

## Theosophy and Modern Science

by H.T. Edge, F.T.S.

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[Page 3] IT has been the part of the *Wisdom-Religion* or *Esoteric Philosophy*, now being given to the world under the name of "Theosophy", to upset many of our most cherished sentiments and opinions with regard to the great questions of life and problems of the universe; and one of the most striking instances of this is of course its attitude towards modern physical science, that fabric with which so much of our nineteenth century glory is interwoven. It is unnecessary here to discourse upon the prowess of science and the blessings it is supposed to have conferred upon humanity; plenty of eloquence has been exhausted over that topic, especially when science was forty or fifty years younger than it is now. Theosophists may coincide with the admirers of science in the opinion that it has rendered good service in clearing away the fetishes of mediaeval superstition, and paving the way for a higher form of knowledge; but they must beg to deny that it has power to wrest more than a very small pittance of information from nature as to her laws. Scientists themselves have begun to recognise this of late. As Edward Carpenter, in his "Civilisation, its Cause and Cure", says :—

"While admitting that science has done a great work in clearing away the kitchen-middens of superstition and opening the path to clearer and saner views of the world, it is possible — and there is already a growing feeling that way — that her positive contributions to our comprehension of the order of the universe have in late times been disappointing, and that even her methods are at fault and must lead to failure. After a glorious burst of perhaps fifty years, amid great acclamations and good hopes that the crafty old universe was going to be caught in her careful net, science, it must be confessed, now finds herself in almost every direction in the most hopeless quandaries." (1st Edition, p. 51.)

The fact is that the sudden violence of the contrast between the rapid advance of science and the dense ignorance of our forefathers on such subjects, combined with our native Western self-sufficiency of temperament to puff us up, and to make us think that by virtue of this science we were entitled to place ourselves at the summit of human attainment. Two violent assumptions are thereby made, which the late awakening of Occult science is beginning to deny, *viz.*, that physical science is the only science, and that the ancients were ignoramuses. The first effect produced by the acceptance of the views of the Esoteric Philosophy will therefore be a [Page 4] mighty change of front as regards the estimation of our position in human history. Instead of looking down upon our ancestors with pity from our tower of intellectual arrogance, we shall look up to them for instruction, and shall come to regard physical science as a kind of mushroom which has sprung rapidly up in the dark, at a time when the absence of the sun of wisdom prevented any healthy growth from appearing.

Now what are the chief objections to modern science, which foredoom it to failure and justify Occultism in decrying it ? They are these: —

(1) It is exclusively materialistic, and therefore cannot afford any knowledge of the most important planes of nature and principles of man. "Advocates of science will answer here — "But science does not pretend to deal with anything above matter, it leaves that to metaphysics or to religion. This is all very well as long as scientists keep to what they profess, and confine their studies and speculations to the observance and consideration of physical phenomena; but when we find them setting themselves up as popes and dictating laws to other departments of human enquiry, we are justified in objecting to the narrowness of their sphere of investigation!! Scientists may study their own material plane to their hearts' content, but they must not confine their consciousness so entirely to the gross earth that at last they become blind like moles, and cannot see that there is any air or light above them. It is a great advantage to be able to tabulate physical phenomena, to know the reaction of chemical compounds upon one another, or to have an intimate acquaintance with the parts of a plant or animal; but when matter is exalted to the throne of the universe and made supreme, and other departments of nature are forced to acknowledge its supremacy and obey its laws, the case is altered, and scientists have transgressed their own domain.

The first count against science then is that it has stared at the earth until it cannot see, and denies the existence of the sky. But this is not all; for I contend that even were scientists content to be mere moles and grovel in the dirt, they would be incapacitated from discovering anything of importance, even about that, by their blindness to the other planes of nature that are so inextricably interwoven with it. The very failing that prevents a mole from seeing the light, prevents him from seeing even the dirt, and later on we shall see into what contradictions and absurdities science has wandered from this cause.

(2) It proceeds by the inductive method, *i.e.*, it collects observations; and from them constructs theories. This method is capable of giving us the truth, *provided we have all the data to base our theories upon* — a condition which can obviously never be fulfilled. Approximations can be made to the truth in proportion to the number of data possessed. But our science has so few data that its theories would be more appropriately named [Page 5] "deviations from the truth". Mr. Edward Carpenter is very incisive upon this point; in the work above quoted he says (p. 52): —

"The method of science is the method of all mundane knowledge; it is that of limitation or actual ignorance. Placed in face of the great uncontained unity of Nature, we can only deal with it in thought by selecting certain details and isolating those (either wilfully or unconsciously), from the rest. That is right enough. But in doing so — in isolating such and such details — we practically beg the question we are in search of; and, moreover, in supposing such isolation we suppose what is false, and therefore vitiate our conclusion. From these two radical defects of all human enquiry we cannot escape. The views of science are like the views of a mountain; each is only possible as long as you limit yourself to a certain stand-point. Move your position and the view is changed."

It is necessary here to observe that, as the author says, this is a radical defect of the human intellect, as opposed to spiritual knowledge, and therefore presents itself in our occult studies, as well as in our scientific ones. For example, if we are given certain data as to the septenary constitution of man, and begin to theorise thereupon, we are theorising from incomplete data, and are liable to have to alter our theories when new data are supplied to us. Similarly when we speculate about Karma and re-incarnation; we cannot know all the causes acting to produce a given result unless we have a higher means of obtaining knowledge than the intellect. But in science the data are more incomplete than anywhere else, on account of its non-recognition of metaphysical nature. Our author gives the following instance among

others: —

"We are accustomed to say the path of the moon is an ellipse. But this is a very loose statement. On enquiry we find that, owing to perturbations supposed to be produced by the sun, the path deviates considerably from an ellipse. In fact in strict calculations it is taken as being a certain ellipse only for an instant, the next instant it is supposed to be a portion of another ellipse. We might then call the path an irregular curve, somewhat resembling an ellipse. This is a new view. But on further enquiry it appears that, while the moon is going round the earth, the earth itself is speeding on through space about the sun, in consequence of which the actual path of the moon does not in the least resemble an ellipse ! Finally, the sun itself is in motion with regard to the fixed stars, and they are in movement too. What then is the path of the moon ? No one knows; we have not the faintest idea — the word itself ceases to have any assignable meaning."

(3) The third objection which I shall make to science is, that it is so utterly divorced from the religious or spiritually-aspiring element of human thought. I do not deny that there are religious scientists or scientific divines; but I assert that in such cases the relation between the religion and the science is rather of mutual tolerance than of mutual help. A man may be religious *in spite* of his science, or scientific *in spite* of his religion. The general tendency of religion and science is, however, apart, and, this is quite an abnormal state of affairs. Here we recognise that dualism which [Page 6] is of evil and is the antithesis of that unity which is of good. The ancients knew of no such sundering of human enquiry into hostile factions. They had their Wisdom-Religion which contained a homogeneous philosophy of life, and provided for the aspirational and intellectual parts of man's nature by the same food. This is not the place to enter into an apology for the Wisdom-Religion and its oneness in all antiquity — there are plenty of Theosophical writings on that — but the case may be summed up by saying that an impartial view of all the historical records we possess will show that such a system existed and still exists, that it was known at all periods and in all parts of the inhabited world, and that different writers confirm its identity by their marvellous unanimity on the subject. Modern speculators have missed this knowledge because they do not take this impartial view. They read all works which support their own beliefs, and refuse even to open books dealing with what they have previously condemned as "superstition". And now what is the result of this divorce between religion and science ? The death and decay of both. Religion, expurgated of its rational element, cannot satisfy intellectual hunger; science, confined to the earth, can only provide us with a philosophy of life as cold and dry as earth, and must sooner or later be rejected as fit only for the governing of gnomes. The characteristics of the material world are squareness, rigidity, darkness, concretion, inertia; applied to the moral life of man they produce the corresponding qualities, and the result is, not a man, but a machine.

The narrowness and one-sidedness of science is producing visible effect in the host of monstrosities it is breeding, moral, intellectual, social, and physical. Its physical consequence becomes daily more apparent to our eyes in the ungainly forms and constructions that meet them in every quarter, showing how ugliness is the outward manifestation of imperfection. Says H. P. Blavatsky in "Civilisation — the death of Art and Beauty", (*Lucifer* for May, 1891): — "Owing to the triumphant march and the invasion of civilisation, nature, as well as man and ethics, is sacrificed, and is fast becoming artificial. Climates are changing, and the face of the world will soon be altered. Under the murderous hand of the pioneers of civilisation the destruction of whole primeval forests is leading to the drying up of rivers, and the opening of the Canal of Suez has changed the climate of Egypt as that of Panama will divert the course of the Gulf Stream. Almost tropical countries are now becoming cold and rainy, and fertile lands threaten to be

soon transformed into sandy deserts. A few years more and there will not remain within a radius of fifty miles around our large cities one single rural spot inviolate from vulgar speculation. In scenery the picturesque and the natural is daily replaced by the grotesque and the artificial. Scarce a landscape in England but the fair body of [Page 7] nature is desecrated by the advertisements of 'Pears Soap' and 'Beecham's Pills'. The pure air of the country is polluted with smoke, the smells of greasy railway-engines, and the sickening odours of gin, whiskey, and beer. And once that every natural spot in the surrounding scenery is gone, and the eye of the painter finds but the artificial and hideous products of modern speculation to rest upon, artistic taste will have to follow suit and disappear along with them". For further instances I refer the reader to the eloquent tirade from which the above passage is extracted, and recommend him to study the underground railway and the steam-roller as object lessons in the effects of science. For instances of corresponding effects produced upon the moral, social, and intellectual planes, I refer the reader to the other denunciatory articles forming the editorials of *Lucifer* during Madame Blavatsky's lifetime, and to a host of writers on modern social evils. I now proceed to a consideration of the methods and theories of science more in detail.

First as to the "working hypothesis", which constitutes a prominent feature in scientific methods. A working hypothesis is simply a provisional theory awaiting proof or disproof, as the event may decide.

For example, suppose a chemist has discovered that the alkali potash, hitherto believed by him to be an elementary substance, can be decomposed and made to yield the metal potassium. He forthwith frames a hypothesis that all the alkalies can be made to yield similar metals. He applies this hypothesis to the discovery of fresh facts and finds that soda does really yield sodium, lithia lithium, etc., and the hypothesis is proved. This is the ordinary method of science; but sometimes it becomes necessary, or at any rate convenient, to frame a hypothesis which does not admit of actual proof, but which nevertheless affords a good temporary basis to reason from, and even to discover fresh facts from. This is the "working hypothesis", and every new fact discovered by its aid goes to increase its probability, though it does not prove it. For instance, in order to explain the laws of chemical combination, chemists have postulated that matter is divisible into minute particles called atoms, separated by comparatively large spaces. This is a working hypothesis and cannot be proved; yet it has sufficed as a basis upon which to build the structure of modern chemistry, and from which a vast number of facts have been able to be discovered, which without its aid would have remained unknown. Again, the undulatory theory of light is a working hypothesis, insusceptible of direct proof, but fitting in so well with facts subsequently discovered as to have justified its retention.

Now, as regards the value of the working hypothesis, it is all very well so long as it remains a working hypothesis, and is not put to improper uses. But unfortunately hypotheses are continually subject to modification, [Page 8] as new facts, which do not fit in with them, are discovered; and different scientists, specialising in different branches of science, modify them differently, so that they become converted into the most inconsistent and self-contradictory figments of the human brain. As I am much indebted to Stallo at this point of my subject I had better quote his own words from "Concepts of Modern Physics", (Introduction to second edition, p. ix.):

"Generally speaking, hypotheses are more than mere arbitrary and artificial devices for the enchainment and classification of facts. They are in most cases guesses at the ultimate truth suggested by the analogies of experience, and are primarily used as working hypotheses only in the sense that they afford a basis for further experiment and observation whereby their

ultimate validity is to be established or overthrown. In the progress of the various attempts at their verification they are almost always modified and transformed, so as to bring them into conformity with the facts. And not infrequently these transformations are different in different departments of scientific investigation, in each of which the hypotheses are tested by different methods, and confronted with different orders of facts. The result is that in many cases not only serious discrepancies but radical inconsistencies are developed between the several forms into which the hypotheses are formed on different lines of research. A very good illustration of this is afforded by the hypothetical aether, which has played a part more or less conspicuous in physical astronomy, in ordinary physics, and in chemistry. By the astronomers this aether was originally regarded as a fluid of extreme tenuity and mobility, offering no sensible resistance to the movements of celestial bodies; and the question of its continuity or discontinuity was not seriously mooted. Its main function in modern astronomy has been to serve as a basis for hydrodynamical theories of gravitation. In physics this fluid for some time appeared in several *rôles* in connection with the 'imponderables'; some physicists going so far as to identify it with one or more of them. But since the promulgation of the kinetic theories of these imponderables, and especially of the dynamical theories of heat, it has been in requisition chiefly in optics as a substratum for luminar undulations. And here, to account for the dispersion of light, physicists came to insist upon its atomic or molecular structure, finding it necessary to assume that the particles of the aether were separated by finite intervals bearing a sensible ratio to the length of a luminar wave. Moreover they had to endow it with an enormous elasticity, so that its resistance to deformation far exceeded that of the most rigid-elastic bodies. But presently, in other departments of physics, the admission of the molecular or atomic constitution of the aether led to consequences subversive of a number, of well-ascertained facts. . . . And in chemistry too it was found impossible to concede the enormous elasticity of the aether without depriving it of those properties upon which its serviceableness in the construction of chemical theories mainly depended. Furthermore, the exigencies of the atomo-mechanical theory have led distinguished mathematicians and physicists to attempt a substitution, for the traditional atoms of matter, of peculiar forms of vortical motion in a universal, homogeneous, incompressible, and *continuous* material medium, which (unless the attribute of impenetrability is to be dismissed from the concept of matter) must of course be identical with the all-pervading aether."

He then explains that there can be no objection to each specialist [Page 9] maintaining his own particular hypothesis about the, aether, so long as he uses it as a *working* hypothesis — as a temporary peg on which to base further experiments; but he must not foist it as a finality upon science at large. Science is a consistent whole, and its division into departments purely arbitrary. These departments cannot have diverse theories about the same thing.

"The atom cannot be a cube or oblate spheroid for physical, and a sphere for chemical purposes. And a group of constant atoms cannot be an aggregate of extended and absolutely inert and impenetrable masses in a crucible or retort, and a system of mere centres of force as part of a magnet or of a Clamond battery. The universal aether cannot be soft and mobile to please the chemist, and rigid-elastic to satisfy the physicist; it cannot be continuous at the command of Sir William Thomson, and discontinuous on the suggestion of Cauchy or Fresnel."

H. P. Blavatsky quotes this latter passage in "The Secret Doctrine". (Vol. I., p. 482, first edition) under the heading, "Modern Physicists are playing at blind man's buff", her object being to show that, as scientists

have not even agreed among themselves what to believe in, they are not in a position to confute the beliefs of Occultism.

Next let us consider the Atomic Theory, upon which; modern chemistry, and in a less degree modern physics, are founded. A materialist *i.e.*, a believer in the reality and not the illusiveness of matter, must postulate one of two things: either that matter is, or is not, infinitely divisible. To admit that it is infinitely divisible is to admit that matter is reducible to — nothingness, and thereby to "confute the materialistic doctrine". Therefore there is a limit to the divisibility of matter; it is composed of minute masses called "atoms", themselves, "not further divisible". But the acceptance of this hypothesis soon lands us in a dilemma. For, in order to account for *vis viva*, for energy, for activity in matter, we must postulate motion in the atoms; and for motion, to be continuous, the atoms must be elastic — must be capable of bouncing off, or of repelling one another. Otherwise the motion would soon come to a dead stop, all energy would depart from matter, and it would become more hopelessly dead and inert than can easily be conceived. Hence the atoms must be elastic. But all elasticity is itself a function of atomic structure it depends on the power of the atoms of a body, when subjected to pressure, to approach one another, and to regain their former distance apart as soon as the pressure is relieved, thus reproducing the force which caused the pressure. But since atoms are not composed of atoms, they can have no-elasticity ; they are incompressible; hence they cannot rebound off one another.

[See "Secret Doctrine," Vol. I., p. 519, first edition, where Butlerof is quoted to this effect]

"See now what a curious contradiction this fundamental principle of [Page 10] the materialists is leading them into. The atom is indivisible, and at the same time we know it to be elastic. An attempt to deprive it of elasticity is unthinkable; it would amount to an absurdity. Absolutely non-elastic atoms could never exhibit a single one of those numerous phenomena that are attributed to their correlations. Without any elasticity the atoms could not manifest their energy, and the substance of the materialists would remain weeded of every force. Therefore, if the universe is composed of atoms, then those atoms must be elastic. It is here that we meet with an insuperable obstacle. For what are the conditions requisite for the manifestation of elasticity ? An elastic ball, when striking against an obstacle, is flattened and contracts, which it would be impossible for it to do, were not that ball to consist of particles, the relative position of which experiences at the time of the blow a temporary change. This may be said of elasticity in general; no elasticity is possible without change with respect to the position of the compound particles of an elastic body. This means that the elastic body is changeful and consists of particles, or, in other words, that elasticity can pertain only to those bodies that are divisible. And the atom is elastic."

This goes to show that the atom is not indivisible and that matter is therefore infinitely divisible. But if it be infinitely divisible, then the atom is not matter at all, but something quite different. The above and similar objections to the theory of the materiality of the atom might be summed up in the following concise proposition:—

If the properties of matter are functions of its atomic structure, then the atom, having no atomic structure, can have none of the properties of matter, and consequently cannot be matter.

It is difficult to avoid visualising the atom as something like a small shot, and though scientists would

probably deprecate such a practice, there is no doubt they are involuntarily influenced by it. If we consider that an atom, having no parts, can have no centre and no circumference, and consequently cannot rotate nor be turned upside down, we shall realise better what an abstraction it is.

All the foregoing tends to support the occult axiom that atoms are "Souls", or "Jivas", or "Lives"; [*The Secret Doctrine*, vol I, p 567, first edition] something not ordinary matter at all, but on a different plane of existence, and forming one of the links between the physical and metaphysical worlds, which links are quite unknown to modern science. We must bear in mind that what is commonly called "matter" has no real existence as such, being merely a concept formed in our imagination by detaching the two qualities of visibility and resistance to touch from the thing in which they inhere, and exalting them into an actual existence. We may provisionally regard "matter" as existing, by way of framing a working hypothesis, but if we give this hypothesis the value of a proven theory and proceed to argue from it, we are landed in absurdities very soon, e.g such an absurdity as the "atom". [Page 11]

The "vortex-theory" of atoms is a later substitute for the ordinary atomic theory. A vortex is a spiral bent round into a circular form, and the most familiar instance of it is the smoke-ring. It is found that these smoke-rings behave in many ways as atoms are supposed to behave, expanding and contracting, repelling and attracting each other, etc. ; and that, if made in a "perfect fluid" — *i.e.*, a hypothetical fluid without friction — they would be indestructible, as atoms are supposed to be. Hence, according to the vortex-theory, atoms are vortical motions in a perfect fluid, the fluid being naturally our old overloaded friend the aether. The worst of it is that the same old difficulties arise about the structure of the aether as about the structure of matter. If it be continuous there can be no motion in it; if it be atomic, then what are the atoms ?

We have seen how scientists postulate the existence of a matter composed of inert atoms; we now come to the consideration of the necessary correlation of this, which accounts for the change and activity which nature displays on every hand. Absolutely inert, motionless, dead atoms obviously cannot by themselves account for a universe where all is life and activity. The terms generally used to denote this other constituent of the universe are "force" and "motion". But neither of these terms has any definite meaning when divorced from matter. Force is always a stress between two bodies, and cannot be conceived as existing apart from the bodies which manifest it. It is defined as "that which produces, or tends to produce, a change in the state of rest or motion of a body"; but that which produces motion in a body is always either motion in some other body, or else some unknown "cause" such as gravitation. The fact is that the word "force" can be used in two senses. If it be used to denote that, which, acting on the atoms, produces in them motion, then it denotes some unknown metaphysical cause, entirely beyond the range of physical science. But if it be used in the sense in which it is used in the mathematical part of physics, then it is not the cause, but the effect, of motion in matter. Force is the *effect* which one moving atom produces on another atom.

H. P. Blavatsky, in "The Secret Doctrine," (I., 517) says, after Butlerof: —

"Force is simply the passage of one state of motion into another state of the same: of electricity into heat and light, of heat into sound or some mechanical function, and so on."

Thus "force" used in this latter sense is not an entity at all, but merely a "concept". (See "Stallo", p. 167.)

It is the same with "motion". Motion cannot be conceived apart from the moving body. It is a mere condition of matter, which cannot be accounted for without reference to some higher or spiritual plane beyond it.[Page 12]

I do not propose to continue any further the consideration of scientific fallacies, and shall content myself with having shown the falsity of the main principles of scientific methods, and with the illustrations given above. The position I have taken may be summarised as follows: — Modern science is a mere intellectual mushroom which has grown up in the dark. So long as it confines itself to the study of physical phenomena, and does not lord it over other departments of thought, no great harm is done; though even then it is hopelessly incapacitated by its severance from the other planes of nature. It proves its insufficiency by its failure to be reconciled with religion. The attitude of scientists towards the ancients is one of complete reversal of the normal state of affairs, and the Wisdom-Religion has been forgotten. The chief failings of science are its habit of using hypotheses as proven facts, and its reasoning from incomplete data; the result of which is seen in the self-destroying conceptions of the "atom", "force", etc..