of the Senate to keep the emissions within specific limit was greater than it was during the Empire.

14. Incredibility of prices and sums mentioned in ancient authors. Augustus is said to have received by the testaments of his friends £32,291,666; Tiberius left at his death £21,796,875, which sum Caligula lavished away in less than a single year; Cæsar owed £2,018,229 when he set out for Spain; he bribed Curio with £484,373 and L. Paulus with £279,500; Antony squandered of the public money £5,651,041; Lollia Paulina wore jewels worth £322,916; Cleopatra swallowed a pearl worth £80,729; Caligula laid out on a supper £80,729; Messala bought the house of Antonius for £352,786; the villa of M. Scaurus cost £807,291; a fish-pond cost £32,291; and the fish of Lucullus a similar sum, &c.²

The Abbé Barthelemy, whose "Travels of Anacharsis" evince a profound critical knowledge of the history and manners of Ancient Greece, spent several years of his life in a study of the coins and prices of that country. The result of these labours is thus summarized:—"J'ai trouvé tant de variations dans celles d'Athènes, et si peu de secours dans les auteurs anciens, que j'ai abandonné ce travail."³

In a similar way the equally learned Marquis de Garnier, after examining the sums and prices in Roman history, as

¹ Humphreys, "Ancient Coins," 163.

² Adam's "Roman Antiquities," pp. 431-2-3, from Pliny, &c.

³ Quoted in Jacob, 91.

translated upon the hypothesis of a commodity money system in Rome, declares them to be as little reliable as the Arabian Nights' Tales.¹

Gibbon and McCulloch write in the same strain.² The reader has only to consult the first book of Boeckh's "Political Economy of the Athenians," the sixth chapter of Jacob's "History of the Precious Metals," and Smith's and Adam's works on "Roman Antiquities," to be convinced of the soundness of these criticisms. For example, we are told that at one period travellers' board cost but a farthing a day;³ that at one time corn cost 4*d.* a bushel, at another 7*s.* 6*d.*, and at a third £6 8*s.*; that an ox cost at one period 3*s.*, at another £12 10*s.*; and at another that a herd of cattle sold for ten pounds weight of copper, and so on.⁴

These sums and prices are simply incredible, and there is but one way to reconcile with truth the statements from which they are translated. This is to regard the sesterce or nummus as an actual copper coin, once known as the *As*, then overvalued and afterwards forced down to its commodity value by means of excessive issues.

15. The example of other states. It has been shown in the preceding chapters of this work that monetary systems of a more or less numerical character had been tried in several of the states with which Rome was connected through commerce, notably in Greece and Carthage. With both of these countries the commerce of Rome was important and continuous, and it is inconceivable that the Romans should not have become acquainted with their monetary systems, and the principle upon which they were founded—that of numbers. Having learnt this much, it is exceedingly improbable that the Romans should not

¹ "Memoire sur la valeur des Monnaies de Compte chez les Peuples de l'Antiquité," par M. le Comte de Garnier, Paris, 1817.

² Gibbon, i. 209, ed. 1838. McCulloch, "Polit. Econ."

³ Boeckh, 86.

⁴ See authorities mentioned in the text, also Jacob, p. 128, and Gibbon, iii. 419.

have endeavoured to secure for their own rising state the advantages which these systems afforded. The Romans were quick to follow Greek examples in the other departments of law and administration, and it would have been strange had they neglected to copy them in so important a one as this. They adopted the Greek name for money; they called it nummus, after the Greek nomisma; and it is regarded as quite out of the question that they should not have known the meaning, or understood the significance of this term.

16. The advice of publicists. Moreover the Romans had constantly before them allusions to such systems in those productions of Greek learning which they justly regarded as models of intellectual vigour and refined taste. Socrates, Plato, Aristotle, Zeno, and other great teachers of philosophy and politics, had all written of numerical systems of money, and the most revered of them all had recommended such a system for his Ideal Republic. It is difficult to imagine that these discourses and recommendations, coming from sources so comparatively recent and so highly respected, should have been wholly disregarded by a nation with whom it had become a habit, nay, almost a passion, to be guided by Greek writers in every other department of science and art.

17. Extreme danger of a commodity system at this period. This point has been alluded to in a previous chapter of the present work. In the ancient times there was not, as now, a vast stock of any commodity, say of gold or silver, suitable for an "intrinsic" money, and amenable to the demands of all commercial countries. Each country then had its own stock, which was therefore comparatively small. The influence upon it of any fresh supply of similar metals, whether from pillage or from the mines, was so great, that violent fluctuations of its value at once ensued, and this unfitted it for money. In other words, the unit of value for each country of the modern world employing a commodity system of money is the total stock of the pre-

rious metals in all countries—a fact which, practically, is modified by the quantity of such metals that temporarily remains in each country by itself, as well as by the freedom of trade, by the use of paper adjuncts in each country, and by other considerations not sufficiently important to be mentioned in this place. Contrariwise, the unit of value for each country of the ancient world which employed a system of money composed of gold or silver coins at their bullion value, was the stock of such metal in that country by itself.

It is easy to perceive that such a condition of affairs exposed the state to grave dangers, and practically obstructed its industrial and commercial progress. It was only necessary for an enemy to quietly withdraw some of the precious metal in circulation, or as quietly to add illegally fabricated, albeit full-weighted, coins to the circulation, in order to produce a prolonged financial crisis, and alter the entire relations of society. Nay, the vicissitudes of the mines,¹ or even the caprices of fashion, as the wearing or disuse of gold embroidery or jewellery, might have involved the fortunes of the state.² The frequency of wars and interruptions to foreign commerce, the great disparity of civilization between neighbouring countries, and many other circumstances peculiar to ancient times, but greatly modified in modern ones, were all sources of danger in the use of a commodity system of money by the Roman Commonwealth, and they furnish a strong presumption for believing that its system was numerical.

A commodity system, or a system substantially “intrinsic,” cannot safely be established anywhere unless the commodity adopted as money is in common use throughout the commercial world; unless its possession is widely

¹ “Certain Italians aiding the barbarians in working the gold diggings of Aquileia, about B.C. 186, in the space of two months the value of gold was diminished throughout the whole of Italy by one-third.” Polybius, xxxiv. 10; Strabo, iv. vi. 12.

² On the use of gold embroidery, jewellery, &c., see Pliny, book xxxiii.

diffused, and freely amenable to commercial demand ; unless the amplitude and steadiness of its future supplies from the mines, or otherwise, is assured ; and unless its coinage is more or less open and gratuitous. All these requirements are fulfilled at the present time by either gold or silver. They were certainly not fulfilled in remote and comparatively non-commercial ages, either by these commodities or any others, and least of all by copper. The Romans would have exposed their state to speedy ruin if they had opened their mints to the copper bullion of all comers, and undertaken to coin it gratuitously, or for brassage, or any moderate rate of seignorage.

If they levied an immoderate rate of seignorage upon the mintage of their copper pieces, or else procured and coined the metal only for and upon account of the state, and only to the extent that the state decided, in either case the system would have been less "intrinsic" than numerical. That the necessities of their position must have caused them to adopt one or both of these devices, there can be little doubt ; indeed we know, from positive evidence, that they adopted the latter. There was no open and gratuitous coinage of copper. The citizens of Rome never had the right to carry their copper bullion to the public mint to be coined without limit and without expense, as have, at the present time, the citizens of Great Britain, the United States, Germany, and other countries, with respect to gold bullion. They had no right to coin it even upon a seignorage. The Roman copper coinage was strictly monopolized by the Senate. All the numismatists and cambists admit this ; and yet, with strange illogicality, they nearly all treat the product of this monopolization as though it had been free. Rome could never have become a great state with "free" coinage laws ; for in those days there was not, as there is now, a vast accumulation of the coining metal on hand to steady its value and lessen the danger of continual revulsions of prices. The only steadiness it could have received must have come from restriction of the coinage, and

there can be little doubt that such was the policy of the republic.

18. Allusions to a numerical system in the fragments of literature supposed to belong to the period of the Commonwealth, and preserved in the *Corpus Juris Civilis*. In the *Pandects of Justinian*, tenth book, occurs this remarkable passage from Julius Paulus, a jurisconsult of the third century of our era:—

“The origin of buying and selling began with exchange. Anciently money was unknown, and there existed no terms by which merchandise could be precisely valued, but every one, according to the wants of the time and circumstances, exchanged things useless to him, against things which were useful; for it commonly happens that one is in need of what another has in excess. But, as it seldom coincided in time that what one possessed the other wanted, or conversely, a device was chosen, *whose legal and permanent value* remedied, by its homogeneity, the difficulties of barter. This device being officially promulgated, circulated and maintained its purchasing power, *not so much from its substance, as from its quantity*. Since that time, only one consideration in an exchange was called merchandise, the other is called price.”

The Code of Justinian, following this opinion of Paulus, probably without fully understanding him, declares that the power of money resides not in the *substance*, but in the *quantity*. This is unquestionably a great truth, but it was no more recognized in practice at the time this code was compiled than it is now. Even in the time of Paulus it was antiquated, and survived only in the letter of a dead law, and the outraged symbol S. C. which still appeared upon the copper sesterce, as if to remind the Senate of the great trust it had betrayed, and the people of the liberties they had lost.

Paulus probably wrote, as afterwards did Sir Matthew Hale on the same subject, either to sustain a case, or else to follow those ancient models, whose wisdom he had learnt

to revere, and without stopping to inquire whether history had not reversed their wonted relevancy.

The ancient authorities of Paulus are quite lost to us. The literature of the Roman Commonwealth has entirely perished, and little remains of the wisdom it embalmed beyond the fragments, which, like the one preserved by Paulus and Justinian, have survived the ruin of time, chiefly because their deep significance has never been noticed, or their practicability demonstrated by an actual test.

19. The terminology of money. This subject has been so fully treated elsewhere in the present work, that it is only necessary to say here that the generic name for money during the Servian period of Roman monetary history was *æ*s, referring to the principal material of which money was composed, whilst during the Commonwealth its name was *nummus*, which as plainly refers to its numerical character at the last-named period.

It is not pretended that each and all of these various evidences and considerations prove the existence of a numerical system of money in Rome, although some of them are regarded as being quite conclusive. Others, while perhaps not conclusive by themselves, serve to lend force to the rest. Taking them altogether, it cannot be denied that they form a mass of evidence and argument which strongly appeals to conviction.

The details of this extraordinary system are lost. The system probably grew out of the inconvenience of the uncial coins, and the determination of adhering to copper as the most suitable material of indigenous production for money symbols; but whether the limitation of coinage which forms its essential feature was adopted as a matter of expediency and usage, or was specifically decreed by the Senate, cannot now be determined. The latter seems most probable. "*Senatus Consultum* was used to denote what the Senate decreed,"¹ and it was evidently not inscribed

¹ Adam, 14.

upon the bronze nummi of this period without an important reason. It did not appear upon the Ases of the previous era, nor upon the Ases of this era, either before or after their name was changed to nummi, nor upon the Ases of subsequent eras.¹ The Ases and their fractions and multiples were always cast, the nummi, except for a short period after their inception, when old Ases were used for the purpose, were always struck. The sign S. C. does not appear upon any of the cast coins: upon all the struck coins that were legal tender, it does.

It does not appear what other reason there could have been for thus distinguishing these pieces beside that of denoting their limitation of issue. It was not necessary to thus designate the fact that they were legal tender, for the As and its parts had been legal tenders, and the denarius and its parts were afterwards made legal tenders, without being thus stamped. It was obviously not a mint mark, for the sign varied in form and size, and appeared upon the coinage of numerous mints. It could only have been a mark which served to indicate that this money was different from all others, and such a difference could only have been limitation of issue, or, as Paulus expressed it: "This device (money) being officially promulgated, circulated and maintained its purchasing power, not so much from its substance, as from its quantity."

The decrees of the Roman Senate, after being written out, were recorded in the Treasury (*Ærarium*), where also other writings pertaining to the Republic were kept. The decrees when not carried to the Treasury were considered invalid.² The Senate had the direction of the Treasury, and distributed the public money at pleasure,³ and although so early as B.C. 448 its authority suffered some diminution,⁴ it

¹ Diminutive Ases were continued to be *cast* for several centuries afterwards, probably for use as religious offerings. A similar custom still retains in Japan in respect to iron coins, some specimens of which are in the author's possession.

² Adam, 15.

³ Ibid. 17.

⁴ Ibid. 15.

cannot be doubted that with regard to money and finance this was not impaired until after the Social Wars.

Its records, however, have perished. Except a few decrees which, on account of the lustre they added to some hero's renown, were committed to brass, not a line of them remains.¹

The numerary system of Rome was certainly in existence at about the period of the Gaulish invasion. After the capital was saved by Camillus, the citizens "set apart particular funds in the treasury, to be spared in every other possible emergency, and reserved for the case of invasion from Gaul alone."² These "particular funds" must have been a sort of money which could be useful abroad as well as at home, in other words, gold or silver. In order to spare a special accumulation of these metals at a time when regular supplies of them could not be depended upon, it was certainly safest to demonetize them altogether; to have a money the material for which could always be obtained in sufficient quantity, it became necessary to adhere to copper; to avoid the inconvenient weight of the uncial coins, it became necessary to overvalue the new copper coins; to maintain this overvaluation, the emissions had to be restricted by the state; and to prevent such restriction from being broken down by counterfeiters, the coins had to be struck from dies of the highest artistic value. The Romans had already, B.C. 452, imported the laws of the Twelve Tables from Greece, and must have been apprised of the Greek system of money which provided numeraries for home use, and the precious metals for foreign service. It seems extremely likely that under such circumstances the Romans should have copied this system.

If not in existence before the Gaulish invasion, the numerary system must have been established shortly afterward. The invasion caused them to change many particulars of their policy.³ Among these would very likely have

¹ Adam, 15.

² Ferguson's "Hist. Rome," i. 75.

³ Ibid.

been the system of money. The embezzlements charged to Camillus at Veii¹ would have impelled such a change in the monetary system, as promised to remove in some measure the temptation to repeat such an offence, and no measure could have been more effective than to demonetize the precious metals.²

With regard to the downfall of this system, this is to be ascribed, firstly, to the permission accorded to the gentes to coin silver denarii without limit, and at a value recognized in usage, if not conferred by law, which rendered these denarii coadjutors of the overvalued nummi of the state; and, secondly, to counterfeiting. The introduction of gold coins, as appears to be suggested by the Plinian text, where the circumstance is alluded to as a "crime," may have assisted this downfall, but it is certainly not responsible for its origin. The numerary system lasted for nearly two centuries, during which all that was admirable of Roman civilization saw its origin, its growth, and its maturity. When the system fell, Rome had lost its liberties. The state was to grow yet more powerful and dreaded, but that state and its people were no longer one.

¹ Ferguson's "History of Rome," i. 74.

² It will be noticed that in all subsequent accounts of the resources of the Roman treasury appears a given *weight* of gold and silver, and a *sum of money* in sesterces. See Pliny, xxxiii. 6, 17.

CHAPTER XVIII.

RISE OF THE ROMAN COMMONWEALTH.

Trifling progress made by Rome during the first few centuries of its existence as an independent power—Its substantial progress only began after the political reforms of B.C. 509 to 408—These measures greatly increased its population and solidified its power—The conquest of Central and Northern Italy which followed, increased its wealth and resources—Expansion of the Republic now rapid—Political reforms and military victories followed incessantly—Progress in agriculture, manufacture, commerce, and the arts—Difference between an expanding and expansive money—The Republican system of money the natural corollary of the expansion of the Roman Republic.

ROME owed its origin to a revolt against an old established and well organized government, from whom it inherited both wealth, religion, and a code of civil laws. Commencing with these advantages, and supplementing them by offering itself as a place of refuge against oppression, it is remarkable what little advance it made as an independent power during the first few centuries of its existence. The explanation of this lies in these self-same inheritances from Etruria, whose retention reduced the results of the revolution to little more than a mere change of rulers. The extravagant privileges of rank, the system of slavery, and the inequitable distribution of lands and wealth, which distinguished the Etrurian system of government, likewise marked that of monarchical Rome. It was not until the nation reformed its government and swept away these abuses that any rapidity is discernible in its progress. When it entered upon this phase of its development, not merely a few oppressed but all the oppressed, and all the discontented inhabitants of the surrounding states fled to it as a home, and its progress changed at once from slow to rapid.

The reforms consisted in the abolition of monarchical and adoption of a republican form of government in B.C. 509; the various concessions to the plebs in 493, 473, 472, 461, 448, and 445; the laws for the division of conquered lands in 486; the increase in the number and proportion of tribunes, 457; the adoption of the Ten¹ (afterwards increased to Twelve) Tables of Solon in 450; the creation of quæstorships in 421, and the admission of the plebs to these offices in 408.

These measures invited to Rome a continual accession of inhabitants, whose interests they so enlarged, and whose power they so solidified, that the conquest of all Central² and Northern Italy soon followed. With the reduction of each important stronghold of the enemy, Rome came into the possession not only of immense wealth in the form of architectural structures, roads, canals, mines, improvements of all kinds, endless works of art, and vast stores of minor commodities, but also of a fertile and cultivated territory which, under juster laws, was soon to be transferred from the few, whose titles were derived from ancient discovery, to the many who founded theirs upon present occupancy and labour.

It was at this period that the progress of Rome became most rapid. Political reforms and military victories followed each other incessantly. In B.C. 376 the Licinian laws were passed to equalize the possession of lands, relieve debtors, and open the consulships to the plebs; in 367 and 302 the pontificate, augurate, and other religious offices were opened to the plebs by means of the Sibylline and Ogulnian laws;³ in 366 the prætorship and curule magistracy were established, and in 336 opened to the plebs; and in 286 was

¹ The Buddhists (see p. 65, ante), Hebrews, and Greeks, each had their code of Ten Commandments.

² Between B.C. 396 and the year of the Gaulish Invasion, Rome captured and plundered Veii, Falisci, and indeed, nearly all the rich Etrurian cities of the lower Tiber and foothills.

³ On the importance of these laws consult Arnold, *App. Cyc.*, xiv. 150.

enacted the Hortensian law to reduce debts, divide lands, and confer legislative power upon the people by tribes independent of the Senate. In 342, by a series of victories over the Samnites, the boundaries of the Republic were extended beyond the Liris; in 338 the Latins were incorporated; in 310 the Etrurian territory, cities, and mines of the Upper Tiber were conquered, plundered, and annexed; in 304 further extensions of territory were conquered from the Samnites; in 293 and 292 the rest of Samnium was conquered and many of its cities plundered; and in 290 the Sabine country was conquered and annexed.

With this expansion of population, territory, and wealth, occurred a corresponding progress in the arts. After the expulsion of the Gauls, Rome was entirely rebuilt, and upon a far more splendid scale than before; in 368 the Temple of Concord was erected; in 312-10 Appius Claudius constructed the great highway and aqueduct which bears his name, erected the public baths, and drained the Pontine Marshes; in 288 M. Curius cut a canal from Lake Velinas; in 272 a friendly embassy was sent to distant Egypt, and Curius Dentatus commenced the construction of the Anio Vetus; and in 260 a vast fleet was constructed to protect and extend the commerce of the Republic on the Mediterranean.

These instances are only types of the progress that marks this period. Numerous works of public improvement were constructed in all parts of Italy; agriculture was prosecuted with ardour;¹ commerce was opened with Carthage, interior Europe, Egypt, and India; local manufactures arose, and Rome emerged from the obscure position of a rebellious province to that of a great nation, whose limits extended from Sicily to the Padus, and whose freedom, energy, industrial resources, and military prowess became known from Carthage to Greece, and from Gaul to China.²

An expanding empire needs an expanding money. This is not the same as an expansive money. The former means

¹ Adams, "Rom. Antiq.," pp. 460, 461.

² See p. 19, ante.

one that by regulation can be made to keep even pace with increasing exchanges ; whereas the latter is one that increases without regulation, either from the adventitious prolificacy of mines, the conquest of the money metal, the unlimited emission of government notes, the licence of private coiners, or the greed of private banks of issue. With the increasing numbers and mobility of her population, with the continual expansion of her territory, and with the growing needs of her commerce and exchanges, it is inconceivable that Rome could have tolerated such a monetary system as careless chroniclers and uncritical commentators, have ascribed to her ; a system composed of copper cast into great round masses, passing for their value as raw metal, subject to fitful increase of numbers from mines and foundries, and to capricious diminution from the demands of the arts. There is a correspondence in the various institutions of government, money included, and nowhere and at no time would such a correspondence have been more violently and injuriously upset than in compelling Rome in the period of her most substantial and rapid growth to accept the rigid and mischievous conditions of a money composed of a commodity of which neither that nation, nor any other, possessed any considerable stock, or controlled any assured supplies.

CHAPTER XIX.

THE PATRICIAN SYSTEM, B.C. 269-250.

The silver spoil of Southern Italy falling largely into the hands of the Roman commanders, the latter obtain from the Senate the privilege to coin it into overvalued denarii—The circulation of these pieces as congeners and multiples of the overvalued Ases constituted the Patrician system of money—Details of the system—The As—Reasons for overvaluing the denarius—It was not a forced but a permissive money—Possibly received for taxes, and paid out for supplies and services—Resemblance to the old time American state-bank notes—Seignorage—Number and rank of gentes coining overvalued denarii—No care taken to guard this privilege from abuse—Reasons for this neglect—Place of coinage the Temple of Juno Moneta; hence the name, “money”—Effects of the new coinage—Its unexpected extent—Inflation of the currency—Gradual fall of both silver and copper numeraries toward their bullion value—Destruction of the Republican system of money.

BETWEEN the years B.C. 277, when they took Crotona and Locri, and B.C. 250, when they defeated Hasdrubal, the Romans conquered the whole of Magna Græcia and Sicily, together with the islands of Sardinia, Corsica, and Malta. The defeat of Pyrrhus and Hasdrubal, both of whom carried valuable military chests, the spoil of the rich city of Tarentum, the plunder of the silver mines in Sardinia, and sack of the opulent Carthaginian towns of Sicily, brought a considerable quantity of silver into Rome; and as this metal seems to have been especially coveted by the victorious commanders for their personal share of the spoil, it fell chiefly into their hands, or that of the patrician families to whom they belonged.¹ To these circumstances

¹ For military spoils of this period and their influence upon the stock of silver in Rome, consult D'Avenant's Works, iii. 32 et seq. and 330; and Humphreys' "Manual," i. 163 and 269; and for the avidity shown by the Roman commanders for silver, see accusations against Camillus and Scipio, the one before, the other after this period; also one against Lucullus in Plutarch, "Lucullus," xxxvii.

must be ascribed the origin of the Patrician System of money.¹

According to Pliny no reduction of the *As libralis* took place until B.C. 250, while Pinkerton affirms that the *As* of the year when the denarius was first issued only weighed three Roman ounces.² I am inclined to the opinion that this reduction took place before B.C. 269, and that a further reduction occurred by that year, so that the *As* only weighed two and a half ounces. But precisely when, and to what extent the *As* was reduced, provided it was reduced at all—of which there can be no doubt whatever—is of little importance. Long before this period the *As* had become a numerary money, whose emissions were controlled by the Senate, and whose value was determined altogether by the extent of such emissions, and not at all by its weight. As previously shown, this value was many times that of the metal contained in the pieces. The coinage of new pieces of lesser weight, which were issued in place of the heavier ones recalled, provided the whole number of pieces was not increased, could have had no effect upon the value of the outstanding pieces, and this value must have remained the same as before. That all of the heavier pieces did not find their way back to the mints is proved by the specimens still extant, but this is a circumstance that will occur in the case of all retirements of large emissions.³ Heavy or light, weighing $2\frac{1}{2}$ ounces, or 3 ounces, or even $9\frac{1}{2}$ ounces each, as the case may have been, it did not pay to melt them, and they must have continued to circulate at a like value, the heavy pieces being worth no more than the light ones.

¹ Greaves, p. 238, believes that the patrician or family denarius was copied from a Sicilian coin; probably forming part of the spoil from which the denarius of this period was coined.

² Pinkerton on "Medals," i. 162.

³ Of the "fractional" greenbacks of the United States, of which the whole sum emitted was about \$45,000,000 and which were recalled many years ago, there are several millions of dollars' worth still outstanding, the main portion of which is supposed to be lost, perhaps destroyed.

This resulted from their high overvaluation, which in the case of the light pieces was at least five times, and in that of the oldest *As libralis* (of $9\frac{1}{2}$ ounces), if any such yet remained in circulation, at least one-third.

To this system, which by itself constituted a purely numery one, and which had lasted more than a century, the patricians, about B.C. 269,¹ obtained permission, or usurped the right, to add a ten-*As* piece composed of silver, weighing one-sixth of an ounce, and called a *denarius*. At this valuation, and upon the tolerably safe assumption that raw copper was worth at the time at least the one hundred and fiftieth part of raw silver, these silver coins were overvalued against commodities as much as the newest and lightest copper ones were. In other words, a pound of silver coined into *denarii* would purchase five pounds of raw silver, just as a pound of copper coined into *Ases* of $2\frac{1}{2}$ ounces each, and of suitably limited emission, would, and did purchase, at least five pounds of raw copper.

From what source permission was obtained for the family *denarius* to circulate as the equivalent of ten *Ases*, whether it was accorded by the Senate, or followed as a custom derived from usurpation and maintained through ignorance in the popular mind as to the true relation of value between the overvalued national copper coins and the silver bullion of the *gentes*, cannot be determined. Probability points to the former. The Senate was still largely patrician, and, as the quantity of silver obtained through recent conquests, although considerable, was not so great as to menace the integrity of the numery system if coined at the proposed rate, and moreover as the population and commerce of Rome were rapidly increasing and needed an augmenting volume

¹ The "Encyc. Brit.," ed. 1858, art. "Numismatics," says that no silver *denarii* have been found which are ascribed to an earlier date than B.C. 207; but Rear-Admiral Smyth ascribes many of the family *denarii* to from B.C. 280 to 269. See "Descriptive Catalogue of a Cabinet of Roman Family Coins belonging to His Grace the Duke of Northumberland, K.G.," by Rear-Admiral Wm. Henry Smyth. London, 1856.

of money to facilitate exchanges and sustain prices, there were not wanting special interests and plausible arguments to urge the adoption of such a measure. Nor were these the only arguments to urge in its behalf. Part of the silver spoil had gone into the public treasury. To leave it there uncoined would be to render it useless for the payment of the troops on foreign service,¹ or for other disbursements abroad. To coin, without overvaluing it, would have probably consigned it to the melting-pot. To coin and overvalue that portion of it which belonged to the people, without according a like privilege to the owners of the remainder of it, would be to reward with a valuable monopoly those to whom their share of this silver cost nothing, and deny it to those who had won the whole of it by their valour and at the hazard of their lives. Rather should the latter be permitted to coin their share of it first and the state wait to coin its share when occasion called for the use of it. As for the value of the proposed silver coins, it appeared unjust that it should be rated any lower than that of the outstanding copper coins.

It is beside the point that these arguments are specious and sophistical: it is enough if they seemed to be fair, for they were addressed to a tribunal, a large portion of whose members were already inclined from personal interest to accord them a favourable consideration.

Even though the new coins, if coined at their bullion value, failed to be melted, they would have gradually lost value as their coinage went on and as the whole volume of money was increased by their accession. If immediately after the acquisition of the silver spoil an ounce of silver would purchase a given measure of wheat, it surely could not be expected to purchase a similar measure when some millions of such ounces had been added to the circulating

¹ The Roman troops were first paid in B.C. 406, Pliny, iv. 59; but Niebühr, ii. 438, in a lecture exclusively devoted to this subject, dates it earlier. The original wage was 2 obols a day, which Niebühr computes at $3\frac{1}{3}$ Ases, or 100 ounces a month, and ten months to the year.

money of the republic in the form of silver coins. The first coiners would therefore have enjoyed an advantage over the later ones ; and was it fitting that the heroes of wars which had brought such lustre to the Roman arms should be forced into an undignified struggle to get their spoil first to market ?

The Spanish conquistadores of the sixteenth century were in a similar predicament. They were overloaded with silver spoil, which the state, however, refused to coin at any other rate than its bullion value, and rather than submit to a regulation which they were aware would rapidly lower the purchasing power of their spoil, they resolved not to coin it at once, but to work it into rough plate, and only coin it from time to time as occasion served or their needs demanded. It is this policy that accounts for the once extraordinary accumulations of plate in the leading households of Spain.¹

The Roman Senate was more generous to its heroes than the Spanish Crown. Perhaps it did not scrutinize their motives so closely. However this may be, it did not refuse to coin their silver at an overvaluation, but in this respect placed them on a par with the people generally, whose copper was coined at five times its value. I think it must be conceded, upon a careful consideration of the subject, that this, or something closely resembling this, was the course pursued.

The weights and fineness of the coins themselves indicate legal regulation,² and legal regulation implies permission to circulate. The earliest family denarii are of very irregular weight ; those of this period, although struck by many different families, are almost uniform in weight. Their fineness is about $\cdot 995$ or $\cdot 966$,³ which is substantially pure

¹ The Dukes of Medina-Cœli, Alva, and others are credited with having possessed more than a hundred dozen of silver plates each, beside dishes and other vessels to match. See chapter on Spain in the "History of Money in Modern Countries."

² Sir John Lubbock, in "Nineteenth Century" Magazine for November, 1879.

³ Rear-Admiral Wm. H. Smyth's "Catalogue."

silver, and probably as fine as the coiners of the time knew how to make the pieces.¹

Their value, as related to the Ases of the period, is indicated by their name. This name proves that originally they did not circulate for more than ten Ases each, and both probability and Pliny's averment point to their not having passed for less. Relative to commodities, raw copper and raw silver included, this value, as already stated, was over-rated at least five times.

The probable reasons why they were overvalued at all have already been given at length. The reasons why they were overvalued at this particular rate may have been due to the expectation that at such rate (that at which the copper numeraries themselves were overvalued), and with but a comparatively unimportant quantity of silver demanding coinage, and in view of the urgent commercial requirements for an increase of circulation, the numery system would remain intact; in other words, that no immoderate or injurious rise of prices would follow.

As to whether the gentes paid anything for the valuable privilege of coining silver at an overvaluation, in other words, whether the state exacted a seignorage from them or not, cannot be determined. The gentes could well afford it, and might even have been anxious to pay it, in order the more freely to justify their new privilege, should it ever become a question, to the people.

The names of the gentes who exercised the privilege of coining these overvalued and permissive denarii have not been distinguished by the numismatists from those who coined them when this permission became a right, and the coins were accorded the function of legal tenders, the date

¹ McCulloch, in the "Encyc. Brit.," ed. 1858, art. "Numismatics," finds fault with Greaves for not assaying the family denarii, and with Arbutnot for assuming them to be as fine as British silver coins, viz., $\cdot 916\frac{2}{3}$. They are in reality much finer. Those examined by Boeckh were regarded to be as fine as the Athenian drachmæ, and he says that they passed one for the other. Boeckh, pp. 21, 25.

of which radical change of system is fixed herein at B.C. 207. The whole number of gentes' names in Rear-Admiral Smyth's Catalogue is 160, of whom 14 were patrician, 26 patrician with plebeian branches, 7 equestrian, 91 plebeian, and 22 unknown. It is probable that of the denarii coined previous to B.C. 207, the majority were struck by patrician families, at least by the families of those who were leaders in the wars through which the silver out of which they were coined, was secured.

The family denarii were not, however, legal tenders. They circulated, like the old time proprietary or "state-bank" notes in America, because they were convenient, and the circumstances of the times demanded more money, to prevent a fall of prices. No man was obliged to take them; no sums of taxes, fines, debts, payments, or treasure of the period are stated in denarii. It is possible, again like the old "state-bank" notes of America, that at one time, the Roman treasury received the overvalued denarii for taxes, only to pay them out again at the same overvalued rate for supplies and services; but of this there is no certain indication.

It may, perhaps, be imagined that the Senate in granting so important a privilege as the coinage of highly overvalued pieces took care to guard it from abuse; but this does not appear to have been the case, and no limits are known to have been assigned to the right of coinage. This neglect was, no doubt, due, first, to the limited quantity of silver obtained from the conquest of Southern Italy and the Islands and the seeming improbability, at that time, of capturing further supplies; and, second, to the practical difficulty of enforcing such a restriction. The Roman Senate, powerful as it was, could hardly have established such a surveillance over the numerous families who exercised the privilege of coining overvalued silver during this period, as would have prevented them, had they so chosen, from overstepping the limits of the law. A precisely analogous case is afforded by the old proprietary "state-bank" note system of America.

There was no limit placed upon the emissions of the notes. They were assumed to be issued upon deposits of certain presumably valuable "stocks," although these "stocks" were often nothing more than shares in "wild-cat" enterprises, and entirely worthless, and upon this false assumption and because the quantity of deposit "stocks" was known to be limited, and also because it would have been unconstitutional for the United States government to exercise control over a bank incorporated under the laws of a state, and impracticable for a state to maintain so close a surveillance over the operations of such a corporation as to limit its emissions of notes; the result was that there was no legal restriction to such emissions, except as to the proportion of notes to so-called "stocks," and practically no restriction whatever, beyond the fitful demands of the public for currency on the one hand, and the conservatism or caprice of dealers in uncurrent notes on the other.

The place of coinage for some or all the new pieces, and eventually for all the silver coins of Rome, was the temple of Juno, known as that of Juno Moneta, because the goddess had recently given the Romans a warning (*monere*) in the field of battle, which had saved them from defeat. Hence pieces of the new coinage came to be known generically as *moneta*, and this name eventually extended itself to all money, and indeed is the origin of the word by which money is most commonly known to the western world.

The immediate effect of the coinage privilege granted to the *gentes* was an increase of the whole sum of money, an "inflation" of the currency, as it is called in modern days. Every time a silver denarius was coined by them, it was as though ten additional copper *Ases* were fabricated. How far this inflation was counterbalanced by the growing needs of the Republic for money cannot be determined. In B.C. 280 the census of Rome returned 278,222 citizens; in B.C. 265 it gave 282,234; and in B.C. 252 it gave 297,797. During this period the whole of Southern Italy, including numerous sea-ports and other centres of commerce, were added to the

Republic, and the new denarii may well have been needed to replace the overthrown or captured moneys of these places, without occasioning the slightest "inflation."

The ultimate effect of the license to coin denarii was of a far less innocent character. No sooner was it generally known that coined silver was several times more valuable than bullion, than a rage set in to coin it and supplies made their appearance from the most unexpected sources. The patrician class were soon compelled to share their valuable coining privilege with the equestrian, and the latter with the plebeian, until the plebeian coins became more numerous than both of the other classes put together.¹ Silver not only came in as spoil, it was imported as merchandise, chiefly from Greece, and some of it, in the form of drachmæ, even went into the circulation before recoinage, and at the same rate of overvaluation as the denarii.²

The consequence of this continued and unrestricted coinage was that, after having passed the point at which they could be sustained at their initial overvaluation, they commenced to decline in value, and each day brought them nearer and nearer to that of the bullion of which they were composed.

Not only this, the copper nummi fell in like manner, and with the same rapidity. Either law or custom had unchangeably co-related these coins. It mattered not that they were made of different materials. Every denarius was ten nummi and every nummus the tenth of a denarius. When a denarius was added to the circulation it was the same as though ten nummi had been added; when a nummus was added it was the same as though the tenth of a denarius had been added. Thus they rose and fell in value together: they rose from restriction of the whole numbers of money,

¹ Overvaluation is the one thing that accounts for the vast number of *gentes* coins which have come down to us from this period.

² Boeckh, 21, 25. A parallel case is afforded by the present circulation of the highly overvalued French two-sous bronze piece, as a penny, in England.

they fell as that restriction was removed. Until B.C. 269 the whole numbers of money consisted of nummi, the coinage of which was limited by the Senate ; after that year the whole numbers consisted of nummi and denarii, the coinage of which was no longer limited. A breach had been made in the Republican system of limited money, and that breach was now to widen every day until the system and all its beneficent consequences were to disappear entirely.

CHAPTER XX.

FIRST PUNIC WAR SYSTEM, B.C. 250-216.

Reduction of the copper nummus from two-and-a-half to two ounces, in conformity with the changed market relation of copper to silver—Inflation of the currency, chiefly by means of the overvalued silver denarii coined without limit by the gentes—Probable fall in the value of both silver and copper coins against commodities—Extant coins prove that Pliny's account of the monetary system of this era is wrong as to both fact and inferences. Had the system been "intrinsic," and the state wished to make a financial resource of the coinage as he supposes, it could have done far better by reducing the silver rather than the copper coins.

THE next change that occurred in the monetary system of Rome was, according to Pliny, "during the first Punic¹ War." As this war lasted from B.C. 264 to 241, the year 250 has been selected to represent the date thus vaguely alluded to. The change consisted in the reduction of the overvalued bronze nummus from $2\frac{1}{2}$ oz., its weight during the Republican era, to 2 oz. The nummus still remained the sole legal tender money of the commonwealth, and all sums and prices of the period were couched in it, but a large and increasing coinage of family denarii, or ten-nummi pieces, had been and was still taking place, and at a rate that probably exceeded the increasing wants of the people; and both nummi and denarii sank more and more toward their bullion value. In other words, the "currency" was being "inflated," and this inflation was brought about chiefly, if not altogether, by the increased numbers of the overvalued silver denarii coined by the gentes.

To what degree this inflation lowered the overvaluation

¹ Punic is from Pœnus, the Latin word for Phœnician or Carthaginian.

of the "currency" from the assumed rate of five times under the Republican era, can only be conjectured. It could scarcely have lowered it further than to three times, nor less than to four times, the probability being in favour of the latter. During this era, therefore, it may safely be assumed that both the nummus and denarius coins were in Rome about four times as valuable as the materials of which they were respectively composed, and would exchange for about four times as many or much of commodities as the raw metal would. It is, however, not impossible that this value underwent important fluctuations.

Another feature of this system invites attention. The respective weights and legal values of the copper nummus and silver denarius (see p. 189) make the ratio of value between copper and silver in these coins as 120 is to 1, and as nearly as can be determined from a comparison of the various imperfect evidences which remain to us on the subject, this was approximately the true market relation in Rome and the neighbouring countries at the time. Indeed, it may be assumed with safety, that no matter how much or little the Romans overvalued their coins as against commodities, they seldom ventured to overvalue them in one another.

Thus, while in one sense (see p. 188) the lowering of the so-called As—really the nummus—to two ounces was of no importance, in another sense it was significant. Considered by itself, it did not matter what was the weight of the nummus, its value being due to the whole number of such nummi which the state emitted. This was the supply. The demand was the need of the public for money wherewith to pay debts, fines, and taxes, and to make purchases. The relation between this supply and demand was value—the value of the nummi in commodities, or the value of the commodities in nummi. When considered with reference to the facts that the law or custom—probably the latter—permitted denarii to pass for ten nummi each, that denarii were made of silver and nummi of copper, and that the market relation

of value between these metals had been changing, that copper was becoming more valuable in silver, and silver less valuable in copper, then the weight of the nummi became a matter for careful consideration and adjustment. For it must be remembered that these coins, though overvalued at home, would sink at once to their commodity or bullion value abroad; and as both the silver and copper coins were needed by the Roman soldiers when they campaigned abroad, and by Roman merchants when they traded abroad—some foreign nations coining only copper and others only silver—it was desirable that the relation of value between the coins should not depart very much from that of the metals of which they were composed. When war or any other serious obstacle to commerce prevails, the overvaluation of coins will not prevent them from being exported, because coins are always easier to transport than merchandise; and when the coins are made of two or more different metals, the exporter will naturally prefer the one least overvalued. Hence it has usually been the practice of nations—and the Romans do not seem to have formed an exception to the rule—to make the relation of value between their coins conform, at least approximately, to that of the various metals of which they were composed, even when all the coins were overvalued in commodities.

Such is an outline of the Roman system of money during the first Punic War. Respect for the honoured text of Pliny, and for the many eminent scholars who have construed it and commented on it, seems to demand that his account should be examined in this place, and with reference to this period. Pliny's words are as follows:—"The weight of the libra of copper was diminished during the first Punic War, the republic not having the means to meet its expenditure; in consequence of which an ordinance was made that the As should in future be struck of two ounces weight. By this contrivance a saving of five-sixths was effected, and the public debt was liquidated."

There is but one fact alleged here, namely, that the copper

libra or As—terms used synonymously—was reduced during the first Punic War from twelve ounces to two. That the republic did not have the means to meet its expenditure, that it saved five-sixths, or that the public debt was liquidated, are inferences, not facts; and their value rests upon the fact from which they profess to be derived.

It has been already shown that this alleged fact is no fact at all. Reason and analogy prove that the *æs* never weighed twelve ounces—the coins themselves prove that it never exceeded nine and a half; they also prove that the As was repeatedly reduced in weight previous to the period in question, and that for many years past it had been coined at three ounces, and probably at two and a half.

If any corroboration were needed of this most positive sort of evidence, it is to be found in the exceeding unlikelihood of a sudden reduction of the As—which Pliny assumes to have been a non-overvalued coin—from twelve to two ounces. Upon his own theory it was the common measure of property, of debts, and of taxes. To have suddenly lowered it five-sixths would not only have reduced the public debt to that extent, it would have also reduced the public income to the same degree. It would also have suddenly voided all contracts, and violently strained many of the numerous relations of society. It is impossible to believe that these occurrences could have taken place without making some mark upon the legislation or history of the times. On the contrary, no sign of it, no mention of it, no allusion to it is to be found anywhere else but in Pliny's "Natural History."

So much for Pliny's fact. As for his inferences, they are hardly worth discussing. It is possible that the republic may have been pushed for means during the war, but this does not prove that it degraded the coinage; it could not have saved five-sixths if the coins were only reduced from $2\frac{1}{2}$ ounces to 2; while as to liquidating the public debt, there is no intimation from any other source that the republic was in debt, or that such a thing as a public debt

was known to the Romans of that period. If the Roman state had already sunk so low that no better resource remained to it than that worst of all resources which involved a sudden and great repudiation of all existing contracts between man and man, namely, a degradation of "intrinsic" coins to one-sixth of their previous weight, it might have gained far more, and risked far less, by reducing the silver denarii than the copper *æses*, because it need only to have handled one-120th of the same weight of metal, and only to have re-coined one-tenth of the same number of pieces.

Indeed, there was an easier resource than this: the state had only to limit the number of pieces, after reducing their weight, when the lighter pieces would have maintained an equal value with the heavier. In those days of state mining, monopoly, and carefully-guarded commercial intercourse, this device would have been quite practicable; but neither Pliny, nor any of his numerous commentators have ever supposed its adoption. That it was indeed adopted we have already had ample proofs, but this was done long before the Punic Wars; and it was those wars which, by opening the silver mines of Spain to Rome, brought into that country sudden and vast supplies of this metal, and broke down the overvalued money system of the commonwealth, instead of furnishing an occasion for its adoption.

CHAPTER XXI.

SECOND PUNIC WAR SYSTEM, B.C. 216-207.

Weights of the nummus and denarius both lowered, the ratio of value between them altered, a silver sesterce coined worth four copper sesterces, and the coinage of silver probably monopolized by the State—Effects of these measures—Decline in the overvaluation of all money, but particularly of the copper sesterce or nummus—Fluctuations in money occasioned by the war.

THE second Punic War lasted from B.C. 218 to 201. Says Pliny, "When Hannibal was pressing hard upon Rome, in the dictatorship of Q. Fabius Maximus (B.C. 216), Ases of one ounce weight were struck, and it was decreed that the denarius should pass for sixteen Ases, the quinarius eight, and the sestercius four. By this reduction of the weight of the As the Republic made a clear gain of one-half. However, so far as the pay of the soldiers is concerned, the denarius has always been paid for ten Ases."

There is no reason to doubt the substantial accuracy of this account, albeit it is inexplicit, incomplete, and wrong as to inference. It is inexplicit in failing to notice that the sestercius here alluded to was a silver coin now issued for the first time; it is incomplete in omitting to state that the denarius was lowered in weight from one-sixth to one-seventh of an ounce, a fact proved by the coins themselves; it is wrong in its inference that the Republic made a clear gain of one-half. The Republic made no gain at all. It simply coined new copper nummi weighing half as much as the old ones; but it did not, indeed it could not, call the old ones in. Many of them were lost in the towns captured by Hannibal, and the rest must have remained in circulation, for vast numbers of them are still extant.

There are other defects in Pliny's account; it fails to identify the *As* of the period (not the *As* of the old law-books nor the *As* of account, but the coin *As*) with the *nummus* or copper *sesterce*; it omits to state which of these various moneys were legal tender; and it entirely ignores the conditions of coinage.

With regard to the first of these subjects it has been sufficiently discussed already. The term *As* was, no doubt, still in use with reference to fines, dues, and emoluments fixed by ancient laws; it was, perhaps, still used in accounts as a measure of rents or services of ancient origin; but the copper or bronze coin described by Pliny, and commonly regarded by numismatists as an *As*, was a *sestercius* or *nummus*, and there was no actual *As* coin of this period, unless it was a minute copper coin employed for religious offerings, and practically useless for commercial purposes.

With reference to legal tender, my impression is that the *As*, or *nummus*, or copper *sesterce*, was a tender by law, and the silver *denarius*—and by consequence the silver *quinarius* and *sestercius*—were tenders by custom, during this period; and each of them to an unlimited amount.

As to the conditions of coinage, the State appears to have continued its monopoly of the copper coinage. The conditions under which silver was coined are, however, not so clear. It is difficult to believe that, after the great advantage the State had already accorded to the *gentes* by permitting them to coin their silver at, say, five times its value, it now gratuitously accorded them the still further advantage of rating these coins at sixteen instead of ten *Ases* or *nummi* each. In order to gain the assent of the patricians to lower the weight and increase the emissions of the copper *nummus* it might have been necessary to covertly bribe them by offering to increase the value of their future silver coinages. But this is exceedingly improbable. Far easier is it to suppose that at this juncture the State declined to permit any farther coinages of silver by the *gentes*, and that the increase in the value of the silver coins only applied

to those already in existence and such others as it might itself determine in future to coin.

The lowering of the weight of the nummus was by itself of no consequence. Hannibal's march through Tuscany had placed the copper mines of that portion of Italy under his control; copper had become scarce in Rome; the State was obliged to economize its use; and as the nummus was already highly overvalued, its weight was a matter of indifference to the people. The emission of new coins of less weight, provided the old proportion of total money to total exchanges was maintained, could injure nobody. It is not pretended that this proportion was known, or if known, maintained. Indeed the probability is against both suppositions. But as this state of affairs would have been the same whether the nummus was reduced in weight or not, the reduction was of no importance.

The lowering of the weight of the denarius was of another character. The increasing scarcity of copper had advanced its market value from 150 or 140 to 120 or 110 for one of silver. Had the weight of the nummus been lowered to one ounce without altering the weight or value of the denarius, the relation between copper and silver in the coinages would have been as sixty is to one, and this would have differed so greatly from the market relation as to have dangerously increased the temptation to counterfeit the nummus. To keep the legal and market relations of value between these coins in harmony, it was necessary either to reduce the weight of the denarius nearly down to one-eleventh of an ounce or raise its value to about nineteen nummi. The same result was attained by a compromise between these two extreme measures. The denarius was reduced in weight to one-seventh of an ounce, and raised in value to sixteen nummi, making a weight relation to the new one-ounce nummus of 1 to 112.

There is every reason to believe that the relation of value between the coins of this period and commodities, sustained a decline, not so much from any absolute increase in the

emissions of money as from a relative increase of money to exchanges. Upon the assumption that the overvaluation of money during the Republican era proper was about five to one of commodities, it will probably not be far wrong to regard such overvaluation as having fallen during the second Punic War to some point between five and four to one as between silver coin and commodities, and between four and three to one as between copper coins and commodities. I think there can be little doubt that the copper sesterce lost more of its previous overvaluation than the silver denarius and its parts, else there would have been no necessity for coining a silver sesterce. A somewhat analogous case occurred in the monetary system of the United States, when the five cent paper greenback overvalued several thousand times (the difference between its value as paper and its value as money) was emitted at the same time with the five cent silver coin, overvalued less than 20 per cent.

There must, however, have occurred important fluctuations in these rates. Hannibal had brought the war to the doors of Rome, and every incident of the conflict must have found its reflex in the value of the fractions of the expiring numerary system.

CHAPTER XXII.

DECAY OF THE COMMONWEALTH.

The industrial progress of Rome ceased and its social decadence commenced after the first Punic War—Proofs of the correctness of this opinion found in the neglect of the arts and decrease of population which followed this event—The second Punic War left it completely exhausted and without recuperative resources—It had thenceforth either to maintain itself by spoliation or to perish—Its subsequent progress due to its policy of Conquest—Impracticability of maintaining a numerary money under such circumstances—Decline of the numerary system.

IT is not an easy matter to fix with precision the time when societary growth ceases and decay begins. Among those illustrious men who have written upon the history and civilization of Rome, there has been a singular unanimity with reference to the period that marked the summit of Roman progress. The most illustrious of them all, confining his work to the decline of the Empire, has opened it with a description of the Augustan era, and thus by the very limits of the work plainly intimated his opinion with regard to the period when Roman progress ceased and decay commenced.

This opinion has been that of nearly every other writer on the subject. In one sense it would be rash to controvert it. The Roman empire was doubtless more extensive, it was more powerful, it was richer, in the Augustan era, than ever before. In another sense the opinion is open to objection. Was Rome more progressive at this period; was it more productive; did its government more effectively promote the welfare of its citizens; did the latter enjoy more liberty, more opportunities, more advantages, more happiness, than at other periods? To these questions there can be but one truthful answer, and that answer is, No.

Perhaps the most reliable indication of the progress or decay of a free state is the movement of its population. So long as the population increases, it is evident that progress in the arts must continue, for an increasing population bespeaks the command of more food, clothing, shelter, tools, implements, machinery, and luxuries, and these can only be permanently supplied through such progress in the arts as shall outstrip not only the growth of population, but also the growth of the requirements of each individual member of it. When the population begins to diminish, it is equally evident that these arts have decayed, for it is a well-established fact that the tendency of population to increase is such as always to keep it close to the limits of its productive resources.

The decrease in the population of the Roman state was noticed so far back as the time of Polybius, who attributed it—and doubtless with entire accuracy—to the ravages occasioned by the Punic wars. When it is remembered that in the second of these wars Hannibal maintained a numerous and mercenary army in Italy for sixteen years, that during the whole of this time he received no aid from Carthage, and, therefore, had not only to forage upon the Roman magazines and fields for food, but also to appease the clamours of his soldiers for pay and rewards by sacking every town he could capture, the devastation committed during this war will be realized. The Union army occupied portions of the Confederate States of America during only three years of the recent civil war, yet the mischief it wrought was so great, that, but for the natural advantages which remained, and the conditions of progress which were restored, to that portion of the country, its progress and population would have probably received a permanent check. These advantages never belonged to Rome, and these conditions were never restored to it after the first two Punic wars.¹

¹ Polybius, vi. 3, 2, notices that at this period Rome had reached its most prosperous era, and had begun to decline.

So long as Rome was confined to Italy it never possessed such a vast area of rich and virgin lands as still await the occupation and industry of the Confederate population of the United States; it had no navigable rivers, no railways, nor other means of rapid communication throughout the country; it had but little timber, and no coal, either for building purposes, fuel, or motive power; it had no such correspondence or commerce with other nations as tend to invite the investment of foreign capital in the Confederate States; it enjoyed no such system of popular education to promote the preservation of liberty, the respect for law, the industrial activity and the continued progress in the arts which distinguish those States; it was not isolated from the rest of the world as the entire United States are, and consequently it enjoyed neither such natural advantages nor such conditions of progress. It had maintained a powerful and destructive enemy on its soil for sixteen years, its valleys had long since been ruined by the Etruscan miners,¹ its plains had long been stripped of their timber,² its people—composed of alien and conquered nations, but ill cemented together by its form of government—were exhausted, and their industrial habits destroyed by a long war upon their own soil; its industrial resources were few, scattered, and inadequate; and it was surrounded by hostile nations, ready, upon the slightest pretext or opportunity, to challenge its right to existence.

Under such circumstances, there was but one course open to Rome. It had either to plunder, or be plundered; to conquer, or be conquered; to domineer, or to die.

In the first Punic war Rome lost four large naval fleets and one-sixth of its fighting population; in the second one its losses were still greater. In addition to these losses, an entire generation of its people had grown up who had never known Italy to be at peace; who had lived in daily fear that

¹ See the author's "Rape of the Earth," chapter on the Tiber.

² Tuscany formerly abounded in forests. Guazzesi, quoted in Gibbon, "Misc. Works," ed. 1796, iii. 121.

their fields would be trodden down by hostile troops, their homes despoiled, their relatives slain, or themselves forced into the hideous slavery of the Carthaginian mines in Spain. The prosecution of industry, the progress of the arts, under such conditions was impossible. Agriculture declined, commerce declined, manufactures declined, population declined. The progress of the industrial arts was checked, and, as it turned out, permanently. Henceforth Rome was to discard the arts, as a means of progress; industry was to give place to conquest, and production to spoil. It was to no purpose that the temple of Janus was closed from B.C. 235 to 218. This closure did not mean that peace was to be restored to Rome: it simply meant that for sixteen years Rome failed to find any people it could rob, or any place it could despoil.

With this new order of affairs arose a new form of government. The republic decayed, a new aristocracy arose, and following the new aristocrats were yet to come new dictators, and eventually emperors. The liberties of the citizens were lost, and with them their opportunities in life, the advantages which they formerly derived from the nature of the government, and the happiness that resulted from these circumstances.

Had no increase whatever occurred in the emissions of copper nummi and silver denarii during this period, the diminution of the Roman population and commerce within the army lines, to say nothing of that check to the growth of the population and commerce of Italy which is herein assumed to have occurred during this period, would have been sufficient to bring these coins nearer and nearer to their bullion value. A diminishing population and commerce need a decreasing money, and when, in spite of these circumstances, the volume of money remains undiminished, it must necessarily decline in purchasing power, and this decline in the power of the whole money must be accompanied by a corresponding decline in the value of each fraction of it.

Not only did the Roman money remain undiminished during the Punic wars, it was possibly increased. Besides

large accessions to the volume of copper nummi, the silver coins seem to have been increased with every fresh accession of spoil. Part of the Roman circulation was, no doubt, swept away in every conquest made by Hannibal, but some even of this was recovered and recoined.

While the sum of money remained thus undiminished, the demand for it declined with the decrease of population and decay of commerce and the arts; and there can be no doubt that the value of money declined with the demand for it.

This decline, however, was not the same with the two kinds of money now used in Rome. The copper nummi declined much more than the silver coins, and while the latter, perhaps, still maintained an overvaluation of four or five times as against commodities, the former must have fallen to less than four times, perhaps to scarcely three times their value when melted.

Nor could it have been otherwise. A state of war is not favourable to the maintenance of an overvalued money. Every military success will tend to increase its value by promising victory, peace, and a resumption of commercial activity. Every disaster will tend to lower its value by its presage of defeat and the overthrow of the government which alone can maintain the overvaluation. And especially would such influences tend to break down a system based on two different substances, whose respective overvaluations were continually liable to vary from the unequal proportions of the coinages emitted from time to time. War absorbs the national energies and restrains industrial development; it either puts an end to commerce, or restricts it to very narrow limits, and it weakens that respect for law which lies at the base of all numerical systems. It is not to be wondered, therefore, that the Punic wars put an end, among many other notable institutions, to the peculiar monetary system of republican Rome.

In abandoning itself to a policy of war, conquest, and rapine, it was fit that Rome should exchange its numerary system for a commodity money. It was henceforth to live,

not upon its own resources, but upon the plunder of weak nations and commerce with strong ones; and no money could have been so suitable for the purposes of such a commerce than that which, coined or uncoined, stamped with "Roma," or thrown into the melting pots of Egypt or India, would pass more or less at the same valuation.

CHAPTER XXIII.

THE SCIPION SYSTEM, B.C. 207-170.

Ambiguity of the Plinian narrative—Effort to fix the era of the Lex Papirius—Features of the Scipion system—Position of gold—An arithmetical puzzle—M. Parisot's unsuccessful attempt to solve it—A simpler and more rational solution found by admitting the existence of an overvalued sesterce—Weight of the scruple gold coin unknown—It was coined by gentes, was not a legal tender, and passed by courtesy—Position of silver—Silver coins made full legal tender, for the first time, during this period—This adoption of silver for money due chiefly to the conquest of Spain and the assurance of ample supplies of silver metal—Abundance of silver in Rome derived from spoils of war—Silver coins formerly overvalued as against commodities, rapidly fall during this period to their bullion value—Position of copper—The numerical system definitely ended—Copper coins, fallen nearly to their ingot value, are shipped away to the provinces in vast numbers—The legal tender function of copper coins probably restricted—They thus become tokens—Recapitulation.

A PARAGRAPH in the Plinian narrative relates that “the first gold coin was struck sixty-two years after that of silver.” This fixes the date of an important change in the monetary system of Rome at the year B.C. 207.

In the preceding paragraph Pliny says: “Shortly after,” (*i.e.* after the reduction of the *æs* or nummus to one ounce), “in accordance with the Lex Papirius, *æses* were coined weighing half an ounce only,” and he thus indicates the date of another important change in the Roman money.

Exactly what this last named date is, there are no means of determining. The name of Papirius among the magistrates of Rome was very common. Gibbon, viii. 6, doubts the date usually assigned by the commentators of his time, which was about B.C. 167. Adam and Lemprière assign the date B.C. 191; McCulloch says B.C. 175. Niebühr, “Röm.

Geschichte," i. 257, ascribes the Papirian law to Verres or L. Valerius Flaccus, B.C. 86. My own researches induce me to place it at about B.C. 130-119, during the magistracy of Caius Papirius.¹

But since there intervened between B.C. 207 and B.C. 130-119 an important series of political events which grew out of the agrarian troubles that began in B.C. 170, events which could scarcely have occurred without involving changes in the monetary system of Rome, I am disposed to believe that the system of B.C. 207 did not last until the enactment of the Lex Papirius, but was modified during the period of the agrarian commotions. From the name of the most prominent person concerned at the time in the movement and disposition of the precious metals in Rome, if, indeed, he was not himself the sponsor of the system, the latter is herein designated the Scipion.

In delineating the character of this system I shall begin with the position of gold.

On this topic, as with many others connected with the monetary system of Rome, the careless narrative of Pliny has only served to obscure the truth.

Says that author: "The first golden coin was struck sixty-two years after that of silver; the scruple of gold being valued at twenty sesterces; a computation which gave, according to the value of the sesterce then in use, nine hundred sesterces to each libra of gold."

This account involves an interesting arithmetical puzzle.

The scruple weight was the twenty-fourth part of an ounce, and the latter the twelfth part of a libra: hence there were 288 scruples in the libra. If the scruple coin contained a scruple weight of gold and was valued at twenty sesterces—whether of silver or copper it does not matter for the present—the libra of gold was worth 288 times as much,

¹ Caius Papirius Carbo, Roman orator and tribune of the people about B.C. 130; a friend of Tiberius Gracchus; consul after the death of Caius Gracchus, B.C. 120; accused of peculation by the tribune L. Gracchus; commits suicide B.C. 119.

or 5,760 sesterces, instead of 900 sesterces, as calculated by Pliny.

This discrepancy of Pliny's has been noticed by other writers and has given rise to much dispute, a dispute which the English translators of Bohn's edition of Pliny attempt to settle by offering the solution of M. Parisot quoted in the notes to Ajasson's edition, a solution which the translators complacently regard as "equally simple and satisfactory." M. Parisot's solution is as follows :

"In the As or libra of *two ounces* there were 288 scruples. Now the scruple remaining the same when the As or libra was reduced to *one ounce* (B.C. 216), it would contain but 144 of these scruples. Then on making the As the sixteenth part of a denarius (B.C. 216) instead of the tenth (as before that date) it would lose three-eighths of its value in scruples, or in other words 54 scruples, thus making it (the libra) worth but 90 scruples. Then again by the Papirian law, the weight or value of the libra was reduced one half, making its value in scruples only 45, or in other words $\frac{5}{32}$ nds of its original value, when worth two unciaë or ounces." Hence, he concludes, that with 20 sesterces to the scruple and 45 scruples to the libra, there were but 900 sesterces to the libra, as stated by Pliny.

Cast into tabular form, this solution appears as follows :—

Date.	No. of scruples to libra.	Weight of scruple. Grains.	Libra deduced by Parisot. Grains.
Before B.C. 216 . . .	288	3·04	875·0
B.C. 216 . . .	144	3·04	437·5
B.C. 216 . . .	90	3·04	273·437
Lex Papirius . . .	45	3·04	136·718

M. Parisot's explanation is ingenious but unsound.¹

1. He starts with the assumption that in the imagined

¹ Matthew Raper, in his "Inquiry," offers another solution of Pliny's puzzle. He says that the latter meant "denarius" where he wrote "sestercius." This solution has not even the merit of being ingenious.

libra *weight* of two ounces there were 288 scruples. There was no libra *weight* of two ounces. There was an *As* or nummus *coin* of two ounces, struck about B.C. 250; but not an *As libralis*, and the two must not be confounded. The libra weight was always of twelve ounces; and we have no evidence to show either that this weight or its subdivisions, the ounce, scruple, &c., were ever reduced, except through gradual neglect in long subsequent ages and in the manner and to the comparatively slight extent mentioned in another part of this work.

2. He next supposes that when the *As* or nummus coin was reduced to one ounce, B.C. 216, the libra weight was similarly reduced, yet that the scruple weight, a component part of the libra weight, was not reduced, but remained the same as before: neither of which suppositions are warranted by authority, or supported by fact or probability.

3. He supposes that because the numerical relation of the *As* or nummus copper coin to the denarius silver coin was changed B.C. 216 from 10 for 1 to 16 for 1, that the libra weight changed its relation in like proportion to the scruple weight, and contained but 90 scruples instead of 288 as before, while the scruple weight remained unchanged; suppositions which are still more extravagant than the former ones.

4. He confuses the terms "value," "worth," "contents," and "proportions," and so applies to weights changes in relations which were only enacted with regard to coins or sums of money.

5. He supposes that the Papirian law which reduced the *As* coin to half an ounce, similarly reduced the libra weight, but left the scruple unaltered: both of which suppositions are gratuitous, unwarranted, and improbable. In short he supposes a number of alterations in Roman weights, which, so far as we know, never took place; which are not assumed to have occurred simultaneously, but which are made to happen now or then at pleasure of the commentator; and all of which are extremely improbable.

6. Both the text which was before him, and the weight

of coins still extant, prove that M. Parisot's views are unfounded. In the very same paragraph, only a part of which has M. Parisot attempted to construe, Pliny says that "in later times an ordinance was made that golden denarii (aureii) should be struck at the rate of forty to the libra." Many of these aureii are now extant and weigh $131\frac{1}{4}$ grains each, a weight that at the rate of forty to the libra, would make the weight of the libra 5,250 grains. By weighing many thousands of the silver denarii, still extant, Letronne, Greaves, and other metrologists have obtained weights varying from 4,959 to 5,246 grains as that of the libra. These results prove that the libra was not reduced to the extent supposed by M. Parisot, if indeed it was reduced at all until a period long subsequent to the one in question.

7. M. Parisot's hypothesis makes the relation of silver to gold as 103 to 1, which is absurd. For example: Pliny says that the gold scruple coin was valued at twenty sesterces, and that twenty sesterces were equal to five denarii. The denarii were silver coins, vast numbers of which are still extant, the average weight of those belonging to the period when the gold scruple was first coined being $62\frac{1}{2}$ grains. Consequently five denarii (equal in value to twenty sesterces) weighed $312\frac{1}{2}$ grains, and this, according to Pliny, was the legal equivalent in silver of the gold scruple coin. Now, as the actual twelve-ounce libra weighed 5,250 grains, or thereabouts, M. Parisot's imaginary two-ounce libra weighed only 875 grains, and as the libra contained 288 scruples, the weight of each scruple coin, according to Parisot, was only $3\cdot038194 +$ grains, say 3·04 grains: and this weight of the scruple, he says, remained constant. Hence, according to Parisot, 3·04 grains of gold were equal in value to $312\frac{1}{2}$ grains of silver, a relation of 1 to nearly 103; which is absurd.

Another consideration which appears to have been overlooked is that a coin weighing but 3·04 grains of gold, unalloyed, would be too small to handle.

8. Mr. Anthon states that a gold scruple still extant and deposited in the British Museum, weighs 17·2 grains. If this coin were really a scruple its weight alone would settle the controversy ; for this weight lacks but a single grain of the scruple weight ; and no matter how carefully it has been preserved, the coin may easily have lost a grain by wear during the twenty centuries since it was struck. But there is no positive proof that it is a scruple coin : on the contrary, its weight rather repels the notion. The doubtful numeral upon it is the only evidence in favour of its being a scruple.

9. M. Parisot is guilty of an anachronism in employing the *Lex Papirius* to prove the weight of the scruple during the second Punic War.

In short, M. Parisot's solution is no solution at all. Indeed it is doubtful whether Pliny's statement, as it stands, will admit of a solution. If the proportions given at the beginning of the quoted passage are correct, the arithmetical conclusion is wrong : if the conclusion is correct, the proportions given are wrong. We must choose between one or the other, for both cannot be right. According to the conclusion the ratio of silver to gold was 2·678 to 1. For example, 900 sesterces equalled 225 denarii. Each denarius contained $62\frac{1}{2}$ grains of silver. Hence 225 denarii, equal to 900 sesterces, contained 14,062·5 grains of silver.

According to Pliny's conclusion this was the equivalent in silver of one libra of gold. The weight of the libra was, say, 5,250 grains : and as this number goes into 14,062·5, 2·678 times, the relative value of silver to gold was as 2·678 is to 1 ; an absurd conclusion. For the treaty of the year B.C. 189,¹ made it optional for the *Ætoli*ans to pay tribute in gold at the weight ratio of 1 to 10 in silver ; and this must have been nearly the true relative value of the metals at the time.

So much for Pliny's arithmetical error and M. Parisot's attempted solution.

¹ Polybius xxii. 15, 8 ; Livy xxxviii. 11 ; Boeckh, 44.

It will be observed that Pliny alludes to "the sesterce then in use," as though it differed from the sesterce now (in his time) in use. This phrase appears to offer a key to the puzzle. If the text of Pliny were corrected so as to preserve a distinction between the ancient and modern sesterces mentioned by him, it would read as follows:—"The scruple of gold was valued at twenty (copper) sesterces, a computation which gave, according to the value of the sesterce then in use, 900 (overvalued silver) sesterces to each libra of gold."

And its interpretation would be found in the following scale of equivalents:—

Weights and coins.	Overvalued silver sesterces.	Copper sesterces.
1 libra weight of gold	900	5,760
$\frac{1}{10}$ of a libra, or 1 aureus gold coin .	22·5	1,440
$\frac{1}{24}$ of a libra, or 1 scruple gold coin	3·125	20

According to this scale the silver sesterce was overvalued $6\frac{4}{10}$ times as against the copper sesterce, which must be assumed by this time to have fallen nearly to its bullion value. Such a high rate of valuation at this late period is questionable, but unless it be admitted, Pliny's puzzle must remain as he bequeathed it to us.

The weight of the gold scruple is not positively known. Following the usual law of coins it was probably called a scruple, not because it weighed a scruple, but because it fell short of one. The small gold coins have been regarded by the numismatists as scruples, chiefly because they weigh about a scruple each. There is no mark upon them to designate their denomination and none to indicate their relation to other coins except the arrow-head and the "XX." In default of possessing the exact weight of the scruple, the dissertations which have been written to prove the ratio of silver to gold in the scruple coinage of B.C. 207 lose much of their value. The market ratio was probably 10 to 1.¹

¹ Del Mar's "Hist. Prec. Met.," pp. 239-40. To the evidences therein

The gold scruple was not a legal tender. It was not coined by the State, but by the *gentes*, of whom Colquhoun, iii. 154, furnishes the following list:—*Arria*, *Calpurnia*, *Cassia*, *Cestia*, *Claudia*, *Cornelia* (the family of the *Scipios*), *Domitia*, *Julia*, *Livineia*, *Mussidia*, *Numonia*, *Servilia*, *Sulpicia*, and *Vibia*. Further proofs of its non-legal tender character are afforded by the fact that so far as we know it was never debased, whereas the silver coins were; by the implication in the treaty of B.C. 189, that the monetary standard of Rome was silver and not gold; and by the common use of the term *sestercius*, or its derivatives for expressing large sums of money during this period.¹

The same considerations which prove that during this period the gold coins of Rome were not full legal tenders, indicate that the silver coins were, and that the copper numeraries had lost this important attribute. These considerations are as follows:—

1st. *Denarii* of both the third, second, and first centuries B.C. were coined by *gentes*,² and although the number thus coined increased very rapidly after the beginning of the period under review, the coinages of *denarii* by the State also greatly increased, and their emission began to be regulated.

2nd. Whether the *sesterce*, previous to B.C. 216, was a copper coin, or whether, according to *Humphreys*, it was a

mentioned should be added the ratio given in *Livy*, xxxviii. 11, on the occasion of a peace with the *Ætolians* B.C. 189, which was fixed at 1 to 10. Also the ratios in *Greaves*, 271, 273, 274, and 292. Also in *Humphreys' "Manual,"* i. p. 275, which says that the *aureus* when first coined was at the ratio of 1 to 10 of silver in the *denarius*. Upon the assumption that the scruple coin weighed a scruple, *Boeckh*, 44, deduces a ratio of 1 to 17.1, but regards the true ratio as having been about 1 to 13.7.

¹ *Humphreys*, "Manual," i. 274, is of opinion that in point of fact the gold *aureus* was first coined at the time that *Pliny* states the gold scruple was first coined, viz., B.C. 207. Therefore *Pliny* in giving the relation of the scruple to the *sesterce* at that date, committed an anachronism, unless, indeed, both an *aureus* and a scruple were coined.

² First *gentes* coins were issued after B.C. 269 and the last about the middle of *Augustus's* reign. *Humphreys*, "Manual," i. 282.

silver coin from the third century B.C. up to the reign of Augustus, matters not in this connection. The fact remains that during the period under review there was a silver sesterce, and this name sesterce, or its derivatives, as *sestercii*, *sestercium*, *sestercia*, etc., is almost invariably used for the expression of large sums of money in the documents and other literary fragments belonging to the period under review ;¹ a fact that indicates the sesterce to have been a full legal tender.

3rd. The passages relating to the payment of taxes and tributes in Polybius (xx. 15, 8) and Livy indicate that at this period such contributions were accustomed to be paid in silver coins, an implication that tends to establish for them the character of full legal tenders.

4th. The official debasements of silver coins at a later period, presently to be noticed, establish an important inference with regard to the Scipion system of money. They prove that the system of the time to which they relate was "intrinsic ;" that silver coins were at that time a full legal tender ; and that this system extended backward from their time to that of Scipio's triumph.

Says Pliny (xxxiii. 13) :—" Livius Drusus, when tribune of the people (B.C. 91), alloyed the silver with one-eighth part of copper." This was not the act of an individual, but of an official. Drusus was not a forger, he represented the state, which by his act alloyed its own coin. Continues Pliny (xxxiii.46) : "The triumvir Antonius (B.C. 43) alloyed the silver denarius with iron . . . A method was devised of assaying the denarius, the law ordaining which was so much

¹ In Pliny, xxxiii. 48, there occurs an instance of a popular contribution of "the sixth part of an As," to defray the funeral expenses of Agrippa Menenius. If this was an exception to the general rule laid down in the present text it may have been due to the religious character of the contribution, or from the force of long habit, as the use of the term "dollar" in the accounts of silver bullion in the United States' mints, after the silver dollar ceased to have a legal existence and before it was remonetized. For an account of this last-named curious circumstance see "Report United States Monetary Commission," i., Appendix.

to the taste of the plebeians, that in every quarter of the city there was erected a full-length statue in honour of Marius Gratidianus," who was prætor at the time, about B.C. 80.

We know from the coins themselves that the denarii, after these events, were made of pure, or nearly pure, silver; consequently the effect of the law of Marius Gratidianus was not merely to test the denarius, but also to purify it, and prevent it from being again alloyed.

The solicitude of the people or the nobles, as the case may have been, for these reforms, as evinced by their gratitude for their accomplishment, could only have arisen out of the prevalence of a commodity system of money. With a numerical system it is inconceivable; for with such a system it would have made no difference to them how much or how little silver was put into a denarius. Neither would the purity of the coins have been of any consequence to them, had they been other than full legal tenders, and open to free and gratuitous, or nearly gratuitous coinage. For example, it makes no difference to the people of Great Britain or the United States at the present time how much metal is contained in their subsidiary or "token" coins: they are not full legal tenders, and are not open to unlimited and gratuitous coinage as their gold coins are. Hence, it would appear that the denarius in B.C. 91 and B.C. 80 was a full legal tender in Rome. The treaty and tax law of B.C. 189 carries this characteristic of full legal tendership back to that year, and the enormous influx of silver into Rome which followed the conquest of Spain by Scipio, together with the other changes in the monetary system of Rome which occurred at the same date, to wit, the coinage and use of gold scruples for certain classes of payments, carry it back to B.C. 207, or thereabouts.

5. The conquest of Spain not only yielded to Rome an enormous mass of silver, part of which was displayed in Scipio's triumph, it insured, for the first time, constant supplies of this metal for the future; for Spain was at that

period, and it continued for many ages to remain, the principal silver-producing country of the world.

The Roman conquest of Spain was like the Spanish conquest of America, and it led to similar consequences in respect of money. The money of Spain before the conquest of America consisted of copper coins, originally overvalued,¹ but eventually reduced by over issues or counterfeiting to their commodity value. The money of Rome before the conquest of Spain also consisted of copper coins, also overvalued and also reduced, by over issues or the success of counterfeiters,² to or near their commodity value.

The prevalence of counterfeiting in Rome; the known amplitude of the silver spoil obtained in Spain; the well established productiveness of her Spanish silver mines, which could be worked, as the Carthaginians had worked them, with the forced labour of the natives; the wealth and power of Carthage, so abundantly evinced during the war; and which in the minds of the Romans might very naturally have come to be associated with the use of the silver money that had now obtained currency in that state; the avarice of the Roman generals, who had appropriated part of the silver spoil for themselves, and naturally desired to have conferred upon it the function of money; the influence of the noble families to which many of them belonged, and who with other noble families might hope to, as in fact they afterwards did, obtain leases of the silver mines from the government;³ the cupidity of the legions awakened by an ample booty of silver in Spain and elsewhere;⁴ and the general enthusiasm for the army occasioned

¹ See "History of Money in Modern Countries," chapter on Spain.

² See the "Lex Cornelia nummaria" of B.C. 80.

³ For taxes on iron, gold, and silver mines in Spain (none mentioned on copper), see Adam's "Rom. Antiq.," p. 61.

⁴ Says Pliny, xxxiii. 48: "So abundant was money (Pliny here means silver coins) at that time (he means from about B.C. 206 to 185, consult Livy, book xxxix. 5 to 7) that the people assessed themselves for a contribution to L. Scipio to defray the expenses of the games which he celebrated." Upon the conquest of Macedon, B.C. 168, the

by the brilliant close of this memorable war—all these circumstances must have combined to bring about a change of the monetary system of Rome from copper numeraries to silver coins.

For the reasons herein adduced, silver coins must be regarded as the basis of the monetary system of Rome from or about the year B.C. 207. The rate at which these silver coins circulated, was several times their value as bullion.

This brings us to consider the position of copper in the Scipion system.

The copper sesterces or numeraries were probably reduced to near their ingot value. This degraded position was probably due as much to counterfeiting as over issues.¹ But whatever the cause, the result can scarcely be doubted; for at this period an enormous export of copper coins occurred from Rome to her provinces, there to be circulated or re-coined; and it is confidently assumed that such export would not have taken place had they been overvalued; for the state would have sustained a great loss in buying them up.² The evidence relied upon to establish the export of copper coins from Rome is as follows:—

1. Says Humphreys: “As the Roman conquests spread we find the gold and silver coinages of other countries disappearing and the Roman coppers with Roman weights and values taking their places, and that with a rapidity truly astonishing. As the several countries were successively brought into Roman subjection by force or diplomacy and

Romans appropriated to themselves the produce of all the gold and silver mines of the kingdom, besides levying tribute upon the inhabitants. “Hist. Rome,” by Th. Arnold, London, 1857, i. 17.

¹ A Roman coin-mould for copper coins was found at Wakefield, England, in 1820. Philadelphian “Numismatist,” p. 46. It had evidently been employed by forgers. Ibid. 157. This mould probably belonged to the Imperial period: but other evidences, already adduced, prove that counterfeiting in Rome was of a much earlier date.

² On the difficulty of maintaining artificial standards or ratios in the presence of many mints, see “Westminster Review,” October, 1879, p. 287. Also Daniell’s pamphlet on East India and bi-metallism.

formed into Roman provinces, a governor was appointed over each and a mint established in the chief cities. Of the cities holding the privilege of issuing coins" (these coins, except in a single instance, were always of copper), "the following provinces or colonies had the number set opposite their names: Phrygia 50, Lydia 30, Cilicia 20, besides Galatia, Cappadocia, Pamphilia, Bithynia, Phœnicia, Gaul,¹ Spain, Britain, Carthage, Corinth, and Sicily. Nemansus in Gaul was the only colony permitted to strike silver.² The quantity of Roman copper money in Spain must have been enormous; numbers of ancient Roman coins being in circulation even to the present day,—worn, it is true, in most cases to flat pieces of copper."³

2. The Roman copper coins of this period, which have been found, grow less and less numerous: those of Spain and the other provinces more and more numerous.

3. Rome levied her tributes upon the conquered countries in silver. To supply them with money of some sort she exported her copper coins after they had fallen to near their bullion value, and these she instructed the provincial mints to recoin at a high overvaluation.

No sooner was silver declared the standard of money in Rome than a rage took place for mining,⁴ one that the ransacking of all Spain and Gaul for the precious metals scarcely appeased. Even Italy was now hunted over for gold and silver.

The Scipion system of money is now before the reader. It was essentially a single silver standard, yoked, on the one

¹ Some of the Roman mints of Gaul continued to coin pieces so late as the reign of Louis le Debonnair. Humphreys' "Ancient Coins," p. 164. See also Vaillant on "Roman Colonial Coins," cited in Humphreys' "Manual," i. 308.

² "Ancient Coins," pp. 127, 162, 163, 165.

³ Humphreys, "Manual," i. 309, and Depping, ii. 112.

⁴ A similar rage for gold and silver mining took place in England after the resumption of specie payments in 1824. McCulloch's "Com. Dic.," art. "Mining Bubbles." Also in the United States after the resumption of 1879.

side, with gold coins struck by the gentes, and possibly receivable for certain classes of dues to and from the State, and on the other with copper coins, which were being rapidly exported to the provinces. The coinage of silver was probably opened freely to the public, and the silver coins rendered a legal tender for all purposes and to any amount. The copper numerical system was ended: the silver system had begun.

This change of the monetary system harmonized with the altered phase of society, and the new order of affairs. Since the limits of the numerary system, and its relations to population and industry had been altered,—whether from the operation of war, over-emissions, or counterfeiting, it mattered not,—since all security for the future of prices had been destroyed, since the currency had become the football of politicians and the tool of capitalists, it was better to degrade it to a level upon which, however prejudicial to the higher interests of society, it could rest undisturbed. And this suited the interests of the classes in power, who had amassed fortunes in land, merchandise, and slaves, of which they were unwilling to run the risk of being deprived through the agency of prices which might be legislated to the order of the plebeians. It also suited the interests of the now much diminished commercial class, who were willing to forego the advantages of an equitable currency for the sake of possessing one that in times of commotion promised a higher degree of stability. Finally, it contented the people, who, perhaps, fancied that they could add without limit to a commodity money either by the produce of the mines or the spoils of conquest.

CHAPTER XXIV.

AGRARIAN AND SOCIAL WAR SYSTEMS. B.C. 170-49.

Political events which influenced the monetary history of Rome during this period—Chiefly foreign coins, which brought in vast though fitful supplies of the precious metals, the working of the Spanish silver mines, the conquest of the Alpine gold mines, and closure of those of Italy—Position of gold coins: legal tenders only during the two years of Sulla's constitution—Position of copper coins: reduced to tokens—Position of silver coins: interruptions to the supplies of silver: occasional scarcity of silver: emissions of alloyed, debased, plated, and forged denarii: silver coins full legal tender—Variable value of the denarius in Ases—Lex quadrante—Temporary revival of full legal tender: overvalued copper coins by Sulla—Their speedy downfall—Summary of the period—Its monetary systems varied and confusing—This confusion increased by the use of corn money.

THE principal events which probably influenced the systems of money during this disordered period were as follows:—

I. The Agrarian troubles, which commenced in B.C. 170,¹ and ended in 121 with the sumptuary laws and the death of Caius Gracchus. This period also embraces the Macedonian War, 170 to 168; the third Punic War, 149-146; the destruction of Carthage and Corinth, 146; the Spanish Wars, 146-130; the Conquest of the Salassi, 143; the first Servile War in Sicily, 134-132; and the enactment of the Lex Papirius, about 130.

II. The Social Wars, 121 to 80. This period embraces the rule of the oligarchy, 121-91; the Jugurthine War,

¹ A sumptuary law of B.C. 163, limited the expense of any entertainment at table to 120 Ases, and another of the same year limited such expense to 100 Ases. In B.C. 148 Lælius and Scipio Æmilianus proposed agrarian reforms.

111-107; the threatened Teutonic Invasion, 106; the second Servile War in Sicily, 102-99; the Marsic War, 91-88; the first Civil War, 88-86; the first two Mithridatic Wars, 88-84 and 83-82; the proscriptions of Sulla, 87; and the establishment of the Sullan constitution, 82-80.

III. The Social Wars, 80 to 46. This period embraces the insurrection of Lepidus, 79; the insurrection of Sertorius in Spain, 79-72; the insurrection of Spartacus in Italy, 73-71; the third Mithridatic War, 74-63; the ravages of the Mediterranean pirates, 66; the conspiracies of Cataline, 65 and 62; the first Triumvirate of Cæsar, Pompey, and Crassus, 60; the conquest of Gaul and Britain, 58-51; the second Triumvirate of Cæsar, Pompey, and Crassus, 56; the end of the Triumvirate, the Dictatorship of Pompey, 52; the rupture between Pompey and Cæsar, 52; the crossing of the Rubicon, 49; death of Pompey, 48; and appointment of Cæsar as permanent Dictator, 46.

The supplies of the coining metals during the period under review were obtained chiefly by plunder.

Paulus Æmilius, after defeating King Perseus, and thus concluding the Macedonian War, 168, brought to Rome, according to Plutarch,¹ 2,250 talents of silver coin, and 231 talents of gold. Valerius Antias, probably with the most truth, estimated its value at 120 million sesterces, but Livy² deemed this computation too low. Valleius Paternulus valued it at 200 million sesterces.³ Besides this, there were numerous vessels of silver chased and wrought, without reckoning 100 denarii to each foot, and 300 to each horse soldier.⁴ A portion of this booty came from the

¹ Plutarch in "Paul. Æm.," 32, 33.

² Livy, xlv. 40.

³ Val. Pat. i. 9; Pliny, xxxiii. 17, says "300 millions of sesterces."

⁴ The plunder obtained by Paulus Æmilius, is said to have been so great, as to render it practicable to absolve the citizens of the city of Rome from the payment of taxes for 125 years, viz., until the consulship of Hirtius and Pansa, n.c. 43. Yet in n.c. 88 the state treasury is represented to have been so entirely exhausted, that in order to raise money to equip an army, the Romans had to sell the land in front of the Capitol. Leighton, 240, from Mommsen's "Rome."

native silver mines. These, though small, were monopolized by the state, which, however, permitted its citizens to work those of copper and iron.¹ This policy, continued by the Roman conquerors, affords a proof that it was no longer deemed necessary to uphold the value of the bronze coinages of the Roman state by monopolizing the mines of copper.² Another portion of the Macedonian booty may have come out of Alexander's plunder of Asia, B.C. 326.

Andriscus, who, it is alleged, was only a pretended son of Perseus, having revolted from their rule, afforded the Romans a long coveted opportunity to destroy Corinth, and thus terminate its commercial importance. This was done by Mummius, B.C. 146, and its works of art and other treasures were removed to Rome.

Scipio Africanus, the son of Paulus Æmilius, ended the third Punic War by destroying the great commercial city of Carthage, from whence he carried to Rome 50,000 captives and an immense booty, B.C. 146.

This same Scipio substantially closed the Spanish wars by capturing and destroying the important city of Numantia, the capital of the Celt-Iberians, reducing its inhabitants to slavery, and plundering it of great booty, B.C. 133.

The Salassi were a tribe of gold miners, whose works were established in the foot-hills of Piedmont. Upon the pretence—probably not destitute of foundation—that their mining ditches withdrew water from the streams, particularly from the Dora Baltea, which was needed for irrigation by the inhabitants of the plains below, the Romans, under Appius Claudius Pulcher, marched upon this people, whom they defeated and plundered, B.C. 143.

The wealth of the Alpine mines is to be gathered from Strabo, who tells us that Polybius thus described those of the Taurisci Norici:—

“Polybius tells us that in his time” (his history was

¹ Livy, xlv. 29.

² Merivale's "Hist. Rome," iii. 544; Arnold's "Hist. Rome," i. 17; Napoleon's "Cæsar," Harper's Ed., i. 119.

written about the year B.C. 146), "the gold mines were so rich about Aquileia,¹ but particularly in the countries of the Taurisci Norici, that if you dug but two feet below the surface you found gold; and that the diggings (generally), were not deeper than fifteen feet. In some instances the gold was found pure, in pellets, about the size of a bean or lupin, which only lost an eighth after melting; in other instances the gold, though requiring more fusion,² was still very rich. Certain Italians aiding the barbarians in working (the mines), in the space of two months the value of gold was diminished throughout the whole of Italy by one-third. The Taurisci, on discovering this, drove out their fellow-labourers, and only sold the gold themselves."³

The expression that "in the space of two months the value of gold was diminished throughout the whole of Italy by one-third," is susceptible of various explanations:—

1. The gold may have been sold near the mines at a price far below its mint value. This has occurred in modern times in California and Australia.⁴ Such an explanation will, however, not cover the assertion that the value of gold fell "throughout the whole of Italy."

2. The quantity of gold derived from these mines and those of the Salassi was so great, that the Roman mints could not coin it in time to prevent the value of the bullion from falling. Of this I am doubtful. The mines may have been exceedingly rich, but gold from mines comes in gradually; whereas if it was plundered from the miners, the quantity must have been small, for miners are never rich.

3. Gold coins were not a legal tender.⁵ Hence any

¹ Possibly not Aquileia near Trieste, where there was no gold, but Aquil, forty-four miles south-east of Turin. See the author's "Rape of the Earth," chapter on the Padus.

² Probably gold imbedded in quartz "float."

³ Strabo, iv. vi. 12.

⁴ For numerous instances of this kind consult the author's "History of the Precious Metals."

⁵ Except, perhaps, for two years under the Sullan constitution.

sudden increase of their number would depreciate their value. That this is the true explanation can hardly be doubted.

To counterbalance these accessions of gold, although not for that reason, the mines of Italy (of the Peninsula only) were closed, not long after, by order of the Senate. There has been much dispute concerning the date of this closure and the reasons that led to it. The author, after visiting the old workings, and observing the influence which they must have had upon the floods of the Tiber, and adding this evidence to what had already been gathered on the subject, concluded to fix the date of the closure during the first century before our era, and he deems it exceedingly probable that the closure was connected with, if indeed it was not directly caused by, the insurrection of Spartacus, B.C. 73.

After the Etruscans had washed the auriferous gulches in the upper valley of the Tiber and Glanis, the product of this region could not have been important until the second century B.C., when the Roman conquests in the East brought to Italy vast hordes of slaves, whose lives their pitiless masters would be only too glad to turn into wealth, by condemning them to the hard task of panning gold in the Maremma. This industry—if such it may be called, whose consequence was the extermination of those employed in it—was at its height at the period when Spartacus and his 200,000 fellow bondsmen cast off their chains and struck for liberty. With this event it suddenly came to an end.¹

“Sulla, B.C. 84,² and afterwards Lucullus, B.C. 69, and Pompey, B.C. 61,³ each drew from Asia Minor about 20,000 talents, besides an equal sum distributed by them to their

¹ See the author's "Rape of the Earth," where the whole subject is considered at length.

² Plutarch in "Sulla," xxv.

³ Gibbon's statement, iii. 423, that before the conquests of Pompey there were in the Roman treasury, 1,920,829 pounds of gold, is evidently based on Pliny's statement that (in B.C. 91) the treasury possessed, 1,620,831 pounds of gold. The latter is either due to a blunder in notation, or is a gross exaggeration. Pliny, xxxiii. 17.

soldiers.”¹ In the triumph of Lucullus at Rome there was shown a golden statue of Mithridates, six feet high, his shield being set with precious stones; twenty stands covered with silver vessels, and thirty-two others full of gold cups, armour, and money. These stands were carried by men followed by eight mules, loaded with golden couches, and after these fifty-six others carrying ingots of silver, and 107 carrying silver money, amounting to 2,700,000 drachmas.²

Cato Uticensis plundered Cyprus of about 7,000 talents, B.C. 50.

Suetonius furnishes the following particulars concerning the spoils acquired by Julius Cæsar:—

“Having renounced all hope of obtaining Egypt,” a gold-mining country,³ “for his province, he stood candidate for the office of chief pontiff. At the expiration of his prætorship he obtained by lot Further Spain, and pacified his creditors, who were for detaining him, by finding sureties for his debts.” Further Spain was Hispania Boetica. He got this office B.C. 61. According to Appian he owed, when he went thither, to use his own words:—“*Bis millies et quingenties centena millia sibi adesse oportere, ut nihil haberet,*” *i.e.*, he was 2,000,000 and nearly 20,000 sesterces worse than penniless.

“Being now supported by the influence of his father-in-law, Lucius Piso, and son-in-law, Cneius Pompey, he made choice, among all the provinces of Gaul, of the one most likely to furnish him with means and occasions for triumphs. At first, indeed, he received only Cisalpine Gaul (the gold regions of Italy) with the addition of Illyricum (another gold region), through a decree proposed by Vatinius to the

¹ Napoleon’s “Cæsar,” 127. In Napoleon’s work, the Attic or Euboic talent is reckoned at 26 kilograms 196 grains, and, when of gold, its equivalent at 5,821 francs, or £232 16s. sterling. From Mommsen’s “Römisches Münzwesen,” pp. 24, 26, 55.

² Plutarch in “Lucullus,” xxxvii.

³ The vast number and prolificacy of the Egyptian gold mines is described in the author’s “Rape of the Earth,” chapter on the Nile.

people; but soon afterwards obtained also from the Senate Gallia Comata (the gold regions of France), the senators being apprehensive that if they should refuse it to him, that province, also, would be granted him by the people.

It will be observed that Cæsar tried to get control of each great gold region successively: 1, Egypt; 2, Spain; 3, Italy; 4, Gaul; and that he really got three out of four of them.

In Gaul he imposed "an annual tribute of forty million sesterces," besides plundering the country of all the treasure it contained.

"With money raised from the spoils of war, he began to construct a new forum, the ground plot of which cost him above a hundred million of sesterces." Upon entering Rome after the Civil War:—"To every foot soldier in his veteran legions, besides the 2,000 sesterces paid him in the beginning of the Civil War, he gave 20,000 more in the shape of prize money. He likewise allotted them lands, but not in contiguity, that the former owners might not be entirely dispossessed. To the people of Rome, besides 10 modii of corn, and as many pounds of oil, he gave 300 sesterces a man, which he had formerly promised them, and 100 to each for the delay in fulfilling his engagement. He likewise remitted a year's tax due to the treasury for such houses in Rome as did not pay above 2,000 sesterces taxes a year; and through the rest of Italy for all such as did not exceed in taxes 500 sesterces. To all this he added a public entertainment and a distribution of meat, and—after his Spanish victory, B.C. 46—two public dinners: because, considering the first one as too sparing, and unsuited to his profuse liberality, he, five days later, added a second one, which was most plentiful. They likewise report that he invaded Britain with the hopes of finding pearls." His favourite mistress was Servilia, the mother of Marcus Brutus, "for whom he purchased, in his first consulship after the commencement of their intrigue, a pearl which cost him six millions of sesterces. But his abstinence did not

extend to pecuniary advantages, either in his military commands or civil offices; for we have the testimony of some writers that he took money from the pro-consul, who was his predecessor in Spain, and from the Roman allies in that quarter for the discharge of his debts, and plundered at the point of the sword some towns of the Lusitanians, notwithstanding they attempted no resistance, and opened their gates to him upon his arrival before them. In Gaul he rifled the chapels and temples of the gods, which were filled with rich offerings,¹ and demolished cities oftener for the sake of their spoil than for any ill they had done. By this means gold became so plentiful with him that he exchanged it through Italy and the provinces of the Empire, for 3,000 sesterces the pound. In his first consulship he purloined from the Capitol 3,000 pounds weight of gold, and substituted for it the same quantity of gilt brass.² He also bartered with foreign nations and princes for gold, the titles of allies and kings; and squeezed out of Ptolemy alone near 6,000 talents, in the name of himself and Pompey. He afterwards supported the expense of the Civil Wars, and of his triumphs and public spectacles, by the most flagrant rapine and sacrilege.”³

Suetonius omits to add that besides the 3,000 pounds weight of gold of which Cæsar robbed the treasury during his first consulship, he afterwards plundered it of 15,000 pounds weight of gold, 30,000 pounds weight of silver, and 300,000 sesterces.⁴

The position of gold during this period has been already outlined. As a general thing, gold coins were not legal tender, and only passed as merchandise or by courtesy. They were certainly merchandise when Sulla struck aureii

¹ Cortes afterwards did the same in Mexico.

² These were doubtless aureii made of bronze, and gilded.

³ From Suetonius' "Cæsar," chapters xviii., xxii., xxv., xxvi., xxxviii., xlvii., l., and liv.

⁴ Pliny, xxxiii. 17. D'Avenant (Works, iii. 36), makes it 4,136 pounds of silver and 900,000 pounds of gold!

weighing thirty to the pound, and they were as certainly legal tender when the *Lex Cornelia nummaria* was enacted. My impression is that their legal tender attribute only lasted during the two years' existence of Sulla's constitution, and that afterwards they became merchandise, or passed by courtesy. When, at times, gold became unusually plentiful, the gold coins passed at a discount, which, as has been seen in two several instances, amounted to twenty-five per cent. It may fairly be conjectured, that at other times its value in silver—at the nominal and customary ratio of 1 : 10—fluctuated between 25 per cent. discount and par.

The nominal weight of the aureus was $131\frac{1}{4}$ grains, or forty to the pound ; but none have been found of this weight, most of them ranging from 117 to 124 grains. "Some of the heavy gold of Sulla weighs 165 grains. This is now thought to be the gold coined for Sulla by Lucullus, and mentioned by Plutarch as the Lucullan money. Each of these pieces, though passing under the usual name, as an aureus, was expressly made heavier as a covert bribe to the soldiers, who were paid in this coin ; by which means their pay, though nominally the same, was much increased." . . . "Some of the pieces weigh 202 grains. One coin at the British Museum weighs $167\frac{1}{2}$, and another $166\frac{1}{10}$ grains." . . . "The gold money issued under Sulla was coined from a fine of 20,000 talents imposed upon Asia after the peace of Mithridates. It appears that Lucullus held under Sylla, in Greece, an office similar to those jointly of *questor urbanus*, and *triumvir monetatis*, in Rome itself." ¹

There are other and easier ways of bribing soldiers than striking for them undervalued coins, which they could only use to advantage by immediately melting down. The heavier gold coins of this period appear rather to embody an effort to make up for that depreciation of gold which had been occasioned by the great and sudden influx of that metal from the wars and the mines. Plutarch, who was

¹ Humphreys, "Ancient Coins," pp. 141, 142.

entirely ignorant of the principles of money, may very naturally have suspected the extra weight to be intended as a bribe to the soldiers. These heavy aureii afford a proof that at the time they were struck, gold coins were not a legal tender in Rome.

The position of copper can now be described. During the Scipion era, the nummus or overvalued copper sesterce, had been demonetized or degraded in function by reducing it from a full legal tender to the position of a "token." It had lost its name of nummus or numerato, and was again known as the As. During the confusion of the Social Wars, attempts seem to have been made, by enlarging its legal tender function, to reinstate the nummus in its old position, not as before, in order that it might form a unital and regulated money which should equitably measure the volume of exchanges in the state, but as a financial resource, to palm off overvalued coins of unlimited issues upon the people. It was as though increased emissions of the existing overvalued British penny or American cent were forced upon unwilling creditors, while the gold and silver coins, operating as multiples for the others, remained in circulation to increase the total volume of money. It is needless to say that the effect of these measures was to render the so-called copper nummi—now really Ases—a drug, and to cause them to be sold at a discount to the money-changers, who probably awaited their opportunity to pass them off again, to the needy, at par.

Of this character may have been the coinage of half-ounce Ases under the Lex Papirius. These coins, according to Pliny, were made to weigh only half an ounce each, coins of the same denomination having previously weighed one ounce. This reduction was of the same character as the lowering of the great copper penny of Great Britain to the present lighter bronze coin, or the lowering of the old American copper cent to the present much smaller and more convenient one. Neither of these coins, British or American, were or are legal tenders, except to the extent of

a trifling sum in any one payment, a position in the laws which has earned for them the *sobriquet* of "tokens." If, when they were lowered in weight, this function of tender had been enlarged by law, and they had been made unlimited legal tenders, they would have been in the same position in which some of the copper emissions of the Roman Social Wars were attempted to be placed.

There is, however, a difference between the position of copper coins during the Roman era and at the present time. Copper metal is never likely to become so scarce nor to appreciate so much in value as compared with silver metal, as to raise the British copper penny or American copper cent to a premium in silver coins; whereas in ancient Rome, because the supplies of both copper and silver were fitful and uncertain, this may have occurred. Hence the relation of value between them was exposed to violent fluctuations. In fixing their relation in the *Lex Papirius* at 56 to 1, some respect was doubtless had to the market relation of the metals at the time, which, it may be presumed, was about 60 to 1; but as this relation was apt to fluctuate, say, between 50 and 100 to 1, it might have happened, at times, that the copper coins were not sufficiently overvalued to prevent their being purchased at a slight premium and melted. It will be seen, therefore, that there were influences in operation which, at one time, may have rendered the copper coins redundant, and at another, scarce.

The position of silver was of importance during this era, for it formed the basis of all the monetary systems. Beside what she received from spoliation, Rome now possessed the means of obtaining ample and perennial supplies from the mines of Spain, into which it was her atrocious design to thrust the prisoners whom her marauding armies might capture in Gaul, Asia Minor, and Africa. But the agrarian troubles and social and servile wars of this period must have greatly interfered with or postponed the execution of this design, for there are not wanting evidences that the

supply of silver occasionally ran short. These evidences are found in the emission of alloyed, debased, plated, and forged coins, numerous examples of which now occurred for the first time in the history of Rome.

In B.C. 91 Livius Drusus, the tribune, authorized the coinage of silver denarii .875 fine, or alloyed with "one-eighth part of copper."¹ Some authorities have held that he went so far as to issue "copper denarii plated to resemble those of silver."²

Some of the denarii of the social (Marsic) war were valued at ten Ases, others at sixteen.³ As the legal value of the denarius was now, so far as we know, sixteen Ases, the practice of valuing it sometimes at ten may have arisen from its being alloyed or debased.

It is possibly to some of these debased or plated pieces that Sallust alludes when he says that, by a law of Valerius Flaccus, the interrex, under Sulla, B.C. 86, "argentum ære solutum est," silver was paid with brass.⁴ Valleius Paternus explains the operation of this law by saying that it "obliged all creditors to accept a fourth part of what was due to them."⁵ Watson's (Bohn's) "Sallust," p. 39, explains that it enabled an As to be paid for a sestercius. Dr. Arnold says that this law only applied to the creditors of insolvent debtors.⁶ None of these explanations are altogether satisfactory. It is quite evident that Sulla always meant to assert the right of the state to make money of whatever material it pleased, and he was not the man to stop short at making it of overvalued brass. This was good enough for the despised people. For his soldiers he coined silver pieces of extra weight, and when Marius Gratidianus, B.C. 84, attempted to enforce the old law by instituting a trial of the *pix*, he annulled his decrees, pro-

¹ Pliny, xxxiii. 13.

² Leighton, 234.

³ Humphreys, 140.

⁴ Sallust, Cataline, xxxiii. Vel. ii. 23; Caes. Bell. Civ. iii.; Suetonius, "Julius Cæsar," 14.

⁵ Val. Pat. ii. 23.

⁶ Arnold's "Rome," i. 205. Insolvent debtors had already been favoured by a law of the consul, A. Sempronius Asellio, B.C. 90. Ibid., 181.

scribed him, and handed him over to the ferocious Cataline, who slew him barbarously.¹ It is only when the matter is regarded from this point of view that the extravagant honours which the people conferred upon Gratidianus can be accounted for.

After Sulla had distributed all the silver of the state to his soldiers, and thus employed it to complete the degradation of his countrymen,² he compelled the latter, with grim irony, to do homage to the instrument of their own enslavement by introducing into his short-lived constitution the most severe penalties against debasing or counterfeiting the gold or silver coins.

His *Lex Cornelia nummaria* applied to "false money, and punished, by the interdiction of fire and water, those who adulterated the gold and silver coin by sweating, smelting, clipping, or defacing it, or bought tin or leaden money and fraudulently sold the same, to which provisions others were added, either by *SCTA* or imperial constitutions." . . . "The severity of the law of Sylla did not, however, suffice to deter persons from this seductive offence, for we learn from Paulus that the better class were transported and the baser condemned to the mines or crucified, and manumitted slaves capitally punished on admission of their guilt for this offence, in his time."³

Of this period generally it may be said that the monetary systems were varied and confusing. Cicero evidently alludes to this condition of affairs when, in connection with

¹ In B.C. 80. Pliny, xxxiii. 46, and xxxiv. 12; Cicero, "De Off.," iii. 20, 80; Matthew Raper.

² In B.C. 111, the Roman consul, L. Calpurnius Bestia, and president of the Senate, M. Æmilius Scaurus, proceeded to Africa ostensibly to carry on the war in Numidia, but really with the purpose of being bribed by Jugurtha. Leighton's "Hist. Rome," 217. This degradation of the Roman character offers a striking contrast to its dignity in B.C. 280, when Pyrrhus vainly tried to bribe the magistrates of Rome by the hands of Cineas. Napoleon's "Cæsar," 226-7.

³ Colquhoun's "Civil Law," § 2412. There appears to have been little choice between these various modes of punishment.

Marius Gratidianus, he says: "At that time the currency was in such a fluctuating state that no man knew what he was worth."¹ There were silver and gold and copper moneys, both "intrinsic" and overvalued; the tale relations between all of these moneys were exposed to continual changes; there were moneys coined by the state, others by the gentes,² and still others by forgers; there were coins of pure metal and others of alloyed; and as if to render the measure of value of still more uncertain limits, a portion of it consisted of grain, which was paid to the state for tithes, and sold to the people of Rome at a loss, to appease their clamours, and purchase their suffrages.³

¹ Cicero, "De Off.," L. iii. § 20.

² Most of the family coins (extant) belong to a comparatively late period of the republic, ranging from less than a century previous to the time of Julius Cæsar, to shortly after the time of Augustus. They consist principally of silver denarii, and, more rarely, of gold." Humphreys' "Ancient Coins," 143.

³ This is mentioned in the Lex frumentaria, one of the Sempronian laws of B.C. 123-2. Livy, ep. 60; Leggett, 209; Pcter, "Gesch. Roms." ii. 32 n.

If it seems strange that the Gracchi and other agitators during this disordered period failed to refer to the condition of the currency, and to propose its reform, it should be remembered that at the present time, though reform in the institution of money would remove many causes of popular discontent, it is never referred to by agrarian "reformers." The fact is that money is a recondite subject, one usually beyond the scope of popular agitators, who moreover may fear to risk the popularity of their own remedies by alluding to the existence of others.

CHAPTER XXV.

THE JULIAN SYSTEM, B.C. 46-31.

Gold now becomes the standard of value in Rome—The change of standard probably due to Cæsar's desire to monetize his plunder of Gaul—Resemblance to the monetary position of Germany in 1870—The position of silver and copper coins.

FROM the year that Julius Cæsar was proclaimed Dictator, B.C. 46, commenced a new and memorable change in the monetary system of Rome. While there does not appear to have been any formal annunciation that henceforth gold instead of silver coins were to form the standard of value in Rome, yet a change of this character seems to have been practically adopted. This may have arisen from the tamperings with the silver coins which occurred during the social wars and continued even into this era;¹ or it may have grown out of the fact that, under the influence of large accessions of silver spoil and of supplies from the mines, prices had greatly risen, until it was no longer convenient to couch in silver coins the larger sums in ordinary use; or it may have been due to the impression that the supplies of silver were more fitful than those of gold, and that the latter would, therefore, prove a safer measure of value. Whatever the cause, it now became the custom, for the first time, to express large sums of money in gold aurei. All large sums were not thus expressed; on the contrary, most of them were couched in silver denarii or silver sesterces, but many such sums were; whereas this had never been the case before. This custom continued

¹ Debased silver coins were emitted during the consulship of Cæsar. They were said to have been alloyed with iron. Adam's "Rom. Ant."

to grow, until it at length received the sanction of law in the dictatorship of Cæsar.

With the exception, perhaps, of two years under the Sullan constitution, gold coins had hitherto not been coined by the state, but, like the earlier silver coins, by the *gentes*. In the same manner that the state eventually subjected the silver coinage to its control, so it now subjected the gold.

It has been shown that, according to Suetonius, Cæsar sold the gold proceeds of his forays in Gaul for 3,000 sesterces the pound. These are taken to mean silver sesterces, each one-fourth of a denarius, with twenty-five—instead of twenty, as formerly¹—of the latter as the equivalent of the gold aureus and forty aurei to the pound; in short, 4,000 silver sesterces to the pound of coined gold. To receive but 3,000 sesterces for the pound of bullion, was to lose one-fourth of its value, either because gold coins were not legal tender, or because the state was not prepared to coin gold bullion with sufficient despatch. The valuation of the aureus at twenty-five denarii settles this question. It proves that gold coins were already legal tender either by law or custom, and renders it all but certain that, assuming the account of Suetonius to be correct and precise, the mint could not yet coin it fast enough.

With all his prodigality, Cæsar was not the man to put up with losses of this character longer than he could help it. No sooner did he succeed in grasping political power than he got control of the mint; and it may be safely surmised that after this time no gold bullion of his was sold at less than its full value for lack of coinage facilities.²

¹ This measure was either adopted by Pompey, whose denarii weigh but 60·6 grains, or Cæsar, whose first weigh 60·4, and later ones 54·9 grains. Consult Rear-Admiral Smyth and Greaves, p. 309. It indicates that the state recognized the gold aureus as money, and perhaps, also, coined it.

² “He appointed to the management of the mint and the public revenue of the state some servants of his own household; and entrusted the command of three legions which he left at Alexandria to an old eunuch of his, the son of his freedman Rufinus.” Suetonius, “Cæsar,” lxxvi.

Indeed he began to coin it at the ratio of forty-two aurei to the pound,¹ thus making the ratio of weight between his gold and silver coins about one to eleven, instead of one to ten, as formerly.

That in the face of a recent and large increase of the supply of gold² an enhancement of its value in silver should have been adopted in the mint laws, is regarded as additional proof that the first-named metal had now become the practical standard of value.

The position of silver coins during this era is not altogether clear, but I am confirmed in the suspicion that their previously full legal tender character was impaired, by the fact that the silver mines were farmed to individuals, whilst those of gold were monopolized by the state.³

The copper coins were merely tokens, overvalued, but possessing only a limited legal course. Shortly after this era, to wit, in the reign of the Emperor Octavius, we learn that the copper mines, formerly so jealously monopolized by the state, had fallen into the hands of individuals. The copper mine of Corduba in Spain was named after and probably owned by the consul Marius; that of Savoy belonged to Sallustius Crispus, the historian, one of the secretaries of Octavius, while the copper district of Livia in Gaul was owned by Livia, the Emperor's wife.⁴

¹ Humphreys' "Ancient Coins," 143.

² It is a singular coincidence that the plunder of Gaul in n.c. 54, and its plunder again in A.D. 1870, should have led to similar results in the legislation of the conquering nation: the establishment of gold as the standard of value in place of a previously existing double standard. This was the case both in the Roman and German empires.

³ Strabo, iii. 2, 9.

⁴ Pliny, vi. 149, and note *b*, Bohn's ed.

CHAPTER XXVI.

THE AUGUSTAN SYSTEM. B.C. 31—A.D. 41.

Exhaustion of the richer portions of the placer mines and falling off of gold and silver supplies—Octavius averts the consequent threatened fall of prices by issuing a new overvalued copper sesterce—Precautions taken to secure approval of this measure—Resemblance to Mr. Chase's financial measures—Complete success of Octavius—Scale of values adopted—Gradual rise of gold and silver coins to a premium—Their disappearance from the circulation—Measures of Tiberius—Of Caligula—The latter seizes the municipal and provincial mints, and without consent of the Senate coins an incredible number of overvalued sesterces—It is in the overvalued and redundant sesterces of this period that the stupendous sums of money mentioned by Pliny are couched—Difficulty of computing their value in silver—The minute "token" As, a degenerate descendant of the great archaic coin.

THIS period embraces the reigns of the emperors Octavius, Tiberius, and Caligula—altogether eighty years.

The vast supplies of comparatively easily-found placer gold, which had been obtained during the previous era—chiefly by Julius Cæsar, in Spain and Gaul—were now exhausted. The precious metal was no longer to be wrung from the natives, or found in nuggets by scratching the surface of the auriferous fields. It was only to be procured in minute grains and by means of large works¹ and a multitude of slaves. In other words, the placer mines had been worked down to the productive level of rock mines.

¹ The author has examined a number of these works in Asturias, Galicia, Leon, and Lugo, and can bear witness to the character of the auriferous gravels in which the Romans of this age delved, and to the grandeur of the hydraulic works they erected to assist them. They will be found described in his "Rape of the Earth," chapter on the Minho.

There was plenty of gold yet in them, but it henceforth could only be obtained—like gold from quartz, or silver from ores—with great pains and expense. Like the product of California and of Australia after 1860, that of Gaul and Spain must have suddenly fallen off after the Julian period, and the Roman government found itself obliged to depend for supplies of the precious metals upon the slow and precarious yield of elaborate hydraulic and subterranean works throughout its remote and widely scattered provinces.

At a later period, and under the reigns of ignorant tyrants and greedy usurpers, this diminution of supplies would have been met by ruinous debasements of the coinage. Octavius was not a monarch of this character. His public works, his measures of administration, his postal system, his lost statistics of the empire, all prove, that his government was far-seeing, wise, and benignant, while his treatment of the senate, his disposition of religious matters, and numerous other political arrangements indicate an intimate knowledge of the history and traditions of his country.

It is therefore not at all surprising to find that in this emergency he resorted to that device which had served the country so well during the republican era. Octavius was fond of restoring old forms and institutions. He repaired the old temples to the gods, he erected new ones, he had the Sibylline books revised, he filled up the priestly offices—some of which had remained vacant since the time of Marius—he issued edicts to restrain luxury, he limited the expense of the public games, he enforced the laws against bribery and corruption, he discouraged celibacy, he fostered commerce, and he greatly strengthened the equestrian order,¹ which consisted chiefly of bankers and merchants. Necessity impelled him to meet the failing supplies of those materials out of which money had come to be made, by substituting in their place a material of which the supply

¹ Those who possessed 400,000 sesterces, and were born of free parents. Leighton, 428.

was ample and assured. Inclination induced him to reinstate all those measures of the old republican system which did not appear to threaten the permanence of the empire he had established. Among these was the copper numerary system of B.C. 385-269.

But here a great difficulty confronted him. If he restored the numerary system, either the senate or himself would have to regulate the entire volume and emissions of money. To entrust the senators with this tremendous power, would be to deliver up the government to them. The power would probably be abused, the country would again be plunged into civil dissensions, and the empire which he had striven and risked so much to erect, would speedily fall to pieces. To regulate the currency himself would expose him to the attacks of every dissatisfied class. A purely numerary money is inconsistent with a despotic government; and, if Octavius was not wise enough to perceive this, his friend and counsellor, Mæcenæ, to whom he deferred in measures of this character, certainly was.

Nor was this the only difficulty. Vast numbers of gold and silver coins were in the coffers of bankers and merchants, in the hands of the people, and scattered throughout the provinces. To demonetize these coins and offer overvalued copper pieces in exchange for them, would be to array the whole empire against himself.

The commerce of Rome extended to the Indies, and in modern times silver coins of the early Roman emperors have been found entombed in the Buddhist topes of that country.¹ Pliny, who wrote shortly after this era, says: "India, China, and Arabia withdraw from our empire, one hundred million of sesterces annually,"² meaning, probably, one hundred million sesterces' worth of silver. Then as now Oriental commerce consisted chiefly in an exchange of spices, silks, and gold, for silver; but the profits then were much greater than now, and often amounted to many times the original cost of the merchandise exchanged. The de-

¹ See chapter on "India."

² Pliny, xii. 18.

monetization of silver by suddenly throwing a vast quantity of it on the Roman market as bullion, would have engendered great competition in the Oriental trade, and greatly reduced its extravagant profits; and the demonetization of gold would have put a stop to one of the most lucrative branches of this commerce. Either measure would have arrayed against the government the influential classes who engrossed the advantages of the traffic.

The systematic mining of silver in Spain had also become an important industry, and one that was managed by classes of citizens whose loyalty the newly-established government could hardly afford to alienate. It employed an army of slaves whose return to Rome would have rendered them an intolerable burden to their owners, and an additional source of danger to the government, and who, if left to shift for themselves in Spain, were numerous and desperate enough to have torn this coveted province from the empire.

In short, the demonetization of the precious metals, however practicable it may have been to the Republic, was out of the question for the Empire, and Octavius was obliged to take that same middle course, to adopt that same sort of mixed system of money, which nearly every government of the world at the present time finds itself compelled to accept; a system consisting partly of highly overvalued pieces, and partly of coins at their bullion value. In modern days the overvalued pieces are made of paper, and usually promise something. In the Augustan era the overvalued pieces were made of bronze, and promised nothing. The modern systems and the Augustan system possessed one great feature in common. The volume of money had no specific limit. To the overvalued portion there was a certain and foreseeable limit. To the "intrinsic" portion, and therefore to the whole volume of the measure of value, there was none. The limit was whatever the vicissitudes of conquest, mining, and demands for the metals in the arts and for foreign commerce chanced to

make it. In this most important of all the features of a monetary system, that of Republican Rome differed from all of those alluded to; its entire limit or volume was regulated from time to time by the Senate, and being known to the citizens afforded them an equitable measure by which they might compute value and compare services and wealth.

In carrying out the important resolution to which these various circumstances impelled him, the first care of Octavius was to improve the personnel of the mint. This office was originally in charge of quæstors, whose probity—they being of the patrician class—was assured by their pride of ancestry and love of fame. During the administration of Julius Cæsar no quæstors were elected, and the mint was filled with the Dictator's servants. In B.C. 28 Octavius committed the treasury and mint to the prætors, and thus restored these important offices to a class of men who might be relied upon to fill them with intelligence and honour. This year has accordingly been fixed upon as that in which the new system was begun.

The principal features of this system were the coinage of a distinctive sesterce—known to modern numismatists as first bronze—composed of bronze, and weighing about two ounces. This coin was made legal tender to any extent and for all purposes. A scale of relative value was also enacted, which, as nearly as can be gathered from existing evidences, was as follows:—

1 aureus of gold, 120 grains¹ = 25 denarii of silver,² each 60 grains, .940 fine³ = 4 great sesterces of copper, each of nearly 2 oz.,⁴ or 4 small sesterces of silver, each of about 14 grains. There were also subsidiary coins of the As series, which, like the copper coins of modern monetary systems, could only be tendered in payment to a trifling amount. Four of these Ases went to the sesterce.⁵

¹ Greaves and Smyth.

² Bohn's "Pliny," note 45 to xxxiii. 13.

³ The extant coins weigh 59.8 grains, and contain 56.2 grains of fine silver. (Rear-Admiral Smyth's "Catalogue.")

⁴ "Encyc. Brit.," ed. 1858, art. "Numismatics."

⁵ Ibid.

Before the emissions of the new sesterces proved to be so great as to seriously influence prices, Octavius became anxious to conciliate the class whose privilege to coin gold and silver under the regulation of the senate would cease to possess any advantage (*e.g.*, that of freedom from a seignorage) when these coins were driven out of circulation, as they were soon certain to be. Accordingly the families privileged to coin the precious metals were appointed moneyers to strike the new bronze coins, and for this service were paid by the state.¹ In a similar way, during the establishment of the greenback system in the United States, the secretary of the treasury, Mr. Chase, conciliated the retiring "state-banks," by granting them equally valuable privileges as "national banks."

In order to secure for the state a quantity of gold and silver for use in foreign wars or commerce, Octavius, acting under the advice of Mæcenas, forbade the circulation in the provinces of any coins but those minted by or under the authority of the Roman state.² In like manner Mr. Chase borrowed \$50,000,000 or £10,000,000 in gold coins from the "state-banks," and then procured the passage of an act taxing the circulation of their notes out of existence.

Proceeding with great caution, Octavius caused the effigy of Julius Cæsar to be stamped upon his first emission of sesterces.³ Mr. Chase, with less prudence, caused his own portrait to be printed upon the one dollar "greenbacks," and thereby incurred the rebuke of Congress, which ordered that thereafter the portrait of no living person should appear upon the national money.

As the emission of overvalued sesterces went on, it was inevitable that the gold and silver coins not overvalued

¹ Humphreys' "Ancient Coins," p. 144.

² Dio. lii. 29, cited in Adam, 122. The revenues were, however, ordered to be paid by the provinces in silver. Jacob, 108.

³ The "Encyc. Brit.," ed. 1858, art. "Numismatics," makes the mistake of supposing that these coins were issued by Julius Cæsar himself. This mistake is corrected by Francis Hobler in his "Roman Coins," London, 1860, vol. i. p. 7.

would first rise to a premium and afterwards disappear from circulation, and this is really what happened.¹ Indeed the bronze sesterce became “nearly the only monetary unit (fraction) used in calculation in Roman pecuniary affairs, though the As yet continued nominally in use in fines and other matters connected with ancient law.”²

Continues Humphreys (p. 150):—“As the noble copper coinage of the early Republic, the grandiose As and its parts, had distinguished the coinage of Rome from that of all other nations, whose standards were gold or silver, though they had subordinate copper money; so, at the period of the establishment of the empire, when the gold and silver of the world had flowed into the coffers of all-powerful Rome, copper was still maintained as the material of the national monetary standard; and though the As and its parts began to disappear, a new and noble form replaced it, that of the great First Bronze, as it is termed, or rather, in other words, the sestercius, of which a magnificent series exists from Augustus to Gallienus, containing monuments magnificent both as works of art and as historic records. Thus, as I have said, copper was still the great national coinage of the Empire, as it had been of the early Republic; and though the emperor coined gold and silver independently, copper could only be coined *ex senatus consulto*, by decree of the Senate.”

Such was the system of money established by Octavius Augustus throughout the Roman dominion, and it was during the virtual “suspension of specie payments” which it involved, that the Saviour of the World first saw the light.³

To what extent the bronze sesterce of Octavius was over-

¹ Humphreys, 302, attests the disappearance of the silver sesterce and smaller silver coins. On p. 143 he says the emissions of “silver denarii, more rarely of gold,” also ceased.

² Humphreys, 301.

³ The birth of Christ is fixed by the Benedictine authors of “*L'art de Verifier les Dates*” at B.C. 7, and by Lydiat at A.D. 4. There are numerous authorities for each one of the several years between.

valued as against commodities, it is difficult to determine. It may have been, and probably was, overvalued many times, until the continually increased emissions of this coin under the emperors Tiberius and Caligula reduced its purchasing power to little more than that of the metal it contained.

Upon the accession of Tiberius, A.D. 14, the weight of the bronze sesterce was lowered, and new emissions took the place of the old ones, and perhaps augmented them. No material alteration is to be observed in the weights of the gold aureus or silver denarius, though each was a grain or two lighter than before. It is probable that neither of them were in circulation except for the pay of the army and for foreign commerce.

With the reign of Caligula, A.D. 37, commenced a new and alarming augmentation of the overvalued bronze currency,¹ and prices rose to an unprecedented height. Upon the "adlocutio" coins of this emperor, or those which represent him as addressing the cohorts, the customary S.C. does not appear; from which it would seem that the coinage was carried on without the consent of the senate.² Upon Caligula's death the senate ordered a recoinage of the sesterce series. Humphreys, who never wholly gets rid of the erroneous notion that these coins were "intrinsic," gives as the reason of this recoinage "that the odious name of Caligula might be forgotten." The true reason was of a far different character. If the sesterces were "intrinsic," why should Caligula have hastened to coin them in such numbers, and why should the senate have decided to contract the currency by melting down especially Caligula's coins? Surely they gained nothing by exchanging Caligula for Claudius, or the latter for Nero. The pretence of effacing his name or effigy on the coins is absurd, first, because these did not appear on all of his coins; and, second,

¹ Even at the present time these coins are far from uncommon. Humphreys' "Ancient Coins," p. 155.

² Ibid.

because from the number of them still left from his short reign of four years, it appears probable that if the currency was contracted at all, it was done by melting, not particularly Caligula's coins, but any that could be conveniently retired from circulation.

Besides the imperial and licensed mints in Rome, there were several hundred others in the various provincial cities, all of which during this era and up to Caligula's time were employed in striking moneys under the regulation of the central government. In furtherance of the financial resource of which the tyrant had begun to avail himself in Rome, he is said to have suddenly withdrawn from the provincial cities the privilege of striking their own coins.¹

If these coins were "intrinsic," why should Caligula have stopped the provincial and colonial cities from coining? If it was merely the designs on the coins that he wished to change, if he merely wished his own name or effigy to be placed upon them, this could easily have been done by sending the cities new dies, without stopping them from coining. The fact that he desired to himself control the coinage shows that it was overvalued and not intrinsic. The vast number of coins issued during his short reign proves also that although he may have withdrawn the privilege of coining from the provinces and colonies, he did not shut up their mints. If he did, it is difficult to see by what means he could have coined so many pieces. He probably seized the provincial mints, and turned them to his own uses.²

It is through the medium of this system, and the remote relation which its overvalued portions bore to silver metal, that we are to read the stupendous sums in "sesterces"

¹ Humphreys' "Ancient Coins," p. 163.

² Among the monetary measures of this reign are the emission of a debased denarius, which may have been intended to represent the true value, at some given moment, of four copper sesterces; but this is doubtful, because the depreciation of the sesterce was probably far greater than the debasement of the denarins.

handed down to us by Pliny and others; and not upon the false assumption that these sesterces were of silver. What this relation of value was cannot be determined even approximately until an entire re-arrangement of the monetary symbols of this era is made by numismatists. When this is done a clearer light will have been shed upon the whole subject, and safer inductions can be made.

It will be found, no doubt, that this relation was inconstant; that the value of the sesterce fluctuated with every occurrence or rumour that threatened the peace of the empire; that it rose when Druses marched through Germany, and Tiberius subdued it; fell when Pannonia and Dalmatia revolted; and rose again when Tiberius revenged the bloody defeat of Varus. But these fluctuations of value, which are inseparable to all moneys, must have been subordinate to that continual decline in the value of the sesterce which arose from the increasing emissions of that monetary symbol and the existence of an unknown number of gold and silver coins, that stood ready at all times to increase the general volume of money.

Of the copper tokens or Ases,¹ which, continued from a preceding era, were coined during a portion of the reign of Octavius, a new emission was authorized by that monarch,² which were much lighter than previously, and made with more artistic skill. Concerning these coins Humphreys remarks:—"It is singular that the last copper coinage of the empire, tottèring to its fall, was a reproduction in a minute form of the As, which in its grand original proportions had been the first coin of the Republic in its herculean youth. So that the As . . . forms at once the Alpha and Omega of the long and splendid series of the Roman coinage."³ But such coincidences have a merely rhetorical value. It was equally singular that the principal coin of the republic was the nummus, and the last one of the empire,

¹ Known to numismatists as Second Brass.

² Known as Third Brass.

³ "Ancient Coins," p. 136.

the noumia;¹ and still more singular that both the first and last of the long line of Roman monarchs had the same name.²

¹ Humphreys' "Ancient Coins," 379.

² One Romulus founded the empire, B.C. 753; the other one, Romulus Augustulus, disappeared with it, A.D. 475.

CHAPTER XXVII.

FROM THE AUGUSTAN ERA TO THE DARK AGES.

The moneys of this era substantially "intrinsic"—Every exchange a barter—Numismatists and numismatics—Growing scarcity of the coinage metals—Debased coins—They form the bulk of the circulating medium—Degradation of coins—The silver denarius dwindles until it becomes too small to handle, and is thereafter made of copper—Though rarely debased, because not lawful money, the aureus continually dwindles—It eventually becomes reduced to less than half its original size—Known as the "solidus," and afterwards the "bezant"—Dwindling and disappearance of the copper As—Dwindling and disappearance of the copper sesterce—The copper denarius alone survives, and confers its name upon all money in Southern Europe—Legal tender—Revenues in silver; payments in copper—Imperial plunder of the provinces, the depositories, and the citizens—Position of gold mining—Silver mining—Copper mining—Right of coinage—Administration of the mines—Counterfeit coins—Difficult to be distinguished from the debased coins of the moneymen—Revolt of the moneymen—Their removal to Gaul and Britain—Seignorage—Decline of the Empire—The Dark Ages—Review.

THE monetary systems of Rome which succeeded that of the Augustan age, were all of a class that comes so entirely within the comprehension of the average numismatist, that they have been very fully and satisfactorily described in their works. There is, therefore, little left for explanation or elucidation. All these systems were "intrinsic." Generally speaking, money consisted of an indefinite number of pieces of various commercial commodities, gold, silver, billon,¹ copper, bronze, potin,² lead, etc., and its value was that of the substances of which it was made. This was a system easily grasped by the modern

¹ Humphreys' "Ancient Coins," p. 362.

² Lenormant.

coin collector. He had only to assay and weigh the substances brought to his notice, and the whole institution of money to which they belonged stood revealed. The symbols or inscriptions had next to be deciphered, and the era of the system was fixed. His function was then ended. The economical conditions—for example, spoliation, or mining—under which the substances were produced, the laws of legal tender, the rights of coinage, the conditions of seignorage, the number of pieces emitted from time to time, or in circulation at any given period, the obscure problems of price—these were subjects which no longer required to be considered. The system of money had become, substantially, one of barter. Certain metals, the whole quantity of which was unknown and unknowable, were exchanged for certain other things, the whole number or quantity of which was equally impossible of ascertainment. The expression of these exchanges was in prices which, under the conditions of such exchanges, could have no possible relation to prices resulting from exchanges under other conditions, conducted elsewhere, and at other periods of time. The entire subject lay within a nutshell, and the numismatists found no difficulty in comprehending it.

But the science of numismatics has a higher function than this petty one. It has something more to do than to decipher inscriptions, explain symbols, and fix dates. It has to deal with the law (*nomos*); it relates not merely to a collection of toys, but to monuments of legal institutions, whose establishment, growth, and decay, have never failed to keep even pace with the other phases and marks of national civilizations; it thus holds the key to the study of these civilizations, and forms an integral part of that body of knowledge or experience, without which every new legislative or administrative measure of the modern world, would be a step in the dark.

This higher function has not yet been so fully recognized and discharged by numismatists, as the interests of historical research and progress in administrative measures seem

to demand. As a rule they have stuck too closely to Budelius, and the narrow views of a school whose foundation was laid in the gross materialism of the Dark Ages, and whose only logical consequence has been the plunder of Aboriginal America, the establishment of the Mercantile system, and the Devastation of those newly-found countries, so unfortunate as to possess soils impregnated with the precious metals.

How long the monetary system established by Octavius continued to maintain its integrity, and precisely when it ended, cannot be satisfactorily determined. It was probably greatly weakened by the excesses of Caligula, and fell into decay in the reign of Vespasian.

From the Augustan era to the time of Nero, the use of nummus as a generic word for money became less and less common, and Pliny, whose "Natural History" was written at this period, shows himself to have been either unaware of the history of this most significant term, or else compelled, in deference to the existing monetary system and the instructions or bias of the imperial censors,¹ to pass it over and dwell upon the traditionary and exceedingly doubtful *As libralis*.² Tacitus, who wrote toward the end of the first century, evidently marks the distinction between the overvalued copper and "intrinsic" silver sesterce, by designating the former as "great" and the latter as

¹ The crime of *majestas* was established by Saturninus, B.C. 100, in order to guard the champions of the plebeians. Sulla applied it to acts against the State. Under Cæsar the law remained the same, but Octavius extended it to writings intended to bring the emperor into contempt. Tiberius still further widened its scope. Not only acts, but even words, which could be construed to threaten the emperor's safety, or question the wisdom of his public measures, were declared to be embraced in the law, and gave rise to a host of informers (*delatores*), who often became the instruments of private revenge. It was as dangerous to be silent as to speak, as dangerous to speak as to write, and as dangerous to write as to commit an overt action.

² Pliny may have been a "bullionist." His shot at the Republic—that she repudiated five-sixths of her debts—proves, at least, that he was a monarchist.

“small.” About half a century later, in the reign of Antoninus Pius, A.D. 138-161, a *congiarium* was given of eight aureii per head, and Gaius, an author of this period, alludes to “*pecunia numerata et ponderata*,” a distinction that suggests the destruction of the old numerical system.¹

Henceforth the money of Rome consisted invariably of commodities, that is to say, of coins of gold, silver, or copper, having permanently no other value than that of the metal they contained. Various emissions were made of overvalued coins, both of gold, silver, billon, and copper, not upon any system of numbers, nor usually with the view of benefiting the public, but to enrich the emperor, or those whom he permitted to enjoy the valuable privilege of coining. Sooner or later the coins thus issued fell to their commodity value, and the profits of the emissions came to an end.

While in many cases the emission of overvalued pieces was surreptitious, and was employed as a financial resource, it cannot be doubted that in others it was superinduced by the increasing and observed scarcity of the coinage metals, whose effects it was ignorantly hoped might thus be remedied or palliated. It is impossible to distinguish these two classes of emissions from one another: indeed it is not known how many of them were made nor of how many coins any one of them consisted, nor precisely in what proportion the coins were debased. Little more is known than that coins of gold and silver have been found with certain regnal marks upon them, which coins were alloyed, debased, stuffed, or plated. The following is a list of them:—

Table of Debased Coins.

Regnal years. A.D.	Monarch.	Coins.	Authority.
37-41	Caligula .	Debased denarii . . .	Jacob.
41-54	Claudius . .	Iron denarii, plated .	Wright.
54-68	Nero . . .	Debased denarii . . .	Jacob.

¹ “Commentaries on Gaius,” by Tomkins and Lemon, London, 1869, p. 492.

Regnal years. A.D.	Monarch.	Coins.	Authority.
69-79	Vespasian . .	Debased denarii . . .	Jacob.
81-96	Domitian	Debased and false denarii	Humphreys, 222.
98-117	Trajan . .	Iron denarii, plated .	Wright.
117-138	Hadrian . .	Denarii of potin . .	Humphreys, 164.
117-138	Hadrian . .	Stuffed aureii . . .	Lenormant.
138-161	Antoninus .	Debased denarii . . .	Biblio. Nationale.
180-193	Commodus .	Stuffed aureii . . .	Lenormant.
193	Didius Julian	Debased denarii . . .	Montesquien.
193-211	Sept. Severus	Debased denari . . .	Humphreys, 362.
211-217	Caracalla . .	Denarii, over half lead .	Xiphilinus.
218-222	Heliogabalus	Denarii, $\frac{5}{7}$ ths base .	Smyth.
222-235	Alex. Severus	Denarii, $\frac{2}{3}$ rds copper .	Jacob, 125.
263-268	Gallienus . .	Copper denarii, plated ¹	Humphreys, 381.
254-263	Valerian . .	Copper denarii, plated .	Humphreys, 381.
258-267	Postumus . .	Debased denarii . . .	Wright.
270-274	Aurelian . .	Revolt of moneyers . .	Humphreys, 362.
476-492	Odoacer . .	Copper denarii. Silver dis- appears	Humphreys, 367.

This list is very imperfect. It can scarcely be doubted that after the first century of our era the practice of alloying and afterwards of debasing² the gold and silver coins of the Roman Empire, became general. The proportions of fine, alloyed, and debased coins which have come down to us do not represent the proportions of these various classes of coins in circulation. The former were coined for exportation, for soldiers' pay, and for other special purposes, and have survived the wreck of time; the latter were coined for general circulation, and were melted and recoinced by one emperor after another, as the process of debasement and

¹ Plated copper denarii and quinarii have been found both of about the same size. The former have the "X," the latter the "V" mark. These marks may be fallaciously interpreted; but whether they are or not, it is an important fact that the emissions of these pieces, judging from the number and variety (in small details of minting) of those extant, must have been very great.

² When the introduction of silver into gold coins, or of base metal into silver ones, does not exceed those proportions which better fit these coins for wear—say from one-twelfth to one-eighth—they are regarded as having been alloyed; after that they become "debased."

degradation¹ went on. This subject will receive additional illustration further on.

The degradation of the Roman coins kept even pace with their debasement. The silver denarius of Rome was originally copied, both as to material and weight, from the Greek drachma. This coin is conjectured to have weighed from the time of Solon to that of Alexander 67 grains, and from that of Alexander to the Roman conquest of Greece 65 grains, fine. It was during the last-named period that the denarius was coined first at Capua and afterwards by the Roman gentes, and for a long time both the heavier Greek drachma and the lighter Roman denarius circulated side by side at the same value. The denarius was first coined in Rome at six to the ounce; afterwards, in B.C. 216, at seven. In 45 both Cæsar and Brutus coined it at eight to the ounce. Thereafter, the contents of fine silver in the coins which have come down to us were as follows:—Octavius, 59·5 troy grains; Caligula, 58·0; Claudius, 56·12; Nero, 57·3; Vespasian, 54·9; Domitian, 53·0; Hadrian, 52·7; Heliogabalus, 44·2; Gallus, 34·0; Gallienus, 37·5; and so on downward, until in the reign of Romulus Augustulus, who was expelled by Odoacer, A.D. 475, it contained no silver at all, but was made entirely of copper.²

In the Eastern Empire, however, the silver denarius maintained a longer footing, and in the reign of Hæraclius, A.D. 609-640, during which occurred the Mahometan Hegira, it still contained 10 grains of silver, about the same as the existing debased three cent ($1\frac{1}{2}d.$ sterling) silver coin of the United States of America.³

Denarii have been found of Sept. Severus and Gordianus containing $62\frac{1}{2}$ grains of fine silver; but they were evidently coined for special purposes, perhaps for exportation to India.⁴ They could not have been in general circulation,

¹ Degradation, as applied to coins, means a reduction of weight.

² Humphreys' "Ancient Coins," 367.

³ Humphreys' "Manual," 382.

⁴ Perhaps it was the "full weight" of this class of denarii rather than the grandeur of Roman institutions which so much excited the admiration of the East Indian potentate alluded to in Pliny.

and must have passed in Rome for more than a denarius (of the time) each.

The fact that but few attempts were made to debase the gold coins is sufficient evidence that except in the rare instances presently to be mentioned they were not legal tender. The stuffed aureii of Hadrian and Commodus have already been alluded to. A portion of the gold was removed from the interior of these coins, and the space filled with base metal; but it does not appear that they were issued authoritatively. Gilded denarii with the effigy of Domitian, and evidently intended to pass as aureii, have been preserved;¹ but these, too, may have been issued surreptitiously or by counterfeiters.

The degradation of the aureus went on steadily. The coins of Octavius contained about 120 troy grains; Tiberius, Caligula, and Claudius, 118; Nero and Galba, 115; Otho, 109; Vitellius and Vespasian, 112; Titus, 110; Domitian, Nerva, Trajan, and Hadrian, $112\frac{1}{2}$ to $110\frac{1}{2}$;² Antoninus Pius and Marcus Aurelian, 120 to 119; Lucius Verus, 114; and so on downwards to Macrinus, 90;³ Heliogabulus, 80; Gallus, 68; Gallienus, 75; Constantine, 73; Majorian and Heraclius, 68; and Nicephore Phocase, A.D. 963-69, 54·75. This coin was known as the solidus,⁴ and later as the bezant.

We now come to the principal money of the Roman Empire—the copper sesterces.

The As series of coins, though long since degraded to the

¹ Hobler, i. 222.

² Some of Hadrian's aureii weigh 122 grains. Greaves.

³ "About ten years before the accession of Artaxerxes, there had been a sudden influx into Western Asia of Roman gold, in consequence of the treaty concluded between Artabanus and Macrinus, A.D. 217, whereby Rome undertook to pay to Parthia an indemnity of above a million and a half of our (sterling) money; see Dio Cassius, lxxviii. 27; compare the author's 'Sixth Monarchy,' p. 360. It is probable that the payment was mostly made in aureii." "The Seventh Great Oriental Monarchy," by Geo. Rawlinson, London, 1876, pp. 69, 70.

⁴ On the origin of "solidus" see p. 43, note 3, *ante*. Raper ("Inquiry," p. 562) says it was first named by Alex. Severus to distinguish it from his half and third aureus pieces.

function of tokens, continued to be fabricated until the reign of Gallienus, when they entirely disappeared.

The bronze sesterce of Octavius, overvalued and maintained at such overvaluation by limiting the emissions, gradually lost its superior value, and fell to that of the copper it contained. It was, thereupon, gradually degraded, until it became too small in size for practical use, and disappeared. Meanwhile the silver denarius had gradually usurped its place, each denarius being counted as four sesterces. The various debasements and degradations of the denarius brought this coin also to be made of copper. It was made of about the same size as the Augustan sesterce, but was called a denarius, and passed for four "sesterces" of account.¹ This copper denarius, denny, or penny survives to the present day in the coinage of Great Britain, but only as a "token." The letter "d," which represents it, is the initial of its ancient name. It also survives in the generic term for money used in Italy, Spain, Portugal, and the colonies, namely, danaro, dinero, dinhiero, &c. In fact the copper denarius had become the only money of the Roman Empire in its decline. The few silver and gold pieces upon which, unfortunately, the numismatists have centred their attention, were currency only in a few great marts and sea-ports. They had no more connection with the measure of value throughout the empire than Carolus dollars have with that of China to-day.

It is difficult to specify what was legal tender money during the decline of the Roman Empire.² Generally speak-

¹ In A.D. 553 Procopius alludes to bronze coins that were equal in value to silver. Hnmphreys' "Ancient Coins," 374.

² M. Lenormant's opinions on this subject are:—1, That Octavius established a single gold standard (vol. i., p. 183); 2, that Heliogabalus and Alex. Severus demanded treasury payments in gold, in order "to secure the fixity of the public revenues" (i. 185); 3, yet that soon afterwards the value of the aureus varied monthly (i. 185); 4, that the result was a virtual demonetization of gold (i. 185); and, 5, that gold is unheard of in history for a century after this (i. 185). In all of which opinions, as well as where he says the ancients never established a

ing, copper coins only were legal tender, and these were nearly always issued at an overvaluation. Various restrictive measures, other than limitation of issue, were enforced from time to time to maintain such overvaluation. Sometimes the copper coins were restricted in circulation to certain cities or provinces;¹ at others they were counter-marked to pass in other certain cities or provinces, but not generally throughout the Roman dominions; and in some instances they were refused to be received for certain classes of payments.

Some of the emperors, while they only transmitted overvalued copper coins for governmental disbursements in the provinces, required the revenues to be collected in silver, while others demanded payments into the treasury to be made in gold;² but these measures were soon abandoned as impracticable. So long as they could, the silver-producing provinces were compelled to pay silver, and the gold-producing ones gold. Where it was known that any considerable quantity of these metals were collected together, either in the provinces or in Rome, the Emperor used the taxing power to despoil the owners of them.³ But, after that, neither legal tender laws nor robbery could bring forth gold or silver. There was none to be had. The aborigines had been stripped and worked to death, the mines were worked down to the last phase of Roman mechanical and metallurgical resource; the depositories in Rome had been plundered; the bulk of the precious metals had gone to bi-metallic or double standard (i. 173, 296), the author is obliged to differ with him.

¹ M. Lenormant, i. 239-50, includes among this class of coins certain copper ones, issued mainly during the second century at the mines of Dalmatia, Mesie Superior (Bosnia), Norica (Carinthia and Austrian Tyrol), and Pannonia (Styria and Carniola). Although many of these were issued from Imperial mines, they have no "S. C." on them, which the distinguished numismatist regards as a certain sign that they enjoyed only "local circulation."

² M. Lenormant, i. 185, mentions, in this connection, Heliogabalus and Alex. Severus.

³ "The government lay in wait for all savings." Leighton, p. 486.

Asia. There was nothing left to make money of but copper, and towards the fourth or fifth century even this metal had become scarce.

The progress and condition of gold placer mining has already been described. All the easily-found gold had long since been obtained, and the placers had next been worked for fine gold by gangs of slaves, employing ground and board sluices and blankets. The modern adjuncts of iron pipes for a head of water to break down the gravel, and of quicksilver to secure the gold, were not employed at this period. The breaking down was done by hand, assisted, in some instances, by streams of water, without pressure, which were conducted to the top of the gravel bank and sometimes in tunnels through it. When the produce became too meagre to pay for the bare subsistence of the slaves, the gravel mines were abandoned, and many of them can be seen to-day in precisely the condition in which they were left nearly twenty centuries ago.

The Romans met with little success as gold quartz miners.¹ Veins of this material, usually imbedded in hard slate, are commonly narrow and expensive to work, on account of the great extent of excavation needed in order to secure a comparatively small quantity of auriferous rock. Thus if the passages are made high enough for a man to walk through and wide enough for two men to pass each other, they must be seven by four feet in dimensions, and if the quartz vein is but one foot wide (the average), it follows that twenty-eight cubic feet of rock have to be excavated, in order to secure seven cubic feet of quartz, to say nothing of shafts, winzes, adits, cross-cuts, and other "dead-work." When this work has to be done as the Romans did it, without the aid of gunpowder, it becomes exceedingly toilsome and expensive, and only the richest class of quartz veins—of which the number was exceedingly limited—and these only for a short distance downward, paid to work.²

¹ This fact is noticed by Strabo, Bohn's ed., i. 219.

² This follows for two reasons—I, as a rule, most of the gold in a

With regard to silver mines, the principal ones worked by the Romans, previous to the removal of the capital to Byzantium, were in Spain and Gaul; afterwards in Thracia, Dacia, Germany, &c.¹

It was the opinion of Depping,² and has been the result of my own researches in the ancient quartz mines of Europe, that the Romans opened but few new mines of this class, but, for the most part, only improved, extended, and deepened those which had been previously opened by the Etruscans, Carthaginians, Thracians, &c. The difference between the character of the work done by these nations often enables this fact to be decided with ease. For example, the Carthaginian shafts and galleries were irregular, while the Roman shafts were round and the galleries smooth and sometimes even lined with cement.³ Generally speaking, their mining work was more perfectly and neatly done than that of either their predecessors or successors. It is a curious fact that some of the silver ores were carried to the city of Rome, there to be crushed and treated.⁴

The number of slaves employed in certain of these mines and their product, compared with the necessary cost of their subsistence, enables it to be affirmed with great confidence that but few of them paid to explore.⁵

So little attention has been paid by historians, archæologists, and miners to the copper mines of the Romans, that but little certain information is to be gathered on the subject. Besides those in the Peninsula and the islands already

quartz vein lies near the surface of the earth; 2, the deeper a mine is worked, the more it costs to hoist rock, pump water, &c.

¹ A gold quartz mine was worked by the Romans in Carmarthenshire, Wales. "Encyc. Brit.," 9th ed., art. "Gold."

² Depping, i. 76.

³ Depping, i. 76.

⁴ See a passage in Martial (about A.D. 93) on the noise of the stamp mills in Rome, cited in Del Mar's "Hist. Prec. Met.," 29 n.

⁵ Jacob, "Hist. Prec. Met.," p. 101. Del Mar, "Hist. Prec. Met.," p. 28.

alluded to in the present work, there were others in Gaulish Italy,¹ Gaul, Spain, Thracia, Dacia, Germany, and, indeed, in almost every province of the empire. As with very few exceptions these mines have never since been opened, it is impossible to know the condition they were commonly in when they were abandoned. If conjecture, based on a general knowledge of the conditions of copper mining, be allowed to eke out this paucity of information, it may be assumed that the copper mines began to show signs of exhaustion during the first century. Before the end of the third century the increasing scarcity of copper attracted attention in Rome, and by the fifth or sixth century that scarcity was known to be irremediable.

It is an inference of the numismatists that the coinage of copper was always controlled by the senate, while that of gold and silver was reserved by the emperors, and this opinion has been expressed so often and with so much confidence, that it has almost passed into history as a fact. Such, however, is not the case.² The senate was composed as the emperor willed; it exercised such prerogatives as he chose; it was little more than an echo or a registry of his wishes or actions. Had gold or silver been the standard of the imperial systems of money, it is very likely that the emperors would have monopolized their coinage, and relinquished to the senate the valueless but showy prerogative of coining copper tokens; but such was not the fact. These supposed tokens were really the basis of the whole monetary system. They were not tokens, but full legal tenders. Their value never fluctuated in denarii or aurei, while that of the latter usually rose and fell in copper sesterces in which all contracts were made and all prices expressed.

With regard to the administration of the mines during the period under review, the gold mines seem to have been

¹ An auriferous copper vein was worked by the Romans at Ollomont in the Val d'Aosta.

² This has been noticed by Gibbon, vi. 536.

monopolized by the emperors from the time of Julius Cæsar onward; ¹ during the same period the silver mines which had previously been worked by the state, were owned or leased by private parties; ² and the copper mines, which had been worked by the state until about the period of Nero, were afterwards leased to private parties. ³ Livy mentions a tax on the gold, silver, and iron mines of Spain, but none on those of copper. ⁴ Depping says, that under the last pagan emperors (third century), the number of mine lessees greatly diminished; the mines became less productive; many of them were abandoned; and a law, *censoria*, was passed, restricting the number of workmen whom the lessees might employ, so that the exhaustion of the mines might be less rapid. ⁵

Beside the base and false coins issued by the emperors, provincial governors, military commanders and others, some were fabricated by counterfeiters, and it is not always possible to distinguish one class from the other. On this subject Mr. Wright has afforded some interesting details.

“We have no traces of a Roman mint in Britain until the reign of Dioclesian and Maximian. . . . It is, however, far from certain that Roman money was not coined in the island before it was thought necessary to indicate the circumstance, and we cannot but be astonished at the extraordinary activity of the Roman mints in Britain during the usurpation of Carausius, A.D. 287, and Allectus, A.D. 293. The great mass of their coins appear to have been struck in Britain.

“It is to be remarked that the insular coins of Carausius are not in general inferior in purity of metal and in execution, to the contemporary coinage of the continent. But it is no less true that among the Roman money found in this country we find a great mass of debased or adulterated

¹ Strabo, Bohn's ed., i. 222.

³ *Ibid.*

⁵ Depping, ii. 75.

² Depping, ii. 75.

⁴ Livy, xxxiv. 21, and xlv. 29.

coinage, and, which is still more curious, that very extensive manufactures of spurious money have been traced.

“ A few years ago, during the excavations for laying the foundations of King William Street, in the city of London, a considerable quantity of coins made of iron, plated with silver, intended to pass as silver, were found packed up in tiers, as they had been imported into Britain, probably to pay the troops. The latest of them were of the emperor Claudius, which was, perhaps, the time when they were brought over hither. Most of these coins are in the cabinet of Mr. Roach Smith, who also possesses a number of Roman forged coins cast in lead, found chiefly in the Thames. Amongst the numerous coins found at Maryport, in Cumberland, were a great quantity of forged denarii of Trajan and Hadrian, mostly, like those in Mr. Smith’s museum, cast in lead. It has been remarked that genuine coin must have been exceedingly scarce among the soldiers of this camp, and their credulity very great, to allow of the circulation of such base imitations.

“ Extensive remains of the manufactures of spurious money under the Romans have been found in several places in this island, but more especially at Lingwell Gate, near Wakefield, in Yorkshire; at Edington, in Somersetshire; at Ruyton and Wroxeter, in Shropshire; and at Castor, in Northamptonshire. The last three places were the sites of well-known Roman towns, Rutunium, Uriconium, and Durobrivæ. The manner of casting the coins was a very simple process. A fine clay, found in the locality, was formed into small round tablets of uniform size and thickness. A coin of one of the emperors was pressed between each two tablets, so as to leave a perfect impression; and the latter were then arranged upon one another in files or columns, the upper and lower tablets being impressed only on one side. A notch was broken into the side all the way down, which admitted the metal into each impression. Two or three of these columns, as the case might be, were placed side by side, with the side notches joined together; and these were

enclosed in a clay case, with a hole at the top, through which the melted metal ran down the opening left by the notches, by which it entered into all the impressions. This arrangement was observed in the moulds found at Lingwell Gate. It was only necessary that care should be taken to place the tablets on one another, so that the reverse might correspond with the head belonging to it. Their misplacement would produce those wrong reverses which are sometimes found among ancient Roman coins, and which have often puzzled the numismatist.

“ From the number of these moulds, which are found on the sites where they occur, we might imagine that, after being used two or three times, they were thrown aside as waste, and new ones formed. In an account of those found at Edington, in Somersetshire, printed in the fourteenth volume of the ‘*Archæologia*,’ the writer informs us that ‘ the field in which they were found is a meadow that bears no mark of ever having been ploughed ; which accounts for the moulds remaining so long undiscovered. It is situated at the north edge of Polden Hill, at about a quarter of a mile to the north of the village at Chilton. We were led to this particular spot by a person who had some time before cut through a bed of them in digging a drain. They were lying promiscuously scattered over a space about four feet square, and from six inches to a foot below the surface of the ground.’ He adds that in the space of an hour they picked up several hundred moulds. They are found also scattered about very plentifully at Lingwell. In some instances pieces of metal have been found ; and at Lingwell Gate an earthen crucible for melting it was met with. Some moulds have even been found to contain the forged coins as the metal had been poured in, which had never been taken out.

“ Moulds of the same kind have been found in France, especially in Lyons, and at Damery, near Epernay, in the department of the Marne. This latter place occupied the site of a Roman station. Excavations made there in the

winter of 1829, brought to light, under a heap of burnt matter, the remains of extensive buildings, which had apparently been destroyed by fire, and appeared to have consisted of baths and a moneyer's workshop. In some of the apartments were found vases full of coins. The first contained at least two thousand pieces of base silver, more than fifteen hundred of which bore the head of Postumus, the remainder presenting the series which is generally found from the elder Philip down to that reign. The fabric was bad, and the metal much alloyed. Another vase contained a silver coin of Antoninus; five small brass of the money of Trèves, with the types of Rome and Constantinople; a hundred other small brass of the money of Trèves, Lyons, Arles, Aquileia, and other towns, with the heads of Constans and Constantius, sons of Constantine; and nearly four thousand pieces in small brass of the fourth size, all of the same emperors, Constans and Constantius. All these coins were so fresh that it seemed evident they had been made in the place where they were found, and that they had never been in circulation. This circumstance was soon explained by the discovery in an adjoining room of a manufactory of money which, at the time the buildings were destroyed, must have been in full activity. 'There, under a heap of ashes and tiles, were found together, shears and the remains of other instruments suitable for the making of money; and several collections of moulds of baked earth, still containing the pieces, which had been cast in them, and the ingot formed by the superfluous metal. These moulds were moulded from the money which they were intended to reproduce, by pressing the models between discs of worked clay of larger diameter, in order to form ledges, and were then placed one upon another, so that, with the exception of the first and last, they received on the two faces the stamp of the obverse and the reverse of a piece. The cavities and impressions being obtained by this process, both easily and accurately, the discs composing the moulds were notched, in order to form a passage for the fused metal; they were then

hardened in the fire, and replaced one another, notch over notch, in the same order as when moulded.'

"It has been a question rather learnedly and warmly discussed, whether these workshops were those of private forgers, or whether they were establishments under the direction of the imperial government. The latter supposition seems to be authorized by the fact that they are found in large towns, and apparently in some instances in public buildings. The moulds found at Polden Hill, in Somersetshire, were of Severus and his wife Julia, of Caracalla, Geta, Macrinus, Heliogabalus, Julia Paula, Alexander Severus, Maximinus, Maximus, Plautilla, and Julia Mammœa. These, compared with other circumstances, seem to show that the forgeries were carried on after the reign of Severus, and that it was probably one scheme of the fiscal administration to raise money by the issue of debased coin, which, to protect the reigning emperor from odium, was cast from moulds of previous emperors. Of course, it does not follow necessarily that some of the moulds which have been found in other places may not have belonged to private forgers, who thus enriched themselves by defrauding the public."¹

"In the reign of Aurelian, A.D. 270-74, occurred the celebrated Revolt of the Moneyers. These persons had taken advantage of the troubles of the empire during the last fifty years to coin base money; and finding that Aurelian was determined to reform this abuse, they, with their chief, Felicissimus, took arms, and assembled on Mount Coelius. There they resisted with such fury the troops sent against them, that seven thousand soldiers are said to have fallen before the rebels were subdued."²

¹ "The Celt, the Roman, and the Saxon," by Thomas Wright, Philadelphia, 1875, 430-35. A Roman coining press, found in England, is also mentioned in "Notes relating to the Gold and Silver Coinage," by a Disciple of Franklin, in the collection of "Tracts on Banks and Currency," No. 6332 in the library of the Philosophical Society of Philadelphia.

² Humphreys' "Ancient Coins," p. 175.

To account for a force so great as to create this havoc, Humphreys reminds us that "it was not Rome, but the world, that had to be supplied with its circulating medium, *the bulk of which was copper.*"

The remark italicized is important; the explanation is insufficient. Though "they had not invented the screw press, but struck up each piece by means of repeated blows with the hammer," the number of workmen at base money alone could hardly have been sufficient to maintain so formidable a revolt. The moneyers had evidently not been coining "base" money, but additional money. They probably had some colour of authority for this, or could scarcely have got so many workmen into the business. They had usurped or persisted in retaining a valuable privilege; and the revolt was in all probability occasioned by an attempt of Aurelian to monopolize the coinage himself.

These various facts and considerations, particularly where they are coupled with the previous ones, relative to the extensive coining arrangements and numerous base coins found in France, very clearly establish the practice of seignorage in copper, as well as silver coins, the difference between the weight or purity of the "base" coins and those which they simulated, constituting the exorbitant profits of the Crown, part of which were shared by the moneyers, who paid for the privilege, and were sometimes, as in the present case, robbed of it before it expired. There is but slight difference in principle between this episode and the "fight" which the American "state-banks" once made against the Federal government. They both ended the same way—the moneyers were crushed.¹

But the defeat of the moneyers in Italy only led to their removal to France, Britain, and the other provinces of the empire, where they could purchase their coveted privilege

¹ Lenormant, 248, regards the emission of symbolic money as an economical error, and as having led to the "great monetary crisis of the third century"!

from the local governor or military commander, and enjoy it with less fear of molestation. The evils of an unlimited and continually debased coinage were no longer to be remedied or palliated. The empire had long been in a decline, and the operations of the moneyers represented only one of those many disorders which invaded and assisted the dissolution of the falling state.

Soon this state was to split into many fragments, each one having its obscure moneys and monetary history, daily growing more and more "intrinsic," until, in the gloom of the Dark Ages, corn, and cattle, and even human beings filled that place in the law which once had been occupied by the refined nummus of the Roman republic.

Looking back, now, upon the monetary systems of Rome as they have herein been resuscitated from her numismatic remains and the few and disjointed fragments she has left us of her laws and history, it appears:—

1. That about the period when the Gauls were expelled from Rome the Roman republic deliberately and purposely adopted what we should now call an irredeemable paper currency, only that instead of being printed upon paper, printing being then unknown, and paper flimsy,¹ it consisted of numerals stamped upon bronze, whose emission was controlled and regulated by the senate, who jealously maintained and guarded this privilege, only yielding it when the constitution was overturned and the senate itself had sunk to the condition of a mere registrar of the edicts of ephemeral tyrants.

2. That gold and silver coins had previously long been in common use among all the nations surrounding Rome; that gold and silver in ample quantities were easily obtain-

¹ Papyrus was not used in Rome until after the time of Alexander the Great; nor parchment until the Ptolemies began to reign in Egypt. They were both unsuited for money symbols. See Adam's "Roman Antiquities," pp. 438-40.

able by the republic had it seen best to use them for coins; that these metals were bought and sold in republican Rome as commodities; that they were stored as bullion in vaults for use in foreign wars, and shipped to India in exchange for merchandise; that they were allowed to be coined by Roman families long before they were used as money in Rome; and that in choosing to adopt an irredeemable currency the Roman senate did so from a conviction that at that time gold and silver were an insecure foundation upon which to rest the industrial and social superstructure of a great state, and not because of any inability on its part to command what would, at that period, have been ample supplies of these metals.

3. That so long as the Roman numerical system was preserved intact, the state continued to increase in population and productive resources; that long before the numerical system was abandoned it was encroached upon by silver, and afterwards also by gold, in the legal use given to these metals for the payment of troops, who having themselves been the means of capturing large quantities of bullion from the enemy refused to receive their pay in tokens which had no value beyond the confines of the republic, and whose patriotism was thus corrupted by the spoil of battle; and that from the time of this introduction of silver and afterwards gold into the currency, and perhaps partly in consequence thereof,¹ the state began to decay, because prices came to be based upon the bullion value of the precious metals, instead of the legal value of bronze, and with this change, prices immediately began to fall, and continued to do so for over ten centuries. The tremendous social consequences of this continued fall of prices has already been fully depicted by David Hume² and Sir Archibald Alison.³ Whether this picture is exaggerated or not, it is no part of the author's design to discuss in this place; but certain it is that, as Antoninus Augustus said,

¹ Jacob, 122.

² Hume's "Essays."

³ Alison's "Essays."

“ Money had more to do with the distemper of the Roman Empire than the Huns and the Vandals.”¹

¹ After the Augustan era, the Roman institution of money lost the power which it had once possessed to assist the development of the State. The refined conceptions of the Commonwealth had disappeared. Law had in great measure resigned the paternity of money. Number had ceased to form its essence ; nummi no longer was its name. Henceforth its paternity was in the mines of distant countries, or the spoil of conquered nations ; its essence was commodities ; its name *moneta*, from the place where these commodities were fabricated into coins.

CHAPTER XXVIII.

ANCIENT GENERIC TERMS FOR MONEY.

KASU, Kas, Kárshápana and cash—Dinar, dinarius, and dinero—Floos, feloos and follis—Nomisma, nummus, and numerary—Pecunia—As—Nummus—Moneta—The last-named term, though it dates back to the Scipion period, did not come into general use until the Dark Ages—Its defects—Specie—Coin—Unit of money—The generic term for money a key to the conception of money.

THE most ancient generic term for money of which we possess any certain knowledge at the present time appears to be the Tamil word kásu,¹ which in Todu is rendered as kás,² in Sanscrit, kárshápana or kársha,³ in Singalese, kahápana,⁴ in Hebrew כסף (caseph), in Kordofanese, kashasba, in modern Persian, cashbekes, and in English, cash.⁵ The probable origin of this word is alluded to in other parts of this work.⁶ It appears to date from certain copper moneys which were in use at the period when the extant code of Manou was compiled. Whether it had or had not some remoter origin cannot be determined.

Another very ancient term is dinar, which is used in the Indian Vedas,⁷ and meant a certain coin. From this word seems to have sprung the Arabian dinar,⁸ and the Roman word denarius; although Pliny traces the latter to dena-

¹ Thomas' "Pathan Kings of Delhi," p. 361.

² Ibid.

³ Ibid. and Marsden, 22.

⁴ P. K. D., 361.

⁵ Cash is used in the seaports of China, meaning the small copper coins that constitute the principal money of that empire. I am doubtful about its Indian origin, but believe it was introduced into China by Europeans from India. Tseen is the Chinese word for money.

⁶ See p. 69, note 1, and pp. 77, 149, 153, *ante*.

⁷ See p. 69, *ante*.

⁸ See p. 99, *ante*.

aeris, and modern numismatists the thing it represents, to the Greek drachma. However this may be, either the Indian dinar or the Roman denarius, has survived to the present day in the generic term for money employed in Italy, Spain, Portugal, Mexico, and South America.

Follis seems to have come from Arabia. It appears in that country and Ethiopia as floos, in Mongul India as feloos or follis,¹ and in Byzantine Rome as fal or follis, plural folles.² I am not aware that it survives in any of the Western languages.

Next to the Hebrew (originally Indian) word caseph, the oldest word for money which survives in modern languages, is the Greek nomisma, which the Romans translated nummus, the French use as numeraire, and the English as numerary. Numbers, numismatics, numismatist, and other words are derived from the same root. Nomisma was from nomos, which was a Dorian word, and therefore of Pelasgian or Phœnician origin, and was probably introduced into Greece before the alphabet.³

In the classical Greek, *nomos* meant law, it also meant numbers, numbers being ideal relations which are made visible by signs or symbols instituted by law, or recognized by convention. *Nomos* meant anything assigned, distributed, or dealt out; *nomizo* related to customs, usages, institutions; *nomikos* meant of or for the law, resting on the authority of law, learned in the law; *nomimos* meant lawful, legal, conformable to prescription; and *nomisma* meant anything established by law, or usage, as numbers, weights and measures, institutions, customs, &c. *Nomismena* was translated by the Romans as *instituta*, and *nomisma* as *nummus*.

It seems very evident from these cognate terms, all of

¹ See p. 98, *ante*.

² Matthew Raper, in his "Inquiry," pp. 570, *et supra*, defines it as a little bag or purse, whence it came to be used (in Byzantium) for a sum of money.

³ On the precedence of the use of mouey before letters, see p. 15, *ante*.

which were used by the commercial classes of Athens during the fifth and fourth centuries B.C., and are to be found ascribed to them in the literature of the period, that the conception of money was inseparably connected with the powers and limitations affixed to it by law; that money was regarded as an institution of law or custom, and one that upon the withdrawal of this support would become valueless.¹

In Rome the generic terms for money seem to have been successively pecunia, As, nummus, and moneta. Pecunia appears to have come from the period previous to the use of the Etruscan bronze money; and æs from the use of that money. Nummus, as already mentioned, followed the adoption of the Greek system of money, either when the laws of Solon were introduced, or after the expulsion of the Gauls. From nummus there flowed nummus æris, bronze money; aureus nummus, gold money; nummus asper, newly-coined money; nummularii, bankers or money-lenders; nomen, a debt; nomnia facere, to contract debt; appellare de nomine, to pay, &c.

The origin of moneta has already been given. It is derived from the name of the temple in which, or in a building attached to or next to which the money of Rome was coined after the defeat of Pyrrhus, B.C. 275, more probably after the capture of Tarentum by the Romans, B.C. 272.² It probably did not come into use until after the era of Scipio, and then was only used occasionally until the period of the Empire, when it and its derivatives became more common. Nummus, nevertheless, continued to hold its ground until towards the decline of the Empire, when it went entirely out of use, and moneta and its derivatives

¹ See opinion of Aristotle in a previous part of this work.

² On the origin of this term I like the account of Suidas best. He says that during their war with the Tarentines the Romans, being in want of money, prayed to Juno, and were assured by the goddess that so long as they observed the principles of equity, money would always be within their reach.

usurped its place, which it has continued to hold ever since.¹

Moneta is therefore substantially a term of the Dark Ages. It has never been applied to a numerary, because there has been no radically numerary system in use since moneta originated. The idea associated with moneta is coins, whose value was derived mainly from that of the material of which they were composed; whilst the idea associated with nummus is a system of symbols whose value was derived from legal limitation. From the fact that our language sprang from the Dark Ages, we have no generic word for money other than moneta, which only relates to one kind of money.² For a similar reason, the comparative newness of the English tongue, we have no word for a piece of money except coin, which, properly speaking, only relates to one kind of piece, namely, that which is struck by the cuneus. "Numerary" is hardly in common use as yet; and "a piece of money" would not be understood to include castings. For want of more comprehensive terms, it has been found necessary throughout this work to employ "moneys" to embrace numeraries, and "coins" to embrace castings.

The term money has yet another defect. It is sometimes used to mean the whole volume of money, and at others a portion or fraction of that volume, as a piece of money, and is therefore ambiguous in several ways; but there seems to be at present no help for this except by means of new and uncouth terms.

"Unit of money," meaning a fraction of the whole volume of money, is erroneous. There can be but one unit of money, and that is the whole of it. Anything less than the whole must be a fraction, and not a unit. How-

¹ For numberless derivatives from moneta, see Du Cange's Glossary, art. "Moneta."

² The words "specie" and "species," sprang from the very depths of these ages, probably from the custom of paying in kind. They are too ambiguous for modern use, and should be permitted to drop.

ever, these are refinements of language which it is not necessary to enlarge upon in this place. They belong less to the history of money, than to the science or principles which are to be deduced from that history.¹

Although the various shades of meaning through which words run from their origin to their extinction, is often misleading with regard to their application at particular eras of time, yet, viewing the matter broadly, it may be assumed that the generic term commonly employed for money, in any given age, affords a key to the conception of money which that age entertained. It is not an indication to be relied upon entirely, but when corroborated by other circumstances, it affords a very safe guide. Confirmed by the explicit words of Plato and Aristotle, there is no more doubt that by *nomisma* the Greeks understood a whole money, whose value depended upon the law, than that by *species* our English forefathers meant a piece of money, the only measure of whose value was to be found in another piece of the same kind.

¹ See the author's "Science of Money," for a full discussion of this subject.

CHAPTER XXIX.

CONCEPTION OF MONEY BY THE ANCIENTS.

The measurement of value by means of coins is only a momentary equation ; that by means of a regulated money is an equation in time—This idea was familiar to the republican leaders of antiquity, and, coupled with the violent fluctuations in the value of the coining metals, led to the establishment of numerary systems—The ancient conception of money is embodied in the terms “nomisma” and “numerato”—Foreign wars broke down these systems, and lowered the conception of money to that expressed by moneta—The decline of the Roman Empire led to a still lower conception of money: that of ponderata—This was the conception of the Dark Ages, and from it have sprung all modern laws and ideas on the subject—The ponderata has since advanced to the moneta conception, but no farther.

DURING the progressive eras of the nations of antiquity it seems to have been observed that the exchange of commodities and services by means of “intrinsic” coins was merely an indirect barter, and that no greater advantage was gained by it over direct barter than the convenience of subdividing the things exchanged ; whilst the higher function of money—that of rendering each exchange an equitable one—was not fulfilled by such coins at all. Their total number was not amenable to control. It was subject to increase or diminution from success in war and mining discoveries, from the operations of commerce, the requirements of the arts, the designs of counterfeiters, and even the caprices of fashion. And the use of such coins for measuring value had resulted in fluctuations so sudden and enormous as to antagonize the interests of classes, and endanger the security of the state.

The earliest efforts to overcome these defects are traceable backward almost to the first employment of money in the Orient. The earliest effort made in the Western world was,

so far as we know, in Laconia or Sparta. From the iron numerary of that country doubtless sprang those of the various Greek states and colonies, as well as those of Carthage and Rome; and from this frequent and common use of numerary systems resulted that general conception of money throughout the ancient world, which is embodied in its classical names of *nomisma* and *numerato*.¹

Polybius attributes the abandonment of the numerary system of Sparta to the lust of foreign conquest.² And this seems to have also been the cause of its relinquishment in Carthage and Rome. All of these nations grew richer and more powerful in after times; but they never were more progressive than during the period when these systems were in vogue. Wealth was more fairly divided; the opportunities of life were more evenly distributed; each citizen was filled with ardour for the welfare of the state; the various orders of society were bound together by common interests and aspirations; there was no fear of the future, no hatred of classes, no social discontent, no civil commotion.³

With the subsequent decline of these great states, and the systems of money which had served to equitably

¹ Consult Colquhoun's "Commentaries on the Civil Law," § 1825, on "Solntio;" also the "Pandects," book x.

² "So long as they confined their views of conquest to the neighbouring states, and to the limits of Peloponnesus, they were able to draw from Laconia itself such supplies as were sufficient for the accomplishment of their designs, as all things that were necessary were collected within their reach, and as the distance was commodious for their return back again to their country, and for transporting all their stores. But when they attempted to maintain fleets upon the sea, and to send their armies beyond the bounds of Peloponnesus, it very soon was seen that neither their iron money, nor the exchange of their own natural commodities that was permitted by Lycurgus, was capable of supplying all their wants, but that stores drawn from foreign countries and money of a common value were needed to support such enterprises." Polybius, book vi., extract iii., chap. i.

³ Polybius bears direct testimony to this: "At the time of the invasion of Hannibal . . . the government of Carthage . . . had declined from its highest point of vigour and perfection; whereas the Romans at this very time had just raised their constitution to the most perfect and flourishing state." Book vi., extract iii., chap. ii.

measure the capital, labour, productions, and social rights of their intellectual and industrial classes, the conception of money underwent a change. The lure of spoil, the attractive hazards of gold and silver mining, the fascination of possessing these beautiful metals, rendered the governing classes blind to the influence which their adoption as money was exercising upon the welfare of the state. The old aphorisms concerning money were forgotten. Money was no longer an institution of the state which connected every exchange, both with the past and the future; it was no longer an idea, it was a fact; it was no longer a symbol, but a thing; and to that thing, as it came, radiant and glistening, from the temple of Juno, cleansed of the blood of innocents, and the sweat of captives that had won it, was given the name "moneta."

From this time forward money ceased to be looked at from a comprehensive point of view. There was no such thing as a system of money; there was no attempt to ascertain, much less to regulate the volume of money; there was no law of money. The unit of money was no longer all money, but any one portion of it, provided it had upon it that mark of authority which certified its validity.

This conception of money lasted until about the third or fourth century of our era; then it took another step toward materialism. It had fallen from *numerata* to *moneta*; it was now to fall from *moneta* to *ponderata*.¹ The mark upon pieces of money was no longer an assurance of their validity. It was now necessary to weigh them.² It was no longer coins that people were dealing in: it was quantities of gold, silver, or copper. Everybody was a buyer and seller of junk.

The *ponderata* conception of money continued substan-

¹ The distinction between *numerata* and *ponderata* will be found in Gaius, A.D. 138-178. "Commentaries on Gaius," by Tomkins and Lemon; London, 1869, p. 492.

² During the decline of the Empire the laws provided that contracts might be made in coins of a specified weight and fineness of metal. "Modern Roman Law," by Tomkins and Jencken; London, 1870, p. 305.

tially until the re-opening of commerce by the Venetians. It was the conception, *par excellence*, of the Dark Ages. Breaks took place now and then, exceptions occurred here and there; but this was the general view of money from the fourth to the eighth centuries, and in some countries until a much later period.¹ Money was not the only institution of government that had perished: all institutions had perished. There was no government, except the sword. There was no money. Exchanges were made in kind, or for slaves, or for bags of corn, or lumps of metal, which men weighed to one another.

From this degraded posture of money have sprung all modern laws and ideas on the subject. When the decline of European civilization was arrested by the establishment of stable governments in Asia, and the re-opening of commerce with that continent, and when its stationary condition was changed again to one of progress by the discovery of America and a sea-route to the Indies, the practice and conception of money advanced from its position of *ponderata* to *moneta*, and there it has substantially remained ever since,² notwithstanding the decisions of Sir Matthew Hale, or of the Supreme Court of the United States.³

¹ In Maddox's "History of the Exchequer" there will be found numerous instances of the practice of weighing and assaying pieces of money, trying by "combustion," &c.

² Sir Edward Coke had laid it down (2 *Instit.* 577) that "the money of England must either be of gold or silver," when Sir Matthew Hale decided (*Davies' Reports*, 48) that a promise of £100 sterling was payable with £100 of the overvalued moneys issued by Queen Elizabeth. The Supreme Court of the United States has recently decided that a promise of \$100 was payable with the overvalued and irredeemable greenback notes issued by the government, under the Act of Feb. 25, 1862. Sir Matthew Hale's decision was certainly out of keeping with the times in which he lived. The progress of events can alone determine the congruity of the Supreme Court's decision with the spirit of the present age.

³ "The most carefully framed Constitutions are worthless unless they be embodiments of the popular character; and governmental arrangements in advance of, or behind the time, will inevitably lapse into congruity with the time." Herbert Spencer's "Essays."

CHAPTER XXX.

CONCLUSION.

IN a previous work the author showed that the world's supplies of the precious metals were diminishing, and that there appeared no prospect that these supplies would be augmented; that, contrariwise, the demand for these metals was daily increasing; that of the stock on hand in the commercial world a large proportion had originally been obtained through conquest and slavery—a circumstance that had lowered its purchasing power and raised the prices of commodities; that this enhancement of prices had been maintained by the gradual introduction of paper notes, which now formed one-half of the entire volume of money, with a tendency to increase still further; that all the known placers had been exhausted of their easily-found gold, and that both placer and quartz and silver mining had henceforth to be conducted upon an economical basis; and that at the existing level of prices it was impossible to produce these metals at a profit (except in a comparatively few and unusually rich mines), so long as the old and cheaply acquired stock of precious metals remained unconsumed, and, especially, so long as the level of prices which that stock had created was maintained by means of paper notes.

Now that the days of conquest are virtually over, and, nations can no longer hope to recruit their supplies of metal through the spoils of war; now that the days of slavery are ended and such supplies can no longer be obtained by forcing captives into the exterminating labours of impoverished mines, it results from the foregoing premises, that unless the proportion of paper to gold and

silver in the moneys of the world is still further increased, we must be prepared to witness a permanent and indefinite fall of prices, and to incur that era of commercial depression and industrial distress, and, perhaps, those political commotions which have ever proved to be the concomitants of such a state and tendency of affairs.

The author is not at present prepared to say whether or not a further extension of convertible paper would be safe or desirable. Nor is he yet prepared to examine and discuss those other features of a monetary system, which relate to its bearing upon the welfare and progress of society. These are questions for the legislator and moralist; not for the historian. His object in the present work has been to place before the reader as much as possible of the experience of the ancient world regarding the institution of money, with the view of enabling him to form his own opinion concerning such measures as the present exigency may bring forth. There his design has ended.

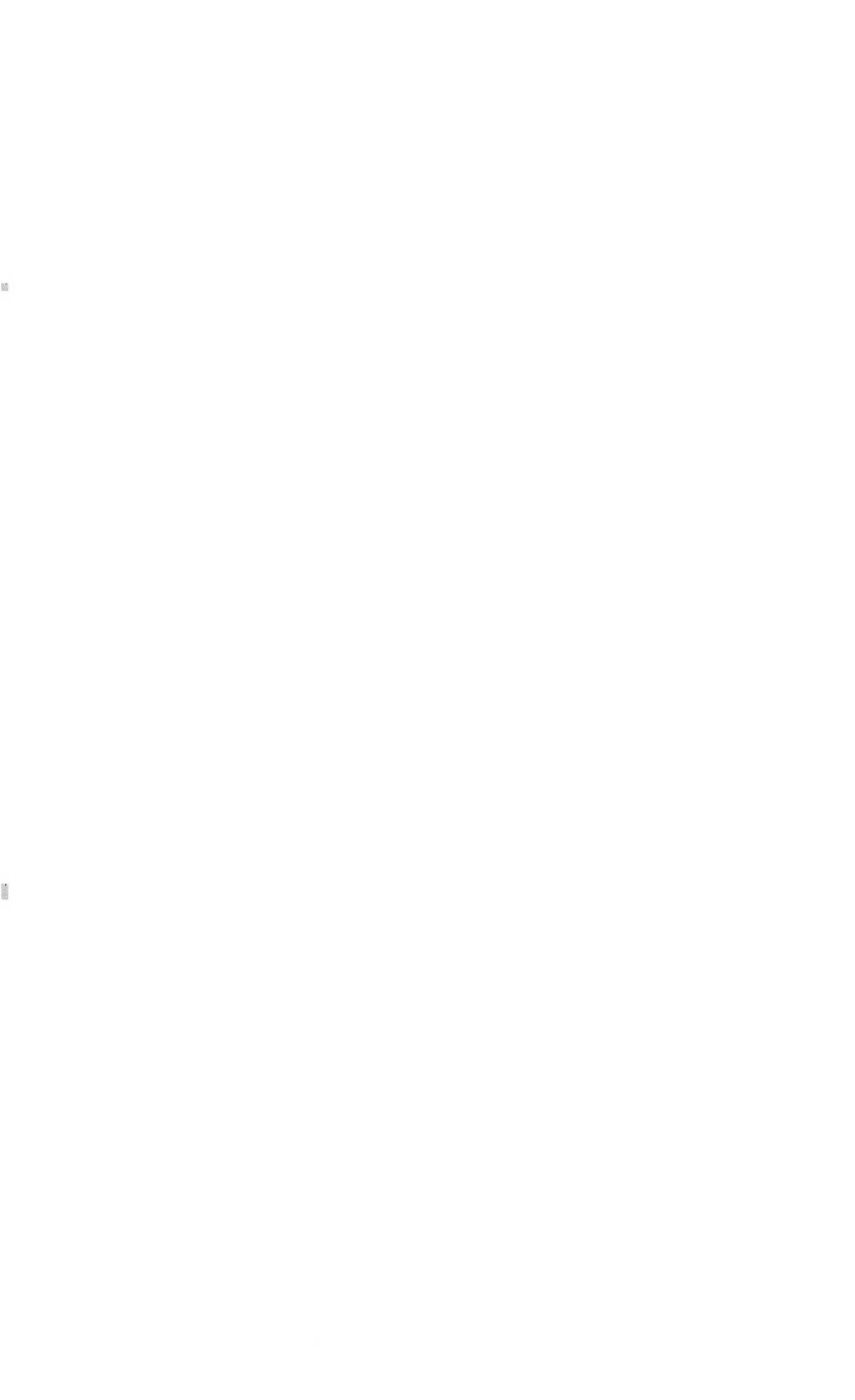
The efforts which he has made to explain and elucidate the monetary systems of antiquity, and the ideas that controlled them, must not be mistaken for an advocacy of any of those systems or ideas. He has failed to be understood by the reader, unless he has conveyed the conviction, which with him is a very strong one—that monetary systems, however well adapted to the requirements of one age or country, may be wholly unfitted for another, and that upon this subject, perhaps above all others, each nation must be a law to itself. It does not follow, because Greece or Rome adopted numerary systems, that modern nations must follow them. Their circumstances were quite different from ours. Apart from all other considerations, the institution of money is of so complex a nature, that unless a state is virtually composed of a ruling aristocracy as in Greece or Rome, or a highly intelligent people as in Great Britain or the United States, a numerary system would enjoy no opportunity of being considered, much less adopted.

The change to such a system from a commodity or mixed

system of money, such as is that of the countries last named, is a grave subject for consideration; and nothing but the conviction that all other remedies for falling or violently fluctuating prices are futile, is ever likely to induce these important states to enter upon it.

The author cannot part with his reader without disclaiming any pride of opinion on this recondite subject. That which has engaged the attention without harmonizing the convictions of such master minds as Aristotle, Plato, Tycho Brahe, Copernicus, Locke, Newton, Smith, Mill, and Spencer, is surely a study which no man can afford to approach with rashness nor leave with complacency.

When the principles which underlie it are thoroughly understood, money is, perhaps, the mightiest engine to which man can lend his guidance. Unheard, unfelt, almost unseen, it has the power to so distribute the burdens, gratifications, and opportunities of life, that each individual shall enjoy that share of them to which his merits entitle him, or to dispense them with so partial a hand as to violate every principle of justice, and perpetuate a succession of social slaveries to the end of time.



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