

THE THEOSOPHICAL PATH

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THANKS for the heavenly message brought by thee,
 Child of the wandering sea,
 Cast from her lap, forlorn!
 From thy dead lips a clearer note is born
 Than ever Triton blew from wreathèd horn!
 While on mine ear it rings,
 Through the deep caves of thought I hear a voice that sings:—

Build thee more stately mansions, O my soul,
 As the swift seasons roll!
 Leave thy low-vaulted past!
 Let each new temple, nobler than the last,
 Shut thee from heaven with a dome more vast,
 Till thou at length art free,
 Leaving thine outgrown shell by life's unresting sea!

The Chambered Nautilus, by Oliver Wendell Holmes

THE UNIVERSAL HARMONY: by H. Travers



N musical harmony, a writer whose musical style evinces the harmony of his own nature; who, writing in the age of Shakespeare, might well be called, so far as meditative eloquence is concerned, the "prose Shakespeare" — Richard Hooker, writes as follows:

Touching musical harmony, whether by instrument or by voice, it being but of high and low in sounds a due proportionable disposition, such notwithstanding is the force thereof, and so pleasing effects it hath in that very part of man which is most divine, that some have been thereby induced to think that the soul itself by nature is or hath in it harmony. A thing which delighteth all ages and beseemeth all states; a thing as seasonable in grief as in joy; as decent being added unto actions of greatest weight and solemnity, as being used when men most sequester themselves from action.

The reason hereof is an admirable facility which music hath to express and represent to the mind, more inwardly than any other sensible mean, the very standing, rising, and falling, the very steps and inflections every way, the turns and

varieties of all passions whereunto the mind is subject; yea, so to imitate them, that, whether it resemble unto us the same state wherein our minds already are or a clean contrary, we are not more contentedly by the one confirmed than changed and led away by the other.

In harmony the very image and character even of virtue and vice is perceived, the mind delighted with their resemblances, and brought, by having them often iterated, into a love of the things themselves. For which cause there is nothing more contagious and pestilent than some kinds of harmony; than some nothing more strong and potent unto good. And that there is such a difference of one kind from another we need no proof but our own experience, inasmuch as we are at hearing of some more inclined unto sorrow and heaviness; of some, more mollified and softened in mind; one kind apter to stay and settle us, another to move and stir our affections; there is that draweth to a marvellous grave and sober mediocrity, there is also that carrieth as it were into ecstasies, filling the mind with an heavenly joy and for the time in a manner severing it from the body.

So that, although we lay altogether aside the consideration of ditty or matter, the very harmony of sounds, being framed in due sort and carried from the ear to the spiritual faculties of our souls, is by a native puissance and efficacy greatly available to bring to a perfect temper whatsoever is there troubled; apt as well to quicken the spirits as to allay that which is too eager; sovereign against melancholy and despair; forcible to draw forth tears of devotion, if the mind be such as can yield them; able both to move and to moderate all affections.

The cultivation and appreciation of music constitute a well-known and characteristic feature of the life in Lomaland. Yet what is ordinarily understood by "music" is but a fraction of the great whole comprehended by the word in its deeper meaning. Theosophists hold that Harmony, Beauty, Law, Order, are of the Life-Spirit of the universe; informing both the beautiful and orderly Nature which we see without, and likewise man himself within — constituting the higher law of his nature. And since Theosophy is no mere pastime or formal cult, but a way of life, the cultivation of Music in this deeper sense is of fundamental importance. All branches of harmony, therefore, are studied and cultivated; and music, in its ordinary restricted sense, is one of these branches; others being the remaining arts of expression, whether graphic, literary, constructive, or what not. And finally, life itself, in its every detail, is an art and the greatest of arts; for Art is the creating of beautiful forms to express the harmony within, and thus every act, word, and thought may be rendered a means of artistic expression.

There is not much beauty and harmony in modern life; it is dull, angular, prosaic; formal, mechanical. When it strives to be otherwise, it runs to sentimentality, turgidity, preciousness, and other false

or feigned sentiments; and the efforts made are too personal and exclusive. Sincerity cannot be feigned; and if our attempts at beauty too often excite a laugh, it is because we have stuck peacocks' feathers in the crow. Our lives must conform to harmony and order; beauty must be in our character. Then the expression in beautiful art-forms will be conformable with the spirit within; sincerity, not pretense, will prevail.

And what of the appreciation of natural scenic beauty? Here again all depends on the spirit within; for unless we are inwardly attuned, how can there be any response to Nature's harmonies? If the music of Nature is to call forth our devotion, "the mind must be such as can yield it." Hence it is that love of Nature is with many people a feigned mood, while to others it has no meaning save as the butt for a sceptical gibe. But let us not presume to say what Nature may not mean for those attuned into responsiveness to her voice!

The meaning of Art — its purpose? Topic for much interesting and valuable speculation, whose mark is ever missed because the mistake is made of trying to think of Art as something in itself and apart from Life. It would be better to say that neither Art nor Life has any separate existence, the two being merely aspects of one Whole. We think of Art as something *superadded* to Life; we think of Life as something which can go on without Art. Yet there is Art in our every action; we are always expressing and creating something, beautiful or otherwise. Art is the flavor and quintessence of life, inseparable, not to be filtered out, even though we should analyse Life down to its atoms. Pretty clothes on a naked body, wig on a hairless head — is this our conception of Art? This, then, is why there are so many theories as to what Art is; considered in this way, it is doubtful whether it is anything at all. Having lost the music out of our lives, we seek to put it back again, like one who shuts himself within four walls and hangs upon them pictures of the scenery without.

Artistic appreciation, taste, love of the beautiful, need cultivating in humanity today; but not as if they were luxuries and extras. For these words, rightly understood, mean the finer faculties of the soul. What is taste? Something we are continually violating, an instinct that sways without vouchsafing a reason for its behests, the voice of an inner knowledge of the truth, an intuitive recognition of the universal harmony. The Greeks said, "Nothing in excess," and a Roman poet sings, "Est modus in rebus" — there is a right proportion in

all things. But is not our motto "Excess, More, Bigness?" — as though one man were to grow an enormous head, another huge legs, and so on. The same old philosopher has written:

Of Law there can be no less acknowledged than that her seat is the bosom of God, her voice the harmony of the world:

All things in heaven and earth do her homage, the very least as feeling her care, and the greatest as not exempted from her power;

Both angels and men and creatures of what condition soever, though each in different sort and manner, yet all with uniform consent,

Admiring her as the mother of their peace and joy.

The secret of Life is the establishment in ourselves of a reign of harmony, law, and order; and music and the other arts serve as helps and reminders. Not that the purpose of art is "didactic"; that word perhaps unfairly conveys a host of undesirable meanings. Some poems are described as merely metrical sermons, and on that account not entitled to the name of poetry; and we have books and dramas written "with a purpose." Yet the bird that sings out its little soul for very joy, because it cannot help itself, charms us more than would some conscientious bird that might perch at our window every morning and sing us a song to charm us. If we are loyal and sincere in our art, we shall potently influence all who contemplate it, becoming teachers by the force of example; which is better than trying to convey a lesson we ourselves have not learned. But art expresses all shades of meaning, as our philosopher says above of music. Some recent schools of expression aim at giving expression to *something* which the artists experience within; and the results, whether due to failure or success in this object, produce corresponding effects on the beholder.

The cultivation of harmony in our disposition overcomes the cold hard congestion of selfishness and egotism, and by no bludgeon blows. The influence is like the warm rays of the sun, which do not blast the mists away like the rude winds, but dissolve them, so that they are no longer mists but sweet refreshing moisture. How eloquently, in *The Lost Chord* has the poet sung the power of a musical cadence to resolve all contrarieties into a grand and perfect peace! When harmony suffuses our soul, then the elements which were grouped in hideous shapes of horror, dissolve to recombine in forms of beauty. Music is mightier than the sword; it wins without a blow, by reconciling, by evoking glad obeisance to the universal Law. Perhaps this was what ancient poets understood by Aphrodite, Venus — names

much abused by passional and even sensual associations, but rightly standing for Law, Order, Beauty, Infinite Harmony. If we could leave off falling down before such gods as the “Majesty of the Personal Will,” which is nothing but the naughty wilfulness of a child magnified by a poor overstrained philosopher; “the Rights of the Individual” — the fractious complaining of those who *have* no individuality or will not assert it; the “Instinct of Self-Preservation”; “Emulation, as the life-blood of Progress”; “Personal Magnetism” — the yearning of a depleted organism to acquire a semblance of health by surreptitious means — if we could break these idols we might have time to listen to the harmony of our neglected Souls, whose voice we perpetually drown. If we could but leave off running hither and thither after knowledge and happiness and power and beauty, we might find that we have them with us all the time in the silence of our Soul which so scares us.

There is a natural melody, an obscure fount, in every human heart. It may be hidden over and utterly concealed and silenced — but it is there. At the very base of your nature you will find faith, hope, and love. He that chooses evil refuses to look within himself, shuts his ears to the melody of his heart, as he blinds his eyes to the light of his soul. He does this because he finds it easier to live in desires. But underneath all life is the strong current that cannot be checked; the great waters are there in reality. — *Light on the Path*

KARMA: by a Student



THEOSOPHY is better defined as ancient truth than as an origination of new ideas; and we can trace in the various dogmas which Theosophy explains the truths of which they are cloaks. And also it is possible to turn the Theosophical teachings themselves into dogmas.

The doctrine of Karma, for instance, if imperfectly comprehended, can be made to subserve an inert and fatalistic attitude of mind; just as the teaching of the Christ in man, which should arouse man to a recognition and exertion of his own higher nature, may degenerate into weak reliance on a favoring and punishing deity. In short, Karma may become another word for “Kismet,” and be used as an excuse for shelving responsibility and refraining from action. But no belief can absolve a man from exercising the powers with which he finds himself endowed; nor, if he is healthy-minded, will any belief discourage him from doing so. In emergencies, where a life is to be

saved from imminent danger, we do not stop to reflect on the philosophy and merits of the case in the light of personal Karma and eternal law; we simply *act*. If we understand the teaching of Karma rightly, we understand that man has a spring of motive that lies outside of the wheel of earthly fate and is not bound thereby. What binds the man is his blind obedience to the attractions of personal desire; but in proportion as he acts impersonally he places himself beyond the power of those attractions.

The word "soul" has come to be a mere abstraction; but Theosophy tells us that we *are* Souls. The Soul is our real Self — and what we call our self is but the myriadfold reflection of the real Self, as in a myriad-colored mirror. Thus, instead of awaiting the interposition of some higher power, we have to seek for light and strength from within. This point of view entirely changes our ideas of Karma.

There is more than one way of regarding misfortune. We can view it as retribution and punishment, or we can regard it as a hardship which we have deliberately and intentionally incurred. Do not people in all walks of life willingly incur hardships for the sake of some greater good, it may be to harden their bodies, it may be to help somebody else, or it may be for the pure love of exercising their endurance? And can we not try to look upon our bad luck in the same spirit? At all events it is better than adopting an attitude of resentment. If we do not at once succeed in adopting such an attitude, we can at least derive consolation from the attempt. It is a comfort to think that deep down in our inmost heart we *know* the rights and wrongs of our circumstances, and that our lot is in fulfilment of our own decree.

There are minds that love a mystery and will not be satisfied with a doctrine unless it is inexplicable. Any attempt to explain such a mystery to them would be regarded as an unwelcome profanation. And there are minds which seek to understand everything. No doubt the doctrine of Karma will provide satisfaction for both; for, like the ocean of Theosophy, as defined by William Q. Judge, it is so comprehensive that its shores will not overwhelm the understanding of a child, while its depths are unfathomable. We can understand some of the workings of the law, and we should expect to understand more of them as we gain in knowledge and experience. It has been said that philosophy is for the leisured, and that many people have not time or opportunity for its consolations; yet there is a right attitude of mind

and a wrong one for all people and all circumstances; and it is better to have the right than the wrong. Our reflections during leisure will always help us in tribulation.

We need to cultivate the masterful attitude, not the bumptious or the despondent attitude. The unseen powers that overrule our will and elude our scrutiny are not necessarily inscrutable, though they may be beyond the reach of our present level of intelligence.

ANCIENT ASTRONOMY: by Fred. J. Dick, M. Inst. C. E.

III



IN a recent number of *Scientia* we hear of the new science of cosmogony "which treats of the origin of the physical world." In a word, the solution is — cosmic dust, endowed with gravitational attraction when necessary; or when this appears inconvenient, with its opposite, repulsion. The origin of life is left unnoticed; and the origins of consciousness, intelligence, will, desire, color, heat, moisture, the sense of structural beauty, and a host of other things, both subjective and objective, remain unaccounted for. Dust itself, according to recent science, is nothing but minute hypothetical electric charges, whose real nature is, however, utterly unknown. So it seems evident enough that cosmic dust, considered as an origin of anything, simply explains nothing whatever.

As has been pointed out repeatedly in these pages, we shall never reach a Science of Origins by an exploration of the merely phenomenal, whether in motion or at rest — be it microbe or star. The marvel is that a truth so self-evident should continually elude the perception of some men of science who, the moment a pet theory has been overthrown by a new aspect of things within some one branch of inquiry, produce the impression that they seek to proclaim every problem of existence to have at last been solved.

Perhaps amid the din of conflicting expert pronouncements it has become necessary for any one who has something important to say, to shout loudly and often, in order to be heard. From this point of view one can forgive pioneers who have really honorably contributed to the sum of knowledge, if they occasionally use a megaphone. One would, if generous, be likely to concede much to rhetorical effect, and

to avoid tying a pioneer down to precise words and phrases. One would recognize that when a pioneer, with or without a megaphone, speaks of the origin of the physical world and calls it cosmogony, he only means that he glimpses a law or laws probably operative during past or present stages of cosmic evolution. Thus one could afford to pass over fundamental questions connected with deeper regions of intelligence, experience, or intuition, and look only at the new things put forward, so as to estimate their intrinsic value.

Endeavoring to follow this course we may pass over the historical portion of the article referred to, which hardly touches the fringe of that subject (for reasons given in former articles in this Review), and glance at what is new. We shall perhaps find that in vindication of Ancient Astronomy the novelties are more apparent than real; are new merely to modern thought. Real ancient astronomy, as a branch of the ancient Science of Cosmogogenesis, is outlined in the *Book of Dzyan* — portions of which, with Commentaries, were first published for the modern world in 1888, by H. P. Blavatsky.

Laplace thought the planets and the Sun were formed from a nebula. The new theory says the same. Ancient Astronomy says the same, plus other things. Laplace thought the planets were thrown off during condensation from the central mass. Babinet proved in 1861 that this was mechanically erroneous. The new theory confirms Babinet, and, introducing the secular action of a resisting medium, calls the general process of the establishment of planets and satellites, capture. Though why nuclei already existing in a nebula could be said to be afterwards captured by it, is not at first very clear. Thus the whole point is as to what goes on physically after the nebula begins to *materialize*. For nebular and cometary matter are, at the outset, of an entirely different nature from any matter known to science, notwithstanding spectroscopic testimony. The events connected with the materialization of nebulous substance are outlined in the *Book of Dzyan* in a manner which it will probably take the best efforts of the highest minds in the whole of this century to grapple with intelligently. But letting this pass, Ancient Astronomy said, innumerable ages ago, that the Sun and planets were co-uterine brothers, which precludes the idea of the capture of, at all events, the majority of the planets from the depths of inter-stellar space.

In point of fact the principal and most valuable feature of the extensive and beautiful investigations which led to some conclusions

in the paper under consideration, is the demolition of the wholly erroneous theory, held recently by men so eminent as Lord Kelvin and Sir George Darwin, that the Moon was thrown off from the Earth. Ancient Astronomy, however, parts company with both the "ejection" and "capture" theories as regards the Moon; but at present we need not go into details of the ancient teaching, because it implies an axiomatic recognition of the Life-principles within, and the Intelligences governing cosmic phenomena — a recognition foreign as yet to the acknowledged thought of modern astronomers, who in spite of wonderful mental and physical instruments of research scarcely yet see so clearly as even the moderns, Newton and Kepler. Enough to say that the Moon, though now a corpse, was anciently known to have once been the parent of the Earth, in a profound sense — which is also connected with the well-known correspondence between the periods of certain life-processes and diseases, and the lunar periods.

Capture, however, like cosmogony, turns out to be an elastic word here given a restricted meaning; which is that after a particular nucleus has attained physical materiality to some extent, if it follow a long elliptic course from the confines of our system, it may either continue indefinitely to have the Sun in one of its foci, or may ultimately, owing to the resistance of an originally diffused physical, though tenuous medium, be constrained to select a planet as its more immediate center of attraction; and the resisting medium continuing effective until its substance has been swept up by the various materializing centers, the orbits become rounded up so as to approximate finally a circular form. The investigations connected with this "restricted problem of three bodies" are among the most beautiful in mathematical research. The assumption made is that the law of gravitation, as ordinarily understood, is the sole determining factor in the process. These investigations, so far as they go, also show that the orbit of a satellite, thus derived, may be either direct or retrograde. Yet however beautiful, conclusions based on an imperfect hypothesis—namely, that "gravitation" is only a one-sided force, instead of being one phenomenal aspect of a dual force whose realm of action is in reality supra-physical — must be accepted with reserve. For in our ignorance of the various orders of forces and emanations pervading nebulous and all other forms of matter and life, we are hardly warranted in assuming that we know all the causes which determine the paths and movements, orbital or rotational, of celestial objects.

It was the peculiarity of Ancient Astronomy, as can be seen by reference to the published extracts from the *Book of Dzyan*, that it recognized the true nature and influence of many recondite forces and causes; it also knew of and confirmed by observations extending over hundreds of thousands of years, those elements of stability in our system which enabled that Astronomy, in spite of mutual planetary perturbations, to calculate accurately the mean motions of the principal bodies in our system, as well as to corroborate their known connexion with important cycles in the life-history of the Earth.

When one realizes, for instance, that Ancient Astronomy taught that every one of the higher, as of the lower worlds is interblended with our own objective world, and that millions of things and beings are, in point of localization, around and in us, as we are around, with, and in them — a glimpse is gained of why the ordinary gravitational theory falls short of explaining certain things fully; just as Newton and others saw clearly enough that rotation remained unaccounted for. Ancient Astronomy is definite as to the cause of rotation; but that original cause is at the same time transcendental, and incapable of mathematical expression on any familiar lines.

Thoughtful men will continue to direct their inquiry into the depths of space, in the effort to solve the many fascinating problems presented by Astronomy. But is it not abundantly evident that while our perceptive faculties are so limited, more limited perhaps than they need be, the phenomenal worlds around us can never yield up their real secrets?

It may be a digression, but it would seem that a recent event throws some doubt on whether the habits of our civilization are not unduly limiting even our ordinary perceptive faculties. Given a perfectly calm clear night at sea, with the stars plainly visible at the very horizon, showing that there is absolutely not the slightest haze, and that those on the watch are warned to keep a sharp lookout. How far off should an object several hundred feet in height be discernible? If we say two miles, dead ahead, two hundred and forty seconds should elapse before the object is abeam, if the vessel is making thirty miles an hour. If on the contrary it comes abeam within a dozen seconds after the sudden order to starboard helm, what is the inference?

Until we have better mastered the "restricted problem of three bodies" — the sea, a steamer, and an iceberg — it seems premature to imagine that we can completely and fully probe celestial phenomena.

SCIENTIFIC DISCOVERY OF THE "AURA":

by H. T. Edge, B. A. (Cantab.), M. A.



FROM the account of an eye-witness, as given in a newspaper, we gather the following particulars about the so-called "human aura" which some scientific men claim to have discovered extending in visible form around the body. This emanation consists of light of so high a refrangibility that it cannot even be photographed, the rays being beyond the ultra-violet. But the experimenter renders it visible to the naked eye by paralysing the rods and cones in the retina. This paralysis is effected by letting the observers gaze through a glass screen, colored blue with dicyanin, for about half a minute. After that, one end of the room is darkened and a partially nude model appears before a black screen. As the spectators draw near, they descry a faint film surrounding the whole body. This is what is called the aura; and when they approach their fingers to it they also see what is described as their own aura extending from their finger tips towards the model's aura, which comes out to meet it. When the sunlight is then let into the room, the aura becomes distinctly visible. Half an inch away from the flesh is seen another layer, and this is called the "etheric double."

The existence of such an aura has long been known to people not counted in the ranks of authentic research, and authentic science derided their statements; but now science has "discovered" a part at least of the truth of those unorthodox opinions. And yet this fact does not in the least discredit the orthodox, but on the contrary exalts it! Strange phenomenon! frequent, but hard to square with logic. Yet we opine that the "aura" cannot even yet be said to have become quite orthodox, though it is progressing that way; it is as yet only in the outer court.

Of course the existence of an invisible but potent radiation surrounding or emanating from bodies, organic or otherwise, has often been alleged before; for instance by Reichenbach and Dr. B. W. Richardson. These people may have felt a call to break the usual rule of silence and come out publicly with their opinions and discoveries; whereby they incurred the usual treatment. They served to prepare the way for the present state of affairs, when it is so much safer to express unorthodox opinions.

Another point to be noted is the use of terms borrowed from the

writings of H. P. Blavatsky and her pupils but too often twisted out of all semblance of their original meaning. This is very curious; and it is to be expected, doubtless, that researchers will soon dismiss these terms and coin others of their own, different alike from those of H. P. Blavatsky, and those of Mesmer, Reichenbach, etc., and adapted to confer patent rights on the latest and most accredited rediscoverers.

Since H. P. Blavatsky wrote and taught, many people not connected with her cause, Theosophy, have availed themselves of her teachings and terminology in order to further innumerable psychic, miscalled "occult," and other such cults; so that the words "aura," "etheric double," "astral body," and the like, no longer serve so accurately as before to convey Theosophical ideas. We can cite a passage from the writings of W. Q. Judge, the successor to H. P. Blavatsky as Leader of the Theosophical Society, in which he says that the expression "astral body" may one day have to be given up. And H. P. Blavatsky herself says it is simply the best expression she could lay hands on at the time. A study of the writings of H. P. Blavatsky and William Q. Judge will show that the words "astral body" are intended to include loosely the whole of the plastic model-body, or *linga-sarîra*, that forms the inseparable companion of man's physical body and is the warp whereupon the life-builders weave the structure of the physical frame. This lower astral body has *many* divisions and subdivisions or layers, and it seems as though the emanation observed by these experimenters might be the very lowest subdivision; if, indeed, it is not in the case observed merely an optical phenomenon. The word "etheric" or "ethereal" was sometimes used by H. P. Blavatsky to convey the idea of a principle much more refined than the astral body, and related rather to mind than to animal vitality.

It is frequently and strongly urged by both H. P. Blavatsky and W. Q. Judge that studies of this kind must be undertaken seriously and cannot be dabbled in with impunity; for, *unless one has the keys*, one is almost certain to go astray into paths of folly; a fact well illustrated by the fate of those who try to convert Theosophy to their own purposes. Such persons and cults no longer really teach Theosophy, though they may use the name; but promote various forms of psychism which will doubtless ere long cause much trouble and perplexity.

The present occasion affords an opportunity of stating the position of the Universal Brotherhood and Theosophical Society and of the

students of H. P. Blavatsky on this question. Theosophy and its followers are concerned with the serious questions of life. OCCULTISM, as the word is used by H. P. Blavatsky, they recognize and venerate; but how different it is from that which the word conveys in popular parlance! OCCULTISM denotes the dedication of oneself to the noblest ideals, and the reverent study of the universal truth in nature and underlying all the greater religions and philosophies. What can it have in common with pursuits at best bypaths ending in blind alleys, and in many cases directly antagonistic to the cause of enlightenment? The great influence for good which the Universal Brotherhood and Theosophical Society is enabled to exercise could not be wielded if its students were swamped in psychic investigations; in the latter case the organization would quickly split up into a number of hostile and useless sects, each pursuing its own selfish purposes. Theosophists have the most earnest desire to learn about their own inner nature and to solve the mysteries of life, but they know how to set about it and how to avoid bypaths. The unalterable rule observed by all real Teachers of OCCULTISM is that the *Spiritual* powers shall be cultivated first; and this means devotion and unselfish service. It is needless to point out the necessity of such a rule, for all history, past and contemporary, demonstrates its necessity. Whole civilizations have gone to pieces through the attempt to sunder knowledge from duty and to utilize the secrets of occultism for selfish and sensual purposes. We are told that there is an easier path, and that such rules as the above are arbitrary or obsolete; but such is ever the plea of libertinism against order.

Theosophy, therefore, does not lend encouragement to aimless pursuits; and it is the sacred duty of Theosophists to guard the Theosophical teachings for the purposes for which they were intended. Hence all who aspire to learn the mysteries of life must be able to give the passwords — which means that they must prove their devotion to the real cause of Theosophy — the service of human progress. But no one can set limits to the possibility of attainment in knowledge by those who have proved themselves worthy; and if there are any who do not yet know as much as they would like to know, they are well aware of the nature of their obstacles and how they can overcome them. There is a large quantity of teachings, sufficient for all possible purposes; but they are couched in such form that the practical meaning reveals itself in proportion to the intuition of the student.

In other words, Theosophists find that in proportion as they succeed in keeping to the path of duty laid down as an indispensable condition by the Teachers, so do they understand more and more of the teachings of Theosophy.

What the world lacks and needs today is *self-controlling power*; civilization, we are told, is in danger of going to pieces for want of this. We need the self-controlling power which comes from a sense of duty and obligation. It is fortunate that in the Universal Brotherhood and Theosophical Society, the movement founded by H. P. Blavatsky, the world has a power that makes for order, freedom, and conscience; for it will surely be needed.

“FOUR-DIMENSIONAL SPACE” AND GEOMETRICAL SYMBOLISM: by Magister Artium



THE question of “four-dimensional space” (which we mention in quotation marks from a doubt as to the correctness of the term) is one that frequently comes up; and there are few ideas that are at once so rich in useful suggestion and so fruitful in fallacies. The immediate occasion for alluding to the subject is an article in a scientific journal. The objective world — that is, the world as it appears to our sensuous cognition — is characterized by a quality often called “space,” but better called “physical extension”; for the word “space” should be reserved to denote a perfect void, which can have no extension or dimensions. The science of geometry, which deals with this property of physical objectivity, finds that it is representable and measurable in accordance with a system of three mutually perpendicular axes. For the purposes of geometry we have invented certain fictions which have no objective existence, not even in the objectivity of our mental pictures. These are the line and the superficies. Euclid defines a line as that which has length but no breadth or thickness; and as we cannot conceive anything answering to this definition, we resort to the expedient of endowing our line with just enough breadth and thickness to make it conceivable. Thus we are safe so long as we bear in mind that the line is an abstraction. Where the mistake is usually made is in forgetting this fact and in supposing that length can exist without breadth and thickness, or length and breadth without thickness. But the three

dimensions are mutually dependent and have no separate existence; take away one of them, and the whole structure of physical extension collapses at once. You cannot rightly conceive a solid as built up of lines and planes; for, unless you begin by postulating the three dimensions, you cannot have any lines and planes at all.

In forgetfulness of this we find people saying that the line is something which has one dimension, and the superficies something which has two dimensions; and then, having thus given these figments a real existence, proceeding to *add* another dimension, thus building up a solid figure. It is an extension of this fallacious process that leads to the imaginary construction, by adding more dimensions, of forms having four or more dimensions. And, not realizing that they cannot conceive of a triangle or square, except as a quality of ordinary threefold extension, the reasoners endeavor to force their minds to conceive of some kind of physical extension having four dimensions.

It has just been said that geometrical lines and surfaces are abstractions; which might be regarded as implying that geometrical solids are not. But is this the case? Can even a geometrical solid be an objective physical existence? We realize at once that it can not. We are familiar with physical bodies which are endowed with the threefold form known in geometry as “solid,” but we know nothing of such a form in itself and by itself. We have never yet encountered a cube pure and simple; only cubes of wood, glass, metal, etc. And when we imagine a cube we have to construct it of air or glass. Here lies another pitfall for the careless reasoner. Again, what is *size*, and what becomes of our dimensions if we eliminate the notion of size? Evidently, for a thing to be physically objective, it must have the threefold property and also something that might be called bulk; yet what becomes even of this latter apart from our tactile and visual senses?

The four-dimensional speculators are really studying the properties of certain mathematical conceptions represented by systems of rectangular co-ordinates or by algebraic equations of various degrees, but are allowing other and distinct notions to become mixed up in the process. Physical extension is threefold; and if there are any twofold or fourfold things, they are not physically extended at all. One might speak of a *force* as two-dimensional, if careful to exclude the notions of size, length, or distance. Possibly a *thought* is four-dimensional or five-dimensional, but the dimensions are not geometrical ones.

In *The Secret Doctrine*, H. P. Blavatsky’s great work, we read:

In the Pythagorean Theogony the hierarchies of the heavenly Host and Gods were numbered and expressed numerically. Pythagoras had studied Esoteric Science in India; therefore we find his pupils saying: "The monad (the manifested one) is the principle of all things. From the Monad and the indeterminate duad (Chaos), numbers; from numbers, *Points*; from points, *Lines*; from lines, *Superficies*; from superficies, *Solids*; from these, solid Bodies, whose elements are four — Fire, Water, Air, Earth." — Vol. I, pp. 433-4

Note the distinction between solids and solid bodies, also the four-fold matter succeeding the threefold geometrical solid. It would appear from this that these Pythagoreans considered matter as already four-dimensional, but did not try to make up four dimensions by adding one more to the geometrical three. A cow has two horns and four legs, but it is absurd to speak of these appendages as being six similar and interchangeable limbs. Imagine a cow walking on two legs and two horns and tossing a dog with the other two legs! We read further:

As an emblem applicable to the objective idea, the simple triangle became a solid. . . . and, as an "imaginary figure constructed of three mathematical lines," it symbolized the subjective spheres. — Ibid. p. 617

In fact, what is a triangle in itself? We cannot say more than that it is some radical principle of nature which, when geometrically applied to our conception of objectivity, becomes a solid — perhaps a triangular film or sheet, perhaps a tetrahedron. But what does a triangle become when we separate it from the idea of objectivity? We may reply, "A threefold relation," but that gives us no concrete idea. The ancient philosophers used it as a *symbol* to denote existences not objective, as indicated in our last quotation. This may give a hint as to the real value of the Pythagorean geometry, which we have so absurdly materialized. They used these symbols as clues to their inner teachings. And what of the "four elements" constituting physical bodies and denoted by the terms "Fire, Air, Water, and Earth"? Here we have a fourfold manifoldness — four dimensions, if you will — analogous to the three inseparable co-ordinates of geometry, answering more or less to our own ideas of "energy," "extension," "mass," etc., which we find it so difficult to separate from each other. Nothing is more evident than that ancient philosophy had penetrated deeper and more successfully into these investigations than we yet have.

MAN'S DUTY TOWARD NATURE: by Nature-Lover



THE female of the "Praying-Mantis," a cannibal member of the *Orthoptera*, which is to be seen at Point Loma among other places, has been observed by a naturalist who kept one under observation, to have seven mates in two weeks and to devour them every one. Its appetite is evidently insatiable. There are many such depths of iniquity to be observed in the lower kingdoms, and the fact suggests an often-asked question, "What is Nature's *purpose* in creating or permitting to exist such horrors?" It is an ancient teaching that the lower kingdom is to a great extent a by-product of the human kingdom, being ensouled by cast-off psychic elements from the latter. It is indubitable that man, by means of his combination of lusts and brains, does contrive to generate some very powerful and horrible propensities; also that man dies in the midst of such propensities. If the scientific principle of the conservation of energy is of general (and not restricted) applicability, it is proper to ask what becomes of this energy which apparently disappears from the scene of action. Judging by the customary scientific analogy, one would answer that the energy is transformed into some other mode. No doubt the propensities often find their way back into the human kingdom, thus accounting for certain mysteries of heredity and karmic heirloom. But such passions follow a law of inverse evolution, and their tendency is towards continual degradation; hence they must eventually attain a degree which is not capable of being vented in the human kingdom at all. In this case they would be fit material for some of the lower animals that are provided with organisms adapted to the occasion; and it is evident that the propensities, being now no longer associated with human intelligence, could thus vent themselves harmlessly or even be made serviceable in the general plan of Nature. It is very likely that some such fragment of ancient knowledge has given rise to the absurd superstitions about transmigration of men into animals; but of course the teaching gives no justification for such a belief. Science itself will be prepared to admit that the physical atoms which once entered into the body of a man may subsequently form part of a plant or animal. If there be atoms of a finer grade, forming the psychic part of organized beings, why may they not follow the same circle? Yet in no significant sense could this be called transmigration or reincarnation.

The recognition of this link between man and nature is calculated

to enhance man's sense of responsibility; and instead of feeling so much at the mercy of Nature he may come to regard Nature as being to a large extent at *his* mercy. Those who have kept pet or domestic animals know well how readily these will acquire habits in accordance with those of their master — good or bad. We are continually throwing off from our minds all kinds of influences into Nature, for her to work up or dispose of as best she may. And when Nature sends the cruel tiger or the treacherous snake after us, who knows but that the just law of compensation is thus finding expression by restoring to the human kingdom something of what the human kingdom has bestowed on Nature?

We are fond of posing as the victims of our entourage — rather inconsistently, considering our pride — but we are responsible for our entourage to a much greater extent than is usually thought. When we reflect upon the many dreadful things that man does with his superior powers, we are obliged to conclude that Nature is very long-suffering. Does man really deserve much bounty at the hands of that Nature whom he so abuses? And is the Praying-Mantis really worse than many human beings are? On the contrary, we know that it is not half so bad — could not be if it tried. What then, let us ask, is Nature's purpose in allowing such human beings to exist?

By way of answer it might be suggested that perhaps Nature is patiently waiting for Man, the wonderful and mighty, to get up and do something, instead of standing still and wondering what Nature is going to do and how God is going to deal with him. As we are talking about "Nature's purpose," suppose we talk about Man's purpose, if he has any, and inquire what he proposes to do with that divine power. After all, it is open to anybody, possessed of a will, an intellect, and other creative powers, and dissatisfied with the existing scheme of things, to set about creating mercy and beauty and harmony and gentleness in as copious measure as he is able. And who knows what mysteries of Nature he might unexpectedly fathom in the process?

SOME THEOSOPHICAL PLANS: by P. A. Malpas



It is interesting to look back over the years and compare plans with their fulfilment. We were lately reading an old announcement dated some thirty-two years ago. It is a document printed and published in India shortly after the Society had sent its delegates from New York to that country to establish the Theosophical work there. The title is "Theosophical Society or Universal Brotherhood."

Mention is made of "the plans of the Society," and these plans are declared, among other things, to be:

- (a) To keep alive in man his belief that he has a soul. . . .
- (b) To oppose and counteract bigotry in every form. . . .
- (c) To gather for the Society's Library and to put into written form correct information upon the various philosophies, traditions, and legends. . . .

(d) To seek to obtain knowledge of all the laws of nature and aid in diffusing it, thus to encourage the study of those laws least understood by modern people. . . . Popular superstition and folklore, however fantastical, when sifted may sometimes lead to the discovery of long-lost but important secrets of Nature. The Society, therefore, aims to pursue that line of inquiry in the hope to widen the field of scientific and philosophical observation.

(e) To promote a feeling of Brotherhood among nations, and assist in the international exchange of useful arts and products.

(f) To promote in every practicable way, in countries where needed, the spread of non-sectarian Western education, and chiefly, to encourage and assist individual Fellows in self-improvement, intellectual, moral, and spiritual.

It is curious to observe in face of the above, that from time to time strange notions have been set afloat as to the aims and plans of the original fountain-head and Founder of the Society, Madame H. P. Blavatsky. Perhaps the strangest part, assuming no malicious misinterpretation, is the way in which a few seemingly sensible people came to believe (or professed to believe) queer ideas, such for instance as that lack of ethics, dogmatism, and an aversion to the practical work of Brotherhood, are compatible with those plans.

Those were days of weighing the soul in a chemical balance, of putting the gods in test-tubes, of measuring the Spirit with a twenty-four inch gage. The "hidden mysteries of nature and of science" or even the mere suggestion that there were such were received almost as

Socratic heresies deserving of the hemlock. Compare their reception with the daily widening doors of the so-called super-material today, and say if such an object was not amply justified.

It is not now easy to realize what a gigantic task the turning of the hose into the Augean stables of the materialism of those days really meant. True to the functions of a Teacher of the hidden mysteries of Nature and of Science, H. P. Blavatsky focused every glimmer of light wherever it might be found, into a bouquet of light-blossoms. To some they seemed to die or to change, and there were weeds that grew up, but those blossoms were the forerunners of the seed-light which today is bringing forth its hundredfold. She was reluctant to give the world any purely new conception in all its details; it might have proved seed on the bare rock. But she seized every particle of soil given by thinkers, authors, philosophers, in which to sow her seeds. She rounded out, corrected, adjusted, suggested, and fanned into life as much as was possible. They were laughed at; she was reviled. But an interesting volume might be compiled today from the various Theosophical publications, of the history of the gradual subsidence of opposition into silence, then into toleration, absorption and emission of those very ideas under the names of great scientists, theologians, academicians, educationalists of today and yesterday. Science and theology and orthodoxy then persecuted bitterly; but now that representative members and authorities have adopted all that they yet care to adopt, it is remarkable that her name is left out — unacknowledged. Perhaps she reckoned with this and made ample provision.

The industrial work, and women's work, are distinctly indicated and emphatically the educational work was on the "trestle-board" plan. We know that H. P. Blavatsky and William Q. Judge both knew of the plan for the foundation of "a great seat of learning in the West." The metaphors of building are peculiarly suitable to their work, which was distinctly synthetical, although much breaking up was necessary at first.

The emphatic assertion of the importance of the highest moral code to a member of the Society hardly calls for comment. No sane person could ever have questioned the intimate relation of morality with Theosophy.

It is interesting to see the educational idea at that early date so clearly defined in public as to include the "mental, moral, and spirit-

ual" — Râja Yoga, in fact. Ordinary education was then very physical and mental; the "spiritual" was little more than a form, if not almost unknown or actually denied.

The document is a remarkable example of a "platform" which has never been abandoned. Few plans nowadays possess such intense vitality.

TWO INTERESTING ITEMS ON REINCARNATION: by an Archaeologist

I. ABORIGINAL BELIEF IN REINCARNATION



THE aborigines of Australia being chiefly the remote descendants of the Third Root Race, we may expect to find among them relics of ancient knowledge. Professor Baldwin Spencer was sent by the Commonwealth Government of Australia on an expedition to the Northern Territory. They went to Port Darwin and traveled south about two hundred miles, after which they crossed the continent to the Gulf of Carpentaria.

Amongst all the tribes examined by the expedition the belief in the reincarnation of the dead is universal.

There is good promise that this valuable item of ancient knowledge will again come into possession of our civilization. We must be on our guard, however, against the many crank systems and perversions that will inevitably arise in connexion with the subject.

And such knowledge is badly needed. We know there is something the matter with our theory of life; for when worked out, it seems to run into a blind alley. Death and bereavement afford a painful mixture of tragedy and mockery, when regarded from the customary point of view. We may feel with the poet that "somehow all is right," but a little definite knowledge would be a great help.

The doctrine of Reincarnation is apt to degenerate into some belief in the reincarnation of the personality. We plan out schemes in accordance with our fond notions of what is right and good for us. Such an idea is like that of preserving the cast-off clothing of the Soul. We must learn to distinguish between personality and Individuality.

People ask why they cannot have the truth of reincarnation demon-

strated. Such demonstration is not at all impossible, but before it can come the whole body of intelligence must first reach a higher level. For ages we have been steeped in materialism and have lost the use of many faculties necessary for the possession of such knowledge. Then again, knowledge is not to be had for the asking, and will not drop from heaven into our laps. A careful study of Theosophy will bring intellectual conviction of the truth of reincarnation; but actual proof implies the entering upon the path that leads to knowledge, a path that requires strong and dauntless steps. The gaining of knowledge means the dispelling of illusions as well as the accumulating of ideas.

2. THE CHURCH AND REINCARNATION

That the idea of reincarnation is forcing itself in is illustrated by the following land-mark; it is a clipping from a publisher's announcement.

REINCARNATION AND CHRISTIANITY

A DISCUSSION OF THE RELATION OF ORTHODOXY TO THE REINCARNATION HYPOTHESIS
BY A CLERGYMAN OF THE CHURCH OF ENGLAND

The unique characteristic of this book is that it is the first attempt ever made in literary form to justify the theory of reincarnation from the standpoint of Christianity. The writer attempts to prove that even to the stickler for orthodoxy there is nothing inconsistent, or out of harmony with the teachings of the Church, in the avowal of a belief in the evolution of the soul through the tenancy by it of a succession of physical bodies. He proceeds to argue that many of the Christian's greatest difficulties are solved by his acceptance of this theory.

This is not quite the first time the above attempt has been made, even from within the churches; while, going outside the churches, we can point to interpretations of the Bible and Christian Gospel made by Theosophical writers in accordance with the idea that there is or was an esoteric side to these. Reincarnation seems to have been at one time part of the Christian belief and to have been eliminated therefrom.

That many of the Christian's greatest difficulties are solved by an acceptance of reincarnation we readily admit; but it is not necessary to go for proof thereof to this clergyman of the Church of England, as Theosophists have been doing this ever since Theosophy was promulgated. There is nothing in reincarnation that is inconsistent with the facts of life, for the doctrine is true and must therefore conform to them; but whether or not reincarnation is consistent with the teachings of the Church — or not inconsistent with them — as

the clergyman maintains, is another question, requiring a definition of "the teachings of the Church." We could quote some expositions of the teachings of the Church, from Bishops, which are not consistent with reincarnation. We could quote other expositions which are. "The teachings of the Church" is an elastic term, and often implies rather "what we propose to teach," than "what we have taught." One would feel inclined to paraphrase the clergyman's thesis as follows: "He attempts to show that the teachings of the Church can be so framed as to be consistent with reincarnation."

We are afraid that some difficulty would be found with some of the teachings that pass current as being those of the Church, especially that favorite one with many people which teaches the blotting out of evil consequences by faith in a special act of intercession and vicarious suffering. The doctrine of reincarnation is inextricably interwoven with that of Karma, in accordance with which Man is regarded as accomplishing his own purification by virtue of the "Christ" or Divine Nature within him. Thus he cannot elude the fruit of his acts, though he may attain grace and strength to endure and triumph over the consequences. This is consistent with that interpretation of the doctrine of Atonement which teaches that Justification means the imparting of Spiritual strength and enlightenment to man; but it is not consistent with that interpretation which insists that Justification means a complete remission. And there are prominent clergymen who expressly deny the former view while contending for the latter.

Theosophists have always had the interests of religion at heart, and may truly be described as the champions of Christianity — though of other religions as well. It is for the sane and helpful interpretation of Christianity that Theosophists have always pleaded; and from the above quotation we see that their efforts have not been fruitless even in the official purlieus of the Church itself. And truly there is nothing — can be nothing — in Christianity which is unreasonable, unmanly, or in any other way obnoxious to our innate sense of reason and justice. It is only the interpretations put upon Christianity — and think of the character of the ages in which those interpretations were made! — that debase Christianity and make it sometimes appear inconsistent with the obvious demands of sense and reverence. Often Jesus Christ teaches plain truths such as Theosophy teaches — the continual presence in man of the Divine Self, to which he must look for aid. Jesus teaches that man must exercise his own Spiritual Will.

Often Christ's sayings have reference to the symbology and terminology of systems of Gnosticism which were prevalent in his times, and these symbolic utterances have been interpreted literally and twisted to suit various occasions in the history of dogmatism. There are places where, as students of the texts admit, changes and interpolations favorable to such dogmas have been made. It is ours to extricate Christianity from this tangle of misrepresentation and to render it once more consistent with eternal truths, one of which is Reincarnation and another its twin-doctrine Karma.

THE FISH-BELL IN ANCIENT ATHENS

IN classical times so fond were the Athenians of fish that as every new catch arrived in the market, a bell was sounded to announce the fact. We are told that on one occasion while a musician was giving a recital on a harp to a company of his friends, the fish-bell rang. Immediately the company, with the exception of a solitary deaf old man, rushed away in haste without stopping to apologize. Whereupon the musician walked up to the one still faithful and said: "Thank you, sir, for being the only man to have the courtesy to remain, although the fish-bell rang." "Hey! What!" replied the solitary remnant of the former audience, "Did you say *fish-bell*? 'Thanks, goodbye!" and off he went in haste after the others.

THE ORIGIN OF CHESS: by E. T.



THE origin of chess has been attributed, according to the *Encyclopaedia Britannica*, to the following peoples:

Greeks	Romans	Babylonians
Scythians	Egyptians	Jews
Persians	Chinese	Hindûs
Arabians	Araucanians	Castilians
Irish	Welsh	

There seems to be considerable diversity of opinion on this subject among savants; but we notice they have not included in the above list the Picts and Scots and several other nationalities which we could mention! If, as Solomon says, there is safety in the multitude of counsellors, surely we have safety here, if it be any satisfaction to feel that one of the fourteen theories may be right, without knowing which of them it is.

What is meant by the *origin* of a thing? Evidently the origin is understood to mean as far back as you can reach. This accounts for there being so many origins; each theorist has traced his own particular route as far back as he can, but nobody has reached the place whence the roads diverge.

In view of the fact that all the races at present on earth have been preceded by races long since gone, it is probable that the origin of chess goes back farther than records and traditions can reach. The game may have been played on Atlantis, it may have been known in Lemuria.

But what is there in chess to give it such remarkable longevity and universality? Like cards, it seems to be based on some fundamental principle and to be typical of human life. It is a drama, with its complete society in miniature — king, counsellors, warriors, commoners. Its chequered field and the moves of its pieces are mathematical. Perhaps when it originated it was not a game; it may have been an augury, like the cards.

The *Encyclopaedia Britannica* says chess is an intellectual pastime, peculiarly adapted to relieving the mind from the cares of business and this workaday world. It is not a difficult game to acquire. Edgar Poe laughs at the idea that chess is abstruse or that it requires an exercise of the subtler powers of the mind. He says it is merely complex; "All the elaborate frivolity of chess," are his words. Consequently it demands a concentrative mind, with a good visual

memory. Huc, in his *Travels*, tells us that the Tartars and Tibetans cry *chik* when they check a piece, and *mate* when the game is at an end. These words came into English through the Norman-French; they are said to be of Persian origin, *check* meaning *king* (?), and *mate* meaning *dead* (?).

Some theorists have even tried to fix upon individuals as the inventors of chess; among them are Japhet, Shem, Solomon, the wife of Râvana, king of Ceylon, the philosopher (?) Xerxes, the Grecian prince Palamedes, Hermes, Aristotle, the brothers Lydo and Tyrrhene, Semiramis, Zenobia, Attalus who died about 200 B. C., the mandarin Hansing, the Brâhmana "Sissa," and "Shatrenscha," said to be a celebrated Persian astronomer. (See Encyclopaedia as above). A rather miscellaneous list, to which we may take occasion to add a conjecture of our own — Francis Bacon! There is, of course, also our old friend the Devil — just the kind of thing he would do, for a man might easily forget the welfare of his soul while absorbed in the elaborate frivolity of chess!

Living chess has been tried occasionally in our times, played on a chequered floor or lawn with men, women, and children in costume. Rather monotonous, especially for the pawns; but here again we appear to have been anticipated, for the Irish game, we are told, was played in the open air. There is a preponderance of authority in favor of the Hindû origin of chess — that is, it is considered that it can be shown to have existed in India earlier than anywhere else.

ETERNAL BEAUTY: by R. W. Machell



THE Mutability of Beauty" is discussed in an English review by a writer (Mr. Holbrook Jackson) who brings out clearly certain aspects of the subject, as for instance, the peculiar accentuation of personality in the modern conception of beauty as understood in the art world. He says:

The quality of the new beauty-sense is consciously personal. . . . But the modern artist, be he painter, poet, sculptor, or musician, is consciously personal, his personality is his only standard.

This is the key to the situation, and the Theosophist will have no difficulty in using the key to unlock the door of the mystery. But the

ordinary person, who looks upon a man's personality as the man himself, will be left to the inevitable conclusion that beauty is as mutable as are the personalities of men.

The modern age is not only an age of steel and concrete, it is above all an age of extreme personality. The illusion of separateness is so commonly accepted as the one reality that personality is become the foundation on which most of the popular philosophy of the day rests.

But Theosophy is the echo of eternal Wisdom, and it reveals to man his true nature, which is triune: body, soul, and spirit. An infinite and universal spirit, an eternal soul and its organ, a temporary personality. When this eternal philosophy was obscured by dogmatism, which personified the Soul and made of it a personal God apart from the lower man, then the inevitable reaction followed, and man, the temporary personal man, feeling his own divine soul and his great possibilities, but not understanding what he felt, naturally asserted the supreme authority of his personality, lived in it, identified himself with it, discarded the dogmas perhaps, but remained under the paralyzing influence of the false doctrine; a mere materialist, a soul incarnate denied by its own subject, the personality, a voiceless soul imprisoned in a castle of ignorance and ruled by personal vanity and egotism.

So the artist, feeling the urging of his soul, gives utterance to the call of the Eternal Beauty, in which the Soul lives as in its own atmosphere; but this utterance can only find expression through the personality, which takes credit to itself, not only for its share in the act of expression, but also for the primal impulse, which arises in the eternal soul and of which the personal mind is ignorant.

True it is that personal ideas of Beauty pass as the fashions pass; and the more acutely modern they are the more sure is their passage from the place of prominence they momentarily enjoy.

That which makes a work of art endure is the utterance of the soul that speaks to the souls of other men and is recognized by them as beautiful even if its origin be misunderstood. True too that the personalities of individual artists are always seeking new modes of expression for the eternal and exhaustless beauty of the Soul; and it is not less true that the personalities of the critics and collectors of works of art are eternally engaged in the hopeless task of establishing permanent standards for the measure of the impermanent. But they too are, unconsciously or consciously, guarding and preserving by

their traditions and academic practices whatever may be valuable in the practice of art, so that continuity in progress may be maintained. The bigotry that characterizes their efforts is as much a product of personal limitations as is the violence of revolt in the futurists. The past, the present, and the future, are aspects of the temporal, and all that belongs to them is of course mutable; but the soul is eternal, and so is Beauty, which is the essence of the soul. The works that rise above the mass, the works that endure through the ages, do so by virtue of the touch of genius which is the voice of the eternal soul speaking in the depths and darkness of the personality. So that a work of genius lives in spite of its mannerism or its method, not because of it.

A new method, without genius or the touch of the eternal in it, may achieve instant popularity or the reverse, but it is conceived and fashioned in the region of the mutable and must submit to the conditions of its own being and pass into quick oblivion.

In judging the work of a new school such as the futurists, for instance, it is as well to remember that man is a complex being and that his most blatant vanity and even his most perverted imagination may be or may once have been for a moment stirred and illuminated by the eternal soul within. For in every man the soul does make efforts to express itself until the personality has become too deaf to its voice to be able to respond, and we may see traces of genius even in the midst of what seems perversion of the functions of art.

THE "TITANIC" DISASTER: by J.

IN connexion with this tragic occurrence *The Scientific American* points out that while the deck officers have come in for a good share of attention, no word has been said about the engineers, none of whom survived. Not only did they stand to their posts, but it seems certain that such engineers as were not on watch voluntarily went below to render what assistance they could. The engineers must have known better than any one that the vessel had received her death wound, for they must have seen the inrush of water. Yet the pumps and lighting plant were kept going *to the last*, thus delaying the final plunge of the vessel and allowing all the life-boats to be launched.

“MATTER, SPACE, TIME”: by a Physicist



THOSE brought up in the atmosphere of modern culture are accustomed to hear disparaging remarks about the way in which ancient or heathen people have expressed their vision of natural facts or their impressions of the world they lived in. Yet when it comes to obscure and vague language, some of the statements that pass current as authoritative would take a good deal of beating. The following is quoted from a brief report of a scientific lecture, but the lecturer himself may have been more lucid than the report.

The Principal began by discussing the question of continuity and discontinuity, whether of space, time, or matter; and showed that, whereas the first two were continuous, matter was discontinuous. It was certainly composed of separate parts, in the same sense that a house was built of bricks, though in the case of matter the parts were not in contact. . . .

This sounds rather dogmatic. It seems evident that the speaker regards space as a kind of very tenuous matter, spread out in all directions and capable of physical measurement. Otherwise what meaning can his statement have? It would be interesting to know how he arrived at his conclusion — whether by induction or deduction. Has somebody isolated a portion of space and submitted it to examination? How would one proceed to do this? Create a high vacuum, perhaps, and, after removing every trace of matter, test the residuum (pure space) for its optical, electric, or magnetic properties, its density, and so forth. Has space any density? If the mass and the density are alike zero, then we get the equation $V = 0/0$ for the volume, which may mean anything from zero to infinity; besides, a thing having volume but no mass and density would be very curious. Suppose a room to contain twenty-five hundred cubic feet of space; what would happen if the space were removed? Logically, the walls, ceiling and floor would now be in contact, since there is no longer any space between them. We should have a collapsed room, and outside of it twenty-five hundred cubic feet of pure space — “between-ness,” so to say — that which previously kept the walls apart. Until we have tried some such experiment we do not care to venture an opinion as to whether space is continuous or atomic. Besides, we have a lurking suspicion that there is no such thing as the space about which the lecturer speaks — that it is as fictitious as Pan and Cupid are said to be. Are we so very wrong in so thinking?

Next we come to time, which the lecturer states is not atomic but continuous; and here again the same difficulty arises. Where are we to get the pure time to experiment with? Our time is crowded with events, and when we sit down and try to eliminate these, we fall asleep and so cannot experiment. But stay; just what sort of time does our philosopher mean? Is it the time in our mind or the time outside? The time in my mind is either full of thoughts or else it is a blank; in either case I fail to analyse its constitution. As to the time outside — let us consider. Take the time that elapses, or intervenes, or subsists, between two swings of a pendulum; is that portion of time continuous or atomic? If it is atomic, then it must be made up of tiny particles of time, having no duration, but separated from each other by — by — but we give it up. We once nearly solved this mystery, but the bed-clothes came off and we woke up with our head on the floor. But very likely the lecturer knows what he means.

Thus far we have dealt with two out of the speaker's three hypotheses; there remains but one more — "matter." His universe is composed of space, matter, and time; but of course there may be other things which he did not mention. One wonders if a universe, or part of a universe, could be made in a laboratory by mixing together these three things; a yard of space, one or two cubic minutes of time, a pinch of pure matter. Also what would result from a mixing of any two of the three without the third? Space and time alone, with no matter — what would that constitute? But there is something missing; space is said to be filled with matter; what is time filled with? Events? Then what is an event, and is it continuous or atomic? Now that we are speaking of matter, we must of course forget the other two for the moment; so we have to begin by imagining matter without space; otherwise we might confuse the properties of the two. Or, better, we need an actual laboratory sample of pure matter without space. The dealer may send it to us wrapped in robes of space, but these we must strip off before we can analyse the matter to see whether it is continuous or atomic. The professor claims to have done this and to have found that matter is atomic — various lines of argument have enabled him to ascertain the dimensions of the particles of which matter is composed. Matter is composed of atoms and molecules. These atoms vibrate, but the rapidity of the vibrations

was such that no form of matter could execute them with the necessary rapidity, and *accordingly* it had been ascertained that electrons, or minute particles of

electricity, which were exceedingly smaller than atoms, and much more lively and vigorous, were the vibrating parts to which light and other radiations were due.

Here we are taken suddenly out of our depth by a perfect maelstrom of fresh words. What is to vibrate, and why should atoms do it? What is electricity, what are electrons, light, radiations? All these words must be defined if they are to convey any definite meaning to the mind and not leave it in a glorious state of mystification.

The above remarks are not directed against science or men of science; nor is it an act of disservice to point out weaknesses. The confusion arises from a failure to distinguish between the abstract and the concrete. An ounce of sulphuric acid may be taken as an instance of the concrete in the sense intended; as an instance of the abstract we may take the "space" and "time" spoken of above. The word "matter" is used in both senses — hence great confusion. At one time the speaker means some actual physical substance in a test-tube; at another time he means some speculative conception. In speaking of "space" he is quite out of his element — he is neither physicist nor metaphysician. Space, considered as an objective fact, amenable to examination by a physicist, is found to be merely a property of physical bodies — an inalienable property; neither bodies without space, nor space without bodies, have any objective existence. One might as well try to separate the two ends of a stick so as to obtain two sticks with only one end apiece, or to have the stick in one room and the two ends in another. Abstract reasoning is serviceable as a means of arriving at truths, provided it is kept within its proper limits; but scientific men, as has many times been pointed out, often forget that the things they are dealing with are abstractions. There is considerable difficulty in the use of the word "space," because it has been employed by some philosophers to denote something real, while it is employed by many scientific writers to denote an abstraction. In this latter sense, space is no more capable of standing alone than is the redness of a red cow. Take away all matter and what becomes of space? The word "space," legitimately used, does not imply geometrical extension, size, or direction. When we try to abstract space from matter, we do not abstract enough; we leave some of the properties of matter behind (in our imagination). We create an ideal space, having parts and magnitude. We imagine space to be very big; we might just as well imagine it to be very little; it can be neither one nor

the other in any ordinary sense of the words. It has been said that total darkness gives a fair notion of space; add to this a complete abeyance of all the senses, and the notion becomes better. A mind alert yet void of thoughts gives a good idea of space. As to "time," we cannot eliminate it from our mind and yet go on reasoning; we might as well try to look at our own neck. There are mental processes analogous to looking at our reflection in a glass, and these may help, provided we do not confuse the object with its reflection. But can we say that time is sufficiently objective to our normal consciousness to warrant us in speculating as to its continuity or discontinuity?

As to the constitution of physical bodies, when shall we get rid of the unwarrantable idea that matter is a big thing made up of little things? Why must the rudiments be very small? There is nothing unreasonable in the idea that atoms are made up of other atoms, and so on indefinitely — since we can never reach an end in this kind of reasoning — but it is unreasonable to assume that the origin of things is to be sought in the infinitely small. Size is an idea we derive from the use of our physical senses; and all these ideas of mensuration and geometry must be eliminated if we are to seek the origins. Physics is on safe ground as long as it is experimental; when it becomes speculative it suffers from neglect of metaphysics. It is essential to analyse the nature of *subject* and *object*, their union as *perception* (sensory or mental), and many other kindred topics. In short, Man must know — *himself*.

HUNTING FOR A METEOR: by D.

SOME of the romance of science is going on in Arizona, where they have been putting down a considerable number of bore-holes in the effort to locate the great meteor which caused the remarkable depression known as Coon Butte, which is about three-fourths of a mile across, and some five hundred feet in depth. Professor E. Thompson, who has interested himself in the matter, says the reason this meteor was not burned up was because it was too big; just as if one turned a hot-blast on a large block of ice for a few seconds, the remaining ice would still be at its low temperature.

ECCENTRICITIES IN ART, AND UNREST IN LIFE:

by Observer



UNREST is certainly the word to describe the spirit of the age. A literary review, which we chance to pick up, puts together for collective notice six books on various phases of unrest. The spirit is characterized by a disgust with certain existing conditions and a vague striving after something deeper and more real. But the strivings are one thing, and the achievement of the object quite another; and confusion is all too frequently the immediate outcome of these yearnings.

In the realm of pictorial art we find the same spirit of unrest, of rebellion against what is, and of strange departures on the quest of what is to be. The new schools of painting, about which the public hears from time to time, leave ordinary people much perplexed as to what they ought to think, and there are many who are inclined to denominate them by the word "freak." While on the one hand it is true that these movements are the work of skilled painters, practised in the theory and the technique of their art, as to which the lay public is unqualified to judge; yet on the other hand the impermanence of the movements is shown by the rapidity with which they supersede one another, if by nothing else.

The latest such movement is that known as "Futurism," an Italian school. *The Illustrated London News* (Feb. 17) reproduces a number of the paintings. To the untutored eye these do not look like pictures at all, but like patchwork quilts or free mural decorations. We make this remark purely as a statement of fact; and it may be considered as casting a reflection either upon the pictures or upon the untutored eye, according to fancy; for one must be willing to concede that minds gifted with the power to create such pictures are also gifted with the power to interpret them. But let us quote from the introduction in *The Illustrated London News*:

They not only wish to give form to vague figments of the brain, but to superimpose the synthesis of memories and associations upon the synthesis of visual impressions. . . . The Futurist painter attempts to state on canvas, not in consecutive narrative form, but in a superimposed jumble, the facts observed, the associations awakened in his feverish brain by those facts, and — say in the case of a portrait — the emotional experiences and thoughts of the sitter. . . . When the Futurist paints a person on a balcony, seen from the interior, he does not limit the scene to what the square framing of the window allows him to see. He paints the "sum-total of the visual impressions experienced by the person

on the balcony; the sunflooded rumbling of the street, the double row of houses extending to the right and to the left, flower-adorned balconies, etc." And all this not in juxtaposition, but in superimposition, to give the "simultaneousness of the ambient." A running horse has not four legs but twelve. The sixteen persons around you in a motor-bus are, in turn and at the same time, one, ten, four, or three persons, who come and go, jump into the street to be quickly swallowed by the sun, return to their places like the persistent symbols of universal vibration. Upon the cheek of the person to whom you are talking you see the horse which passes far away at the end of the street.

One feels that art is striving earnestly after some goal and failing to reach it. Analogies may be sought among the other arts, and found in sundry literary eccentricities, or in musical composition which succeeds better in abandoning old forms than in finding new ones. Among theories and schemes of social reform we shall also find many analogies; and proposals which our judgment forbids us to endorse are defended by an appeal to the worthiness of the motives which actually or presumably inspired them. Often a refusal to endorse the schemes is regarded by their promoters as a repudiation of the motives. Yet it is possible for a reasonable mind to condemn existing evils without accepting any proposed plan of reform, though all the time admiring the ideals and principles, so excellent in themselves, yet so misdirected.

The new spirit must generate many strange and temporary forms ere it achieves full and just expression, just as the Elizabethan drama (for instance) passed through many phases from an enactment of the crucifixion in a church to the consummation of the drama in Shakespeare. To obtain a just idea of what is happening, we must stand off and view the great drama of human life as a whole; for all the arts are comprised within this great art of life. Sincerity of feeling and frankness of expression constitute the essentials of supreme art, whether it be pictorial, plastic, dramatic, musical, or the achievement of a noble and well-proportioned life. The supreme artists in all these lines must have been men who, more or less consciously, were inspired by that aspiration to help, to uplift, to bless humanity, which is dimly foreshadowed to our mind by the word "Love" used in its true sense and apart from emotional desire and rapture. For if we could penetrate beneath the troubled surface of our life, where vain desires and foolish fancies continually chase each other, and reach the tranquil deeps below, where are the true waters of life, we should surely find there an ocean of Compassion, a resistless urge to bring joy,

peace, and beauty in our path, that they might find a home in every exiled heart. This, then, must be the true and final inspiration of all art — to uplift, to help, to inspire. This is the secret of the great masters and the explanation of the miscarriage of lesser motives. Let us consider the efforts of schools of painters, musicians, etc. in the light of this motive, and ask ourselves to what extent is their work so inspired. Are people the better for seeing the productions, as people are better after receiving the gifts of the great masters? And to one of these masters we find ourselves inevitably turning for a fitting thought with which to close, as there recurs to the memory Shakespeare's saying that the first necessity is

This above all — to thine own self be true!

“Seek in thyself the causes of failure and success”; for figs do not grow from thistles.

A NEW VIEW OF THE PYRAMIDS AND OF THE PARTHENON: by T. Henry



THE following article reviews the opinions of a recent writer and authority on ancient history, Dr. G. T. Wrench, who, in his book, *The Mastery of Life*, maintains that the slaves of Egypt were far happier than most people of today, that the civilization was joyous and harmonious, and that the Pyramids were built by a happy people to the national glory. He holds that the beauties of Greek art were the spontaneous expression of the national joy and exuberance. Such a view is a welcome change.

In judging ancient civilizations we have innumerable errors to avoid, the chief of which, perhaps, is hasty generalizations that put into one category things having no resemblance. Then there are the extremes of overestimation and undervaluing, praising or condemning a race *because* it is old, regardless of other considerations, and finally the neglect of historical perspective. Microscopic vision causes us to scrutinize unessential details while ignoring the all-important general effect. We forget that the viewpoint of people who for centuries have dwelt in houses and for generations have lived in an atmosphere of printed pages and the other appurtenances of our particular brand of civilization, is peculiarly biased. On the whole we have erred far more

on the side of undervaluing than overestimation, but a rapid change is coming.

Dr. G. T. Wrench, in his *Mastery of Life*, says that ancient Egypt was more free than modern Europe. Our poor people are not slaves; the slaves of Egypt were strong and well-fed, able to write and paint, able to rise to high positions.

It was not a stiff and rigid system of castes. It was not a system in which a man was forced to follow in the footsteps of his father, however capable he might have been, owing to natural endowment, of rising to positions to greater power. The ladder by which the son of the poorest peasant could rise from office to office to take the next place to the king was the literary ladder, or the ladder of education. But the words "education" and "literary" must not be taken in our modern sense. The nearest approach to the literary ladder is the similar system which has existed in China for several thousand years and still exists. In China the system is a test of almost every quality known to man, physical and intellectual. Its purpose is to select amongst the peasants and subject classes any boy or youth who is born with an innate genius for ruling his fellow-men and enabling him to step up and join the hereditary ruling classes. The same system in Egypt had for its purpose the same aims.

In advocating a division of society into two classes, the author means natural classes, founded on ability, not artificial classes. He does not hold the view that the Pyramids were built by slave-labor to the glory of the Pharaohs, but that they were built by a happy people to the national glory. The Pharaoh was the head-boy of a civilization young and strong; the best men were the monitors; the smaller and weaker, the "fags"; and thus everybody was in his place, while there was perfect freedom for any one to rise to a higher place. The Egyptian Pharaoh was the Leader of a free people; and one Pharaoh wrote on his tomb:

I have caused no child of tender age to mourn; I have despoiled no widow; I have driven away no tiller of the soil; I have taken no workman away from the foreman for the public works; none have been unfortunate about me, nor starving in my time. In years of scarcity, as I had cultivated all the lands of the home of the gazelle to its northern and southern boundaries, causing its inhabitants to live, and creating provisions, none who were hungry were found there; for I gave to the widow, as well as the woman who had a husband, and I made no distinction between high and low in all that I gave. If, on the contrary, there were high Niles, the possessors of the land became rich in all things for I did not raise the tax upon the fields.

The author attributes the ills of life to the Aryan invasion, but we need not follow him to that length. He attributes all that was refined

in Athens to Egypt, all that was hard in Sparta to Aryan influence. What he says about Athenian art and life is as well worth attention as what he says about Egypt:

Art is a spontaneous expression of life. As a boy whistles on a bright morning, so the artist absorbs, mainly unconsciously, the influences about him. When those influences are of social spirit and harmony, of the ruler qualities in the right place, of men valued and placed according to their values, of the life of the people proportioned, balanced, ordered in a manner acceptable because in accord with their natures and values, then the national artist can create a temple of beauty such as the Parthenon. For beauty is a human expression. The Parthenon is an expression in stone. As the boy on the gate whistles his melody with unconsidered spontaneity, so these artists of the Acropolis, Iktinus, Kallikrates, Mnesikles, and Pheidias, had proportion and dignity and joyousness and beauty about them, and carved them into white marble that all who came after might feel their witness. It was the spontaneous cry of beauty and joy amidst a beautiful and joyous community. It is the most eloquent expression, and in architecture it is also the greatest because of its power and permanence. It is the most valuable and lovely expression, because it is spontaneous, as the happy laughter of a child.

And have people not usually thought of this art-work as laborious? Perhaps that helps to explain why we cannot today imitate it; for who can imitate spontaneity? Nietzsche the German philosopher, said that any one who would be his disciple must first succeed in forgetting the master; he meant that his philosophy was spontaneity, and that his disciples must imitate him in spontaneity — strike out their own lines, not follow in his. Yet we have quite a few Nietzscheans who do not take this advice. So it may be with Grecian art; it is perhaps the joyousness and simplicity of life that we should imitate, not the particular forms in which the Greeks expressed these feelings. Then we might achieve an art of our own, natural and free from servility.

And another reversal of the usual order: while other scholars are saying that the ancient Greek life was so and so, and then wondering how a people that lived such a life could produce such works, this writer *infers* their life from their works. Because their works are beautiful, their lives must have been beautiful; *ergo*, there must be something wrong in the sources of our information as to their life — or at least in our understanding of those sources. Perhaps we have thought them barbarians because they did not live in cities like ours and have our indoor and comfort-loving habits. They may have lived a simple outdoor life and yet have been more civilized than we are.

They must have been so, or they could not have produced such works. So runs the argument.

A reviewer of this book, in *T. P.'s Weekly* (London), says that this not only explains art, but suggests that where this is not the normal condition the body politic is sick; and that this is certainly not the normal condition in the Teutonic and Anglo-Saxon world today. And that this suggestion is indeed what the author meant to convey is shown by further passages in which he contrasts our civilization with the older ones to the great disadvantage of ours.

The races at present occupying the earth resemble sundered fragments, each possessing characteristic virtues with characteristic defects. Can we imagine the possibility of a single race combining the best traits of all these races and neutralizing the defects? Each of our present races has its dominant tone, like a single color of the spectrum; but all the rays combined would make pure white light and the rainbow. Can there ever have dwelt on the earth a race abounding in the joy of life, exuberant with all the charms of body, mind, soul, free from strife and selfishness, living the true life of Man (whatever that may be)? And is it conceivable that some catastrophe brought down darkness and confusion, so that the race split up into many fragments that wandered over the earth and settled down in strange lands forgetful of their past glory? Such an idea is quite in line with folklore and tradition. Some "War in Heaven," some strife among the "Gods," seems to have struck asunder the elements of man's character, separating the Divine Triad of Strength, Beauty, and Wisdom, no one of which can exist alone without degenerating.

But what can have been the secret of this marvelous contentment and order in the ancient race? There must have been some power behind the scenes diffusing an unseen influence through the land and touching all hearts. Or whence came the "best men" who were put into the prominent positions? Where can *we* find such men?

It was because in those days there flourished safe and unprofaned the Sacred Mysteries, those Schools presided over by real Teachers who knew the mysteries of life and could teach the people the greatest of all arts — the Art of Life. This is where the unseen life and light radiated from.

It is only too clear that we need something of the sort in our present life, in which people write to the papers and say: "Dear

Friends in Council: I live in a deadly dull country town and am tired of doing nothing but work and eat and sleep. I have often contemplated suicide as a means of ending it all. Please advise me what to do in these circumstances." There is no *meaning* in life, in short. Countless numbers living in unceasing daily struggle for the means of keeping body and soul together; and then other people contemplating suicide when they have plenty to eat and shelter and comfort. Wealthy people striving hard to banish thought; sensuous people trying to get more pleasure out of the harp by twanging its chords ever more violently; dull people living in a monotonous unthinking blankness. But nowhere the joy of life — save for a too brief moment in the very young.

Evidently there is room for a revival of the lost Mysteries of Antiquity, for a recovery of the forgotten secret. Light and Life are the one thing needed. And as the urge becomes greater, men will turn more and more to the sources of Light and Life, will recognize more and more the lesson that antiquity has to teach, will be more willing to hearken to the Truths of the Secret Doctrine and to lay aside their prejudices and accept the Light which can help them.

In saying that the Mysteries were the cause of the harmony of life in ancient Egypt, we also find an explanation for that wonderful Egyptian "religion" or "science," or whatever it was, depicted in the hieroglyphics, statues, temples, sculptures, and emblems. That this played the dominant part in Egyptian life no one can deny; the greatest importance was attached to it; and as the people who valued it so were not simpletons, but very far from being so, it is foolish to call it all superstition, and merely shows the lack of knowledge and judgment in those who do so. "Gods," represented by symbols, animal-headed figures, etc., were powers of the human Soul and Cosmic potencies. Such powers or Gods are not to be evoked by individuals for their own private purposes, according to the idea which seems to prevail in our idea about the evocation of powers. The ancient Egyptians did not worry so much about the welfare of their individual souls, much less about calling down heaven to cure their bodies. The powers they invoked were collective powers. Our civilization recognizes that bodily health is a property of the whole community, and that each individual must keep himself clean and free from disease for the sake of his fellows; but we are simpletons in the matter of *moral* hygiene. Our thought-atmosphere, our moral atmosphere, must be

a hotbed of infection, since we pay no attention whatever to its sanitation. We have positively no science of mental and moral hygiene; and that is reason enough to account for our woes. Is it too much to speculate that some ancient civilizations had such a science?

The power of thought is coming to be generally known nowadays, but unfortunately it is associated with schemes for curing one's personal body, obtaining personal powers and advantages, and suchlike narrow selfish purposes. Few people have any faith in the power of a pure heart and a clear conscience, but nearly all of us live as though our thoughts were secret and confined to ourselves. Yet we not only influence the lives of others by our own unexpressed thoughts, but are continually influenced ourselves by the thoughts of others which we mistakenly regard as proceeding from ourselves.

Honor, truth, charity, and many other words, that have so little vital meaning for us, may once have stood for powers and qualities of the Soul, cherished as we cherish our life, cultivated as we cultivate our health.

The eye of the imagination cannot conjure up a picture of the sublimity of an ancient Egyptian city, for only the wasted skeleton remains; but what we can conceive of that grandeur should teach us that great indeed must have been the soul of the people which could thus express itself. It would be mocking the laws of nature to suppose that the grace of Grecian art could have sprung from any other source than a people whose lives were graceful; and we may measure our own defect in the inward spirit by our defect in the outward form.

Yet we have to remember that it is useless to try to *copy* our teachers; if sincerity and naturalness can be imitated, it is not thus. The lesson we have to learn is that we also belong to the same human race and must consequently possess similar powers, together with the power to evoke them.

In short, we must *find ourselves*, regain trust in our own Divinity.

ALCHEMY: by H. Travers



THE alchemists believed that a substance must be destroyed before the essential part of it could come to life, and that to get through the gate of dissolution until the stage of exaltation was reached it was necessary to pass through *twelve* gates before the Philosopher's Stone was obtained. They spoke of *four* elements — fire, air, water, earth; *three* principles — mercury, salt and sulphur; and the *two* seeds, male and female metals, which by being brought together produced the elixir.

These particulars are from a lecture on alchemical methods given by a well-known chemist in London. He did not regard the ideals of the alchemists favorably, but admitted the indebtedness of modern science to them; the customary scientific attitude. Nevertheless there is a romance about the subject which appeals to the light of a clearer judgment that shines through the chinks of our intellectual roof.

In accordance with the doctrine of "correspondences," alchemy can be at once symbolical of spiritual process occurring in the nature of man, and have a material application. Though the making of gold from base metals means the refinement of character, yet gold can be made from base metals; and this the alchemists knew. This it was that led them off the higher track in order to waste their lives trying to find the physical process, which would not have benefited anybody if it had been found. The Elixir is both an actual potion and a spiritual power.

We notice in the above description that the numbers One, Two, Three, Four are combined to make Ten, as in the Tetraktys of Plato. The One is on the highest of four planes; the Four on the lowest. Before the writer is a picture of the arms of Sicily, in which the same symbol is seen. From a central face radiate three legs, on the sides of the head are two wings, while from it issue four serpents, two above and two below. The motto, IANOPMITAN, is often said to mean "I always fall on my feet," or "One who is at home everywhere."



THE ARMS OF SICILY

The Three and the Four together make up the Seven — the number

of principles in Man, three higher and four lower. The Two and the One above that are Cosmic principles. This septenary key to the mysteries of our nature is of the greatest importance, as H. P. Blavatsky knew when she recalled the world's attention to it by the Theosophical teachings. Scholars know that the number seven was universally a sacred number. This key is of particular importance during the present wave of psychism, because it alone can enable people to discriminate between their real Spiritual nature and their lower psychic nature. In the vain belief that they are cultivating their higher nature, many people are trying to arouse into activity the latent forces of the psychic nature, which is part of the lower Four just spoken of. Thus they fall victims to forces they cannot control, awaken sleeping desires, throw their nervous systems out of balance, and so forth. The Spiritual nature pertains to the higher triad of principles alone, it is won by the conquest of desires, not by their cultivation. This explains the importance set by Theosophists on the practice of helpful service and active work, and the disfavor with which they regard all mere dabbling in psychism.

We also notice in the above remarks the number Twelve — the number of the Zodiac, that mysterious ancient Book which scholars try so vainly to read and to account for. Twelve were the labors of Hercules, the sons of Jacob, the stones of Ūrim and Thummim, the disciples of Jesus, and so on. There are interesting relations between Ten and Twelve, which together make the twenty-two letters of the Hebrew alphabet and the twenty-two extra cards in the Tarot pack; but the subject is endless. The gross matter to be purified has first to be dissolved, and after that it has to pass through these twelve stages of purification and rebuilding. Apply this to the drama of the Soul.

Alchemy, if properly studied, can furnish us with many valuable clues to many branches of science — Spiritual, physical, etc. H. P. Blavatsky has written a good deal about it in *The Secret Doctrine*. It is evident that no one can succeed unless he is ready to take the preliminary steps, which is just where most people are apt to balk. In other words, we have to be sure of our motives, our purity, our strength and courage, and some other important matters. Otherwise, with fatal certainty, we shall wander in vain and profitless mazes.

THE PRE-GLACIAL ENGLISHMAN: by T. Henry

THE subject of the Pre-Boulder-Clay Man, recently unearthed at Ipswich, England, and investigated by Professor Arthur Keith, of the Museum of the Royal College of Surgeons, London, comes up so frequently in public print that a review aiming to keep abreast of current opinion must perforce recur to it. The topic, too, is of special interest to students of Theosophy, as illustrating the truth of the Theosophical teachings with regard to the past history of the human race.

The occasion of the present notice is an article in *The Illustrated London News* for March 23, 1912, which gives a summary of the relations between this latest-found man and the other well-known ancient human remains, together with an account of the series of geological strata in which the different remains were found. In this article and its pictorial illustrations we notice the customary conflict between logic and preconception; the former compelling a vindication of the Theosophical position, the latter asserting the claims of conventional theories of biological evolution. The inconsistency, seemingly unsuspected, reflects the chaotic condition of current thought, for each of whose motley phases the editor must cater; and suggests the contest between rays of sunlight and a brooding mist of illusion. For while the writer, in passages which we shall quote, upholds views so strongly in support of the Theosophical position, the artist, charged with the duty of providing suitable captions, has silhouetted the letterpress in a decorative border of hairy anthropoids armed with sticks and going about seeking an enemy; and there is a full-page fancy scene representing this ancient Englishman, "reconstructed from his remains," which we should describe as a rather handsome mechanic of strictly modern type, but with a body of more than modern shapeliness, finding his way home from a bathing expedition after his clothes have been stolen. For this comely individual has his hair down, a ragged, untailed animal-skin is thrown loosely about his middle, and he carries a stone missile in one hand and a flint-tipped spear in the other. Yet his magnificent brow and keen thoughtful eye suggest that he would be more happily occupied in fitting an electric installation.

Regarding the place where the Pre-Boulder-Clay man was found — it was about a mile to the north of Ipswich, on a brickfield, famous to geologists, as the writer curiously says, "for the very ancient Quaternary and Tertiary deposits which have been exposed by the excava-

tions of the London Clay for brickmaking." It is good business to sprinkle in a few "very ancients," but it is better to have them in the right place. The deposits, in descending order, are enumerated as follows:

Chalky Boulder-Clay
Middle-Glacial Sand and Gravel
Decalcified Red Crag
London Clay
Woolwich and Reading Beds
Thanet Sand

The workmen had standing instructions to report finds; and last October one of them reported that in removing some decalcified Boulder Clay to get at the underlying Glacial Sand, he had found part of a human skull and human bones. As the remains were friable, whole blocks of earth enclosing them were removed and submitted to the examination of Professor Keith. The strata were examined by expert geologists — Mr. W. Whitaker, F. R. S., Dr. J. E. Marr, F. R. S., and Mr. George Slater, F. G. S. The Chalky Boulder-Clay, under which the bones were lying, covers an immense area in East Anglia, and is a landmark in Pleistocene Geology. It owes its origin to the ice-sheet associated with the last episode of the Great Ice Age. Since its deposition, most of the present river-valleys have been formed; this shows its antiquity, when measured by the scale of historical time. Before it was laid down, there seems to have been a sandy land-surface to the north of Ipswich, and on this the man must have lived. In the Boulder-Clay and at its junction with the sand, have been found flint implements, which doubtless explains the stone-tipped spear in the picture. Yet what necessary connexion is there between the man and the flints? The former may well have occupied his sandy plain in days when the climate was genial, working metals and building cities perhaps; until the slow march of ages brought increasing cold, civilization gradually moved southwards, and the now inhospitable plains became the abode of flint-chipping, fur-clad tribes. Doubtless such layers of flints represent the ultimate residue of many vanished populations, whose wooden and metal products have long since been resolved into their elements.

With respect to the characteristics of this man, the writer shows that they are flatly in contradiction of the results required by conventional theory. Let us take three successive men: the Neanderthal

man, whose remains have been found frequently in southern France and elsewhere, and who lived in Mid-Palaeolithic times; the Galley Hill man, found in the one-hundred-foot terrace of the Thames, and much older than the Neanderthal; and finally the oldest of all, the Ipswich man. The Neanderthal men

show distinctly primitive and somewhat simian characteristics. The implements which they made are also of a more simple type than those found in the river-terrace gravels, which are nevertheless more ancient. Therefore, if we are to judge of the type of man from the implements he made, the earlier River-Drift man was of a more advanced type than the later Mousterian or Neanderthal man. The famous find at Galley Hill . . . has proved this to be true; for here we have a type of skull which is by no means degraded, and associated with flint implements which show an advanced civilization. . . . But the one-hundred-foot terrace of the Thames at Upminster in Essex rests upon and is therefore less ancient than the Chalky Boulder-Clay, and under this Boulder-Clay at Ipswich a modern type of man has been found! . . . The outstanding fact about this discovery is that even at such an immensely remote period . . . modern man was already evolved, and that to find the primitive human type we shall have to carry our investigations back into a still more dim and distant past.

But what rule of logic or mathematics are we expected to apply here? We are trying to fix the date of man's beginning by means of a calculation based on the gradations in the specimens discovered and the intervals between those gradations. This is the mathematical method of drawing a line through a series of points and predicting therefrom the position of other points not experimentally determined. But if the points determined by experiment are found to lie in such a relative position as to *make our line go up instead of down*, the only consistent conclusion is that the other points follow the same law. In short, if the type of humanity becomes more refined as we get farther back, where is the logic of seeking a primitive beginning in the past? The writer says we must place the beginning in a "still more dim and distant past"; but that is no way out of the difficulty; for the trouble is that the more dim and distant we make our past, the farther we get from the origin we are seeking! If a man boring for water should find the point of his auger issuing from the surface in the adjacent lot, would he screw on another length of pipe and go to boring deeper? If you are digging for potatoes and find oranges, it is a sure sign that you are headed in the wrong direction.

In *The Secret Doctrine*, published twenty-four years ago, H. P. Blavatsky urges very strongly this point as to the difficulty of recon-

cing theories with scientific facts. She cites copious illustrations from the leading authorities on the subject, as to the facts, as to the theories, and as to the relation between facts and theories. What the writer above quoted says bulks very small in comparison with the wealth of instance and argument to be found in *The Secret Doctrine*; and the whole goes to show that the conventional theories of human history and evolution are wrong. Perhaps one reason why they are so tenaciously clung to, lies in the belief that the only alternative to their acceptance is the abandonment of evolution altogether; and evolution came as so welcome a relief from conventional beliefs of another kind, that there is a natural fear of imperilling it. Such a fear, however, is quite groundless. The principle of evolution is in no danger; evolution is a law and a truth. It is merely the wrong and twisted theories, the wild speculations, the unwarrantable assumptions, indulged in by many who speak in the name of evolution, that are in danger; and we need not be in haste to save them. What H. P. Blavatsky did was to point out the true laws of evolution, that great Cosmic principle which works in every realm of life.

The story of human evolution is far greater and grander than is imagined by the timid conceptions of anthropological speculation. The history of man as a physical being goes back very much farther into geological time, and is counted by Races lasting millions of years, of which what we call races are only the minor subdivisions. At all epochs civilized and uncivilized men have tenanted the earth side by side, as they do today. The vestiges of civilization disappear, while only the stone implements remain — save indeed those stupendous stone monuments set up for an undying memorial by the early sub-races of our own Fifth Race. The evolution of man is not physical alone; he has other lines of heredity, spiritual, mental, etc. All these have to be studied, if facts are to be adhered to and the truth to be known; to ignore them is to lose oneself in a sea of error. The progress of races is brought about, as history shows, by a *handing on of the light* from one race to another, by the occasional appearance of great men, heroes, saviors, geniuses; and not alone by the alleged processes of natural selection. But before we can give even a lucid outline of this subject, it is essential to assume a familiarity with many preliminary details such as a student of Theosophy gradually learns. We can but conclude, therefore, with a recommendation to the inquirer to study Theosophy, and especially the teachings of H. P. Blavatsky.

THE HONEY-ANTS OF POINT LOMA:

by Percy Leonard, Instructor, Râja Yoga College, Point Loma, California

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EVER since Llave described a Mexican honey-ant in 1832, these insects have been more or less before the public notice, and yet there are many obscure points to be cleared up in respect to their habits.

The following notes are a contribution to the subject, and are based upon nearly a year's observations of these ants, both in the wild state and in captivity.

In opening up a nest of honey-ants, we are liable to meet with six distinct phases. Firstly, and most numerous, are the workers, the undeveloped females, which occur in three sizes, the majors, the minors, and the minimis; and the so-called "queens," who exercise no regal power, but are simply the egg-producers and mothers of the community. They have deprived themselves of their wings and inhabit the darkest recesses of the nest. Next come the virgin females, adorned with gauzy wings of great beauty, and lastly, the almost brainless males, likewise provided with wings. (Figure 1.)

Besides these we find the repletes, which are not, however, a distinct phase, but are simply workers (usually majors) whose crops are so distended with honey as to justify their generic name *Myrmecocystus* (i. e., ant-bladders). These ants have evolved their distinctive habit with reference to climatic conditions. In the Californian spring-time the hills are covered with flowers and flowering shrubs. The juicy shoots of many plants are also infested with aphides, which excrete the "honey-dew." These insects use only part of the sweet sap sucked from the growing shoots, the surplus being excreted, and the foraging ants lap it up from the surface of the leaves, or directly from the excretory orifice of the aphides. The quantity of syrup thus produced is extraordinary. As an extreme case we may mention an aphis living on the sugar-maple which excretes forty-eight drops in twenty-four hours.¹

During the season of plenty a certain number of the workers, usually majors, are set aside to store up the supplies collected by their foraging sisters. They hang motionless from the vaulted ceilings of the underground chambers (Figure 2), and are always ready either to relieve a returning collector of the contents of her crop, or to regurgi-

1. *Ants, Their Structure, Development, and Habits*, page 341.

tate a drop or two to feed a hungry member of the community. The swallowed honey is not "consumed," but simply stored. It remains in the crop, and is returned to the mouth in the same condition as when first swallowed. A minute quantity is of course passed on to the stomach proper, for the sustenance of the individual, but the crop contents are available for the use of the community "on demand."

The tendency to active exertion common to ants is held in abeyance, and the patient replete resigns herself to the monotonous occupation or serving as a simple container for the fluid wealth of the community.

During the dry season, the whole community depends upon the honey stored in the repletes, supplemented by dead bees, wireworms, and other insects. The replete when appealed to by the antennae of another ant opens her mandibles to their fullest extent, and the recipient sucks up the honey with mandibles almost shut. In two or three minutes the meal is over, and it is usual for the party served to lick the replete all over and massage the abdomen, as she is powerless to perform her own toilet. The crop, which expands to fill almost the entire gastric cavity, has no glands discharging into it, and as its walls are composed of non-absorbent chitine,² it is to all intents and purposes as cleanly a container for fluids as a glass bottle.

MYRMECOCYSTUS MEXICANUS MOJAVE

Early in March, 1910, some of the boys of the Râja Yoga School at Point Loma, San Diego, brought me some honey-ants. Their gasters looked like partly deflated bladders or half-dried raisins. This was because their honey contents had been almost exhausted by the winter consumption of the nest, and the spring blossoms having not yet opened no fresh supplies were available.

It is a golden moment in the myrmecologist's career when, with a few blows of a mattock on the hard, tough, sandstone subsoil, he lays open the honey-vaults. In the bright sunshine the repletes glitter like jewels. They look like highly-polished amber beads, clear and translucent, as they hang from the domed ceilings. So firmly do they cling that only one or two are dislodged by the shock of the mattock. Many of the workers huddled together, like frightened sheep, in one of the chambers, and made no effort to defend their citadel, but, doubtless, they were paralysed by the sudden glare. All the chambers and passages were spotlessly clean and absolutely free from smell. Although

2. *Ants, Their Structure, Development, and Habits*, page 33.

they look quite helpless, the heavily laden repletes are perfectly well able to regain their position in the dome when shaken to the floor. Wm. M. Wheeler comments on the need of keeping the nest dry to prevent the crumbling of the walls, and to prevent the growth of moulds on the repletes.³ My observations, continued daily for nearly a year, have convinced me that they actually *prefer* a moist soil. I have found many chambers of repletes about four inches below the surface of the flower beds in a garden which is repeatedly irrigated during the summer months. A wild nest under observation was situated at the bottom of a steep bank where it received not only its own rainfall but the surface water shed by the adjoining slope. The soil crumbles very readily when moist, and how the nest escaped disaster is not very apparent, nevertheless it appears to be a strong and populous formicary.

At first it seems almost incredible that these ants, whose mandibles cannot pierce a plum skin or the rind of a pear,⁴ should be able to drive tunnels in the hard sandstone subsoil. The sandstone, however, must appear to the ants as lilliputian masonry, the stone being represented by the sand-grains, the mortar by the yellow clay which binds them together. It is not a question of cutting through the tiny blocks of silica, it is only necessary to moisten the clay matrix with saliva and remove the loosened grain. Lafcadio Hearn's statement that ants can bore tunnels in the solid rock is therefore seen to be misleading. Wm. M. Wheeler states his belief that the relatively large nest opening is an adaptation for increasing the ventilation.⁵ My own view, based upon observation continued for many months, is that the large entrance is required for the removal of nodules of iron encountered while excavating. During the hot weather of July and August the entrance was almost entirely blocked up with little clods; but when the first autumnal rain fell, softening the soil and favoring excavation, the hole was enlarged to a size somewhat greater than that of a ten-cent piece (which measures eighteen millimeters in diameter). (See Figure 3.) Six or eight workers unite their efforts to drag out a nodule. Each grasps it on its equatorial line with her mandibles, and their bodies radiate outwards from this center like the spokes of a wheel. Those in front drag while those behind push, and after very heavy exertions the heavy burden is deposited outside the entrance.

3. *Honey Ants, with a Revision of the American Myrmecocysti*, page 380.

4. *Ants, Their Structure, Development, and Habits*, page 177. 5. *Ibid.*, page 375.

To allow egress for a team of eight workers surrounding a nodule necessitates a commodious gangway. The constant stream of ants circulating through the galleries is probably sufficient to prevent the accumulation of stagnant air. The nursery chambers are invariably situated in the upper portion of the nest, and one may sometimes see a worker carrying a cocoon outside the nest as if to give it an airing.

One usually associates ants with dry weather and sunshine, but these ants come out only at night. A thick fog drifts in from the ocean, spangling the scanty grass blades with glittering drops. The landscape is shrouded in darkness; but the little circle illuminated by the lantern is a scene of bustling activity. A constant stream of amber-colored ants pours out of the entrance hole, each carrying a small pellet of sand-grains in her mandibles. Some leave their burden just outside, others laboriously plod as far as three or four feet before they drop their load and hurry back for another. The underground workings are being extended almost every day in the year. I have seen the ants at work at 9 p.m. in the pouring rain and at a temperature as low as 44°F. They do not leave their holes until about half an hour after sunset. Thus they escape the birds and the lizards, their only enemies being the night-prowling toads, and ant-lions.⁶ If we smear a little honey on a piece of glass it is quickly surrounded by forty to fifty ants, who climb upon each other's backs to reach the tempting fluid. In two or three minutes they are loaded to the limit of their capacity, and then they stagger off towards home. They are perfectly ready to regurgitate, when appealed to on their way by a hungry comrade. The ants' antennae, in which the "contact-odor" sense resides, are constantly being cleaned to free them from dust, which must dull their sensibility. The eggs and larvae are continually being licked over, probably as a sanitary precaution to prevent the growth of moulds, to which they are very subject in the damp recesses of the nest.

As evidence of individuality in character I give the following anecdotes:

An ant had fallen into the moat surrounding my artificial nest and was rescued in a moribund condition and laid upon the surface of the island. Two of the workers came up, inspected the sufferer, and passed by without the slightest effort to help. Presently a minor

6. Since writing, my nest was raided by driver ants (*Eciton sumichrasti*) on June 12, 1911. The invaders poured into the nest and emerged carrying larvae. They were repulsed by spraying them with kerosene oil. "The ant's most dangerous enemies are other ants, just as man's most dangerous enemies are other men." (*Forel*)

worker arrived and showed the liveliest concern. For many minutes she vigorously kneaded the patient's gaster, and worked the stiff legs until at last the half-drowned ant revived.

On another occasion, after a team of six workers had deposited a nodule outside the nest opening, one major stayed behind and by strenuous exertion dragged the load one-third of an inch farther away. Its exact location was a matter of absolute unimportance; but the major's notions of exactitude had to be satisfied.

For more than nine months I was unable to get the least indication as to the source of their honey. Occasionally foraging ants would drag a dead bee or other insect into the nest; but I could never find any foragers returning with distended crops.

On March 16, 1911, however, it seemed as if the whole population was on the move, and streaming up and down the trunk of a neighboring pepper tree (*schinus molle*). An examination of the tree by daylight showed a quantity of blossoms, but I could find only one or two scale insects. My captive ants greedily lapped up the nectar from these flowers. I have found these ants "milking" the aphides upon roses and carnations at night. It is probable that almost all the wild flowers are visited by the foraging ants. I know they get nectar from the "rattlesnake weed" (*Euphorbia setiloba*), the honey-plant (*Echium simplex*, a cultivated flower), and the blossoms of that fragrant wild shrub, *Ceanothus cuneatus*. As evidence of the stay-at-home habits of these ants, I can certify that a honey-plant was in full bloom twenty-seven feet away from their nest, and yet it was three weeks before the foragers discovered it.

The honey stored in a replete of average size I found to weigh 0.1885 of a gram, and if we take McCook's figure of six hundred repletes in a nest of the *horti-deorum* variety⁷ to be approximately true of *M. M. Mojave*, this would give us 113.10 grams, or a grand total of about a quarter of a pound of honey. Small though it may appear to us, I fancy that the knowledge of a share in this provision imparts a certain dignity to every individual member of the nest.

These ants do not display such a wolfish eagerness to acquire chance scraps of food as is shown by other species who live from hand to mouth. To show the inoffensive character of the ants under consideration, I may mention that once a troop of little black ants (*Dorymyrmex pyramicus*, var. *niger*) gathered round to lap up some honey

7. *Nature's Craftsmen*, page 104.

which I had put at the nest entrance, but there was no resentment expressed towards them.

When watching the nest at night one may sometimes see crickets hop about among the ants who cover the ground outside the entrance; but no notice is taken of these intruders, and they hop away in a leisurely manner. Once I saw a tiny cricket emerge from the nest among the moving throng of ants, and markedly differentiated from his companions by his sudden, jerky action of progression. He skirmished about for a minute or two and then retreated down the hole. Evidently he was one of the "pets" of the nest.

Among the solitary insects, such as the flies, the moths and beetles, only a very small percentage of their numerous offspring ever reach maturity, owing to parental neglect. Among ants, under favorable conditions, the infant mortality is practically nil, so that if every female produced eggs the population would very soon outrun the means of subsistence. It has been very plausibly suggested that the ants regulate the supply of "queens" by rearing a selected number of female larvae on a full diet, while the great majority of them are so insufficiently nourished that their reproductive organs never develop. The feminine trait of taking delight in nursing the larvae survives, however, in its full strength in these stunted females, and they devote themselves passionately to the care of the little, white, semi-translucent grubs, which resemble a crook-necked squash in general form. I think I have never looked into my artificial nest at any time during the day or night without seeing the nursing ants employed in caring for the larvae.

On October 28, 1910, I caught a worker near my wild nest who was carrying about a cocoon in her mandibles. I placed her upon the island nest, where a quantity of other workers were wandering about, not yet having begun to excavate tunnels. There arose immediately a tremendous competition to nurse the cocoon. The lucky possessor was constantly surrounded by eager applicants for the privilege. Sometimes they showed their impatience by stamping violently upon the ground or jerking their bodies forward in their uncontrollable desire to caress the helpless pupa. A few days afterwards the covering was stripped off, and the pale, unfinished infant was carried to and fro without a moment's peace, as one ant after another acquired possession of it. Every worker wanted to be good to it and in the end it died, killed by kindness. If the care of the luckless pupa had been

entrusted to one nurse all would have gone well, but by a perversion of the nursing instinct a tragedy resulted.

On October 16, 1910, after the first real rain of the winter season, I noticed a number of ants peeping out of their hole in great excitement. To produce the effect of nightfall I inverted a box over the entrance. On raising the box after a few minutes I saw the ground alive with ants and among them a virgin queen, which I secured. This is the first capture of this phase of *M. M. Mojave*. The general coloring and markings remind one of a wasp (Figure 1). Although many nests have been searched, only two queens of this species have been found.

During the hot dry spell of weather at the end of August, 1910, the ants stayed underground. The entrance was almost closed with little clods of earth, which seems to show that the extraordinarily large nest opening is needed not so much for ventilation as to afford egress for ants removing nodules.

For some time I had noticed ants come out of the nest carrying what seemed to be the corpses of ants in their mandibles. I casually noted that they dropped their burdens and returned to the nest. Later on I discovered that these burdens were *live ants*, and that when deposited, both parties plodded away in opposite directions without showing the slightest trace of emotion. Other observers who have witnessed similar occurrences have thought them to be a kind of play; but what I saw was much too solemn to be called a frolic. I would suggest that the ants carried out were "callows," that is, ants newly emerged from the chrysalis, and that after being allowed to harden their shells for some days in the shelter of the nest they were thus formally introduced to the outside world as a hint that they might now undertake the regular work of the nest.

Professor Wheeler has established the fact that it is only "callows" which are capable of becoming repletes. Once an ant gets thoroughly matured and hardened it appears to lose the elasticity required in order to allow of the enormous distention of the crop which characterizes the replete. An ant in process of becoming distended to the proportions of a replete can never be confounded with a replete who has fed away her store and is slowly collapsing to her normal condition. In the former case the gaster is tense and more or less spherical (Figure 4), in the latter the skin is corrugated into folds and the segments stand out as ridges as the crop contents slowly diminish.

MYRMECOCYSTUS MEXICANUS

These ants have never been found in the United States until 1910, and our discovery of a nest on Point Loma was the third reported occurrence of this species in the year.

On November 6, I dug up a nest in a soil composed of disintegrated shale. They are hardly distinguishable to the casual observer from the preceding species, except by a slightly darker color.

There were many semi-repletes moving about the galleries (Figure 5), and about laying-females.

When opened up the resulting hole was only three feet deep and two feet in diameter — evidently a new nest. The laying-females, in pleasing contrast to the queens in a beehive, are very friendly and spend hours with their heads together, caressing one another with their antennae. On January 30, 1911, I found a solitary female in a little hole in a bank. The excavation could not have been more than a day or two old. Had she been undisturbed, in due time a new colony would have been produced by her unaided efforts.

Shortly after I had established an island nest in a basin and had moistened the earth, a minor worker was struck with the idea of sinking a shaft. Accordingly she scratched away at the soil, using her fore legs just like a terrier. Her energy was so infectious that a major joined her, and presently a minim was drawn into the undertaking. Ants digging in pure sand are obliged to remove it grain by grain, but the slightest admixture of clay permits the formation of pellets, thus enormously economizing labor. The loose dirt is first scraped into a heap under the ant. The gaster is then curved forward and downward as in the act of stinging,⁸ and the front pair of legs is used to pat the earth against the opposing lower surface of the gaster. The loose soil granules are thus packed into a solid pellet, which is seized in the mandibles and carried out. When digging a gallery against the inner wall of a glass tumbler, the digging consists for the most part in tugging at the sand-grains and detaching them by main force. The gallery is afterwards enlarged to give passage room for the females. One of the nests under observation had its entrance against the edge of a level slab of smooth concrete, so that the circular area over which the ants deposited their excavated soil was divided

8. N. B. No ant of the subfamily *Camponitinae*, to which the genus *Myrmecocystus* belongs, possesses any sting. They have a large poison-bag, the contents of which are used to spray their enemies and their prey.

into two parts; one extended over a flower bed, the other over a surface of cement.

Every day the concrete slab is swept, so that on any given morning the loose earth is exactly half of the total amount brought up during the preceding night. On January 24, 1911, the radius of the circle of débris was seven feet four inches. The night had been calm, so that in sweeping up the deposit I am sure that I collected no wind-borne particles. The weight was 23.6489 grams, and by doubling this figure we get the total output of loose dirt for the night. When poured into a cubic inch measure it almost exactly filled it. Under favorable conditions, therefore, these ants can excavate nearly two cubic inches in a night. During a colder night, a few days previous, the radius of the circle was only four feet eight inches. Quite early in the evening, some ants will be seen traveling to the very circumference of the circle, passing by bare spaces where we might imagine they would be perfectly justified in getting rid of their load.

Professor Wheeler, in speaking of repletes, remarks that they "are of course imprisoned for life"; but I have found my ants gradually resume their original figure when their contents are exhausted. In the nest I excavated November 6, 1910, there were two or three dozen semi-replete majors whose gasters were no larger than those of the fertile female's and who could walk about quite freely. Others had apparently been entirely emptied, owing to the lapse of time since the spring honey-harvest, and their gastric segments were in a distressing condition of misfit. They did not overlap smoothly, but were warped and twisted out of shape. But another course is open to a replete who finds her honey-content diminishing. *She may swallow air* and thus maintain her size (Figure 6). This is done by both *M. M. Mojave* and the present species. In my artificial nest I found a full-sized major replete three-quarters full of honey, and with an air-bubble occupying the upper region of the crop. I stinted supplies of honey to bring about diminution of her stock, and as she fed away her store the air-bubble increased, until it filled three-quarters of her capacity, while the remaining quarter of her honey lay in the lowest part of the crop.

I now frequently found her lying on the floor of the little grotto where she lived, with six or eight workers gathered around to be fed. The reason for her recumbent posture is at once apparent. So long as she was hanging from the ceiling, the air-bubble occupied the upper portion of the crop, and her efforts to regurgitate honey could only

result in an escape of the imprisoned air; but if she lay upon her side, or ventral surface, on the principle of the spirit-level the air rose to the highest point of the gastric wall and then any contraction of the proventriculus, or pumping stomach, forced the honey out at the mouth. Contrary to the observations of McCook on the *hortideorum* variety, I have found that these ants very economically lap up the honey contents of dead repletes, after depositing the heads and thoraces in the moat round their nest. It was very amusing to watch the workers of this species feeding their larvae with eggs. The nurse holds the egg in her jaws and squeezes it into the mouth of the helpless baby, who shows great eagerness to be fed. After the larva has got what it can, the nurse cleans out the shell, and regurgitates the remnant into the larva's mouth. Frequently the nurse sticks an egg on to the back of the larva's neck by saliva, so as to have it ready for the next feeding time.

Although these ants have no stings, they can spray some poisonous fluid into the wounds made by their mandibles, from a gland situated in the tip of their gaster. Two caterpillars, an inch and a half long and a quarter of an inch in diameter, succumbed to the spray in a few minutes, and were dragged down into the nest for food. It is quite common to find dead insects, termites, flies, etc. lying among the larvae, and in wild nests and among captive communities it is usual for two or three repletes to hang from the ceilings of the nursery chambers. Sometimes the larger larvae remain for a long time with their heads thrust into the thoraces of dead flies, devouring the muscular tissue.

The high development of ants is shown by the long period of helpless infancy and absolute dependence upon the care of the nursing workers. Although they lie upon the bare earth of their caves, they are protected from actual contact with the soil by stiff bristles which are set in their soft skin, and which allow of a free circulation of air all round them. Living as they do in damp subterranean caverns, they are peculiarly liable to be attacked by various moulds, and it is for this reason that the nurses are indefatigable in licking their charges to remove the spores from which these vegetable parasites take their rise. Larvae isolated from the attentions of the workers very quickly succumb to these exhausting growths. It is probably due to the need of a certain amount of ventilation that the larvae are usually found in the upper chambers, thus presenting a parallel with the case of the short-tailed field vole (*microtus agrestis*) of England.

The ordinary retreat of these rodents is a burrow situated far below the surface; but their young are reared in a nest of split grass, built upon the very surface of the ground. They are exposed to innumerable dangers, of course; but a litter of six or eight young mice would probably be suffocated if confined in a deeply situated nursery.

As showing the preference of these ants for moist surroundings, I may mention that for some months I kept a colony upon a porous earthenware saucer inverted in a basin of water and completely covered by a mound of clay and sand. When I eventually broke up the formicary, I found that the chambers and galleries had all been hollowed out in the soil immediately above the damp earthenware surface, the saucer itself forming the floor. The higher and drier portion of the mound had not been inhabited at all.

PRENOLĒPIS IMPARIS

This is found here in great abundance, and is common from the Atlantic to the Pacific. We will content ourselves, therefore, with merely recording its occurrence. It ascends the blue gum (*eucalyptus globulus*), and may be found by the dozen resting half-hidden among the fragrant anthers.

MYRMECOCYSTUS MELLIGER FOREL

The typical form has not yet been found here, but a variety which appears to be intermediate between varieties *testaceus* and *semirufus* has been identified by Professor Wheeler.

MYRMECOCYSTUS MELLIGER LOMAENSIS

Another variety or sub-species has been found here, only previously reported from Riverside and Whittier by Mr. Quayle.

This ant is strictly diurnal in its habits, and has been seen feeding upon the white flowers of *mesembryanthemum aequilaterale*.

In an artificial nest these ants were fed with a drop of bee's honey in a leaf. Instead of greedily lapping it up, as the first two species here treated of would have done, they became violently agitated. They flung themselves upon the honey and sprayed it with their poison, snapping at it furiously with their mandibles, and it was some time before they realized that it was good for food. Is it possible that being diurnal in their habits they have a perennial feud with honey-bees when they compete with them for the contents of the nectaries of flowers, and that the smell of the honey forcibly suggested bees to their minds,

and provoked the customary hostilities? Whereas the honey-bees require a hollow tree and household furniture in the shape of waxen cells for rearing brood or storing honey, the ants can carry on their lives with nothing more than food and a few cubic feet of soil. They use no implements, utensils nor bedding, and the sole garment they require is the swaddling gown of woven silk that wraps them in the pupal state. Ants have no personal ambition. The only end they have in view is to cover the earth with colonies of their own particular species, and urged by this remote, impersonal desire, they spend their lives in ceaseless toil. The instinct which impels the ants' unselfish labor is probably as irresistible as that which forces human beings to pursue their personal advantage. The personality of ants appears to be dissolved, and every individual seems to act as if it were the agent for that nameless, universal will that urges on the slow advance of cosmic evolution. Without compulsion or direction their social life is carried on in perfect harmony. Each ant is a law to herself; but as the aim of all is identical, a spirit of perfect harmony prevails. The ants have shown the possibility of a perfect communal life, and have proved that individuals can be incited to the maximum of effort with the minimum of personal advantage, and that the little states based on unselfish sisterhood are supremely fitted to survive in the struggle for existence.

This paper would be incomplete without an expression of grateful acknowledgment to Professor William Moreton Wheeler for his kindness in identifying the various species of ants to which reference has been made. Without this help in naming specimens, and the assistance derived from his correspondence, the production of the paper would have been indefinitely delayed.

The illustrations are from plates prepared expressly to illustrate the text, and are the work of the Lomaland Photo and Engraving Department, Point Loma, California.

It may be of interest to note that I have in my possession specimens of replete honey-ants collected at Coronado, San Diego, in 1890, by Dr. F. E. Blaisdell, formerly a member of the San Diego Society of Natural History. They evidently belong to the species *Myrmecocystus mexicanus*, but whether to the pure type, or to one of the sub-species or varieties, it is impossible to determine, owing to their defective state of preservation in consequence of the evaporation of the alcohol.

WEIMAR AND THE DUCHESS AMALIA

by Grace Knoche



THE *Encyclopaedia Britannica*, in a very brief account, describes Weimar as being a little city, dull, unpretending, of no actual importance at the present time, with no imposing structures, and indeed somewhat plainly built.

But there is an air of elegance in its quiet and clean streets which recalls the fact that it is the residence of the grand-duke and his court, and it still retains an indescribable atmosphere of refinement, dating from its golden age, when it won the titles of the "poets' city" and "the German Athens."

Although in the deeper sense every woman's life is crowded with opportunities, still, to strike the keynote of a distinct and higher era in art and literature and joy in life is given to very few women to do. The "Golden Age of Weimar," while popularly thought of as existing within the reign of the grand-duke, Charles Augustus (1775-1828), was not only inaugurated and its keynote definitely sounded, but it was well sped towards the zenith of its glory by Charles' mother, the Duchess Anna Amalia, who for nearly twenty years preceding her son's term of power held the reins of government and of social life in the duchy.

At the early age of nineteen the Duchess Amalia, as she is best known, was left a widow with a twofold burden: the administration of the grand-duchy of Saxe-Weimar-Eisenach, the largest of the Thuringian estates, and the education of her two little sons, for the elder of whom she was appointed regent. For two decades she carried these responsibilities, and superbly. It was she who first made Weimar a center of art, music, and letters, and through the wisdom she showed in the care and education of her elder son (her younger son, Constantine, died in youth) she assured the continuance of its luster as the center, for more than fifty years, of German intellectual life. She husbanded existing and developed new resources, she strengthened the duchy in its relations to surrounding powers, and she built up its life on material lines the while she was creating, by her patronage of art and letters and her appreciation of the old Greek ideals, an inner life that made possible an efflorescence in many ways similar to the ages of Pericles and Aspasia in Greece and Elizabeth in England. And the wonderful thing about this is that it came about quite naturally, in reality as the result of a certain quality of motherhood which

led the Duchess to feel that the thing of supreme importance was a right education for her sons.

Herself possessing educational ideals that were far more Greek than German (for Weimar had not then come into its own) the Duchess engaged as tutor for her elder son, Wieland, then Professor of Philosophy at Erfurt and already famous as the translator of twenty-two of Shakespeare's plays. The Duchess herself was widely known for her love of the drama, as well as for her interest in Greek culture and ideals.

At Weimar, in connexion with his educational work, Wieland founded and edited *Der Deutsche Mercur* (*The German Hermes*), made translations to his heart's content, among them from the works of Horace, Lucian, and Aristophanes, and produced quantities of original works—works which are by no means great in the sense in which the writings of Homer and Shakespeare are great, but yet which won a place and filled it well for the clearness, charm, poesy, and grace of them.

But the flower of the golden age of Germany's "Athens" blossomed full only when Goethe and Schiller came upon the scene. It has been said often and justly that "Goethe was Weimar," Goethe, himself the grand old Greek, serene, statuesque, often addressed as "Zeus," who lived and worked at Weimar nearly sixty years, who was the friend and adviser of the court during all of that time, and whose touch was a directive power behind nearly every enterprise of the grand-duke Charles during the fifty years of his reign.

The world knows something of what Goethe stands for as a light in the literary firmament, but his work for the state is usually lost sight of because so little importance is attached by biographers to the personal relations he sustained to the Duchess Amalia and her son, a son in every way worthy of his mother and whose reign was a tribute to her far-seeing care when she stood, hardly out of girlhood, so dowered with responsibilities and, in a sense, so alone.

Professor Browning (Cambridge) writes in this regard:

Upon this society Goethe, in the strength and beauty of youth, rose like a star. From the moment of his arrival he became the inseparable and indispensable companion of the grand-duke. He subdued the affections of all he met with. Wieland said that his soul was as full of him as a dewdrop of the morning sun. . . . Goethe and the duke (just of age) dined together and bathed together; the duke addressed his friend by the familiar *thou*. Goethe slept in his chamber and tended him when he was ill. In the spring he had to decide whether he would

go or stay. In April the duke gave him the little garden by the side of the Ilm, with its lofty roof, where he lived for the next eight years. In June he invested him with the title, so important to Germans, of *geheim-legationsrath*, with a seat and voice in the privy-council and an income of £180 a year. By accepting this he was bound to Weimar forever.

We may here mention the different grades of service through which Goethe passed. In January 1779 he undertook the commission of war; on September 5, 1779, he became *geheim-rath*; . . . In April 1782 he was ennobled by the emperor and took for his arms a silver star in an azure shield; in June of the same year he became president of the chamber *ad interim*.

We know that Goethe devoted himself with industry and enthusiasm to the public business; he made himself acquainted with every part of his master's territory; he did his best to develop its resources; he opened mines and disseminated education; he threw himself with vigor into the reconstruction of the tiny army. . . .

His efforts for the development of the Duke's dominions naturally led him to the study of science. The opening and direction of mines induced him to study geology; the classification of ancient forms of life led him to osteology and anatomy.

Between the lines we can read some of the reasons why Weimar became what it did become, and why other states and cities have had to wind along the way of mediocrity, unmindful of the talent within their borders and so deprived of the service it perhaps so willingly would render. To know Weimar one must know the relations between the court and the splendid, gifted, unselfish types who were drawn there and remained.

When Schiller came to Weimar and found his real life beside Goethe the sun rose high in mid-heaven. Two friends never more gloriously balanced one another in a common work. In place of jealousy there was love. Schiller, younger, all fire and flame, looked up to Goethe not only as a literary inspiration but as an epic himself in that moderation, that balance, that closeness to the ideals that made Greece live and that have made live many a city and nation since; Goethe was pleased and complimented when the public mistook some unsigned writing of Schiller for his own. The light of Weimar centered in these men and today the pilgrim to that city is first of all attracted to the *Goethehaus*, the humble home of Schiller, and to Rietschel's bronze group of Goethe and Schiller (unveiled in 1857) which stands, as it should stand, before the theater.

For the theater was the central point in Weimar's teeming life. The Duchess Amalia, who, although nominally in private life after her son's accession nevertheless continued to occupy the place which

the duke's sympathetic but less gifted wife would otherwise have filled, loved the drama, and the best writers in Germany wrote for the Weimar theater. More than that, she believed the drama to be an educational factor of enormous importance. Her son, so like her and so worthy of her, shared in this conviction and added his patronage of dramatic art to her own. To Goethe and Schiller the drama, rightly understood and made to serve rightly, was the well-spring of a new life for the state. Could Weimar have been less than a center of new life under such conditions?

From the beginning of his residence in Weimar, Goethe, in conjunction with the Duchess Amalia and the grand-duke, had worked in various ways towards the accomplishment of certain dramatic ideals, but not until he had been in Weimar fifteen years was he enabled to work in an environment that did not present constant limitations. Continues Professor Browning (*italics ours*):

In the autumn of 1791 Goethe was able to devote himself regularly to a task which had informally occupied his first years in Weimar. The new theater was completed and Goethe was made the director of it. It was in this capacity that he was best known to the citizens of Weimar. He had the final decision on every detail of piece, scenery, and acting; in later years his seat was in a large armchair in the middle of the pit, and applause was scarcely permitted until he gave the signal for it. The German stage owes perhaps as much to Goethe as to Lessing. The *répertoire* of the Weimar theater was stocked with pieces of solid merit which long held their place.

Shakespeare was seriously performed and the actors were instructed in the delivery of blank verse. Stress was laid on the excellence of the ensemble as against the predominance of particular stars. The theater was considered as a school not only of elevating amusement but of national culture.

It was after the building of this theater that Weimar received its crowning benefits in the lifelong friendship of Goethe and Schiller, the latter already famous as the author of a drama that had taken Germany — particularly younger Germany — by storm, *Die Räuber*. And nothing could better attest the temper of the place than the fact that Goethe, who at first intended to complete his *Demetrius* as a memorial to his friend, arranged instead a performance of Schiller's greatest poem, *Das Lied von der Glocke* (The Song of the Bell), crowning it with an epilog.

In an obscure account we read that the Duchess Amalia, who manifested the greatest interest in all public dramatic efforts of the kind to which Goethe was giving the best of himself, often had presented

at her beautiful country home, Tiefurt, in the environs of Weimar, open-air plays in which her courtiers were the actors "and rocks and trees the scenery." Pity it is that we know so little of these particular efforts, for there is a charm and fascination in the very thought of them that is so suggestive of certain lines of dramatic work being carried on in Lomaland, that one wishes Tiefurt had known a family chronicler or the Duchess herself a Boswell.

But all in Weimar was not smooth sailing on dramatic lines, for while Goethe and Schiller and the court were working in one way, another, who was equally with them a pillar in the temple of Weimar's fame, was openly opposing them. This was Herder, narrow in his religious views, and consequently prejudiced against any efforts to make the drama serve as a guide to the people, but intellectually noble, and kingly in his life; Herder, who said when all but overcome with weakness and constant pain toward the end of his life, "Oh, if some grand new thought would come and pierce my soul through and through, I should be well in a moment." Herder had been a guiding influence in the life of the young Goethe at one time, but had been so baptised in Lutheranism that even the atmosphere of "pagan Weimar" could not wipe out the mark of it. He was insular where Goethe was cosmopolitan, even, one may say, cosmic; and so, from his post of influence as upper court preacher (a post obtained for him by Goethe), he exerted an influence that it must have been a trial to attempt to offset. He never grasped the meaning of what Goethe was trying to do.

Another pillar in the temple was Richter — Jean Paul, The Only — who had come to Weimar in order to be near Herder but who also failed to see that true drama is potent to teach and refashion the human heart.

Then there was Knebel, associated with Wieland in the instruction of the Duchess Amalia's two sons; and Musaeus, who had qualified for theology at Jena, but failed in his efforts to secure a parish because of a scandal spread abroad by peasants to the effect that he had once been seen to dance. So literature became his refuge and Weimar his goal. Böttiger was also of that august company, the famous archaeologist, whose researches in the art of ancient Greece and Rome had made him an authority. Liszt made his residence there for a time; Weimar was never without its artists.

Nothing but the doctrines of Cyclic Law and Reincarnation can

explain the sudden appearance of this group of philosophers — among whom the Duchess must be counted as a commanding figure — in an obscure little German city, to make it a center of what was really Neo-Greek culture adapted to modern conditions, and to leave it to mediocrity again when they had passed. All of them, as any study of their individual lives will reveal, were deep students of Homer, Plato, the old Greek tragedians, and of Shakespeare. Theosophy does not set down such facts as these as mere accidents or co-happenings. Many of these men had won a separate fame as translators of and commentators upon the great dramas of the world. They knew also the writings of the sage Ossian, of which fact one of Herder's biographers remarks with unconscious naïveté, "in the genuineness of which he (Herder) like many others believed."

There was a quality of balance, of proportion, of sanity, of moderation, in its life that marked Weimar as a city apart, as a city that was touched by the true spirit of old. To a strange degree it exemplified what Goethe held to be life's quest and law, "the husbandry of the soul." Its light became as sunlight with Goethe's advent, and flickered out when he died.

SEISMOLOGICAL NOTES: by D.

THE latest Bulletin of the Seismological Society of America contains an invaluable article on the choice of a seismograph, which ought greatly to stimulate practical interest in the equipment of many more stations. Almost the only country in the world whose government has long practically recognized the importance of applied science in its bearings on every department of human activity, is France. Other governments have followed in some directions, timidly; but scientific research is too often treated publicly as if a matter of no more than third-rate importance. The theory is that private research should be stimulated; but when a point has been reached where public appropriations are obviously needed — well, let us look at France, and sigh! The same Bulletin has an extraordinarily detailed analysis of earthquakes in China, covering a period of twenty-seven centuries or so. These seem to bring out the interesting fact that there is a cycle of three hundred years connected with these disturbances, with a peculiar alternation in the direction of their location.

IN MEMORIAM

IN MEMORIAM of the passing of Madame Carin Scholander, on April 19 last, at Stockholm, the flags of America and Sweden were at half-mast on the grounds of the International Theosophical Headquarters, at Point Loma, California; while the minds and hearts of members there and the world over, united in homage to the rich fruitage of her forceful and unselfish service in the cause of Theosophy.

Madame Scholander was one of the beacon-lights of our Theosophical work in Sweden, being for many years a devoted member of the Society; and in her devotion to duty, her stedfastness to principles, her wide culture commanding the fluent use of eight languages exercised in an extensive correspondence throughout Europe, she reminds us of the stately type of the women of olden time — a type seldom seen in modern days. Her father's house was the meeting-place of the artists and authors of the day, and after her marriage at the age of twenty, her own home became such a center, and so continued until her death.

From her first meeting with H. P. Blavatsky in London, in the early years of the Theosophical Society, she helped to carry Theosophy to Sweden, where she also greatly aided in the translating of *The Secret Doctrine*.

With her finely educated mind and her broad understanding, she became as the Mother-Mind which fostered the work of the three Theosophical Leaders for Sweden; and from her first meeting with the writer in Berlin, in 1896, she helped to bring the spirit of the Theosophical "Crusades" to revivify Theosophy in her native country. In council with her co-workers, her mere presence was an assurance of harmony; and to them, and to all, the aroma of her unselfish yet forceful and gentle life will ever remain as one of their richest possessions.



ON Monday May 6, at 3.15 p. m., Mr. Joseph Fussell, the noted English painter and art-teacher and the oldest resident at the International Theosophical Headquarters at Point Loma, passed away. Nine years ago, Mr. Fussell who up to that time had for many years resided at Nottingham, England, came to Point Loma

to spend the rest of his days with his son Joseph H. Fussell, who is Secretary of the Universal Brotherhood and Theosophical Society, also Private Secretary to Madame Katherine Tingley, and one of the oldest of the International Headquarters staff. Although within a month of ninety-four years of age, Mr. Fussell up to a few months ago led a most active life, retaining his faculties and keen interest in life and in his art and his flower-garden until the very end.

He was born in Birmingham, England, June 10, 1818, and when he was two years old the family moved to London. His father numbered among his personal friends many of the famous artists of a century ago, and from early boyhood Mr. Fussell himself came in close contact with many of these, among whom may be mentioned the great painter Turner, and the elder Cruikshank, the pioneer of modern cartooning. Among his own personal friends were Mr. Good-year, the noted engraver, Mr. Redgrave, President of the South Kensington School of Art, and Dean Hole, whose book on roses is a world standard.

A very interesting feature in Mr. Fussell's career was that he and his older brother, Alexander Fussell, were the first two artists engaged on *The Illustrated London News*. In addition to this, Mr. Fussell did a great deal of book-illustrating, following his father, who was one of the most noted book-illustrators of his day.

Later Mr. Fussell went to reside in Nottingham where he had a most successful career, and at the time of his leaving England, in the spring of the year 1903, at the age of eighty-five, he was probably the oldest active art-teacher in the country, with a record of seventy-four years of active work.

He left many friends behind him in England, and on coming to Point Loma he immediately took up active work both in painting and as one of the art-instructors in the Râja Yoga College.

Because of Mr. Fussell's great love of flowers, Katherine Tingley arranged that the funeral services should be held in one of the beautiful Lomaland gardens, which at this time of the year are filled with gorgeous color and bloom. Mr. Joseph H. Fussell and Mr. C. J. Ryan accompanied the body to Los Angeles, where it was cremated.

Mr. Fussell leaves two sons, H. Alexander Fussell, and Joseph H. Fussell.