COLERIDGE SAMUEL TAYLOR

HINTS TOWARDS THE FORMATION OF A MORE COMPREHENSIVE THEORY OF LIFE

Samuel Coleridge

Hints towards the formation of a more comprehensive theory of life

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Содержание

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Preface

The accompanying pages contain the unfinished Sketch of a Theory of Life by S. T. Coleridge. Everything that fell from the pen of that extraordinary man bore latent, as well as more obvious indications of genius, and of its inseparable concomitant—originality. To this general remark the present Essay is far from forming an exception. No one can peruse it, without admiring the author's comprehensive research and profound meditation; but at the same time, partly from the exuberance of his imagination, and partly from an apparent want of method (though, in truth, he had a method of his own, by which he marshalled his thoughts in an order perfectly intelligible to himself), a first perusal will, to many readers, prove unsatisfactory, unless they are prepared for it by an introduction of a more popular character. This purpose, therefore, I shall endeavour to accomplish; it being to be understood that I by no means make myself responsible either for Mr. Coleridge's speculations, or for the manner in which they are enunciated; and that, on the contrary, I shall occasionally indicate views from which I dissent, and expressions which perhaps the author himself, on revision, would have seen reason to correct.

It is clear that Mr. Coleridge considers the unity of human nature to result from two combined elements, Body and Soul; that he regards the latter as the principle of Reason and of Conscience

(both which he has largely treated in his published works), and that the "Life," which he here investigates, concerns, in relation to mankind, only the Body. He is far, however, from confining the term "Life" to its action on the human body; on the contrary, he disclaims the division of all that surrounds us into things with life, and things without life; and contends, that the term Life is no less applicable to the irreducible *bases* of chemistry, such as sodium, potassium, &c., or to the various forms of crystals, or the geological strata which compose the crust of our globe, than it is to the human body itself, the acme and perfection of animal organization. I admit that there are certain great powers, such as magnetism, electricity, and chemistry, whose action may be traced, even by the limited means which science at present possesses, in admirable gradation, from purely unorganized to the most highly organized matter: and, I think, that Mr. Coleridge has done this with great ingenuity and striking effect; but what I object to is, that he applies to the combined operation of these powers, in all cases, the term *Life*. If we look back to the early history of language, we shall probably find that this word, and its synonymes in other tongues, were first employed to denote *human* life, that is, the duration of a human being's existence from birth to the grave. As this existence was marked by actions, many of which were common to man with other animals, those animals also were said to "live;" but the extension of the notion of Life to the vegetable creation is comparatively a recent usage,—and hitherto (in this country at least) no writer

before Mr. Coleridge, so far as I know, has maintained that rocks and mountains, nay, "the great globe itself," share with mankind the gift of Life. On the other hand, there are well known and energetic uses of the word "Life," to which Mr. Coleridge's speculations, as contained in the accompanying pages, are wholly inapplicable. Almost all nations, even the most savage, agree in the belief that individuals of the human race, after they have ceased to exist in this mortal life, will exist in another state, to which also the word Life is universally applied; but to this latter Mr. Coleridge's views of magnetism, electricity, &c., can hardly be thought applicable. Still less can they apply to "Life" in its spiritual sense; as, when Moses says to the Jews, "the words of the law are your *life*," (Deut. xxxii, 47,) and when our Saviour says, "the words that I speak unto you, they are spirit, and they are *life*;" (John, vi, 63;) and again, "I am the resurrection and the life," (John, xi, 25.) Upon the whole, therefore, I think it would have been advisable in Mr. Coleridge to have adopted a different phraseology, in tracing the operation of certain natural agencies first on unorganized, and then on organized bodies.

Another word, of which I consider an improper use to be made in this Essay, is "Nature." I find this imaginary being introduced on all occasions, and invested with attributes of personality, which may be extremely apt to make a false impression on young or thoughtless minds. At one time, "the life of Nature" is spoken of; then we are informed that "Nature has succeeded. *She* has created the intermediate link between the vegetable

world and the animal." Again, it is said that "Nature seems to fall back, and to reexert *herself* on the lower ground, which *she* had before occupied;"—and elsewhere we are told that "Nature never loses what *she* has once learnt; though in the acquirement of each new power *she* intermits or performs less energetically the act immediately preceding. *She* often drops a faculty, but never fails to pick it up again. *She* may seem forgetful and absent; but it is only to recollect *herself* with additional as well as recruited vigour in some after and higher state." Now the word "Nature," in any intelligible sense, means nothing but that method and order by which the Almighty regulates the common course of things. Nature is not a person; it is not active; it neither creates nor performs actions more or less energetically, nor learns, nor forgets, nor reexerts itself, nor recruits its vigour. Perhaps it will be said that all this is merely figurative language. Figurative language is very much misplaced in strict philosophical investigations; and these particular figures, which might be quite consistent with the atheistical philosophy of Lucretius, sound ill in the mouth of a pious Christian, which Mr. Coleridge undoubtedly was. He probably adopted them unconsciously from Bacon; but Bacon's use of the word Nature ought rather to have served as a warning than an example; for it has contributed, in no small degree, to the atheistical philosophy of recent times.

The prevalent natural philosophy of the present day is that which is called *corpuscular*, because it assumes the existence

of a first matter, consisting of *corpuscula* or atoms, which are supposed to be definite, though extremely small, *quantities*, invested with the *qualities* of extension, impenetrability, and the like; and from certain combinations of these qualities, Life is considered, by some persons, to be a necessary result. This philosophy Mr. Coleridge combats. The supposed atoms, he says, are mere abstractions of the mind; and Life is not a thing, the result of atomic arrangement or action, but is itself an act, or process. He refutes various definitions of Life, such as, that it is the sum of all the functions by which death is resisted; or, that it depends on the faculty of nutrition, or of anti-putrescence. His own definition he proposes merely as an hypothesis. Life, he says, is "the principle of Individuation," that is to say, it is a power which discloses itself from within, combining many qualities into one individual thing. This individualising principle unites, as he conceives, with the cooperating action of magnetism, electricity, and chemistry. At least, such is the inference to be drawn from the present state of science; though it is easily conceivable that future discoveries may bring us acquainted with powers more directly connected with Life. The most general law governing the action of Life, as a tendency to individuation, is here designated *polarity*; for instance, the power termed magnetism (not meaning that there is necessarily an actual tangible magnet in the case) has two poles, the negative, answering to attraction, rest, carbon, &c., and the positive, answering to repulsion, mobility, azote, &c.; and as the magnetic needle which points to the north

necessarily indicates thereby the south, so the power disposing to rest has necessarily a counteracting influence disposing to mobility, between which lies the point of indifference. Now this quality, to which Mr. Coleridge gives the name of polarity, is in truth nothing more than an exemplification of the doctrine of opposites, the πρός ἄλληλα ἀντικειμένω ἀντίθεσις, which the Eleatic Philosopher, in Plato's "Sophist," applies to the idea of existence and non-existence, and which accompanies every other idea as its shadow, whether in physics, in intellect, or in morals; for the finite is opposed to the infinite, the false to the true, the evil to the good, and so forth; which we say, not to derogate from the value of Mr. Coleridge's application of the doctrine, of which he has very ably availed himself; but merely to explain the term polarity, by referring it, as a species, to a higher genus of intellectual conceptions.

Reverting to the three powers before mentioned, it is not to be understood, that on Mr. Coleridge's hypothesis of Life, they ever act separately; but in the different modifications of Life, at one time the power of magnetism predominates, at another that of electricity, and at another that of chemistry. Magnetism is stated to act as a line, electricity as a surface, and chemistry as a solid; for all which Mr. Coleridge refers to certain physical experiments. The predominance of magnetism is characterised by reproduction, that of electricity by irritability; and irritability, which first appears as muscle, gradually rises into sensibility as nerve. The limits of a mere introduction will not permit me to

examine Mr. Coleridge's first principles more in detail; and I can but briefly notice their application to the successive stages of ascent, from the first rudiments of individualised Life, in the lowest classes of the mineral, vegetable, and animal creation, to its crown and consummation in the human body. Beginning with magnetism, by which, in its widest sense, he means what he improperly calls the first and simplest differential act of *Nature* (he should rather have said the first and simplest conception that we can form of a differential act of God, in the work of creation), he supposes the pre-existence of chaos, not, indeed, in the Miltonic sense—

> "For hot, cold, moist, and dry, four champions fierce,
> Strive *there* for mast'ry, and to battle bring
> Their embryon atoms,—"

but rather as one vast homogeneous fluid, and even *that* he suggests not as a historical fact, but as the appropriate symbol of a great fundamental truth. The first effort of magnetic power, the first step from indifference to difference, from formless homogeneity to independent existence, is seen in the tranquil deposition of crystals; and an increasing tendency to difference is observable in the increasing multitude of strata, till we come to organic life; of which the vegetable and animal worlds may be regarded as opposite poles; carbon prevailing in the former and azote in the latter; and vegetation being characterised by the predominance of magnetism in its highest

power, as reproduction; whilst the animal tribes evince the power of electricity, as shown in irritability and sensibility. Passing over the forms of vegetation, we come to the polypi, corallines, &c., in which individuality appears in its first dawn; for a multitude of animals form, as it were, a common animal, and different genera pass into each other, almost indistinguishably. The tubipora of the corals connects with the serpula of the conchylia. In the *mollusca* the separation of organs becomes more observable; in the higher species there are rudiments of nerves, and an exponent, though scarcely distinguishable, of sensibility. In the snail, and muscle, the separation of the fluid from the solid is more marked, yet the prevalence of the carbonic principle connects these and the preceding classes, in a certain degree, with the vegetable creation. "But the *insect* world, taken at large (says Mr. Coleridge) appears as an intense *Life*, that has struggled itself loose, and become emancipated from vegetation—*Floræ liberti, et libertini*!" In insects we first find the distinct commencement of a separation between the muscular system, that is, organs of irritability, and the nervous system, that is, organs of sensibility; the former, however, maintaining a pre-eminence throughout, and the nerves themselves being probably subservient to the motory power. With the fishes begins an internal system of bones, but these are the results of a comparatively imperfect formation, being in general little more than mere gristle. In birds we find a sort of synthesis of the powers of fish and insects. In all three, the powers are under the

predominance of irritability; but sensibility, which is dormant in the insect, begins to awaken in the fish, and, though still subordinate, is quite awake in the bird, of which no better proof can be given than its power of sound, with the rudiments of modulation, in the large class of singing birds, and in some others a tendency to acquire and to imitate articulate speech. The next step of ascent brings us to the *mammalia*; and in these, including beasts and men, the complete and universal presence of a nervous system raises sensibility to its due place and rank among the animal powers. Finally, in Man the whole force of organic power attains an inward and centripetal direction, and the "apex of the living pyramid"becomes a fit receptacle for Reason and Conscience.

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It is much to be regretted, that the estimable Author did not live to put a finishing hand to this Essay; but the part completed involves speculations of so interesting a nature, and presents such striking marks of deep and original thought, that the Editor, to whose hands it was committed, did not feel himself justified in withholding it from the judgment of the public.

Physiology Of Life.
Introduction

When we stand before the bust of John Hunter, or as we enter the magnificent museum furnished by his labours, and pass slowly, with meditative observation, through this august temple, which the genius of one great man has raised and dedicated to the wisdom and uniform working of the Creator, we perceive at every step the guidance, we had almost said, the inspiration, of those profound ideas concerning Life, which dawn upon us, indeed, through his written works, but which he has here presented to us in a more perfect language than that of words—the language of God himself, as uttered by Nature.

That the true idea of Life existed in the mind of John Hunter I do not entertain the least doubt; but it may, perhaps, be doubted whether his incessant occupation, and his stupendous industry in the service, both of his contemporaries and of posterity, added to his comparatively slight acquaintance with the arts and aids of logical arrangement, permitted him fully to unfold and arrange it in distinct, clear, and communicable conceptions. Assuredly, however, I may, without incurring the charge of arrogance or detraction, venture to assert that, in his writings the light which occasionally flashes upon us seems at other times, and more frequently, to struggle through an unfriendly

medium, and even sometimes to suffer a temporary occultation. At least, in order to dissipate the undeniable obscurities, and to reconcile the apparent contradictions found in his works,—to distinguish, in short, the numerous passages in which without, perhaps, losing sight internally of his own peculiar belief, he yet falls into the phraseology and mechanical solutions of his age,—we must distinguish such passages from those in which the form corresponds to the substance, and in which, therefore, the nature and essential laws of vital action are expressed, as far as his researches had unveiled them to his own mind, without disguise. To effect this, we must, as it were, climb up on his shoulders, and look at the same objects in a distincter form, because seen from the more commanding point of view furnished by himself. This has, indeed, been more than once attempted already, and, in one instance, with so evident a display of power and insight as announces in the assertor and vindicator of the Hunterian Theory a congenial intellect, and a disciple in whom Hunter himself would have exulted. Would that this attempt had been made on a larger scale, that the writer to whom I refer[1] had in consequence developed his opinions systematically, and carried them yet further back, even to their ultimate principle!

But this the scientific world has yet to expect; or it is more than probable that the present humble endeavour would have been superseded, or confined, at least, to the task of restating the opinion of my predecessor with such modifications as

[1] Mr. Abernethy.

the differences that will always exist between men who have thought independently, and each for himself, have never failed to introduce, even on problems of far easier and more obvious solution.

Without further preface or apology, therefore, I shall state at once my objections to all the definitions that have hitherto been given of Life, as meaning too much or too little, with an exception, however, in favour of those which mean nothing at all; and even these last must, in certain cases, receive an honour they do not merit, and be confuted, or rather detected, on account of their too general acceptance, and the incalculable power of words over the minds of men in proportion to the remoteness of the subject from the cognizance of the senses.

It would be equally presumptuous and unreasonable should I, with a late writer on this subject, "exhort the reader to be particularly on his guard against loose and indefinite expressions;" but I perfectly agree that they are the bane of all science, and have been remarkably injurious in the different departments of physiology.

The Nature Of Life. On The Definitions Of Life Hitherto Received. Hints Towards A More Comprehensive Theory

The attempts to explain the nature of Life, which have fallen within my knowledge, presuppose the arbitrary division of all that surrounds us into things with life, and things without life —a division grounded on a mere assumption. At the best, it can be regarded only as a hasty deduction from the first superficial notices of the objects that surround us, sufficient, perhaps, for the purpose of ordinary discrimination, but far too indeterminate and diffluent to be taken unexamined by the philosophic inquirer. The positions of science must be tried in the jeweller's scales, not like the mixed commodities of the market, on the weigh-bridge of common opinion and vulgar usage. Such, however, has been the procedure in the present instance, and the result has been answerable to the coarseness of the process. By a comprisal of the *petitio principii* with the *argumentum in circulo*,—in plain English, by an easy logic, which begins with begging the question, and then moving in a circle, comes round to the point where it began,—each of the two divisions has been made to define the other by a mere reassertion of their assumed

contrariety. The physiologist has luminously explained Y plus X by informing us that it is a somewhat that is the antithesis of Y minus X; and if we ask, what then is Y-X? the answer is, the antithesis of Y+X,—a reciprocation of great service, that may remind us of the twin sisters in the fable of the Lamiæ, with but one eye between them both, which each borrowed from the other as either happened to want it; but with this additional disadvantage, that in the present case it is after all but an eye of glass. The definitions themselves will best illustrate our meaning. I will begin with that given by Bichat. "Life is the sum of all the functions by which death is resisted," in which I have in vain endeavoured to discover any other meaning than that life consists in being able to live. This author, with a whimsical gravity, prefaces his definition with the remark, that the nature of life has hitherto been sought for in *abstract* considerations; as if it were possible that four more inveterate abstractions could be brought together in one sentence than are here assembled in the words, life, death, function, and resistance. Similar instances might be cited from Richerand and others. The word Life is translated into other more learned words; and this *paraphrase* of the *term* is substituted for the *definition* of the *thing*, and therefore (as is always the case in every *real* definition as contra-distinguished from a *verbal* definition,) for at least a partial *solution* of the *fact.* Such as these form the *first* class.—The second class takes some one particular function of Life common to all living objects,—nutrition, for instance; or, to adopt the phrase most in vogue

at present, assimilation, for the purposes of reproduction and growth. Now this, it is evident, can be an appropriate definition only of the very lowest species, as of a Fungus or a Mollusca; and just as comprehensive an idea of the mystery of Life, as a Mollusca might give, can this definition afford. But this is not the only objection. For, *first*, it is not pretended that we begin with seeking for an organ evidently appropriated to nutrition, and then infer that the substance in which such an organ is found *lives*. On the contrary, in a number of cases among the obscurer animals and vegetables we infer the organ from the pre-established fact of its life. *Secondly*, it identifies the process itself with a certain range of its forms, those, namely, by which it is manifested in animals and vegetables. For this, too, no less than the former, presupposes the arbitrary division of all things into not living and lifeless, on which, as I before observed, all these definitions are grounded. But it is sorry logic to take the proof of an affirmative in one thing as the proof of the negative in another. All animals that have lungs breathe, but it would be a childish oversight to deduce the converse, viz. all animals that breathe have lungs. The theory in which the French chemists organized the discoveries of Black, Cavendish, Priestly, Scheele, and other English and German philosophers, is still, indeed, the reigning theory, but rather, it should seem, from the absence of a rival sufficiently popular to fill the throne in its stead, than from the continuance of an implicit belief in its own stability. We no longer at least cherish that intensity of faith which, before Davy commenced

his brilliant career, had not only identified it with chemistry itself, but had substituted its nomenclature, even in common conversation, for the far more philosophic language which the human race had abstracted from the laboratory of Nature. I may venture to prophecy that no future Beddoes will make it the corival of the mathematical sciences in demonstrative evidence. I think it a matter of doubt whether, during the period of its supposed infallibility, physiology derived more benefit from the extension, or injury from the misdirection, of its views. Enough of the latter is fresh in recollection to make it but an equivocal compliment to a physiological position, that it must stand or fall with the corpuscular philosophy, as modified by the French theory of chemistry. Yet should it happen (and the event is not impossible, nor the supposition altogether absurd,) that more and more decisive facts should present themselves in confirmation of the metamorphosis of elements, the position that life consists in assimilation would either cease to be distinctive, or fall back into the former class as an identical proposition, namely, that Life, meaning by the word that sort of growth which takes place by means of a peculiar organization, consists in that sort of growth which is peculiar to organized life. *Thirdly*, the definition involves a still more egregious flaw in the reasoning, namely, that of *cum hoc, ergo propter hoc* (or the assumption of causation from mere coexistence); and this, too, in its very worst form. For it is not *cum hoc solo, ergo propter hoc*, which would in many cases supply a presumptive proof by induction, but *cum hoc, et plurimis*

aliis, ergo propter hoc! Shell, of some kind or other, is common to the whole order of testacea, but it would be absurd to define the *vis vitæ* of testaceous animals as existing in the shell, though we know it to be the constant accompaniment, and have every reason to believe the constant effect, of the specific life that acts in those animals. Were we (*argumenti causá*) to imagine shell coextensive with the organized creation, this would produce no abatement in the falsity of the reasoning. Nor does the flaw stop here; for a physiological, that is a real, definition, as distinguished from the verbal definitions of lexicography, must consist neither in any single property or function of the thing to be defined, nor yet in all collectively, which latter, indeed, would be a history, not a definition. It must consist, therefore, in the *law* of the thing, or in such an *idea* of it, as, being admitted, all the properties and functions are admitted by implication. It must likewise be so far *causal*, that a full insight having been obtained of the law, we derive from it a progressive insight into the necessity and *generation* of the phenomena of which it is the law. Suppose a disease in question, which appeared always accompanied with certain symptoms in certain stages, and with some one or more symptoms in all stages—say deranged digestion, capricious alternation of vivacity and languor, headache, dilated pupil, diminished sensibility to light, &c.—Neither the man who selected the one constant symptom, nor he who enumerated all the symptoms, would give the scientific definition *talem scilicet, quali scientia fit vel datur*, but the man who at once named

and defined the disease hydrocephalus, producing pressure on the brain. For it is the essence of a scientific definition to be causative, not by introduction of imaginary somewhats, natural or supernatural under the name of causes, but by announcing the law of action in the particular case, in subordination to the common law of which all the phenomena are modifications or results.

Now in the definition on which, as the representative of a whole class, we are *now* animadverting, a single effect is given as constituting the cause. For nutrition by digestion is certainly necessary to life, only under certain circumstances, but that life is previously necessary to digestion is absolutely certain under all circumstances. Besides, what other phenomenon of Life would the conception of assimilation, *per se*, or as it exists in the lowest order of animals, involve or explain? How, for instance, does it include sensation, locomotion, or habit? or if the two former should be taken as distinct from life, *toto genere*, and supervenient to it, we then ask what conception is given of *vital* assimilation as contradistinguished from that of the nucleus of a crystal?

Lastly, this definition confounds the Law of Life, or the primary and universal form of vital agency, with the conception, Animals. For the kind, it substitutes the representative of its degrees and modifications. But the first and most important office of science, physical or physiological, is to contemplate the power in kind, abstracted from the degree. The ideas of caloric, whether as substance or property, and the conceptions

of latent heat, the heat in ice, &c., that excite the wonder or the laughter of the vulgar, though susceptible of the most important practical applications, are the result of this abstraction; while the only purpose to which a definition like the preceding could become subservient, would be in supplying a nomenclature with the character of the most common species of a genus—its *genus generalissimum*, and even this would be useless in the present instance, inasmuch as it presupposes the knowledge of the things characterised.

The third class, and far superior to the two former, selects some property characteristic of all living bodies, not merely found in all *animals* alike, but existing equally in all parts of all living things, both animals and plants. Such, for instance, is the definition of Life, as consisting in anti-putrescence, or the power of resisting putrefaction. Like all the others, however, even this confines the idea of Life to those degrees or concentrations of it, which manifest themselves in organized beings, or rather in those the organization of which is apparent to us. Consequently, it substitutes an abstract term, or generalization of effects, for the idea, or superior form of causative agency. At best, it describes the *vis vitá* by one only of its many influences. It is however, as we have said before, preferable to the former, because it is not, as they are, altogether unfruitful, inasmuch as it attests, less equivocally than any other sign, the presence or absence of that degree of the *vis vitá* which is the necessary condition of organic or self-renewing power. It throws no light, however, on the law

or principle of action; it does not increase our insight into the other phenomena; it presents to us no *inclusive* form, out of which the other forms may be developed, and finally, its defect as a definition may be detected by generalizing it into a higher formula, as a power which, during its continuance, resists or subordinates heterogeneous and adverse powers. Now this holds equally true of chemical relatively to the mechanical powers; and really affirms no more of Life than may be equally affirmed of every form of being, namely, that it tends to preserve itself, and resists, to a certain extent, whatever is incompatible with the laws that constitute its particular state for the time being. For it is not true only of the great divisions or classes into which we have found it expedient to distinguish, while we generalize, the powers acting in nature, as into intellectual, vital, chemical, mechanical; but it holds equally true of the degrees, or species of each of these genera relatively to each other: as in the decomposition of the alkalies by heat, or the galvanic spark. Like the combining power of Life, the copula here resists for awhile the attempts to dissolve it, and then yields, to reappear in new phenomena.

It is a wonderful property of the human mind, that when once a momentum has been given to it in a fresh direction, it pursues the new path with obstinate perseverance, in all conceivable bearings, to its utmost extremes. And by the startling consequences which arise out of these extremes, it is first awakened to its error, and either recalled to some former track, or receives some fresh impulse, which it follows with the same

eagerness, and admits to the same monopoly. Thus in the 13th century the first science which roused the intellects of men from the torpor of barbarism, was, as in all countries ever has been, and ever must be the case, the science of *Metaphysics* and *Ontology*. We first seek what can be found at home, and what wonder if truths, that appeared to reveal the secret depths of our own souls, should take possession of the whole mind, and all truths appear trivial which could not either be evolved out of similar principles, by the same process, or at least brought under the same forms of thought, by perceived or imagined analogies? And so it was. For more than a century men continued to invoke the oracle of their own spirits, not only concerning its own forms and modes of being, but likewise concerning the laws of external nature. All attempts at philosophical explication were commenced by a mere effort of the understanding, as the power of abstraction; or by the imagination, transferring its own experiences to every object presented from without. By the former, a class of phenomena were in the first place abstracted, and fixed in some general term: of course this could designate only the impressions made by the outward objects, and so far, therefore, having been thus metamorphosed, they were effects of these objects; but then made to supply the place of their own causes, under the name of occult qualities. Thus the properties peculiar to gold, were abstracted from those it possessed in common with other bodies, and then generalized in the term *Aureity*: and the inquirer was instructed that the Essence of

Gold, or the cause which constituted the peculiar modification of matter called gold, was the power of aureity. By the latter, *i.e.* by the imagination, thought and will were superadded to the occult quality, and every form of nature had its appropriate Spirit, to be controlled or conciliated by an appropriate ceremonial. This was entitled its SUBSTANTIAL FORM. Thus, physic became a sort of dull poetry, and the art of medicine (for physiology could scarcely be said to exist) was a system of magic, blended with traditional empiricism. Thus the forms of thought proceeded to act in their own emptiness, with no attempt to fill or substantiate them by the information of the senses, and all the branches of science formed so many sections of logic and metaphysics. And so it continued, even to the time that the Reformation sounded the second trumpet, and the authority of the schools sank with that of the hierarchy, under the intellectual courage and activity which this great revolution had inspired. Power, once awakened, cannot rest in one object. All the sciences partook of the new influences. The world of experimental philosophy was soon mapped out for posterity by the comprehensive and enterprising genius of Bacon, and the laws explained by which experiment could be dignified into experience.[2] But no sooner was the impulse given, than the same propensity was made manifest of looking at all things in the one point of view which

[2] Experiment, as an organ of reason, not less distinguished from the blind or dreaming industry of the alchemists, than it was successfully opposed to the barren subtleties of the schoolmen.

chanced to be of predominant attraction. Our Gilbert, a man of genuine philosophical genius, had no sooner multiplied the facts of magnetism, and extended our knowledge concerning the property of magnetic bodies, but all things in heaven, and earth, and in the waters beneath the earth, were resolved into magnetic influences.

Shortly after a new light was struck by Harriott and Descartes, with their contemporaries, or immediate predecessors, and the restoration of ancient geometry, aided by the modern invention of algebra, placed the science of mechanism on the philosophic throne. How widely this domination spread, and how long it continued, if, indeed, even now it can be said to have abdicated its pretensions, the reader need not be reminded. The sublime discoveries of Newton, and, together with these, his not less fruitful than wonderful application, of the higher mathesis to the movements of the celestial bodies, and to the laws of light, gave almost a religious sanction to the corpuscular system and mechanical theory. It became synonymous with philosophy itself. It was the sole portal at which truth was permitted to enter. The human body was treated of as an hydraulic machine, the operations of medicine were solved, and alas! even directed by reference partly to gravitation and the laws of motion, and partly by chemistry, which itself, however, as far as its theory was concerned, was but a branch of mechanics working exclusively by imaginary wedges, angles, and spheres. Should the reader chance to put his hand on the "Principles of

Philosophy," by La Forge, an immediate disciple of Descartes, he may see the phenomena of sleep solved in a copper-plate engraving, with all the figures into which the globules of the blood shaped themselves, and the results demonstrated by mathematical calculations. In short, from the time of Kepler[3]

[3] Whose own mind, however, was not comprehended in the vortex; where Kepler erred it was in the other extreme.

Конец ознакомительного фрагмента.