

BOOK I.—PART III.

ADDENDA.

SCIENCE AND THE SECRET
DOCTRINE CONTRASTED.

“ The knowledge of this nether world—
Say, friend, what is it, false or true ?
The false, what mortal cares to know ?
The true, what mortal ever knew ? ”

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ADDENDA TO BOOK I.

I.

REASONS FOR THESE ADDENDA.

MANY of the doctrines contained in the foregoing Seven Stanzas and Commentaries having been studied and critically examined by some Western Theosophists, certain of the occult teachings have been found wanting from the ordinary stand-point of modern scientific knowledge. They seemed to encounter insuperable difficulties in the way of their acceptance, and to require reconsideration in view of scientific criticism. Some friends have already been tempted to regret the necessity of so often calling in question the assertions of modern Science. It appeared to them—and I here repeat only their arguments—that “to run counter to the teachings of its most eminent exponents, was to court a premature discomfiture in the eyes of the Western World.”

It is, therefore, desirable to define once and for all the position which the writer, who does not agree in this with her friends, intends to maintain. So far as Science remains what in the words of Prof. Huxley it is, viz., “organized common sense”; so far as its inferences are drawn from accurate premises—its generalizations resting on a purely inductive basis—every Theosophist and Occultist welcomes respectfully and with due admiration its contributions to the domain of cosmological law. There can be no possible conflict between the teachings of occult and so-called exact Science, where the conclusions of the latter are grounded on a substratum of unassailable fact. It is only when its more ardent exponents, over-stepping the limits of observed phenomena in order to penetrate into the arcana of Being, attempt to wrench the formation of Kosmos and its *living* Forces from Spirit, and attribute all to blind matter, that the Occultists claim the right to dispute and call in question their theories. Science cannot, owing to the very nature of things, unveil the mystery of the universe around us. Science can, it is true, collect, classify, and generalize upon phenomena; but the occultist, arguing from admitted metaphysical data, declares that the daring explorer, who would probe the inmost secrets of Nature, must transcend the narrow limitations of sense, and transfer his consciousness into the region of noumena and the sphere of primal causes. To effect this, he must develop faculties which are absolutely

dormant—save in a few rare and exceptional cases—in the constitution of the off-shoots of our present Fifth Root-race in Europe and America. He can in no other conceivable manner collect the facts on which to base his speculations. Is this not apparent on the principles of Inductive Logic and Metaphysics alike?

On the other hand, whatever the writer may do, she will never be able to satisfy both Truth and Science. To offer the reader a systematic and uninterrupted version of the Archaic Stanzas is impossible. A gap of 43 verses or *Slokas* has to be left between the 7th (already given) and the 51st, which is the subject of Book II., though the latter are made to run from 1 *et seq.* for easier reading and reference. The appearance of man on Earth alone occupies as many stanzas, which describe minutely his primal evolution from the human Dhyān Chohans; the state of the globe at that time, etc., etc. A great number of names referring to chemical substances and other compounds, which have now ceased to combine together, and are therefore unknown to the later offshoots of our Fifth Race, occupy a considerable space. As they are simply untranslatable, and would remain in every case inexplicable, they are omitted, along with those which cannot be made public. Nevertheless, even the little that is given will irritate any follower and defender of dogmatic materialistic Science who happens to read this.

Before proceeding to other Stanzas, it is proposed, therefore, to defend those already given. They are not in perfect accord or harmony with modern Science—this we all know. Had they been, however, as much in agreement with the views of modern knowledge as a lecture by Sir W. Thomson, they would have been rejected all the same. For they teach belief in conscious Powers and Spiritual Entities; in terrestrial, semi-intelligent, and highly intellectual Forces on other planes*; and in Beings that dwell around us in spheres imperceptible, whether through telescope or microscope. Hence the necessity of examining the beliefs of materialistic Science: of comparing its views about the “Elements” with the opinions of the ancients, and of analysing the physical Forces as they exist in modern perception before the Occultists admit themselves to be in the wrong. We shall touch upon the constitution of the Sun and planets, and the occult characteristics of what are called *Devas* and *Genii*, and are now termed by Science, Force, or “modes of motion,” and see whether esoteric belief is defensible or not (*Vide infra*, “*Gods, Monads, and Atoms*.”) Notwithstanding the efforts made to the contrary, an unprejudiced mind will discover

* Their intellection, of course, being of quite a different nature to any we can conceive of on Earth.

under Newton's "agent, material or immaterial" (of his third letter to Bentley), the agent which *causes gravity*, and, in his personal *working God*, one finds just as much of the metaphysical *devas* and *genii*, as in Kepler's *angelus rector* conducting each planet, and the *species immateriata* by which the celestial bodies were carried along in their courses, according to that astronomer.

We shall have, in Book II., to openly approach dangerous subjects. We must bravely face Science and declare, in the teeth of materialistic learning, of Idealism, Hylo-Idealism, Positivism and all-denying modern Psychology, that the true Occultist believes in "Lords of Light;" that he believes in a Sun, which, far from being simply "a lamp of day" moving in accordance with physical law, and far from being merely one of those Suns, which according to Richter—" . . . are Sun-flowers of a higher light"—is, like milliards of other Suns, the dwelling or the vehicle of a god, and a host of gods.

In this question, of course, it is the Occultists who will be worsted. They will be considered on the *prima facie* aspect of the dispute to be ignoramuses, and labelled with more than one of the usual epithets given to those whom the superficially judging public, itself ignorant of the great underlying truths in nature, accuses of believing in mediæval superstitions. Let it be so. Submitting beforehand to every criticism in order to go on with their task, they only claim the privilege of showing that the physicists are as much at loggerheads among themselves in their speculations, as the latter are with the teachings of Occultism.

The Sun is matter, and the Sun is Spirit. Our ancestors—the "heathen,"—along with their modern successors, the Parsis—were, and are, wise enough in their generation to see in it the symbol of Divinity, and at the same time to sense within, concealed by the physical Symbol, the bright God of Spiritual and terrestrial Light. Such belief is now regarded as a superstition only by rank materialism, which denies Deity, Spirit, Soul, and admits no intelligence outside the mind of man. But if too much of wrong superstition bred by "Churchianity"—as Lawrence Oliphant calls it—"renders a man a fool," too much scepticism makes him mad. We prefer the charge of folly in believing too much, to that of a madness which denies everything, as do Materialism and Idealism. Hence, the Occultists are fully prepared to receive their dues from Materialism, and to meet the adverse criticism which will be poured on this work, not for writing it, but *for believing in that which it contains*.

Therefore the discoveries, hypotheses, and unavoidable objections which will be brought forward by the scientific critics must be anticipated and disposed of. It has also to be shown how far the

occult teachings depart from real science, and whether the ancient or the modern theories are the most logically and philosophically correct. The unity and mutual relations of all parts of Kosmos were known to the ancients, before they became evident to modern astronomers and philosophers. And if even the external and visible portions of the Universe and their mutual relations cannot be explained in any other terms than those used by the adherents of the mechanical theory of the Universe in physical science, it follows that no materialist, who denies that the Soul of Kosmos (which appertains to metaphysical philosophy) exists, has the right to trespass upon that metaphysical domain. That physical science is trying to, and actually does, encroach upon it, is only one more proof that "might is right," and no more.

Another good reason for these Addenda is this. Since only a certain portion of the Secret teachings can be given out in the present age, if they were published without any explanations or commentary, the doctrines would never be understood even by theosophists. Therefore they must be contrasted with the speculations of modern science. Archaic axioms must be placed side by side with modern hypotheses and comparison left to the sagacious reader.

On the question of the "Seven Governors," as Hermes calls the "Seven Builders," the Spirits which guide the operations of nature, the animated atoms of which are the shadows, in their world, of their Primaries in the astral realms—this work will, of course, besides the men of Science, have every materialist against it. But this opposition can, at most, be only temporary. People have laughed at everything and scouted every unpopular idea at first, and then ended by accepting it. Materialism and scepticism are evils that must remain in the world as long as man has not quitted his present gross form to don the one he had during the first and second races of this Round. Unless scepticism and our present natural ignorance are equilibrated by intuition and a natural spirituality, every being afflicted with such feelings will see in himself no better than a bundle of flesh, bones, and muscles, with an empty garret inside him which serves the purpose of storing his sensations and feelings. Sir Humphry Davy was a great scientist, as deeply versed in physics as any theorist of our day, yet he loathed materialism. "I heard with disgust," he says, "in the dissecting-rooms, the plan of the physiologist, of the gradual secretion of matter, and its becoming endued with irritability, ripening into sensibility, and acquiring such organs as were necessary, by its own inherent forces, and at last rising into intellectual existence." Nevertheless, physiologists are not the most to be blamed for speaking of that only which they can see and estimate on the evidence of their physical senses. Astronomers

and physicists are, we consider, far more illogical in their materialistic views than even physiologists, and this has to be proved. Milton's—

. "Light
Ethereal, first of things, quintessence pure,"

has become with the materialists only—

. Prime cheerer, light,
Of all material beings, first and best.

For the occultists it is both Spirit and Matter. Behind the "mode of motion," now regarded as "the property of matter" and nothing more, they perceive the radiant noumenon. It is the "Spirit of Light," the first born of the Eternal pure Element, whose energy (or emanation) is stored in the Sun, the great Life-Giver of the physical world, as the hidden Concealed Spiritual Sun is the Light- and Life-Giver of the Spiritual and Psychic Realms. Bacon was one of the first to strike the key-note of materialism, not only by his inductive method (renovated from ill-digested Aristotle), but by the general tenor of his writings. He inverts the order of mental Evolution when saying that "the first Creation of God was the light of the sense; the last was the light of the reason; and his Sabbath work ever since is the illumination of the Spirit." It is just the reverse. The light of Spirit is the eternal Sabbath of the mystic or occultist, and he pays little attention to that of mere sense. That which is meant by the allegorical sentence, "*Fiat Lux*" is,—when esoterically rendered—"Let there be the 'Sons of Light,' " or the noumena of all phenomena. Thus the Roman Catholics rightly interpret the passage as referring to Angels, and wrongly as meaning Powers created by an anthropomorphic God, whom they personify in the ever thundering and punishing Jehovah.

These beings are the "Sons of Light," because they emanate from, and are self-generated in, that infinite Ocean of Light, whose one pole is pure *Spirit* lost in the absoluteness of Non-Being, and the other, the *matter* in which it condenses, crystallizing into a more and more gross type as it descends into manifestation. Therefore matter, though it is, in one sense, but the illusive dregs of that Light whose limbs are the Creative Forces, yet has in it the full presence of the Soul thereof, of that Principle, which none—not even the "Sons of Light," evolved from its ABSOLUTE DARKNESS—will ever know. The idea is as beautifully, as it is truthfully, expressed by Milton, who hails the holy Light, which is the—

". Offspring of Heaven, first-born,
And of th' Eternal co-eternal beam;
. Since God is light,
And never but in unapproached Light
Dwelt from Eternity, dwelt then in thee
Bright effluence, of bright essence increate."

II.

MODERN PHYSICISTS ARE PLAYING AT BLIND
MAN'S BUFF.

AND now Occultism puts to Science the question: "Is light a body, or is it not?" Whatever the answer of the latter, the former is prepared to show that, to this day, the most eminent physicists know neither one way nor the other. To know what is light, and whether it is an actual substance or a mere undulation of the "etherial medium," Science has first to learn what are in reality Matter, Atom, Ether, Force. Now, the truth is, that *it knows nothing of any of these*, and admits it. It has not even agreed what to believe in, as dozens of hypotheses emanating from various and very eminent Scientists on the same subject, are antagonistic to each other and often self-contradictory. Thus their learned speculations may, with a stretch of good-will, be accepted as "working hypotheses" in a secondary sense, as Stallo puts it. But being radically inconsistent with each other, they must finally end by mutually destroying themselves. As declared by the author of "Concepts of Modern Physics":—

"It must not be forgotten that the several departments of Science are simply *arbitrary divisions of labour*. In these several departments the same physical object may be considered under different aspects. The physicist may study its molecular relations, while the chemist determines its atomic constitution. But when they both deal with the same element or agent, it cannot have one set of properties in physics, and another set contradictory of them, in chemistry. If the physicist and chemist alike assume the existence of ultimate atoms absolutely invariable in bulk and weight, *the atom cannot be a cube or oblate spheroid for physical, and a sphere for chemical purposes. 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 Ether 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.*"*

The eminent physicist, G. A. Hirn, may likewise be quoted saying the same in the 43rd Volume of the *Mémoires de l'Académie Royale de Belgique*, which we translate from the French, as cited: "When one sees the assurance with which are to-day affirmed doctrines which attribute the collectivity, the universality of the phenomena to the motions alone of the atom, one has a right to expect to find likewise unanimity on the qualities described to this unique being, the foundation of all that exists. Now, from the first examination of the particular systems proposed, one feels the strangest deception; one perceives that the atom of the chemist, the atom of the physicist, that of the metaphysician, and that of the mathematician . . . have *absolutely nothing in common but the name!* The inevitable result is the existing

* "Concepts of Modern Physics," p. xi.-xii., Introd. to the 2nd Edit.

subdivision of our sciences, each of which, in its own little pigeon-hole, constructs an atom which satisfies the requirements of the phenomena it studies, without troubling itself in the least about the requirements proper to the phenomena of the neighbouring pigeon-hole. The metaphysician banishes the principles of attraction and repulsion as dreams; the mathematician, who analyses the laws of elasticity and those of the propagation of light, admits them implicitly, without even naming them. . . . The chemist cannot explain the grouping of the atoms, in his often complicated molecules, without attributing to his atoms specific distinguishing qualities; *for the physicist and the metaphysician, partisans of the modern doctrines, the atom is, on the contrary, always and everywhere the same.* What am I saying? THERE IS NO AGREEMENT EVEN IN ONE AND THE SAME SCIENCE AS TO THE PROPERTIES OF THE ATOM. Each constructs an atom to suit his own fancy, in order to explain some special phenomenon with which he is particularly concerned."*

The above is the photographically correct image of modern Science and physics. The "pre-requisite of that incessant play of the 'scientific imagination,'" which is so often found in Professor Tyndall's eloquent discourses, is *vivid* indeed, as shown by Stallo, and for contradictory variety leaves far behind it any "phantasies" of occultism. However it may be, if physical theories are confessedly "mere formal, explanatory, didactic devices," and if "atomism is only a symbolical graphic system,"† then the occultist can hardly be regarded as assuming too much, when he places alongside of these *devices* and "*symbolical systems*" of modern Science, the symbols and devices of Archaic teachings.

III.

"AN LUMEN SIT CORPUS, NEC NON?"

MOST decidedly Light is not a body, we are told. Physical Sciences say Light is a Force, a vibration, the undulation of ether. It is the property or quality of matter, or even an affection thereof—never *a body!*

Just so. For this discovery, the knowledge—whatever it may be worth—that light or caloric is not a motion of *material particles*, Science is chiefly indebted, if not solely, to Sir W. Grove. It was he who was the first in a lecture at the London Institution, in 1842, to show that

* "*Recherches expérimentales sur la relation qui existe entre la résistance de l'air et sa température*," p. 68.

† From the criticism of "Concepts of Modern Physics" in *Nature*. See Stallo's work, p. xvi. of *Introduction*.

“light, heat, etc., etc.* are *affections* of matter itself, and not a distinct ethereal, ‘imponderable,’ fluid, (a state of matter *now*) permeating it.” (See “*Correlation of the Physical Forces*,” *Preface*). Yet, perhaps, for some physicists—as for Oersted, a very eminent Scientist—FORCE and FORCES were tacitly “Spirit (*and hence Spirits*) in Nature.” What several rather mystical Scientists taught was that light, heat, magnetism, electricity and gravity, etc., were not the final *causes* of the visible phenomena, including planetary motion, but themselves the *Secondary effects of other Causes*, for which Science in our day cares very little, but in which Occultism believes, for the Occultists have exhibited proofs of the validity of their claims in every age. And in what age were there no *Occultists* and no *ADEPTS*?

Sir Isaac Newton held to the Pythagorean corpuscular theory, and was also inclined to admit its consequences; which made the Count de Maistre hope, at one time, that Newton would ultimately lead Science back to the recognition of the fact that *Forces* and the Celestial bodies were *propelled and guided by Intelligences* (*Soirées*, vol. ii.). But de Maistre counted without his host. The innermost thoughts and ideas of Newton were perverted, and of his great mathematical learning only the mere physical husk was turned to account. Had poor Sir Isaac foreseen to what use his successors and followers would apply his “gravity,” † that pious and religious man would surely have quietly eaten his apple, and never breathed a word about any mechanical ideas connected with its fall.

Great contempt is shown for metaphysics generally and for onto-

* Mr. Robert Ward, discussing the questions of Heat and Light in the November *Journal of Science*, 1881, shows us how utterly ignorant is Science about one of the commonest facts of nature—the heat of the sun. He says:—“The question of the temperature of the sun has been the subject of investigation with many scientists: Newton, one of the first investigators of this problem, tried to determine it, and after him all the scientists who have been occupied with calorimetry have followed his example. *All have believed themselves successful*, and have formulated their results with great confidence. The following, in the chronological order of the publication of the results, are the temperatures (in centigrade degrees) found by each of them: Newton, 1,699,300deg.; Pouillet, 1,461deg.; Tollner, 102,200deg.; Secchi, 5,344,840deg.; Ericsson, 2,726,700deg.; Fizeau, 7,500deg.; Waterston, 9,000,000deg.; Spoëren, 27,000deg.; Deville, 9,500deg.; Soret, 5,801,846deg.; Vicaire, 1,500deg.; Rosetti, 20,000deg. The difference is as 1,400deg. against 9,000,000deg., or no less than 8,998,600deg.!! There probably does not exist in science a more astonishing contradiction than that revealed in these figures. And yet without doubt if an *Occultist* were to give out an estimate, each of these gentlemen would vehemently protest in the name of ‘EXACT’ Science at the rejection of his special result.” (From the *Theosophist*.)

† According to one atheistic idealist—Dr. Lewins—“When Sir Isaac, in 1687 showed mass and atom acted upon by innate activity he effectually disposed of Spirit, Anima, or Divinity, as supererogatory.”

logical metaphysics especially. But we see, whenever the Occultists are bold enough to raise their diminished heads, that materialistic, physical science is honey-combed with metaphysics;* that its most fundamental principles, while inseparably wedded to transcendentalism, are nevertheless, in order to show modern science divorced from such "dreams," tortured and often ignored in the maze of contradictory theories and hypotheses. A very good corroboration of this charge lies in the fact that Science finds itself absolutely compelled to accept the "hypothetical" Ether and to try to explain it on the materialistic grounds of atomo-mechanical laws. This attempt has led directly to the most fatal discrepancies and radical inconsistencies between the assumed nature of Ether and its physical actions. A second proof is found in the many contradictory statements about the atom—the most metaphysical object in creation.

Now, what does the modern science of physics know of Æther, the first concept of which belongs undeniably to ancient philosophers, the Greeks having borrowed it from the Aryans, and the origin of modern Æther being found in, and *disfigured* from, AKĀSA? This disfigurement

* Stallo's above-cited work, "Concepts of Modern Physics," a volume which has called forth the liveliest protests and criticisms, is recommended to anyone inclined to doubt this statement. "The professed antagonism of Science to metaphysics," he writes, "has led the majority of scientific specialists to assume that the methods and results of empirical research are wholly independent of the control of the laws of thought. They either silently ignore, or openly repudiate, the simplest canons of logic, including the laws of non-contradiction and . . . resent with the utmost vehemence, every application of the rule of consistency to their hypotheses and theories . . . and they regard an examination (of these) . . . in the light of these laws as an impertinent intrusion of 'à priori principles and methods' into the domains of empirical science. Persons of this cast of mind find no difficulty in holding that atoms are absolutely inert, and at the same time asserting that these atoms are perfectly elastic; or in maintaining that the physical universe, in its last analysis, resolves itself into 'dead' matter and motion, and yet denying that all physical energy is in reality kinetic; or in proclaiming that all phenomenal differences in the objective world are ultimately due to the various motions of absolutely simple material units, and, nevertheless, repudiating the proposition that these units are equal" . . . (p. xix.) "The blindness of eminent physicists to some of the most obvious consequences of their own theories is marvellous . . . When Prof. Tait, in conjunction with Prof. Stewart, announces that 'matter is simply passive' (*The Unseen Universe*, sec. 104), and then, in connection with Sir W. Thomson, declares that 'matter has an innate power of resisting external influences' (*Treat. on Nat. Phil.*, Vol. I., sec. 216), it is hardly impertinent to inquire how these statements are to be reconciled. When Prof. Du Bois Reymond . . . insists upon the necessity of reducing all the processes of nature to motions of a substantial, indifferent substratum, *wholly destitute of quality* ('*Ueber die Grenzen des Naturerkennens*,' p. 5), having declared shortly before in the same lecture that 'resolution of all changes in the material world into motions of atoms *caused by their constant central forces* would be the completion of natural science,' we are in a perplexity from which we have to be relieved." (Pref. xliii.)

is claimed to be a modification and refinement of the idea of Lucretius. Let us then examine the modern concept from several scientific volumes containing the admissions of the physicists themselves.

The existence of Ether is accepted by physical astronomy, in ordinary physics, and in chemistry. Astronomers, who first began by regarding it as a fluid of extreme tenuity and mobility, offering no sensible resistance to the motions of celestial bodies, never gave a thought to its continuity or discontinuity. "Its main function in modern astronomy has been to serve as a basis for hydrodynamical theories of gravitation. In physics this fluid appeared for some time in several rôles in connection with the 'imponderables'"—so cruelly put to death by Sir W. Grove. Some physicists have even identified the ether of space with those "imponderables." Then came their Kinetic theories; and from the date of the dynamical theory of heat, it was chosen in optics as a substratum for luminous undulations. Then, in order to explain the dispersion and polarization of light, physicists had to resort once more to their "scientific imagination" and forthwith endowed the Ether with (a) atomic or molecular structure, and (b) with an enormous elasticity, "so that its resistance to deformation far exceeded that of the most rigid elastic bodies" (*Stallo*). This necessitated the *theory of the essential discontinuity of matter*, hence of Ether. After having accepted this discontinuity, in order to account for dispersion and polarization, theoretical impossibilities were discovered with regard to such dispersions. Cauchy's "scientific imagination" saw in atoms "material points without extension," and he proposed, in order to obviate the most formidable obstacles to the undulatory theory (namely, some well-known mechanical theorems which stood in the way), to assume that the ethereal medium of propagation, instead of being continuous, should consist of particles separated by sensible distances. Fresnel rendered the same service to the phenomena of polarization. E. B. Hunt upset the theories of both (*Silliman's Journal*, vol. viii., p. 364 *et seq.*) There are now men of Science who proclaim them "materially fallacious," while others—the "atomo-mechanicalists"—cling to them with desperate tenacity. The supposition of an *atomic* or *molecular constitution* of ether is upset, moreover, by thermo-dynamics, for Clerk Maxwell showed that such a medium would be simply *gas*.* The hypothesis of "finite intervals" is thus proven of no avail as a supplement to the undulatory theory. Besides, eclipses fail to reveal any such variation of colour as supposed by Cauchy (on the assumption that the chromatic rays are propagated with different velocities).

* See Clerk Maxwell's "Treatise on Electricity of Magnetism" and compare with Cauchy's "*Mémoire sur la Dispersion de la lumière.*"

Astronomy has pointed out more than one phenomenon absolutely at variance with this doctrine.

Thus, while in one department of physics the atomo-molecular constitution of the ether is accepted in order to account for one set of special phenomena, in another department such a constitution is found quite subversive of a number of well-ascertained facts, Hirn's charges being thus justified (*vide supra*). Chemistry deemed it impossible to concede enormous elasticity to the *ether* without depriving it of other properties, upon the assumption of which the construction of *its* modern theories depended. This ended in a final transformation of ether. The exigencies of the atomo-mechanical theory have led distinguished mathematicians and physicists to attempt to substitute for the traditional atoms of matter, peculiar forms of *vortical motion* in a "universal homogeneous, incompressible, and *continuous* material medium," or Æther. (*See Stallo.*)

The present writer, claiming no great scientific education, but only a tolerable acquaintance with modern theories, and a better one with Occult Sciences, picks up weapons against the detractors of the esoteric teaching in the very arsenal of modern Science. The glaring contradictions, the mutually-destructive hypotheses of world-renowned Scientists, their mutual accusations, denunciations and disputes, show plainly that, whether accepted or not, the Occult theories have as much right to a hearing as any of the so-called learned and academical hypotheses. Thus whether the followers of the Royal Society choose to accept ether as a *continuous* or a *discontinuous* fluid matters little, and is indifferent to the present purpose. It simply points to one certainty: Official Science *knows nothing to this day of the constitution of ether*. Let Science call it matter, if it likes; only neither as *akâsa* nor as the one sacred Æther of the Greeks, is it to be found in any of the states of matter known to modern physics. It is MATTER on quite another plane of perception and being, and it can neither be analyzed by scientific apparatus, appreciated, nor even conceived by "scientific imagination," unless the possessors thereof study the Occult Sciences. That which follows proves this statement.

It is clearly demonstrated by Stallo as regards the crucial problems of modern physics (as was done by De Quatrefages and several others in those of anthropology, biology, etc., etc.) that, in their efforts to support their individual hypotheses and systems, the majority of the eminent and learned materialists very often utter the greatest fallacies. Let us take the following case. Most of them reject *actio in distans* (one of the fundamental principles in the question of Æther or Akâsa in Occultism), while, as Stallo justly observes, there is no physical action,

“which, on close examination, does not resolve itself into *actio in distans*”; and he proves it.

Now, metaphysical arguments, according to Professor Lodge (*Nature*, vol. xxvii., p. 304), are “unconscious appeals to experience.” And he adds that if such an experience *is not conceivable*, then it does not exist, etc. In his own words:—“. . . If a highly-developed mind or set of minds, find a doctrine about some comparatively simple and fundamental matter *absolutely unthinkable*, it is an evidence . . . that *the unthinkable state of things has no existence*, etc.”

And thereupon, toward the end of his lecture, Professor Lodge indicates that the explanation of cohesion, as well as of gravity, “is to be looked for in the vortex-atom theory of Sir William Thomson” (Stallo).

It is needless to stop to inquire whether it is to this vortex-theory, also, that we have to look for the dropping down on earth of the first life-germ by a passing meteor or comet (Sir W. Thomson’s hypothesis). But Mr. Lodge might be reminded of the wise criticism on his lecture in the same “Concepts of Modern Physics.” Noticing the above quoted declaration by the London Professor, the author asks “whether . . . the elements of the vortex-theory are *familiar*, or even possible, facts of experience? For, if they are not, *clearly that theory is obnoxious to the same criticism which is said to invalidate the assumption of ACTIO IN DISTANS*” (p. xxiv). And then the able critic shows clearly what the Ether *is not*, nor can ever be, notwithstanding all scientific claims to the contrary. And thus he opens widely, if unconsciously, the entrance door to our occult teachings. For, as he says:—

“The medium in which the vortex-movements arise is, according to Professor Lodge’s own express statement (*NATURE*, vol. xxvii., p. 305), ‘a perfectly homogeneous, incompressible, continuous body, incapable of being resolved into simple elements or atoms: it is, in fact, continuous, not molecular.’ And after making this statement Professor Lodge adds: ‘*There is no other body of which we can say this, and hence the properties of the æther must be somewhat DIFFERENT from those of ordinary matter.*’ It appears, then, that the whole vortex-atom theory, which is offered to us as a substitute for the ‘metaphysical theory’ of *actio in distans*, rests upon the hypothesis of the existence of a material medium which is utterly *unknown to experience*, and which has properties *somewhat different** from those of ordinary matter. Hence this theory, instead of being, as is claimed, a reduction of an unfamiliar fact of *experience* to a familiar fact, is,

* “Somewhat different!” exclaims Stallo. “The real import of this ‘somewhat’ is, that the medium in question *is not, in any intelligible sense, material at all*, having none of the properties of matter.” All the properties of matter depend upon differences and changes, and the “hypothetical” æther here defined is not only destitute of differences, but incapable of difference and change—in the physical sense let us add). This proves that if æther is “matter” *it is so* only as something visible, tangible and existing, for *spiritual* senses alone; that it is a Being indeed—but not of our plane: Pater Æther, or Akâsa.

on the contrary, a reduction of a fact which is perfectly familiar, to a fact which is not only unfamiliar, but wholly unknown, unobserved and unobservable. Furthermore, the alleged vortical motion of, or rather in, the assumed ethereal medium is . . . impossible, because "motion in a perfectly homogeneous, incompressible, and therefore continuous fluid, is not sensible motion." . . . It is manifest, therefore, that wherever the vortex-atom theory may lead us, it certainly *does not lead us anywhere in the region of physics, or in the domain of veræ causæ.** And I may add that, inasmuch as the hypothetical undifferentiated† and undifferentiable medium is clearly an involuntary re-ification of the old ontological concept *pure being*, the theory under discussion has all the attributes of an *inapprehensible metaphysical phantom.*"

A "phantom" indeed, which can be made apprehensible only by Occultism. From such scientific metaphysics to Occultism there is hardly one step. Those physicists who hold the view that the atomic constitution of matter is consistent with its penetrability, need not go far out of their way to be able to account for the greatest phenomena of Occultism, now so derided by physical scientists and materialists. Cauchy's "material points without extension" are Leibnitz's monads, and at the same time the materials out of which the "Gods" and other invisible powers cloth themselves in bodies (*vide infra*, "*Gods, Monads and Atoms*"). The disintegration and reintegration of "material" particles without extension as a chief factor in phenomenal manifestations ought to suggest themselves very easily as a *clear possibility*, at any rate to those few scientific minds which accept M. Cauchy's views. For, disposing of that property of matter which they call impenetrability by simply regarding the atoms as "material points exerting on each other attractions and repulsions which vary with the distances that separate them"—the French theorist explains that: "From this it follows that, if it pleased the author of nature‡ simply to *modify* the laws according to which the atoms attract or repel each other, *we might instantly see the hardest bodies penetrating each other*, the smallest particles of matter *occupying immense spaces*, or the largest masses reducing themselves to the smallest volumes, the entire universe concentrating itself, as it were, in a single point." (*Sept leçons de physique Générale*, p. 38 *et seq.*, ed. Moigno.)

And that "point," *invisible on our plane of perception and matter*, is quite visible to the eye of the adept who can follow and see it present on other planes.

* *Vera causæ* for physical science are *mayavic* or illusionary causes to the Occultist, and *vice versâ*.

† Very much "differentiated," on the contrary, since the day it left its *laya* condition.

‡ For the Occultists who say that the author of nature *is nature itself*, something indistinct and inseparable from the Deity, it follows that those who are conversant with the *occult laws* of nature, and know how to change and provoke new conditions in ether, may—not modify the laws, but work and do the same *in accordance with* those *immutable laws*.

IV.

IS GRAVITATION A LAW?

THE corpuscular theory has been unceremoniously put aside; but gravitation—the principle that all bodies attract each other with a force proportional directly to their masses, and inversely to the squares of the distances between them—survives to this day and reigns, supreme as ever, in the alleged ethereal waves of Space. As a hypothesis, it had been threatened with death for its inadequacy to embrace all the facts presented to it; as a *physical law*, it is the King of the late and once all-potent “Imponderables.” “It is little short of blasphemy an insult to Newton’s grand memory to doubt it,” is the exclamation of an American reviewer of “*Isis Unveiled*.” Well; what is finally that *invisible and intangible* God in whom we should believe on blind faith? Astronomers who see in gravitation an easy-going solution for many things, and an *universal* force which allows them to calculate thereby planetary motions, care little about the Cause of Attraction. They call Gravity a law, a *cause* in itself. We call the forces acting under that name *effects*, and very secondary effects, too. One day it will be found that the scientific hypothesis does not answer after all; and then it will follow the corpuscular theory of light and be consigned to rest for many scientific *æons* in the archives of all exploded speculations. Has not Newton himself expressed grave doubts about the Nature of Force and the corporeality of the “Agents,” as they were then called? So has Cuvier, another scientific light shining in the night of research. He warns his readers, in the *Révolution du Globe*, about the doubtful nature of the so-called Forces, saying that “it is not so sure whether those agents were not *Spiritual Powers* after all (*des agents spirituels*). At the outset of his “Principia,” Sir Isaac Newton took the greatest care to impress upon his school that he did not use the word “attraction” with regard to the mutual action of bodies in a physical sense. To him it was, he said, a purely mathematical conception involving no consideration of real and primary physical causes. In one of the passages of his “Principia” (*Defin. 8, B. I. Prop. 69, “Scholium”*), he tells us plainly that, physically considered, attractions are rather *impulses*. In section XI. (*Introduction*) he expresses the opinion that “there *is some subtle spirit by the force and action of which* all movements of matter are determined” (see *Mod. Mater., by Rev. W. F. Wilkinson*); and in his third Letter to Bentley he says: “It is inconceivable that inanimate brute matter should, without the mediation of something else *which is not material*, operate upon and affect other matter, without mutual contact, as it must do if gravi-

tation, in the sense of Epicurus, be essential and inherent in it. . . . That gravity should be innate, inherent and essential to matter, so that one body may act upon another at a distance, through a vacuum, without the mediation of anything else by and through which their action may be conveyed from one to another, is to me so great an absurdity that I believe no man, who has in philosophical matters a competent faculty of thinking, can ever fall into it. Gravity must be caused by an agent acting constantly according to certain laws; but *whether this agent be material or immaterial* I have left to the consideration of my readers."

At this, even Newton's contemporaries got frightened—at the apparent return of *occult* causes into the domain of physics. Leibnitz called his principle of attraction "an incorporeal and inexplicable power." The supposition of an attractive faculty and a perfect *void* was characterized by Bernouilli as "revolting," the principle of *actio in distans* finding thus no more favour than it does now. Euler, on the other hand, thought the action of gravity was due to either a *Spirit* or some subtle medium. And yet Newton knew of, if he did not accept, the Ether of the Ancients. He regarded the intermediate space between the sidereal bodies as *vacuum*. Therefore he believed in "subtle spirit" and *Spirits* as we do, guiding the so-called attraction. The above-quoted words of the great man have produced poor results. The "absurdity" has now become a dogma in the case of pure materialism, which repeats, "No matter without force, no force without matter; matter and force are inseparable, eternal and indestructible (*true*); there can be no independent force, since all force is *an inherent and necessary property of matter (false)*; consequently, *there is no immaterial creative power.*" Oh, poor Sir Isaac!

If, leaving aside all the other eminent men of Science who shared in the same opinion as Euler and Leibnitz, the Occultists claim as their authorities and supporters only Sir Isaac Newton and Cuvier, as above cited, they need fear little from modern Science, and may loudly and proudly proclaim their beliefs. But, the hesitation and doubts of the two before cited authorities, and of many others, too, whom we could name, did not in the least prevent scientific speculation from wool-gathering on the fields of brute matter just as before. First it was matter and an imponderable fluid distinct from it; then came the *imponderable* fluid so much criticised by Grove; and Æther, which was at first *discontinuous* and then became continuous; after which came the "mechanical" Forces. These have now settled in life as "modes of motion" and the æther has become more mysterious and problematical than ever. More than one man of Science objects to such crude materialistic views. But then since the days of Plato, who repeatedly asks his readers not to confuse *incorporeal* Elements with

their PRINCIPLES—transcendental or spiritual Elements; from those of the great Alchemists, who, like Paracelsus, made a great difference between phenomenon and its cause, or the Nounemon; and Grove, who, though he sees “no reason to divest universally diffused matter of the *functions* common to all matter,” yet uses the term *Forces* where his critics, “who do not attach to the word any idea of a *specific action*,” say Force—from those days to this nothing has proved competent to stem the tide of brutal materialism. Gravitation is the sole cause, the acting God, and matter is its prophet, said the men of science only a few years ago.

They have changed their views several times since then. But do the men of Science understand the innermost thought of Newton, one of the most spiritual-minded and religious men of his day, any better now than they did then? It is certainly to be doubted. Newton is credited with having given the death-blow to the Elemental Vortices of Descartes (the idea of Anaxagoras, resurrected, by-the-bye), though the last modern “vortical atoms” of Sir W. Thomson do not, in truth, differ much from the former. Nevertheless, when his disciple Forbes wrote in the *Preface* to the chief work of his Master a sentence declaring that “attraction was the *cause* of the System,” Newton was the first to solemnly protest. That which in the mind of the great mathematician assumed the shadowy, but firmly rooted image of God, as the *nounemon* of all,* was called more philosophically by the ancient (and modern) philosophers and Occultists — “Gods,” or the *creative* fashioning Powers. The modes of expression may have been different, and the ideas more or less philosophically enunciated by all sacred and profane Antiquity; but the fundamental thought was the same.† For Pythagoras the Forces were Spiritual Entities, Gods inde-

* “Attraction,” Le Couturier, a materialist, writes, “has now become for the public that which it was for Newton himself—a simple word, an *idea*” (*Panorama des Mondes*), since its cause is unknown. Herschell virtually says the same, when remarking, that whenever studying the motion of the heavenly bodies, and the phenomena of attraction, he feels penetrated at every moment with the idea of “the *existence of causes* that act for us under a veil, disguising their *direct* action.” (*Musée des Sciences*, August, 1856.)

† If we are taken to task for believing in operating “Gods” and “Spirits” while rejecting a *personal* God, we answer to the Theists and Monotheists; “Admit that your Jehovah is *one of the Elohim*, and we are ready to recognise him. Make of him, as you do, the Infinite, the ONE and the *Eternal* God, and we will never accept him in this character.” Of *tribal* Gods there were many; the One Universal Deity is a principle, an abstract Root-Idea which has nought to do with the unclean work of finite Form. We do not worship the Gods, we only honour Them, as beings superior to ourselves. In this we obey the Mosaic injunction, while Christians *disobey* their Bible—Missionaries foremost of all. “*Thou shalt not revile the gods*,” says one of them—(Jehovah)—in *Exodus xxii. 28*; but at the same time in verse 20 it is commanded, “He that sacrificeth to *any* God, save unto the Lord, he shall be utterly destroyed.” Now in the

pendent of planets and Matter as we see and know them on Earth, who are the rulers of the Sidereal Heaven. Plato represented the planets as moved by an *intrinsic* Rector, one with his dwelling, like "A boatman in his boat." As for Aristotle, he called those rulers "*immaterial* substances;"* though as one who had never been initiated, he rejected the gods as *Entities* (*See Vossius, Vol. II., p. 528*). But this did not prevent him from recognising the fact that the stars and planets "were not inanimate masses but *acting* and *living* bodies indeed." As if "*sidereal spirits were the divine* portion of their phenomena, τὰ θεϊότερα τῶν φανερώων" (*De Caelo. I. 9*).

If we look for corroboration in more modern and Scientific times, we find Tycho Brahè recognising in the stars a triple force, *divine, spiritual and vital*. Kepler, putting together the Pythagorean sentence, "The Sun, guardian of Jupiter," and the verses of David, "He placed his throne in the Sun," and "The Lord is the Sun," etc., said that he understood perfectly how the Pythagoreans could believe that all the globes disseminated through Space were rational Intelligences, *facultates ratiocinativæ*, circulating around the Sun, "in which resides a *pure Spirit of fire*; the source of the general harmony" (*De Motibus planetarum harmonicis, p. 248*).

When an Occultist speaks of Fohat—the energising and guiding intelligence in the Universal Electric or *Vital Fluid*,—he is laughed at. Withal, as now shown, neither the nature of electricity, nor of Life nor even of Light, are to this day understood. The Occultist sees in the manifestation of every force in Nature, the action of the quality, or the special characteristic of its noumenon; which *noumenon* is a distinct and intelligent Individuality *on the other side of the manifested mechanical Universe*. Now the Occultist does not deny—on the contrary he will support the claim—that light, heat, electricity and so on are *affections* (not properties or qualities) of matter. To put it more clearly: matter is the condition—the necessary basis or vehicle, a *sine quâ non*—for the manifestation of these forces, or agents, on this plane.

But in order to gain the point the Occultists have to examine the credentials of the law of gravity, first of all, of "Gravitation, the King

original texts it is not "god" but *Elohim*,—and we challenge contradiction—and Jehovah is one of the *Elohim*, as proved by his own words in *Genesis iii. 22*, when "the Lord God said: Behold the Man has become *as one of us*," etc. Hence both those who worship and sacrifice to the *Elohim*, the angels, and to Jehovah, those who *revile the gods* of their fellow-men, are far greater transgressors than the Occultists or any Theosophist. Meanwhile many of the latter prefer believing in some one "Lord" or other, and are quite welcome to do as they like.

* To liken the "immaterial species to *wooden iron*," and laugh at Spiller referring to them as "incorporeal matter" does not solve the mystery (*See "Concepts of Modern Physics," p. 165 et infra*).

and Ruler of Matter," under every form. To do so effectually, the hypothesis in its earliest appearance has to be recalled to mind. To begin with, is it Newton who was the first to discover it? The *Athenæum* of Jan. 26, 1867, has some curious information upon this subject. It says that "positive evidence can be adduced that Newton derived all his knowledge of gravitation and its laws from Bøehme, *with whom gravitation or ATTRACTION is the first property of Nature.*" . . . For with him "his (Bøehme's) system, shows us the *inside* of things, while modern physical science is content with looking at the outside." Then again, "the science of electricity, which was not yet in existence when he (Boehme) wrote, is there anticipated (in his writings); and not only does Bøehme describe all the now known phenomena of that force, but he even gives us the origin, generation, and birth of electricity, itself, etc."

Thus Newton, whose profound mind read easily between the lines, and fathomed the spiritual thought of the great Seer in its mystic rendering, owes his great discovery to Jacob Bøehme, the nursling of the genii (Nirmânakâyas) who watched over and guided him, of whom the author of the article in question so truly remarks, that "every new scientific discovery goes to prove *his profound and intuitive insight into the most secret workings of nature.*" And having discovered gravity, Newton, in order to render possible the action of attraction in space, had, so to speak, to *annihilate* every physical obstacle capable of impeding its free action; ether among others, though he had more than a presentiment of its existence. Advocating the corpuscular theory, he made an *absolute vacuum* between the heavenly bodies. . . . Whatever may have been his suspicions and *inner* convictions about Ether; however many friends he may have unbosomed himself to—as in the case of his correspondence with Bentley—his teachings never showed that he had any such belief. If he *was* "persuaded that the power of attraction could not be exerted by matter across a vacuum,"* how is it that so late as 1860, French astronomers (Le Couturier, for instance), combated "the *disastrous* results of the theory of vacuum established by the great man?"† Professor Winchell writes, "These passages (letter to Bentley) show what were his views respecting the nature of the interplanetary medium of communication. Though declaring that the heavens 'are void of sensible matter,' he elsewhere excepted '*perhaps*

* World-Life. Prof. Winchell, LL.D (pp. 49 and 50).

† "Il n'est plus possible aujourd'hui, de soutenir comme Newton, que les corps célestes se meuvent au milieu du *VIDE* immense des espaces. . . . Parmi les conséquences de la *théorie du vide établie* par ce grand homme, il ne reste plus debout que le mot '*attraction*,' et nous verrons le jour où ce dernier mot disparaîtra du vocabulaire scientifique." ("Panorama des mondes," pp. 47 and 53.)

some very thin vapours, streams, and effluvia, arising from the atmospheres of the earth, planets, and comets, and from such an exceedingly rare ethereal medium as we have elsewhere described." (*Newton, Optics, III., query 28, 1704; quoted in "World-Life."*)

This only shows that even such great men as Newton have not always the courage of their opinions. Dr. T. S. Hunt "called attention to some long-neglected passages in Newton's works, from which it appears that a belief in such universal, intercosmical medium gradually took root in his mind." (*Ibid.*) But such attention was never called to the said passages before Nov. 28, 1881, when Dr. Hunt read his "*Celestial Chemistry, from the time of Newton.*" "Till then the idea was universal, even among the men of Science, that Newton had, while advocating the corpuscular theory, preached a void," as Le Couturier says. The passages had been "long neglected," no doubt because they contradicted and clashed with the preconceived pet theories of the day, till finally the undulatory theory imperiously required the presence of an "ethereal medium" to explain it. This is the whole secret.

Anyhow, it is from that theory of Newton's of a universal void—*taught*, if not believed in by himself,—that dates the immense scorn now shown by modern for ancient physics. The old sages had maintained that "Nature abhorred vacuum," and the greatest mathematicians of the world (read of the Western races) had discovered the antiquated "fallacy" and exposed it. And now modern science vindicates, however ungracefully, archaic knowledge, having, moreover, to vindicate Newton's character and powers of observation at this late hour, after having neglected for one century and a half to pay any attention to such very important passages—perchance, because it was wiser not to attract any notice to them. Better late than never.

And now Father Æther is *re-welcomed* with open arms; and wedded to gravitation; linked to it for weal or woe, until the day when it, or both, shall be replaced by something else. Three hundred years ago it was *plenum* everywhere, then it became one dismal *vacuity*; later still the sidereal ocean-beds, dried up by science, rolled onward once more their ethereal waves. *Recede ut procedes* must become the motto of exact Science—"exact," chiefly, in finding itself inexact every leap-year.

But we will not quarrel with the great men. They had to go back to the earliest "Gods of Pythagoras and old Kanada" for the very backbone and marrow of their correlations and "newest" discoveries, and this may well afford good hope to the Occultists, for their minor gods. For we believe in Le Couturier's prophecy about gravitation. We know the day is approaching when an *absolute reform* will be demanded in the present modes of Science by the scientists themselves—as was done by Sir W. Grove, F.R.S. Till that day there is nothing to be done. For if gravitation

were dethroned to-morrow, the day after the Scientists would discover some other new mode of mechanical motion.* Rough and up-hill is the path of true Science, and its days are full of vexation of Spirit. But in the face of its "thousand" contradictory hypotheses to explain physical phenomena, there never was yet a better one than that of "motion"—however paradoxically interpreted by materialism. As may be found on the first pages of Book I., Occultists have nothing surely against *motion*† the GREAT BREATH of Mr. Herbert Spencer's "UNKNOWN." But, believing that everything on Earth is the *shadow* of something in *space*—they believe in *smaller* "Breaths," which, living, intelligent and independent of all but Law, blow in every direction during Manvantaric periods. These Science will reject. But whatever replaces attraction, *alias* gravitation, the result will be the same. Science will be as far from the solution of its difficulties as it is now, unless it comes to some compromise with Occultism and even with Alchemy—which supposition will be regarded as an impertinence, but remains a fact, nevertheless. As Faye says: "*Il manque quelque chose aux géologues pour faire la géologie de la Lune, c'est d'être astronomes. A la vérité il manque aussi quelque chose aux astronomes pour aborder avec fruit cette étude, c'est d'être géologues.*" But he might have added, with still more pointedness, "*Ce qui manque à tous les deux, c'est l'intuition du mystique.*"

Let us remember Sir William Grove's wise "concluding remarks," on the ultimate structure of matter, or the minutiae of molecular actions, which, he thought, man will never know.

"Much harm has already been done by attempting hypothetically to dissect matter and to discuss the shapes, sizes, and numbers of atoms, and their atmospheres of heat, ether, or electricity. . . . Whether the regarding electricity, light, magnetism, etc., as simply motions of ordinary matter, be or be not admissible, certain it is that all past theories have resolved, and all existing theories do resolve, the action of these forces into motion. Whether it be that, on account of our familiarity with motion, we refer other affections to it, as to a language which is most easily construed, and most capable of

* When read in a fair and unprejudiced spirit, Sir Isaac Newton's works are an ever ready witness to show how he must have hesitated between gravitation and attraction, impulse and some other *unknown* cause to explain the regular course of the planetary motion. But see *Treatise on Colour* (Vol. III., question 31.) We are told by Herschell that Newton left with his successors the duty of drawing all the scientific conclusions from his discovery. How modern Science abused the privilege of building its newest theories upon the law of gravitation, may be realised when one remembers how profoundly religious was that great man.

† The materialistic notion that because, in physics real or sensible motion is impossible in pure space or *vacuum*, therefore, the eternal MOTION of and in Cosmos (regarded as infinite Space) is a *fiction*—only shows once more that such words as "pure space," "pure Being," "the Absolute," etc., of Eastern metaphysics have never been understood in the West.

explaining them, or whether it be that it is in reality the only mode in which our minds as *contra-distinguished from our senses*, are able to conceive material agencies, certain it is that since the period at which the mystic notions of spiritual or preternatural powers were applied to account for physical phenomena, all hypotheses framed to explain them have resolved them into MOTION."

And then the learned gentleman states a purely occult tenet:—

"The term perpetual motion, which I have not infrequently used in these pages, is itself equivocal. If the doctrines here advanced be well founded, *all motion is, in one sense, perpetual*. In masses, whose motion is stopped by mutual concussion, heat or motion of the particles is generated; and thus the motion continues, so that if we could venture to extend such thoughts to the universe, we should assume the same amount of motion affecting the same amount of matter for ever."*

Thus, supposing attraction or gravitation should be given up in favour of the Sun being a *huge magnet*—which is a theory already accepted by some physicists—a magnet that acts on the planets as attraction is now supposed to do, whereto, or how much farther would it lead the astronomers from where they are now? Not an inch farther. Kepler came to this "curious hypothesis" nearly 300 years ago. He had not discovered the theory of attraction and repulsion in Kosmos, for it was known from the days of Empedocles, the two opposite forces being called by him "hate" and "love"—which comes to the same thing. But Kepler gave a pretty fair description of cosmic magnetism. That such magnetism exists in nature, is as certain as that gravitation does not; not at any rate, in the way in which it is taught by Science, which never took into consideration the different modes in which the dual Force—that Occultism calls attraction and repulsion—may act within our solar system, the earth's atmosphere, and *beyond* in the Kosmos.† This was proven by Newton himself; for there are many phenomena in our

* "*Correl. Phys. Forces*," p. 173. This is precisely what Occultism maintains, and on the same principle that "where force is made to oppose force, and produce static equilibrium, the balance of pre-existing equilibrium is affected, and *fresh motion is started* equivalent to that which is withdrawn into a state of abeyance." This process finds intervals in the pralaya, but is eternal and ceaseless as *the "Breath,"* even when the manifested Kosmos rests.

† "Trans-solar space," writes the great Humboldt, "does not hitherto show any phenomenon analogous to our solar system. It is a peculiarity of *our System*, that matter should have condensed within it in nebulous rings, the nuclei of which condense into earths and moons. I say again, heretofore, *nothing of the kind has ever been observed beyond our planetary system.*" (See *Revue Germanique of the 31st Dec. 1860, art. "Lettres et conversations d'Alexandre Humboldt."*) True, that since 1860 the nebular theory has sprung up, and being better known, a few identical phenomena were *supposed* to be observed beyond the solar system. Yet the great man is quite right; and no earths or moons can be found—*except in appearance*—beyond, or of the same order of matter as found in our system. Such is the Occult teaching.

Solar system, which he confessed his inability to explain by the law of gravitation. "Such were the uniformity in the directions of planetary movements, the nearly circular forms of the orbits, and their remarkable conformity to one plane" (*Prof. Winchell*). And if there is one single exception, then the law of gravitation has no right to be referred to as an *universal law*. "These adjustments," we are told, "Newton, in his general Scholium, pronounces to be 'the work of an intelligent and all-powerful Being.'" Intelligent that "Being" may be; as to "all-powerful" there would be every reason to doubt the claim. A poor "God" he, who would work upon minor details and leave the most important to secondary forces! The poverty of the argument and logic in this case, is surpassed only by that of Laplace, who, seeking very correctly to substitute motion for Newton's "all-powerful Being," and ignorant of the true nature of that eternal motion, saw in it a blind physical law. "Might not those arrangements be an effect of the laws of motion?" he asks, forgetting, as all our modern Scientists do, that this *law* and this motion are a vicious circle, so long as the *nature of both* remains unexplained. His famous answer to Napoleon: "*Dieu est devenu une hypothèse inutile,*" would be correctly stated only by one who adhered to the philosophy of the Vedantins. It becomes a pure fallacy, if we exclude the interference of operating, intelligent, powerful (never "all-powerful") Beings, who are called "gods."

But we would ask the critics of the mediæval astronomers why should Kepler be denounced as *most unscientific*, for offering just the same solution as Newton did—only showing himself more sincere, more consistent and even more logical. Where may be the difference between Newton's "all-powerful Being" and Kepler's *Rectores*, his sidereal and Cosmic Forces, or Angels? Kepler is again criticised for his "curious hypothesis which made use of a vortical movement within the solar system;" for his theories in general, for his favouring Empedocles' idea of attraction and repulsion, and "Solar magnetism" in particular. Yet several modern men of Science, as will be shown—Hunt (if Metcalfe is to be excluded), Dr. Richardson, etc.—favour the idea very seriously. He is half excused, however, on the plea that "to the time of Kepler no interaction between masses of matter had been distinctly recognized which was *generically* different from magnetism" (*World-Life*). Is it *distinctly* recognised now? Does Prof. Winchell claim for Science any serious knowledge whatever of the natures of either electricity or magnetism—except that *both seem to be the effects of some result arising from an undetermined cause*.

The ideas of Kepler, weeded from their theological tendencies, are purely occult. He saw that:

(I.) The Sun is a great Magnet.* This is what some eminent modern scientists and also the Occultists believe in.

(II.) The Solar substance is immaterial.† (See “*Isis Unveiled*,” Vol. I. pp. 270 to 271.)

(III.) He provided, for the constant motion and restoration of the Sun’s energy and planetary motion, the perpetual care of a spirit, or spirits. The whole of Antiquity believed in this idea. The Occultists do not use the word Spirit, but say *Creative Forces*, which they *endow with intelligence*. But we may call them spirits also.

This theory is tabooed a great deal more on account of the “Spirit” that is given room in it, than of anything else. Herschell, the elder, believed in it likewise, and so do several modern scientists also. Nevertheless Professor Winchell declares that “a hypothesis more fanciful, and less in accord with the requirements of physical principles, has not been offered in ancient or modern times.” (*World-Life*, p. 554.)

The same was said, once upon a time, of the universal Ether, and now it is not only accepted perforce but advocated as *the only possible theory* to explain away certain mysteries.

Grove’s ideas, when he first enunciated them in London about 1840, were called as *unscientific* as the above; nevertheless, *his* views on the correlation of forces are now universally accepted. It would, very likely, require one more conversant with science than is the writer, to combat with any success some of the now prevailing ideas about gravitation and other similar “solutions” of Cosmic Mysteries. But, let us recall a few objections that came from recognized men of Science; from astronomers and physicists of eminence, who rejected the theory of rotation, as well as that of gravitation. Thus one reads in the *French Encyclopædia* that “Science agrees, in the face of all its representatives, that it is *impossible* to explain the *physical* origin of the rotatory motion of the solar system.”

If the question is asked, “what causes rotation?” we are answered: “It is the centrifugal Force.” “And this force, what is it that produces it?” “The force of rotation,” is the grave answer. (*Godefroy, Cosmogonie de la Révélation.*‡) It will be well, perhaps, to examine both these theories as being directly or indirectly connected.

* But see *Astronomie du Moyen Age*, by Delambre.

† In the sense, of course, of matter existing in states unknown to Science.

‡ We shall be taken to task for contradiction. It will be said that while we deny *God*, we admit Souls and *operative Spirits*, and quote from Roman Catholic bigoted writers in support of our argument. To this we reply: “We deny the *anthropomorphic* god of the Monotheists, but never the Divine Principle in nature. We combat Protestants and Roman Catholics on a number of dogmatic theological beliefs of human and sectarian origin. We agree with them in their belief in Spirits and *intelligent* operative powers, though we do not worship “Angels” as the Roman Latinists do.

V.

THE THEORIES OF ROTATION IN SCIENCE.

CONSIDERING that "final cause is pronounced a chimera, and the first Great Cause is remanded to the Sphere of the Unknown," as a reverend gentleman justly complains, the number of hypotheses put forward, a nebula in itself, is most remarkable. The profane student is perplexed, and does not know in which of the theories of *exact* science he has to believe. Here we have hypotheses enough for every taste and power of brain. They are all extracted from a number of scientific volumes.

CURRENT HYPOTHESES EXPLAINING THE ORIGIN OF ROTATION.

Rotation has originated either—

(a) By the collision of nebular masses wandering aimlessly in space; or by *attraction*, "in cases where no actual impact takes place."

(b) "By the tangential action of currents of nebulous matter (in the case of an amorphous nebula) descending from higher to lower levels,* or *simply by the action of the central gravity of the mass.*" †

"It is a fundamental principle in physics that *no rotation could be generated in such a mass by the action of its own parts.* As well attempt to change the course of a steamer by pulling at the deck railing," remarks to this Prof. Winchell in "World-Life."

HYPOTHESES OF THE ORIGIN OF THE SEVEN PLANETS AND COMETS.

(a.) We owe the birth of the Planets (1) to an explosion of the Sun—a parturition of its central mass; ‡ or (2) to some kind of disruption of the nebular rings.

(b) "The Comets are strangers to our planetary system" (*La Place*). "The Comets are undeniably generated in our Solar system" (*Faye*).

(c) The "*fixed* stars are motionless" says one authority. . . . "All the stars are actually in motion" answers another authority. . . . "Undoubtedly every star is in motion" (*Wolf*).

(d) "For over 350,000,000 years, the slow and majestic movement of the Sun around its axis has never for a moment ceased" (*Panorama des Mondes, Le Couturier.*)

* The terms "high" and "low" being only relative to the position of the observer in Space, any use of those terms tending to convey the impression that they stand for abstract realities, is necessarily fallacious.

† *Jacob Ennis*, "The Origin of the Stars," p. 221 *et seq.*

‡ If such is the case, how does Science explain the comparatively small size of the planets nearest the Sun? The theory of meteoric aggregation is only a step farther from truth than the nebular conception, and has not even the quality of the latter—its metaphysical element.

(e) And “the sun having Alcyone in the Pleiades for the centre of its orbit, consumes 180,000,000 of years in completing its revolution” (*Mædler*). And also,

(f) That, “*the Sun has existed no more than 15,000,000 of years, and will emit heat for no longer than 10,000,000 years more*” (*Sir W. Thomson’s lecture on “the latent dynamical theory regarding the probable origin, total amount of heat, and duration of the Sun,” 1887*).

A few years ago this eminent Scientist was telling the world that the time required for the earth to cool from incipient incrustation to its present state, could not exceed 80,000,000 years*; (*Thomson and Tait, Natural Philosophy*.) If the encrusted age of the world is only 40 millions, or the half of the duration once allowed, and the Sun’s age only 15 millions, have we to understand that the earth was at one time independent of the Sun?

Since the ages of the Sun, planets, and the Earth, as stated in the many scientific hypotheses of the astronomers and physicists, are given elsewhere (*infra*), we have said enough to show the disagreement between the ministers of modern Science. Whether we accept the *fifteen* million years of Sir W. Thomson or the *thousand* millions of Mr. Huxley, for the rotational evolution of our solar system, it will always come to this; by accepting *self-generated* rotation for the heavenly bodies composed of *inert* matter and yet moved by *their own internal motion*, for millions of years, this teaching of Science amounts to—

(a) An evident denial of that fundamental physical law, which states that “a body *in motion tends constantly to inertia*, (*i.e.*, to continue in the same state of motion or rest), unless it is stimulated into further action by a *superior active force*.”

(b.) To an original impulse, which culminates in an unalterable motion, within a *resisting* ether that NEWTON had declared *incompatible with that motion*.

(c.) Universal gravity, which, we are taught, always tends to a centre in *rectilinear* descent—*alone* the cause of the revolution of the whole solar system, which is performing an eternal *double* gyration, each body around its axis and orbit. Another occasional version is:—

(d.) A magnet in the Sun; or, the said revolution due to a magnetic force, which acts, just as gravitation does, in a straight line—varying inversely as the square of the distance. (*Coulomb’s Law*.)

(e.) The whole acting under *invariable* and changeless laws, which are, nevertheless, often shown variable, as during some well-known freaks

* And even on these figures Bischof disagrees with Thomson, and calculates that 350 million years would be required for the earth to cool from a temperature of 20,000° to 200° centigrade. This is, also, the opinion of Helmholtz.

of planets and other bodies, as also when the Comets approach to or recede from the Sun.

(f.) A MOTOR FORCE always *proportionate* to the mass it is acting upon; but *independent of the* specific nature of that mass, to which it is proportionate; which amounts to saying, as Le Couturier does, that, "without that Force independent from and of quite another nature than the said mass, the latter, were it as huge as Saturn, or as tiny as Ceres, would always fall with the same rapidity" (*Musée des Sciences*, 15 August, 1857). A mass, furthermore, which derives its weight from the body on which it weighs.

Thus neither Laplace's perceptions of a solar atmospheric fluid, which would extend beyond the orbits of the planets, nor Le Couturier's electricity, nor Foucault's heat (*Panorama des Mondes*, p. 55), nor this, nor the other, can ever help any of the numerous hypotheses about the origin and *permanency* of rotation to escape from this squirrel's wheel, any more than the theory of gravity itself. This mystery is the Procrustean bed of physical Science. If matter is, as now taught, passive, the simplest movement cannot be said to be an essential property of matter—if the latter is simply an inert mass. How, then, can such a complicated movement, compound and multiple, harmonious and equilibrated, lasting in the eternities for millions and millions of years, be attributed simply to its own inherent Force, unless the latter is an *intelligence*? A *physical will* is something new—a conception that the ancients would have never entertained, indeed! *

"We talk of the weight of the heavenly bodies," says an astronomer; "but since it is recognised that weight decreases in proportion to the distance from the centre, it becomes evident that, at a certain distance, that weight must be forcibly reduced to Zero? Were there any *attraction* there would be equilibrium And since the modern school recognizes neither a *beneath* nor an *above* in universal space, it is not clear what should cause the Earth to fall, were there even no gravitation, nor attraction." (*Cosmographie*.)

Methinks the Count de Maistre was right in solving the question in its own theological way. He cuts the Gordian knot by saying:—"The

* For over a century all distinction between body and force is made away with. "Force is but the property of a body in motion," say the physicists; and "life—the property of our *animal organs*—is but the result of their molecular arrangement," answer the physiologists. "In the bosom of that aggregate which is named planet," teaches Littré, "are developed all the forces immanent to matter . . . *i.e.*, that matter possesses *in itself* and *through itself* the forces that are proper to it . . . and which are *primary*, not *secondary*. Such forces are the property of weight, the property of electricity, of terrestrial magnetism, the property of life. . . . Every planet can develop life . . . as earth, for instance, which had not always mankind on it, and now bears (*produit*) men" (*Revue des Deux Mondes*, July 15, 1860.)

planets rotate because *they are made to rotate* and the modern physical system of the universe is a *physical impossibility.*" (*Soirées.*) For did not Herschell say the same thing when he remarked that there is a *will* needed to impart a circular motion, and *another will* to restrain it? (*Discours*, 165.) This shows and explains how a *retarded* planet is cunning enough to calculate so well its time as to hit off its arrival at the fixed minute. For, if Science sometimes succeeds with its great ingenuity in explaining some of such stoppages, retrograde motions, angles outside the orbits, &c., &c., by appearances resulting from the inequality of their progress and ours in the course of our mutual and respective orbits, we still know that there are others, and "very real and considerable deviations," according to Herschell, "which cannot be explained except by the mutual and irregular action of those planets and by the *perturbing* influence of the Sun."

We understand, however, that there are, besides those little and accidental perturbations, continuous perturbations called "secular"—because of the extreme slowness with which the irregularity increases and affects the relations of the elliptic movement—and that these perturbations *can be corrected.* From Newton, who found that this world needed *repairing* very often, down to Reynaud, all say the same. In his *Ciel et Terre* (p. 28), the latter speaks of—

" The orbits described by the planets as being very far from immutable; "on the contrary, subject to a perpetual mutation in their position and form,"—all prove gravitation and the peripatetic *laws* to be as negligent as they are quick to repair their mistakes. The charge as it stands seems to be that "they (the orbits) are alternately widening and narrowing, their great axis lengthens and diminishes, or oscillates at the same time from right to left around the Sun, the plane itself, in which they are situated, raising and lowering itself periodically while pivoting around itself with a kind of tremor. . . ."

To this, De Mirville, who believes in *intelligent* "workmen" ruling invisibly the solar system—as we do—observes very wittily*. . . . "*Voilà certes*, a voyage which has little in it of mechanical *rigour*; at the utmost, one could compare it to a steamer, pulled to and fro and tossed on the waves, retarded or accelerated, all and each of which impediments might put off its arrival indefinitely, were there not the intelligences of a pilot and engineers to catch up the time lost, and to repair the damages. . . ."

The law of gravity, however, seems to be becoming an *obsolete* law in starry heaven. At any rate those long-haired sidereal *radicals*, called comets, appear to be very poor respecters of the majesty of that law,

* *Deuxième mémoire*, "Manifestations Historiques," p. 272.

and to beard it quite impudently. Nevertheless, and though presenting in nearly every respect “phenomena *not yet fully understood*,” comets and meteors are credited by the believers in modern Science with *obeying the same laws and consisting of the same matter*, “as the Suns, stars and nebulae,” and even “the earth and its inhabitants.” (*Laing’s “Modern Science and Modern Thought.”*)

This is what one might call taking things on trust, aye, even to *blind faith*. But *exact* Science is not to be questioned, and he who rejects the hypotheses imagined by her students—gravitation, for instance—would be regarded as an ignorant fool for it; yet we are told by the just cited author a queer legend from the scientific annals. “The comet of 1811 had a tail 120 millions of miles in length and 25 millions of miles in diameter at the widest part, while the diameter of the nucleus was about 127,000 miles, more than ten times that of the earth.” He tells us, “in order that bodies of this magnitude, passing near the earth, *should not affect its motion or change the length of the year by even a single second*, their actual substance must be inconceivably rare. . . .” It must be so indeed, yet :—

“ The extreme tenuity of a comet’s mass is also proved by the phenomenon of the tail, which, as the comet approaches the sun, is thrown out sometimes to a length of 90 millions of miles in a few hours. And what is remarkable, THIS TAIL IS THROWN OUT AGAINST THE FORCE OF GRAVITY *by some repulsive force*, probably electrical, so that it always points away from the Sun (!!!) And yet, thin as the matter of comets must be, *IT OBEYS THE COMMON LAW OF GRAVITY (!?)*, and whether the comet revolves in an orbit within that of the outer planets, or shoots off into the abysses of Space, and returns only after hundreds of years, its path is, at each instant, regulated *by the same force as that which causes an apple to fall to the ground.*” (*Ibid*, p. 17.)

Science is like Cæsar’s wife, and must not be suspected—this is evident. But it can be respectfully criticised, nevertheless. At all events, it may be reminded that “the apple” is a dangerous fruit. For the second time in the history of mankind, it may become the cause of the *FALL*—this time, of “exact” Science. A comet whose tail defies the law of gravity right in the Sun’s face can hardly be credited with obeying that law.

In a series of scientific works on Astronomy and the nebular theory, written between 1865 and 1866, the present writer, a poor tyro in Science, has counted in a few hours, no less *than thirty-nine contradictory hypotheses* offered as explanations for the self-generated, primitive rotatory motion of the heavenly bodies. The writer is no astronomer, no mathematician, no scientist; but was obliged to examine these errors in defence of Occultism, in general, and what is still more

important, in order to support the occult teachings concerning astronomy and Cosmology. Occultists were threatened with terrible penalties for questioning scientific truths. But now they feel braver; Science is less secure in its "impregnable" position than they were led to expect, and many of its strongholds are built on very shifting sands.

Thus, even this poor and unscientific examination of it was useful, and it was certainly very instructive. We have learned a good many things, in fact, having studied with particular care especially those astronomical data that would be the most likely to clash with our heterodox and "superstitious" beliefs.

So, for instance, we have found there, concerning gravitation, the axial and orbital motions, that synchronous movement having been once overcome, in the early stage—it was enough to originate a rotatory motion till the end of Manvantara. We have also come to know in all the aforesaid combinations of possibilities with regard to incipient rotation—most complicated in every case,—some of the causes *to which it may have been due*, as well as some others to which it *ought and should* have been due, but, in some way or other, was not. Among other things, we were informed that *incipient* rotation may be provoked with equal ease in a mass in *igneous fusion*, and in one that is characterised by *glacial opacity* ("Heaven and Earth"). That gravitation is a law which *nothing can overcome*, but which, nevertheless, is overcome in and out of season by the most ordinary celestial or terrestrial bodies—the tails of impudent comets, for instance. That we owe the universe to the holy creative Trinity, called *Inert Matter*, *Senseless Force* and *Blind Chance*. Of the real essence and nature of any of these three, Science knows nothing, but this is a trifling detail. *Ergo*, we are told that, when a mass of cosmic or nebular matter—whose nature *is unknown* (entirely so), and which may be in a state of fusion (Laplace), or *dark and cold* (Thomson), for "this intervention of heat is itself a *pure hypothesis*" (Faye)—decides to exhibit its mechanical energy under the form of rotation, it acts in this wise. It (the mass) either bursts into spontaneous conflagration, or it remains inert, tenebrous, and frigid, both states being equally capable of sending it, without *any adequate cause*, spinning through space for millions of years. Its movements may be retrograde and they may be direct, about a hundred various reasons being offered for both motions, in about as many hypotheses. Anyhow, joining the maze of stars, whose origin belongs to the same miraculous and spontaneous order—for "the *nebular theory does not profess to discover the origin of things*, but only a *stadium* in material history" (*Winchell: World-Life*)—those millions of suns, planets, and satellites, composed of inert matter, will whirl on in most impressive and majestic symmetry around the firmament, moved

and guided only, their inertia notwithstanding, “by their own internal motion.”

Shall we wonder after this if learned mystics, pious Roman Catholics, and even such learned astronomers as were Chaubard and Godefroy,* have preferred the Kabala and the ancient systems to the modern dreary and contradictory exposition of the Universe? The *Zohar* makes a distinction, at any rate, between “the *hajaschar* (“the light Forces”), the *hachoser* (“Reflected Lights”), and the simple *phenomenal exteriority* of their spiritual types.” (See *Kabala Demudata*, II, 67.)

The question of “gravity” may now be dismissed, and other hypotheses examined. That physical Science knows nothing of “Forces” is clear. We may close the argument, however, by calling to our help one more man of Science—Professor Jaumes, Member of the Academy of Medicine at Montpellier. Says this learned man, speaking of Forces:—

“A cause is that which is essentially acting in the genealogy of phenomena, in every production as in every modification. I said that activity (or Force) was invisible. . . . To suppose it corporeal and residing in the properties of matter would be a gratuitous hypothesis. . . . To reduce all the causes to God. . . . would amount to embarrassing oneself with a hypothesis hostile to many verities. But to speak of a plurality of forces proceeding from the Deity and possessing inherent powers of their own, is not unreasonable. . . . and I am disposed to admit phenomena produced by intermediate agents called Forces or Secondary Agents. The distinction of Forces is the principle of the division of Sciences; so many real and separate forces, so many mother-Sciences. . . . No: Forces are not suppositions and abstractions, but realities, and the only acting realities whose attributes can be determined with the help of direct observation and induction.” (“*Sur la distinction des Forces*,” published in the *Mémoires de l'Académie des Sciences de Montpellier*, Vol. II., fasc. I., 1854.)

VI.

THE MASKS OF SCIENCE.

PHYSICS OR METAPHYSICS?

If there is anything on earth like progress, Science will some day have to give up, *nolens volens*, such monstrous ideas as her physical, self-guiding laws—void of soul and Spirit,—and then turn to the occult teachings.

* *L'Univers expliqué par la Révélation*, and *Cosmogonie de la Révélation*. But see De Mirville's *Deuxième Mémoire*. The author, a terrible enemy of Occultism, was yet one who wrote great truths.

It has done so already, however altered are the title-page and revised editions of the Scientific Catechism. It is now over half a century since, in comparing modern with ancient thought, it has been found that, however different our philosophy may appear from that of our ancestors, it is, nevertheless, composed only of *additions* and *subtractions* taken from the old philosophy and *transmitted drop by drop through the filter of antecedents*.

This fact was well known to Faraday, and other eminent men of Science. Atoms, Ether, evolution itself—all comes to modern Science from ancient notions, all is based on the conceptions of the archaic nations. “Conceptions” for the profane, under the shape of allegories; plain truths taught during the Initiations to the elect, which truths have been partially divulged through Greek writers and have descended to us. This does not mean that Occultism has ever had the same views on matter, atoms and ether as found in the exotericism of the classical Greek writers. Yet, if we believe Mr. Tyndall, even Faraday was an Aristotelean, and an Agnostic more than a materialist. In his “Faraday, as a Discoverer” (p. 123) the author shows the great physicist *using* “old reflections of Aristotle” which are “concisely found in some of his works.” Faraday, Boscovitch, and all others, however, who see, in the atoms and molecules, “centres of force,” and in the corresponding *element force*, an ENTITY BY ITSELF, are far nearer the truth, perchance, than those, who, denouncing them, denounce at the same time the “old corpuscular Pythagorean theory” (one, by the way, which has never passed to posterity as the great philosopher *really* taught it), on the ground of its “delusion that the conceptual elements of matter *can be grasped* as separate and real entities.”

The chief and most fatal mistake and fallacy made by Science, in the view of the Occultists, lies in the idea of the possibility of such a thing as inorganic, or *dead* matter, in nature. Is anything *dead* or *inorganic* capable of transformation or change? Occultism asks. And is there anything under the sun which remains immutable or changeless?

This fallacy is nowhere better illustrated than in the scientific work of a German *savant*, Professor Philip Spiller (*Der Weltæther als Kosmische Kraft*). In this cosmological treatise, the author attempts to prove that “no material constituent of a body, no atom, *is in itself originally endowed with force*, but that every such atom *is absolutely dead*,* and without any power to act at a distance” (p. 4).

* Something *dead* implies that it had been at some time *living*. When, at what period of cosmogony? Occultism says that in all cases when matter *appears* inert, it is the most active. A wooden or a stone block is motionless and impenetrable to all intents and purposes. Nevertheless, and *de facto*, its particles are in ceaseless eternal vibration which is so rapid that to the physical eye the body seems absolutely devoid of motion ;

This statement, however, does not prevent Spiller from enunciating an occult doctrine and principle. He asserts *the independent substantiality of force*, and shows it as an "incorporeal stuff" (*unkörperlicher stoff*) or substance. Now *substance* is not *matter* in metaphysics, and for argument's sake it may be granted that it is a wrong expression to use. But this is due to the poverty of European languages, and especially to that of scientific terms. Then this "stuff" is identified and connected by Spiller with the æther. Expressed in occult language it might be said with more correctness that this "force-substance" is the ever-active phenomenal *positive æther—prakriti*; while the omnipresent all pervading ether is the *noumenon* of the former, the substratum of all, or *Akâsa*. Nevertheless, Stallo falls foul of Spiller, as he does of the materialists. He is accused of "utter disregard of the fundamental correlation of force and matter" (of neither of which Science knows anything certain). For this "hypostasized half-concept" is, in the view of all other physicists, not only *imponderable*, but destitute of cohesive, chemical, thermal, electric, and magnetic forces—of all of which forces—according to occultism—æther is the source and *cause*.

Therefore Spiller, with all his mistakes, exhibits more intuition than any other modern Scientist, with the exception of Dr. Richardson, perhaps, the theorist on the "nerve force," or Nervous Ether, also on "Sun Force and Earth Force."* For ÆTHER, in Esotericism, is the very quintessence of all possible energy, and it is certainly to this universal agent (composed of many *agents*) that all the manifestations of energy in the material, psychic and spiritual worlds are due.

What are Electricity and Light, in fact? How can Science know that one is a fluid and the other a "mode of motion"? Why is it not made clear why a difference should be made between them, since both are considered force-correlations. Electricity is a fluid, we are told, immaterial and non-molecular (though Helmholtz thinks otherwise), and the proof of it is that we can bottle it up, accumulate and store it away. Then, *it must* be simply matter, and no peculiar "fluid." Nor is it only "a mode of motion," for motion could hardly be stored in a Leyden jar. As for light, it is a still more extraordinary "mode of motion;" since, "marvellous as it may appear, light (also) can *actually be stored up for use*," as demonstrated by Professor Grove nearly half a century ago.

"Take an engraving which has been kept for some days in the dark, expose it to full sunshine—that is, insulate it for 15 minutes; lay it on

and the spacial distance between those particles in their vibratory motion is—considered from another plane of being and perception—as great as that which separates snow flakes or drops of rain. But to physical science this will be an absurdity.

* See "Popular Science Review," Vol. V., pp. 329-34.

sensitive paper in a dark place, and at the end of 24 hours it will have left an impression of itself on the sensitive paper, the whites coming out as blacks. . . . There seems to be no limit for the reproduction of engravings, etc., etc. . . .”

What is it that remains fixed, nailed, so to say, on the paper? It is a *Force* certainly, that fixed the thing, but what is *that thing*, the residue of which remains on the paper?

Our learned men will get out of this through some scientific technicality; but what is it that is intercepted, so as to imprison a certain quantity of it on glass, paper, or wood? Is it “Motion” or is it “Force”? Or shall we be told that what remains behind is the effect only of the force or Motion? Then what is this Force? Force or energy is a quality; but every quality must belong to a something, or a somebody. In Physics, Force is defined as “that which changes or tends to change any physical relation between bodies, whether mechanical, thermal, chemical, electrical, magnetic, etc.” But it is not that “Force” or that “Motion” which remains behind on the paper, when the Force or Motion has ceased to act; and yet something, which our physical senses cannot perceive, has been left there to become a cause in its turn and produce effects. What is it? It is not matter, as defined by Science—*i.e.*, matter in any of its known states. An Alchemist would say it was a spiritual secretion—and would be laughed at. But yet, when the physicist said that Electricity, stored up, was a fluid, or that light fixed on paper is still Sunlight—this is Science.* In the opinion of an experienced Occultist, one who has verified the whole series of *Nidanas*, of causes and effects that finally project their last effect on to this our plane of manifestations; one who has traced matter back to its noumenon, the explanation of the physicist is like calling anger, or its effects—the exclamation provoked by it—a secretion or a fluid, and man, the cause of it—its *material* conductor. But, as Grove prophetically remarked, that day is fast approaching when it will be confessed that the “forces” we know of are but the phenomenal manifestations of realities we know nothing about,—but which *were known to the ancients and—by them worshipped.*

He made one still more suggestive remark, however, which ought to have become the motto of Science, but has not. Sir W. Grove said that “SCIENCE SHOULD HAVE NEITHER DESIRES NOR PREJUDICES. TRUTH SHOULD BE HER SOLE AIM.”

Meanwhile, in our days, Scientists are more self-opinionated and bigoted than even the clergy. For they minister to, if they do not actually worship,

* The newest Authorities have rejected these explanations as “exploded theories,” and have now deified “Motion” as their sole Idol. But, surely, they and their idol will one day share the fate of their predecessors.

“Force-Matter,” which is their *Unknown God*. And how unknown it is may be inferred from the many confessions of the most eminent physicists and biologists, with Faraday at their head. Not only, he said, could he never presume to pronounce whether Force was a property or function of Matter, but he actually did not know what was meant by the word *matter*.

There was a time, he added, when he believed he knew something of matter. But the more he lived, and the more carefully he studied it, the more he became convinced of *his utter ignorance of the nature of matter*.* (See Buckwell’s “Electric Science.”)

The Occultists are often misunderstood because, for lack of better terms, they apply to the essence of Force *under certain aspects* the descriptive epithet of *substance*. Now the names for the varieties of “substance” on different planes of perception and being are *legion*. Eastern Occultism has a special appellation for each kind; but Science—like England, in the recollection of a witty Frenchman, blessed with thirty-six religions and only one fish-sauce—has but one name for all, namely, “Substance.” Moreover, neither the orthodox physicists nor their critics seem to be very certain of their premises, and are as apt to confuse the effects as they do the causes. It is incorrect, for instance, to say, as Stallo does, that “matter can no more be realized or conceived as mere spacial presence than as a concretion of forces,” or that “force is nothing without mass, and mass is nothing without force”—for one is the noumenon and the other the phenomenon. Again; Schelling, when saying that “It is a mere delusion of the phantasy that something, we know not what, remains after we have denuded an object of all the predicates belonging to it” †—could never have applied the remark to the realm of transcendental metaphysics. It is true that pure force is *nothing* in the world of physics; it is ALL in the domain of Spirit. Says Stallo: “If we reduce the mass upon which a given force, however small, acts to its limit zero—or, mathematically expressed, until it becomes infinitely small—the consequence is that the velocity of the resulting motion is infinitely great, and that the ‘thing’ . . . is at any given moment neither here nor there, but everywhere—that there is no

* This ominous confession was made, we believe, at a Scientific Congress at Swansea. Faraday held a similar opinion, however, as stated by Tyndall: “What do we know of the atom *apart from its force*? You imagine a nucleus which may be called *a* and surround it by forces which may be called *m*; to my mind the *a* or nucleus vanishes and the substance consists of the powers *m*. And, indeed, what notion can we form of the nucleus independent of its powers? What thought remains on which to hang the imagination of an *a* independent of the acknowledged forces?”

† Schelling, “Ideen,” etc., p. 18.

real presence; it is impossible, therefore, to construct matter by a synthesis of forces" (p. 161).

This may be true in the phenomenal world, inasmuch as the illusive reflection of the *one reality* of the supersensual world may appear true to the dwarfed conceptions of a materialist. It is absolutely incorrect when the argument is applied to things, in what the Kabalists call the supermundane spheres. Inertia, so called, "is force" according to Newton (*Princ. Def. iii.*), and for the student of Esoteric Sciences the greatest of the occult forces. A body may be considered divorced from its relations with other bodies — which, according to physical and mechanical sciences, give rise to its attributes—only *conceptually*, only on this plane of illusion. In fact, it can never be so detached: death itself being unable to detach it from its relation with the Universal forces, of which the one FORCE or LIFE is the synthesis: but simply continues such inter-relation on another plane. But what, if Stallo is right, can Dr. James Croll mean when, in speaking "On the Transformation of Gravity" (*Philosophical Magazine*, Vol. II., p. 252), he brings forward the views advocated by Faraday, Waterston, and others? For he says very plainly that gravity—

" is a force pervading Space *external to bodies*, and that, on the mutual approach of the bodies, the force is not increased, as is generally supposed, but the bodies merely pass into a place *where the force exists with greater intensity*."

No one will deny that a force (whether gravity, electricity, or any other force) which exists *outside* of the bodies and in open space—be it ether or vacuum—must be *something*, and not a pure *nothing*, when conceived apart from a mass? Otherwise it could hardly exist in one place with a *greater* and in another with reduced "intensity." G. A. Hirn declares the same in his *Théorie Mécanique de l'Univers*. He tries to demonstrate that the atom of the chemists is not an entity of pure convention, or simply an explicative device, but that it exists really, that its volume is unalterable, and that consequently it is *not* elastic (!!). Force, therefore, *is not in the atom; it is in the space which separates the atoms from each other.*"

The above-cited views, expressed by two men of Science of great eminence in their respective countries, show that it is not in the least *unscientific* to speak of the substantiality of the so-called *Forces*. Subject to some future specific name, this force is *substance* of some kind, and can be nothing else; and perhaps one day Science will be the first to re-adopt the derided name of phlogiston. Whatever may be the future name given to it, to maintain that force does *not* reside in the atoms, but only in "space between them," may be scientific enough; nevertheless it is not true. To the mind of an Occultist it is like saying

that water does not reside in the drops of which the ocean is composed, but only in the space between those drops!

The objection made that there are two distinct schools of physicists, by one of which "the force is assumed to be an *independent substantial entity*, which is NOT a property of matter nor is it essentially related to matter,"* is hardly likely to help the profane to any clearer understanding. It is, on the contrary, still more calculated to throw the question into greater confusion than ever. For Force is, then, neither this nor the other. By viewing it as "an independent substantial entity," the theory extends the right hand of fellowship to Occultism, while the strange contradictory idea that it is not related to matter otherwise than by its power to act upon it,† leads physical science to the most absurd contradictory hypotheses. Whether "force" or "motion," (Occultism, seeing no difference between the two, never attempts to separate them) it cannot act for the adherents of the atomo-mechanical theory one way, and for those of the rival school in another way. Nor can the atoms be, in one case, *absolutely uniform in size and weight*, and in another, vary in their weight (Avogadro's law). For, in the words of the same able critic,

. . . "While the absolute equality of the primordial units of mass is thus an essential part of the very foundations of the mechanical theory, the whole modern Science of chemistry is based upon a principle directly subversive of it—a principle of which it has recently been said that 'it holds the same place in chemistry that the law of gravitation does in astronomy.‡ This principle is known as the law of Avogadro or Ampère.§"

This shows that either modern chemistry or modern physics is entirely wrong in its respective fundamental principles. For if the assumption of atoms of different specific gravities on the basis of the atomic theory in physics is deemed absurd, and chemistry meets, nevertheless, on its opposite basis (in the question of the formation and transformation of chemical compounds) with "*unfailing experimental verification*,"

* "Concepts of Modern Physics," xxxi., Introductory to the 2nd edition.

† *Loc. cit.*

‡ J. P. Cooke, *The New Chemistry*, p. 13.

§ "It imports that equal volumes of all substances, when in the gaseous state, and under like conditions of pressure and temperature, contain the same number of molecules—whence it follows that the weights of the molecules are proportional to the specific gravities of the gases; that therefore, these being different, the weights of the molecules are different also; and inasmuch as the molecules of certain elementary substances are *monatomic* (consist of but one atom each) while the molecules of various other substances contain the same number of atoms, that the ultimate atoms of such substances are of different weights" (*Concepts of Modern Physics*, p. 34). As shown further on in the same volume, this cardinal principle of modern theoretical chemistry is in utter and irreconcilable conflict with the first proposition of the atomo-mechanical theory—namely, the absolute equality of the primordial units of mass.

then it becomes apparent that it is the atomo-mechanical theory which is untenable. The explanations of the latter, that "the differences of weight are only differences of density, and differences of density are differences of distance between the particles contained in a given space," are not really valid, because, before a physicist can argue in his defence that, "as in the atom there is no multiplicity of particles and no void space : hence differences of density or weight are impossible in the case of atoms," he must first know what an atom is, in reality, and that he cannot know. He must bring it under the observation of *at least one* of his physical senses—and that *he cannot do* : for the simple reason that no one has ever *seen, smelt, heard, touched* or *tasted* an "atom." The atom belongs wholly to the domain of metaphysics. It is an *entified abstraction*—at any rate for physical Science—and has nought to do with physics, strictly speaking, as it can never be brought to the test of retort or balance. The mechanical conception, therefore, becomes a jumble of the most conflicting theories and dilemmas, in the minds of the many Scientists who disagree on this, as on other subjects ; the evolution of which the Eastern Occultist, who follows this scientific strife, beholds in the greatest bewilderment.

To conclude on the question of gravity. How can Science presume to know anything certain of it ? How can it maintain its position and its hypotheses against those of the Occultists, who see in gravity only sympathy and antipathy, or attraction and repulsion, caused by physical polarity on our terrestrial plane, and by spiritual causes outside of its influence ? How can they disagree with the Occultists before they agree among themselves ? Indeed one hears of the conservation of energy, and in the same breath of the perfect hardness and inelasticity of the atoms ; of the Kinetic theory of gases being identical with "potential energy," so called ; and, at the same time, of the elementary units of mass being *absolutely hard* and *inelastic* ! An Occultist opens a scientific work and reads as follows :—

"Physical atomism derives all the qualitative properties of matter from the forms of atomic motion. The atoms themselves remain as elements utterly devoid of property." (Wundt, "*Die Theorie der Materie*," p. 381.)

And further :

"Chemistry in its ultimate form *must be atomic mechanics*." (Nazesmann, "*Thermochemie*," p. 150.)

And a moment after he is told that :

"Gases consist of atoms which *behave* like solid, *perfectly elastic* spheres." (Krœnig, Clausius, Maxwell, etc., *Philosophical Magazine*, Vol. XIX., p. 18.)

Finally, to crown all, Sir W. Thomson is found declaring that :

"We are forbidden by the modern theory of the conservation of

energy to assume inelasticity, or anything short of *perfect elasticity* of the ultimate molecules whether of ultra mundane or mundane matter." (!!!) ("Philosophical Magazine," p. 321, *loc. cit.*)

But what do the men of *true Science* say to all this? By the "men of true Science" we mean those who care too much for truth and too little for their personal vanity to dogmatise on anything, as the majority do. There are several among them—perhaps more than dare publish openly their secret conclusions for fear of the cry "Stone him to death!"—men, whose intuitions have made them span the abyss that lies between the terrestrial aspect of matter, and the—to us, on our plane of illusion—subjective, *i.e.*, TRANSCENDENTALLY OBJECTIVE SUBSTANCE, and led them to proclaim the existence of the latter. Matter, to the Occultist, it must be remembered, is that totality of *existences* in the Kosmos, which falls within any of the planes of possible perception. We are but too well aware that the orthodox theories of sound, heat and light, are against the occult doctrines. But, it is not enough for the men of Science, or their defenders, to say that *they do not deny dynamic power to light and heat*; and urge as a proof the fact that Mr. Crookes' radiometer has unsettled no views. If they would fathom the ultimate nature of these Forces, they have first to admit their *substantial* nature, however *supersensuous*. Neither do the Occultists deny the correctness of the vibratory theory.* Only they limit its functions to our Earth—declaring its inadequacy on other planes than ours, since "Masters" in the Occult Sciences perceive the CAUSES that produce ethereal vibrations. Were all these only the fictions of the alchemists, or dreams of the Mystics, such men as Paracelsus, Philalethes, Van Helmont, and so many others, would have to be regarded as worse than visionaries: they would become impostors and deliberate mystificators.

The Occultists are taken to task for calling the *Cause* of light, heat, sound, cohesion, magnetism, etc., etc., a *substance*.† Mr. Clerk Maxwell has stated that the pressure of strong sunlight on a square mile is about $3\frac{1}{4}$ lbs. It is, they are told, "the energy of the myriad ether waves;" and when they call it a "substance" impinging on that area, their explanation is proclaimed *unscientific*.

There is no justification for such an accusation. In no way—as stated

* Referring to the *Aura*, one of the Masters says in the "Occult World," "How could you make yourself understood by, command in fact, those semi-intelligent *forces*, whose means of communication with us are not through spoken words but *through sounds and colours* in correlation between the *vibrations* of the two." It is this "correlation" that is unknown to modern Science, yet was many times explained by the Alchemists.

† The "substance" of the Occultist, however, is to the most refined *substance* of the physicist, what *radiant matter* is to the leather of the Chemist's boots.

more than once before now—do the Occultists dispute the explanations of Science, as affording a solution of the *immediate* objective agencies at work. Science only errs in believing that, because it has detected in vibratory waves the *proximate* cause of these phenomena, it has, therefore, revealed ALL that lies beyond the threshold of Sense. It merely traces the sequence of phenomena on a plane of effects, illusory projections from the region that Occultism has long since penetrated. And the latter maintains that those etheric tremors, are not, as asserted by Science, set up by the vibrations of the molecules of *known* bodies—the matter of our terrestrial objective consciousness,—but that we must seek for the ultimate causes of light, heat, etc., etc., in MATTER existing in *super-sensuous* states—states, however, as fully objective to the spiritual eye of man, as a horse or a tree is to the ordinary mortal. Light and heat are the ghost or shadow of matter in motion. Such states can be perceived by the SEER or the Adept during the hours of trance, under the *Sushumna ray*—the first of the Seven *Mystic* rays of the Sun. *

Thus, we put forward the Occult teaching which maintains the reality of a supersubstantial and supersensible essence of that *Akāsa* (not ether, which is only an aspect of the latter), the nature of which cannot be inferred from its remoter manifestations—*its merely phenomenal phalanx of effects*—on this terrene plane. Science, on the contrary, informs us that heat can never be regarded as matter in any conceivable state.† We are also told that the two great obstacles to the fluid (?) theory of heat undoubtedly are :—

* The names of the Seven Rays—which are, Sushumna, Harikesa, Viswakarman, Viswatryarchas, Sannaddha, Sarvasvasu and Swaraj—are all mystical, and each has its distinct application in a distinct state of consciousness, for occult purposes. The *Sushumna*, which, as said in the *Nirukta* (11, 6), is only to light up the moon, is the ray nevertheless cherished by the initiated Yogis. The totality of the Seven Rays spread through the Solar system constitute, so to say, the physical *Upadhi* (basis) of the *Ether of Science*; in which *Upadhi*, light, heat, electricity, etc., etc.,—the forces of orthodox science—correlate to produce their terrestrial effects. As psychic and spiritual effects, they emanate from, and have their origin in, the supra-solar *Upadhi*, in the ether of the Occultist—or *Akāsa*.

† To cite a most impartial critic, one whose authority no one can call in question, as a reminder to Western Dogmatists, that the question cannot be in any way considered as settled: "There is no fundamental difference between light and heat . . . each is merely a metamorphosis of the other. . . . Heat is light in complete repose. Light is heat in rapid motion. Directly light is combined with a body, it becomes heat; but when it is thrown off from that body it again becomes light." (*Leslie's Fluid Theory of Light and Heat.*) "Whether this is true or false we cannot tell, and many years, perhaps many generations, will have to elapse before we shall be able to tell." (*Buckle's History of Civilization*, Vol. III., p. 384.)

(1.) The production of heat by friction—excitation of molecular motions.

(2.) The conversion of heat into mechanical motion.

The answer given is: There are fluids of various kinds. Electricity is called a fluid, and so was heat quite recently, but it was on the supposition that heat was some imponderable substance. This was during the supreme and autocratic reign of matter. When the latter was dethroned, and MOTION was proclaimed the sole sovereign ruler of the Universe, heat became “a mode of motion.” We need not despair: it may become something else to-morrow. Like the Universe itself, Science is ever *becoming*, and can never say, “I am that I am.” On the other hand, Occult Science has its *changeless* traditions from pre-historic times. It may err in particulars; it can never become guilty of a mistake in questions of Universal laws, simply because that Science, justly referred to by philosophy as the “*divine*,” was born on higher planes, and was brought on Earth by beings who were wiser than man will be, even in the seventh Race of his Seventh Round. And *that* Science maintains that Forces are not what modern learning would have them; *e.g.*, Magnetism is *not* a “mode of motion”; and, in this particular case, at least, *exact* “modern Science” is sure to come to grief some day. Nothing, at the first blush, can appear more ridiculous, more outrageously absurd than to say, for instance: “the Hindu initiated Yogi knows really *ten times more than the greatest European physicist of the ultimate nature and constitution of light*—both solar and lunar.” Yet why is the Sushumna ray believed to be that ray which furnishes the moon with its borrowed light? Why is it “the ray cherished by the initiated Yogi?” Why is the moon held as the *deity of the mind*, by those Yogis? We say, because light, or rather all its occult properties, every combination and correlation of it with other forces, mental, psychic, and spiritual, were perfectly known to the old adepts.

Therefore, although, in its knowledge of the ultimate constitution of matter, or in the so-called ultimate analysis as opposed to the proximate in chemistry, occult science may be less well-informed as to the behaviour of compound elements in various cases of physical correlations: still, it is immeasurably higher in its knowledge of the ultimate occult states of matter, and of the true nature of matter, than all the physicists and chemists of our modern day put together.

Now, if we state the truth openly and in full sincerity, namely, that the ancient Initiates had a far wider knowledge of physics—as a Science of Nature—than our Academies of Science, all taken together, possess, the statement will be characterized as an impertinence and an absurdity; for physical sciences are considered to have been carried in our age to the apex of perfection. Hence, the twitting query—“Can

the Occultists meet successfully the two points, namely (a) the production of heat by friction—excitation of molecular motions; and (b) the conversion of heat into mechanical force, if they hold to the old “exploded” theory of heat being a substance or a fluid?”

To answer the question, it must first be observed that the Occult Sciences do not regard either electricity or any of the forces supposed to be generated by it, as matter, *in any of the states known to physical Science*; to put it more clearly, none of these “forces,” so-called, are either solids, gases, or fluids. If it did not look pedantic, an Occultist would even object to electricity being called a fluid—as it is an effect and not a cause. But its *noumenon*, he would say, is a conscious cause. The same in the cases of “Force” and the “Atom.” Let us see what an eminent Academician, Butlerof, the chemist, had to say about these two abstractions.

“What is Force?” argues this great man of Science, “what is it from a strictly scientific stand-point, and as warranted by the law of conservation of energy? Conceptions of Force are resumed by our conceptions of this, that, or another mode of motion.” Force is thus 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.* The first time electric fluid was produced by man on earth it must have been by friction; hence, as well-known, it is heat that produces it by disturbing its *laya* state,† and electricity exists no more on earth *per se* than heat or light, or any other force. They are all correlations, as science says. “When a given quantity of heat, assisted by a steam engine, is transformed into mechanical work, we speak of steam power (or force). When a falling body strikes an obstacle in its way, thereby generating heat and sound—we call it the power of collision. When electricity decomposes water or heats a platinum wire, we speak of the force of the electric fluid. When the rays of the sun are intercepted by the thermometer bulb and its quicksilver expands, we speak of the calorific energy of the sun. In short, when one state of a determined quantity of motion ceases, another state of motion equivalent to the preceding takes its place, and the result of such a transformation or correlation is—force. In all cases where such a transformation, or the passage of one state of motion into another, is entirely absent, there no force is possible. Let us admit for a moment an absolutely homogeneous state of the Universe, and our conception of force falls down to nought.”

* On the plane of manifestation and illusionary matter it may be so; not that it is nothing more, for it is vastly more.

† Neutral, or zero.

“ Therefore it becomes evident that the force, which materialism considers as the cause of the diversity that surrounds us, is in sober reality only an effect, a result of that diversity. From such point of view force is not the cause of motion, but a result, while the cause of that force, or forces, is not the substance or matter, but motion itself. Matter thus must be laid aside, and with it the basic principle of materialism, which has become unnecessary, as force brought down to a state of motion can give no idea of the substance. If force is the result of motion, then it becomes incomprehensible *why that motion should become witness to matter* and not to Spirit or a Spiritual essence. True, our reason cannot conceive of a motion minus something moving (and our reason is right); but the nature or *esse* of that something moving remains to Science entirely unknown; and the Spiritualist, in such case, has as much right to attribute it to a “ Spirit,” as a Materialist to creative and all-potential matter. A Materialist has no special privileges in this instance, nor can he claim any. The law of the conservation of energy, as thus seen, is shown to be illegitimate in its pretensions and claims in this case. The “ great dogma”—*no force without matter and no matter without force*—falls to the ground, and loses entirely the solemn significance with which materialism has tried to invest it. The conception of force still gives no idea of matter and compels us in no way to see in it “ the origin of all origins.” (“ *Scientific Letters*,” Professor Butlerof.)

We are assured that real science is not materialistic; and our own conviction tells us that it cannot be so, when its learning is real. There is a good reason for it, well defined by some physicists and chemists themselves. Natural sciences *cannot* go hand in hand with materialism. To be at the height of their calling, men of science have to reject the very possibility of materialistic doctrines having aught to do with the *atomic* theory; and we find that Lange, Butlerof, Du Bois Reymond,—the latter probably unconsciously—and several others, have proved it. And it is, furthermore, demonstrated by the fact, that Kanada in India, and Leucippus, Democritus, and after them Epicurus—the earliest atomists in Europe—while propagating their doctrine of definite proportions, believed in *Gods* or supersensuous entities, at the same time. Their ideas upon matter thus differed from those now prevalent. We must be allowed to make our statement clearer in a short synopsis of the ancient and modern views of philosophy upon atoms, and thus prove that the atomic theory kills Materialism.

From the standpoint of Materialism, which reduces the beginnings of all to *matter*, the Universe consists, in its fullness, of atoms and vacuity. Even leaving aside the axiom—now absolutely demonstrated by telescope and microscope—taught by the ancients, that nature abhors

vacuum, what is an atom? "It is, we are answered by Science," writes Professor Butlerof, "the limited division of substance, the indivisible particle of matter. To admit the divisibility of the atom, amounts to an admission of an infinite divisibility of substance, which is equivalent to reducing substance to *nihil*, a nothingness. Owing to a feeling of self-preservation alone, materialism cannot admit infinite divisibility; otherwise, it would have to bid farewell for ever to its basic principle and thus sign its own death-warrant." Büchner, for instance, like a true dogmatist in materialism, declares that "to accept infinite divisibility is absurd, and amounts to doubting the very existence of matter." The Atom is indivisible then, saith Materialism? Very well.

"See now what a curious contradiction this fundamental principle of the materialists is leading them into," writes Butlerof. "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 is sufficient to show how absurd are the simultaneous admissions of the non-divisibility and elasticity of the atom. The atom *is elastic*, *ergo*, the atom is divisible, and must consist of particles, or of *sub-atoms*. And these *sub-atoms*? They are either non-elastic, and in such case they represent no dynamic importance, or, they are *elastic* also; and in that case, they, too, are subject to divisibility. And thus *ad in finitum*. But infinite divisibility of atoms resolves matter into simple centres of force, *i.e.*, precludes the possibility of conceiving matter as an *objective* substance.

This vicious circle is fatal to materialism. It finds itself caught in its own nets, and no issue is possible for it out of the dilemma. If it says that the atom is indivisible, then it will have mechanics asking it the awkward question: "How does the Universe move in this case, and how do its forces correlate? A world built on absolutely *non-elastic* atoms, is like an engine without steam, it is doomed to eternal inertia."*

* "Scientific Letters," Butlerof.

Accept the explanations and teachings of Occultism, and, the blind inertia of physical Science being replaced by the *intelligent active* Powers behind the veil of matter, motion and inertia become subservient to those Powers. It is on the doctrine of the illusive nature of matter, and the infinite divisibility of the atom, that the whole science of Occultism is built. It opens limitless horizons to *substance* informed by the divine breath of its soul in every possible state of tenuity, states still undreamt of by the most spiritually disposed chemists and physicists.

The above views were enunciated by an Academician, the greatest chemist in Russia, and a recognised authority even in Europe—the late Professor Butlerof. True, he was defending the phenomena of the Spiritualists, the materializations, so called, in which he believed as Professors Zöllner, and Hare did, as Mr. A. Russell Wallace, Mr. W. Crookes, and many another Fellow of the Royal Society, do still, whether openly or secretly. But his argument with regard to the nature of the essence that acts behind the physical phenomena of light, heat, electricity, etc., is no less scientific and authoritative for all that, and apply admirably to the case in hand. Science has no right to deny to the Occultists their claim to a more profound knowledge of the so-called Forces; which, they say, are only the effects of causes generated by Powers, substantial, yet supersensuous, and *beyond* any kind of matter with which they (the Scientists) have hitherto become acquainted. The most science can do is to assume the attitude of agnosticism and to maintain it. Then it can say: “Your case is no more proven than is ours; but we confess to knowing nothing in reality either about Force or matter, or that which lies at the bottom of the so-called correlations of Forces. Therefore, time alone can prove who is right and who is wrong. Let us wait patiently, and meanwhile show courtesy instead of scoffing at each other.”

But to do this requires a boundless love of truth and the surrender of that prestige—however false—of *infallibility*, which the men of Science have acquired among the ignorant and flippant, though cultured, masses of the profane. To blend the two sciences, the archaic and the modern, requires first of all the abandonment of the actual materialistic lines. It necessitates a kind of religious mysticism and even the study of old magic, which our Academicians will never take up. The necessity is easily explained. Just as in old alchemical works the real meaning of the substances and elements meant are concealed under the most ridiculous metaphors, so are the physical, psychic, and spiritual natures of the Elements (say of fire) concealed in the Vedas, and especially in the Purânas, under allegories comprehensible only to the Initiates. Had they no meaning, then indeed all those long legends and allegories about the sacredness of the three types of fire, and the *forty-nine original fires*—

personified by the Sons of Daksha's daughters and the Rishis, their husbands, "who with the first son of Brahmâ and his three descendants constitute the forty-nine fires"—would be idiotic verbiage and no more. But it is not so. Every *fire* has a distinct function and meaning in the worlds of the physical and the spiritual. It has, moreover, in its *essential* nature a corresponding relation to one of the human psychic faculties, besides its well determined chemical and physical potencies when coming in contact with the *terrestrially* differentiated matter. Science has no speculations to offer upon fire *per se*; Occultism and ancient religious science have. This is shown even in the meagre and purposely veiled phraseology of the Purânas, where (as in the *Vâyu Purâna*) many of the qualities of the *personified* fires are explained. Thus, *Pavaka* is electric, or *Vaidyuta*, fire; *Pavamâna*, the fire produced by friction, (or *Nirmathya*): and *Suchi* is solar (or *Saura*) fire*—all these three being the sons of Abhimânin, the Agni (fire), eldest son of Brahmâ and of Swâha. *Pavaka*, moreover, is made parent to *Kavyavâhana*, the fire of the *Pitris*: *Suchi* to *Havyavâhana*—the fire of the gods; and *Pavamâna*, to *Saharaksha*, the fire of the Asuras. Now all this shows that the writers of the Purânas were perfectly conversant with the "Forces" of Science and their correlations; moreover, with the various qualities of the latter in their bearing upon those psychic and physical phenomena which receive no credit and are unknown to physical science now. Very naturally, when an Orientalist,—especially one with materialistic tendencies—reads that these are only appellations of fire employed in the *invocations* and rituals, he calls this "Tantrika superstition and mystification"; and he becomes more careful to avoid errors in spelling, than to give attention to the secret meaning attached to the personifications, or to seek their explanation in the physical correlations of forces, so far as known. So little credit, indeed, is given to the ancient Aryans for knowledge, that even such glaring passages as in *Book I. chap. ii, Vishnu Purâna*, are left without any notice. Nevertheless, what can this sentence mean?—"Then Ether, air, light, water, and earth, severally united with the properties of sound and other qualities, existed as distinguishable according to their properties, . . . but possessing many and various energies and being unconnected, they *could not, without combination*, create living beings, not having blended with each other. . . . Having combined . . . they assumed through mutual association, the character of one mass of entire unity; and directed by Spirit . . ." etc. This means, of course, that the writers were perfectly acquainted with correlation and were well posted about the origin of Kosmos from the "undiscrete Principle"—*Avyaktânugraheña*, as applied

* Called the "drinker of waters," solar heat causing water to evaporate.

to Parabrahmam and Mulaprakriti conjointly, and not to "Avyakta, *either* First Cause, or matter," as Wilson gives it. The old Initiates knew of no "miraculous creation," but taught the evolution of atoms (on our physical plane), and their first differentiation from *laya* into the *protyle*, as Mr. Crookes has suggestively named matter, or primordial substance *beyond* the zero-line:—there where we place *Mulaprakriti*, the "root-Principle" of the world stuff and of all in the world.

This can be easily demonstrated. Take, for instance, the newly-published catechism of the *Visishtadwaita Vedantins*, an orthodox and exoteric system, yet fully enunciated and taught in the XIth century (its founder, Ramanujâcharya, being born in A.D. 1017), at a time when European "Science" still believed in the squareness and flatness of the Earth, of Cosmas-Indicopleustes of the VIth century. It teaches that before evolution began, Prakriti (Nature) was in a condition of *laya* or absolute homogeneity, as "matter exists in two conditions, the *sukshma*, or latent and undifferentiated, and the *sthula* or differentiated condition." Then it became *anu*, atomic. It teaches of *Sudda-satwa*—"a substance not subject to the qualities of matter, from which it is quite different," and adds that out of that substance the bodies of the inhabitants of Vaikuntaloka (the heaven of Vishnu), the gods, are formed. That every particle or atom of Prakriti contains *Jiva* (divine life), and is the *savira* (body) of that Jiva which it contains, while every Jiva is in its turn the *savira* of the supreme spirit, as "Parabrahm pervades every Jiva, as well as every particle of matter." Dualistic and anthropomorphic as may be the philosophy of the *Visishtadwaita*, when compared with that of the *Adwaita*—the non-dualists,—it is yet supremely higher in logic and philosophy than the cosmogony accepted by either Christianity, or its great opponent, modern Science. The followers of one of the greatest minds that ever appeared on Earth, the *Adwaita* Vedantins are called *Atheists*, because they regard all save Parabrahm, the *secondless*, or Absolute Reality—as an illusion. Yet the wisest Initiates came from their ranks, as also the greatest Yogis. The *Upanishads* show that they most assuredly knew not only what is the *causal* substance in the *effects* of *friction*, and that their forefathers were acquainted with the *conversion of heat into mechanical force*, but that they were acquainted with the *noumena* of every spiritual as well as of every cosmic phenomenon.

Truly the young Brahmin who graduates in the universities and colleges of India with the highest honours; who starts in life as an M.A. and an LL.B., with a tail initialed from Alpha to Omega after his name, and a contempt for his national gods proportioned to the honours received in his education in physical sciences; truly he has but to read in the light of the latter, and with an eye to the correlation of

physical Forces, certain passages in his Purânas, if he would learn how much more his ancestors knew than he will ever know—unless he becomes an occultist. Let him turn to the allegory of Purûravas and the celestial *Gandharva*,* who furnished the former with a vessel full of heavenly fire. The primeval mode of obtaining fire by friction has its scientific explanation in the Vedas, and is pregnant with meaning for him who reads between the lines. The *Tretagni* (sacred triad of fires) obtained by the attrition of sticks made of the wood of the *Aswattha* tree (the Bo-tree, of Wisdom and Knowledge)—sticks “as many finger-breaths long as there are syllables in the gayâtri” must have a secret meaning, or else the writers of the Vedas and Purânas were no sacred writers but mystificators. That it has such a meaning, the Hindu Occultists are a proof, and they alone are able to enlighten Science, as to why and how, “the fire, that was primevally *one*, was made three-fold (*treta*) in our present Manvantara, by the Son of Ila (Vâch), the primeval woman after the Deluge, the wife and daughter of Vaivasvata Manu. The allegory is suggestive, in whatever Purâna it may be read and studied.

VII.

AN ATTACK ON THE SCIENTIFIC THEORY OF FORCE BY A MAN OF SCIENCE.

THE wise words of several (English) men of Science have now to be quoted in our favour. Ostracised for “principle’s sake” by the few, they are tacitly approved of by the many. That one of them preaches almost Occult doctrines, in some things identical with, and often amounting to a public recognition of our “*Fohat* and his seven Sons”—

* The Gandharva of the Veda is the deity who knows and reveals the secrets of heaven and divine truths to mortals. *Cosmically*—the Gandharvas are the aggregate powers of the solar-fire, and constitute its Forces; *psychically*—the intelligence residing in the *Sushumna*, Solar ray, the highest of the *seven* rays; *mystically*—the occult force in the Soma (the moon, or lunar plant) and the drink made of it; *physically*—the phenomenal, and *spiritually*—the noumenal causes of *Sound* and the “Voice of Nature.” Hence, they are called the 6,333 “heavenly Singers” and musicians of Indra’s loka who personify (even in number) the various and manifold sounds in Nature, both above and below. In the latter allegories they are said to have mystic power over women, and to be fond of them. The esoteric meaning is plain. They are one of the forms, if not the prototypes, of Enoch’s angels, the Sons of God, who saw that the daughters of men were fair (Gen. vi.) who married them, and taught the daughters of the Earth the secrets of Heaven.

the Occult *Gandharva* of the Vedas—will be recognised by every Occultist, and even by some profane readers.

If the latter open Volume V. of the *Popular Science Review* (pp. 329-334), they will find in it an article on “*Sun Force and Earth Force*,” by Dr. B. W. Richardson, F.R.S., which reads as follows :—

“ At this moment, when the theory of mere motion as the origin of all varieties of force is again becoming the prevailing thought, it were almost heresy to re-open a debate, which for a period appears, by general consent, to be virtually closed; but I accept the risk, and shall state, therefore, what were the precise views of the immortal heretic, whose name I have whispered to the readers, (Samuel Metcalfe), respecting Sun Force. Starting with the argument on which nearly all physicists are agreed, that there exist in nature two agencies—matter which is ponderable, visible, and tangible, and a something which is imponderable, invisible, and appreciable only by its influence on matter—Metcalfé maintains that the imponderable and active agency which he calls ‘*caloric*’ is *not a mere form of motion*, not a vibration amongst the particles of ponderable matter, but *itself a material substance flowing from the Sun* through Space,* filling the voids between the particles of solid bodies, and conveying by sensation the property called heat. The nature of caloric, or Sun-Force, is contended for by him on the following grounds :—

“(i.) That it may be added to, and abstracted from other bodies and measured with mathematical precision.

“(ii.) That it augments the volume of bodies, which are again reduced in size by its abstraction.

“(iii.) That it modifies the forms, properties, and conditions of all other bodies.

“(iv.) That *it passes by radiation through the most perfect vacuum*† that can be formed, in which it produces the same effects on the thermometer as in the atmosphere.

“(v.) That it exerts mechanical and chemical forces which nothing can restrain, as in volcanoes, the explosion of gunpowder, and other fulminating compounds.

“(vi.) That it operates in a sensible manner on the nervous system, producing intense pain; and when in excess, disorganization of the tissues.

“As against the vibratory theory, Metcalfé further argues that if caloric were a *mere property or quality*, it could not augment the volume of other bodies; for this purpose it must itself have volume, it must occupy space, and it must, therefore, be a material agent. If caloric were *only the effect of vibratory motion* amongst the particles of ponderable matter, it *could not radiate from hot bodies* without the simultaneous transition of the vibrating particles; but the fact stands out that heat can radiate from material ponderable substance without

* Not only “through space,” but filling every point of our solar system, for it is the physical residue, so to say, of Ether, its *lining* on our plane; Ether having to serve other cosmic and terrestrial purposes besides being the “agent” for transmitting light. It is the astral fluid or “Light” of the Kabalists, and the “Seven rays” of Sun-Vishnu.

† What need, then, of etheric waves for the transmission of light, heat, etc., if *this* substance can pass through vacuum?

loss of weight of such substance. . . . With this view as to the material nature of caloric or sun-force; with the impression firmly fixed on his mind that 'everything in Nature is composed of two descriptions of matter, the one essentially active and ethereal, the other passive and motionless,'* Metcalfe based the hypothesis that the Sun-force, or caloric, is a Self-active principle. For its own particles, he holds, it has repulsion; for the particles of all ponderable matter it has affinity; it attracts the particles of ponderable matter with forces which vary inversely as the squares of the distance. It thus acts *through* ponderable matter. If universal space were filled with caloric, sun-force, alone (without ponderable matter), caloric would also be inactive and would constitute a boundless Ocean of powerless or quiescent ether, because it would then have nothing on which to act, while ponderable matter, however inactive of itself, has 'certain properties by which it modifies and controls the actions of caloric, both of which are governed by immutable laws that have their origin in the mutual relations and specific properties of each.'

"And he lays down a law which he believes is absolute, and which is thus expressed:—

"'By the attraction of caloric for ponderable matter, it unites and holds together all things; by its self-repulsive energy it separates and expands all things.'"

This, of course, is almost the occult explanation of cohesion. Dr. Richardson continues:—

"As I have already said, *the tendency of modern teaching is to rest upon the hypothesis . . . that heat is motion*, or, as it would, perhaps, be better stated, a specific force or form of motion.†

"But this hypothesis, popular as it is, is not one that ought to be accepted to the exclusion of the simpler views of the material nature of sun-force, and of its influence in modifying the conditions of matter. *We do not yet know sufficient to be dogmatic.*"‡

. . . "The hypothesis of Metcalfe respecting sun-force and earth-force is not only very simple, but most fascinating. . . . Here are two elements in the Universe, the one is ponderable matter . . . The second element is the all-pervading Ether, solar-fire. It is *without weight, substance, form, or colour*; *it is matter infinitely divisible*, and its particles repel each other; its rarity

* And how can it be otherwise? Gross *ponderable* matter is the body, the Shell of matter or Substance, the female passive principle; and this *Fohatic* force is the second principle, *prána*—the male and the active? On our globe this Substance is the second principle of the septenary *Element*—Earth; in the atmosphere, it is that of *air*, which is the cosmic gross body; in the Sun it becomes the *Solar body* and that of the Seven rays; in sidereal space it corresponds with another principle, and so on. The whole is a homogeneous Unity alone, the parts are all differentiations.

† Or the reverberation, and for *sound*, repercussion *on our plane* of that which is a perpetual motion of that *Substance* on higher planes. Our world and senses *are* victims of *Maya*, ceaselessly.

‡ An honest admission, that

is such that we have no word, except ether,* by which to express it. It pervades and fills space, but alone it too is quiescent—dead.† We bring together the two elements, the inert matter, the self-repulsive Ether (?) and thereupon dead (?) ponderable matter is vivified”; [*Ponderable matter may be inert but never dead—this is Occult Law.*—H.P.B.] . . . “through the particles of the ponderable substance the ether [*Ether’s second principle.*—H.P.B.] penetrates, and, so penetrating, it combines with the ponderable particles and holds them in mass, holds them together in bond of union; they are dissolved in the Ether.”

“This distribution of solid ponderable matter through ether extends, according to the theory before us, to everything that exists at this moment. The ether is all-pervading. The human body itself is charged with the ether [*Say astral light.*—H.P.B.]; its minute particles are held together by it; the plant is in the same condition; the most solid earth, rock, adamant, crystal, metal, all are the same. But there are differences in the capacities of different kinds of ponderable matter to receive sun-force, and upon this depends the various changing conditions of matter; the solid, the liquid, the gaseous condition. Solid bodies have attracted caloric in excess over fluid bodies, and hence their firm *cohesion*; when a portion of molten zinc is poured upon a plate of solid zinc, the molten zinc becomes as solid because there is a rush of caloric from the liquid to the solid, and in the equalization the particles, previously loose or liquid, are more closely brought together. . . . Metcalfe himself, dwelling on the above-named phenomena, and accounting for them by the unity of principle of action, which has already been explained, sums up his argument in very clear terms, in a comment on the densities of various bodies. ‘Hardness and softness’ (he says), ‘solidity and liquidity, are not essential conditions of bodies, but depend on the relative proportions of ethereal and ponderable matter of which they are composed. The most elastic gas may be reduced to the liquid form by the abstraction of caloric, and again converted into a firm solid, the particles of which would cling together with a force proportional to their augmented affinity for caloric. On the other hand, by adding a sufficient quantity of the same principle to the densest metals, their attraction for it is diminished when they are expanded into the gaseous state, and their cohesion is destroyed.’”

Having thus quoted at length the *heterodox* views of the great “heretic”—views that need only a little alteration of terms here and there, [the same eminent scientist—an original and liberal thinker, undeniably—proceeds to sum up those views, and continues:—

* Yet it is not *Ether*, but only one of the principles of Ether, the latter being itself one of the principles of *Akāsa*.

† And so does *prāna* (Jiva) pervade the whole living body of man; but alone, without having an atom to act upon, it would be *quiescent*—dead; *i.e.*, would be in *laya*, or as Mr. Crookes has it, “locked in *protyle*.” It is the action of *Fohat* upon a compound or even a simple body that produces life. When a body dies it passes into the same polarity as its male energy and repels therefore the active agent, which, losing hold of the *whole*, fastens on the parts or molecules, this action being called chemical. Vishnu, the Preserver, transforms himself into Rudra-Siva, the Destroyer—a correlation seemingly unknown to Science.

“ I shall not dwell at great length on this unity of sun-force and earth, which this theory implies. But I may add that out of it, or out of the hypothesis of mere motion as force, and of virtue without substance, we may gather, as the nearest possible approach to the truth on this, the most complex and profound of all subjects, the following inferences :—

“(a) Space, inter-stellary, inter-planetary, inter-material, inter-organic, is not a vacuum, but is filled with a subtle fluid or gas, which for want of a better term* we may still call, as the ancients did, *Aith-ur*—Solar fire, ÆTHER. This fluid, unchangeable in composition, indestructible, invisible,† pervades everything and all [ponderable.—H. P. B.] matter,‡ the pebble in the running brook, the tree overhanging, the man looking on, is charged with the ether in various degree; the pebble less than the tree, the tree less than man. All in the planet is in like manner so charged! A world is built up in ethereal fluid, and moving through a sea of it.

“(b) The Ether, whatever its nature is, is from the sun and from the suns§ the suns are the generators of it, the store-houses of it, the diffusers of it.||

“(c) Without the ether there could be no motion; without it particles of ponderable matter could not glide over each other; without it there could be no impulse to excite those particles into action.

“(d) Ether determines the constitution of bodies. Were there no ether there could be no change of constitution in substance; water, for instance, could only exist as a substance, compact and insoluble beyond any conception we could form of it. It could never even be ice, never flint, never vapour, except for ether.

“(e) Ether connects sun with planet, planet with planet, man with planet, man with man. Without ether there could be no communication in the Universe; no light, no heat, no phenomenon of motion.”

Thus we find that Ether and *elastic* atoms are, in the alleged *mechanical* conception of the Universe, the Spirit and Soul of Kosmos, and that the theory—put it any way and under whatever disguise—always leaves a more widely opened issue for men of

* Verily, unless the occult terms of the Kabalists are adopted!

† “Unchangeable” only during Manvantaric periods, after which it merges once more into Mulaprakriti; “invisible” for ever, in its own essence, but seen in its reflected coruscations, called the Astral light by the modern Kabalists. Yet, conscious and grand Beings clothed in that same Essence move in it.

‡ One has to add (ponderable), to distinguish it from that *Ether* which is matter still, though a substratum.

§ The Occult Sciences reverse the statement, and say that it is the sun, and all the suns that are from it, which emanate at the Manvantaric dawn from the *Central Sun*.

|| Here, we decidedly beg to differ with the learned gentleman. Let us remember that this Æther, whether *Akâsa* is meant by the term, or its lower principle, Ether—is septenary. *Akâsa* is Aditi in the allegory, and the mother of Mârttânda (the sun), the *Deva-matri*—“Mother of the gods.” In the solar system, the sun is her Buddhi and *Vahan*, the Vehicle, hence the 6th principle; in Kosmos all the suns are the Kama rupa of *Akâsa* and so is ours. It is only when regarded as an individual Entity in his own Kingdom that *Surya* (the sun) is the 7th principle of the great body of *matter*.

Science to speculate beyond the line drawn by modern materialism—or call it *agnosticism* rather, to be more correct*—than the majority avails itself of. Atoms, Ether, or both, modern speculation cannot get out of the circle of ancient thought; and the latter was soaked through with archaic occultism. Undulatory or corpuscular theory—it is all one. It is speculation from the aspects of phenomena, not from the knowledge of the essential nature of the *cause* and *causes*. When modern Science has explained to its audience the late achievements of Bunsen and Kirchoff, and shown the seven colours, the “primary” of a ray which is decomposed in a fixed order on a screen; and described the respective lengths of luminous waves, what has it proved? It has justified its reputation for *exactness* in mathematical achievement by measuring even the length of a luminous wave—“varying from about seven hundred and sixty millionths of a millimètre at the red end of the spectrum to about three hundred and ninety-three millionths of a millimètre at the violet end.” But when the exactness of the calculation with regard to the *effect* on the light-wave is thus vindicated, Science is forced to admit that the *force* (which is the *supposed cause*) is *believed* to produce “inconceivably minute undulations” in *some* medium—“*generally regarded as identical with the ethereal medium*”†—and that medium itself is still only—a *hypothetical agent!*”

Auguste Comte’s pessimism with respect to the impossibility of knowing some day the chemical composition of the sun, has not been belied thirty years later by Kirchoff, as claimed. The spectroscope has helped us to see that the elements, with which the modern chemist is familiar, *must in all probability* be present in the sun’s outward robes—not in the sun itself; and, taking these “robes,” the solar cosmic veil, for the sun itself, the physicists have declared its luminosity to be due to *combustion* and *flame*, and have mistaken the vital principle of that luminary for a purely *material* thing, and called it “chromosphere.”‡ We have hypotheses and theories only so far, not law—by any means.

* Brutal but frank materialism is more honest than Janus-faced agnosticism in our days. *Monism* is the Pecksniff of modern philosophy, turning a pharisaical face to psychology and idealism, and its natural face of a Roman Augur, swelling his cheek with his tongue—to Materialism. The Monists are worse than the Materialists; because, while looking at the Universe and psycho-spiritual man from the same negative stand-point, the latter put their case far less plausibly than sceptics of Mr. Tyndall’s or even Mr. Huxley’s stamp. Herbert Spencer, Bain and Lewes are more dangerous to universal truths than Büchner.

† “*Geology*,” by Professor A. Winchell.

‡ See *Five Years of Theosophy*—Articles: “Do the Adepts deny the nebular theory?” and “Is the Sun merely a cooling mass?”—for the true Occult teaching.