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LIFE AND MIND:

THEIR

UNITY AND MATERIALITY.

BY

ROBERT LEWINS, M.D.

“If it be possible to perfect mankind, the means of doing so will be found in the Medical Sciences.”

DESCARTES.

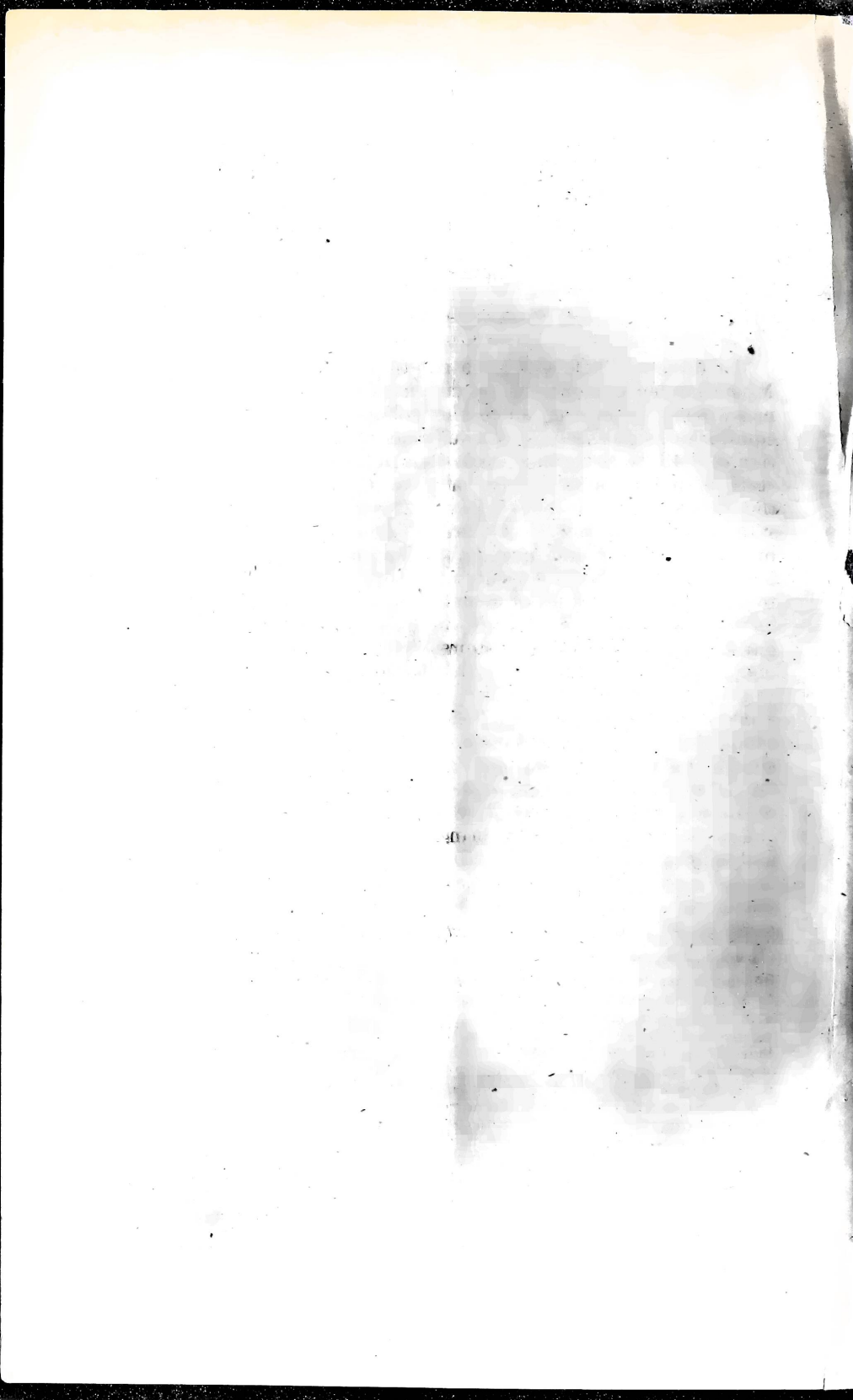
“For that which befalls men befalls beasts; as the one dies so does the other; they have all one breath; all go unto one place; all are of the dust, and all turn to dust again.”

ECCLESIASTES, 3rd Chap., Verses 18, 19.

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The design of this short contribution to the philosophy of Modern Science is one, the execution of which I have felt for many years past, ever since the collapse of the European equilibrium signalized by the outbreak of the French revolution of 1848, to be a great *desideratum* in the current distracted state of public opinion, especially in Great Britain, as to the claims upon our belief of Divine Revelation at the existing standpoint of science.* My present purpose is to attempt, in quite popular and intelligible language, divested of all technicality which is not familiar to all fairly educated persons, to ascertain the verdict of modern physiology and pathology on the real nature of life. Upon this physical basis, disregarding all metaphysical systems, from Plato to Comte, as so many *ignes fatui*, which have only served during thousands of years of misdirected activity, to perplex and mislead the human mind, I propose to formulate, in a few sentences, a consistent and rational theory of human existence, in which everything super-natural and exceptional to familiar, everyday observation and experience, is removed from the domain of sense and fact into that of fancy and fable.†

I have chiefly at heart to bring to bear, in a purely scientific and judicial spirit, on the so-called inspiration and infallibility of our own Bible, one single, well-established physiological canon, *the non-existence of a vital or spiritual principle as an entity apart from the inherent energy of the material organism.*

* Volumes could not better illustrate the irreconcilable antagonism between Revelation and Science, than the statement of so thoughtful a scholar as the Archbishop of Canterbury, in his sermon on the text "Jesus wept," at Lambeth Church on Hospital Sunday, 15th June, 1873, respecting Death. His Grace seriously advocated the untenable hypothesis now so thoroughly refuted by Paleontology and Biology, that "Death was a frightful thing, the memento of Sin, for Sin gave it birth," evidently under the conviction that the myth in the Hebrew Scriptures of the Creation and Fall of Adam is a matter of fact.

† No doubt both the poetical and metaphysical faculties are most essential and important elements in human nature, but the legitimate end of imagination and philosophical speculation is to lead us to the possession of positive facts practically useful in vulgar life. All records of intellectual processes, that stop short of this result, are—except during the brief period of our education—impediments of right conduct, and only serve to cheat and beguile us of our time. Action, not contemplation, is the true vocation of Man.

This one fact alone, I am fully satisfied in my own mind, proves conclusively that all super-naturalism, alike "sacred and profane," is explicable by quite familiar phenomena of deranged cerebation and innervation, and that, as a corollary, the pretended "fundamental truths of Christianity" are palpable fallacies, ill-analysed and mis-interpreted signs of disordered functions of the brain and cranial nerve-centres, of no more authority or claim to especial sanctity than analogous pretensions in the case of the Koran, or other extinct or extant idolatry. Mahomet, indeed, from being subject to epilepsy, must be considered by modern pathology as labouring, during his whole public career, which was much more extended than that of the Prophet of Nazareth, under actual organic brain disease, and the wide-spread religion of Islam may therefore be dismissed at once, as a purely medical question, from the serious notice of all who are not Pathologists. The Grecian Oracles, also revered by the most civilized nation of antiquity as superhuman utterances of Divine Wisdom, were merely the ravings of women temporarily insane from the inhalation of gases which disturbed, by poisoning the blood, their cerebral functions. Insanity and Idiocy, to this day, are still venerated in the native lands of Jesus and Mahomet as the manifestation of divine inspiration.* Christianity will thus be found, when examined by the light of the 19th, to be simply what the impartial Greeks and Romans described it in the 1st century—a Syrian superstition. Syria, the "Holy Land" of the Bible and Koran (as if in sound philosophy any one place or thing can be holier than another) seems in all ages—doubtless from geological and meteorological peculiarities†—to have been notorious for the mysticism of its inhabitants; by which term I mean such excess of the idealising over the reflective faculties that sober reason and observation, the seeing things as they are in the open day-light of fact and nature, become quite disguised and obscured by the phantasmagoria of illusion. This radical defect, which necessitates the intellect to revolve perpetually in a vicious circle, fatal to all real progress, is characteristic of the human mind throughout all the East,

* Epilepsy, doubtless from its striking and imposing physiological symptoms, was in ancient times regarded as the "Holy Disease," *par excellence*. Hippocrates no doubt incurred the odium attached to "Impiety," when he taught that no disease was more or less holy than another—all being alike the result of impaired bodily organs.

† The scenery round Jerusalem and through the wilderness of Judea towards the Jordan, is exceedingly weird and hideous, well fitted to be the nursery of an ascetic creed, "whose Kingdom is not of this World."

as every impartial traveller perceives on a very cursory acquaintance.

An Oriental *must* mystify and "fable," not necessarily by intention, but because, from the structural arrangement of his intellectual organs, exaggeration, hyperbole, and the preference of fiction to fact, is his natural element. To him Lord Bacon's aphorism is peculiarly applicable, "A mixture of a lie doth ever add pleasure." In the whole texture of his mind he displays the impulsive, visionary imaginativeness and incapacity for patient and sustained impersonal research of women and children, swayed by every fluctuating breath of sentiment and passion. To minds of this class plain truth appears insipid, displeasing, and unsatisfactory, in direct contrast with that disciplined virile European intellect, which, in comparatively recent times, by strict adherence to the investigation of what really exists, has so immeasurably extended, for the benefit of mankind, the range of mental vision. In the signal triumphs of civilization during the last two centuries the Orient, and the traditional methods of the Orient, have no part whatever.

To return from this digression to my more immediate purpose. The single and simple cardinal principle of modern science, above italicised, to which I would direct attention, and to which I shall confine myself on the present occasion—as subversive of all spiritualism and mysticism whatever—is a plant of English growth, and cannot properly be considered older, in its definite shape, than the publication of Newton's "Principles of Natural Philosophy," the year before the revolution of 1688, though in a vague, indefinite form its spirit was awake in Europe from the time of the Reformation. Our Royal Society was established, as stated in its charter, at the Restoration of Charles II., as a protest against "supernatural" methods, the Puritan Revolt being the last sincere and earnest abortive attempt to govern mankind on Christian principles, or to take *au sérieux* in political life, the truth of the Jewish Dispensation. Modern Physical and Mental Science, dating from the English Revolution—the era of Newton and Locke—may thus justly be considered the real Anti-Christ.

This radical principle of true knowledge, which the human mind has only reached after persevering for thousands of years in false methods, is the confidence, *based on fixed scientific data, and not merely on conjecture*, in the all-sufficiency of Matter to carry on its own operations, and the consequent absurdity, uselessness, non-

necessity of any hypothesis which assumes, that from outside the sphere of sensible, material phenomena, there intrudes an immaterial, spiritual, or supernatural factor, to perform functions, which Matter, by virtue of its own in-dwelling energy, really performs for and by itself. I confidently submit to the judgment of my readers the assertion that the whole hypothesis of Immaterialism, of an over-ruling of matter by "Spirit" (in the transcendental, not etymological sense of the word), the former the passive instrument, the latter the active agent, received its death-blow on the fall of the Cartesian, and establishment of the Newtonian, Philosophy. Our great English astronomer, by his discovery of universal gravitation, was the real founder, in Christian times, of scientific, common sense materialism, though, from prejudices of his own education in the scholastic methods of his age, he himself failed to carry out his own data, to their legitimate conclusions, in the domain of Biology. The tremendous revolution in European thought, at the close of the 17th century, can even yet be well appreciated by comparing the mystical idealism of Milton's "Paradise Lost" with the common sense realism of Pope's "Essay on Man." From the awe-struck manner in which the intellectual representative of Puritanism hails Light as too sacred even to be named, we recognise the fatal tendency of that primeval mysticism which renders free thought, free investigation, and real progress, an impossibility. There is no room for doubt, from his cosmological and psychological standpoint, that had Milton been aware of the prismatic experiments and cosmical demonstrations of Newton, he would have turned from them with abhorrence and proud contempt.* To

* Socrates, who has been considered by not a few orthodox authorities to have had a *quasi* Divine Mission, as a forerunner of Christ, protested against the impudence and profanity of Anaxagoras, when he degraded the divine Helios and Selene into a Sun and Moon of calculable motions and magnitudes. Astronomy was pronounced by him to be among the "Divine Mysteries," which it was *impossible* to understand and *madness* to investigate, as the above-named physicist had presumptuously pretended to do. He held, indeed, that the Gods did not intend that man should pry into cosmical arrangements, that they managed such things so as to be beyond his ken, and therefore logically discarded General Physics, or the study of Nature altogether as *impious madness*. "Moral Philosophy" he considered alone fit for Humanity. Natural Science he taught to be *Celestial Arcana*, that would for ever remain inscrutable secrets to mankind. And, as far as we can see, that remained the mediæval standpoint only fully displaced, spite of the admirable but incomplete labours of Copernicus, Tycho Brahe, Kepler, and Galileo, by the discovery of Universal Gravitation. Both Bacon and Milton, scholars at the high water mark of the knowledge of their respective epochs, disbelieved the true system of the universe.—See Grote's "*History of Greece*," chap. lxxviii.

us, at all events, a century and a half later, it seems perfectly patent, whatever may have been the doubts and quibbles of Newton, Locke, and their learned and unlearned contemporaries, that as soon as it became a demonstrated fact that Matter was active, not passive, and that its every particle was in motion itself, and the cause of motion in every other particle—the belief in an energising principle as a separate entity, apart and distinct from Matter itself, became an untenable fallacy. The whole fabric of Immaterialism, the idea of the necessity of supernatural influence in inorganic matter, was annihilated at once.

And the generalization cannot be restricted to “brute” matter, but is equally applicable to the organic kingdom of nature, to plants, animals, and man. Sensibility and voluntary motion (animal life), just as in the case of the self-acting cosmos, is not the outcome of a vital or senso-motor principle, spiritual or immaterial—animating, vivifying or vitalising the material organization, but just as in the simpler, though not less wonderful (for in an infinite scale there are no absolute degrees) case of inanimate matter—animal vitality or conscious existence, with all its marvellous and complicated processes of body and mind, is merely the active expression of the material machinery of the microcosm. In this microcosm special anatomical structures or tissues manifest special functions, one of them being consciousness—egoistic and altruistic—of which mentation or cerebration is only a mode. Thought and Moral Feeling is thus only localised sensation, the special life of the hemispheres of the brain, organs familiarly known to be exceptionally developed in the human, as compared with all other animals. Modern physiology, just as in the case of modern physics, has been compelled entirely to discard the Oriental, classical, mediæval, metaphysical, ante-Newtonian speculation that organic function has for its factor a spiritual or immaterial entity or soul. The question of the *anima mundi* and *anima humana* (using the term in the sense of soul) is at bottom one and the same. The speculation, explicable and excusable even so late as the prevalence of the Cartesian system, while the erroneous idea of the inertness of matter vitiated Philosophy, had no longer a *locus standi* after its refutation by Newton. If matter acts by means of its own *vis insita*, and depends on no extraneous “*influx*,” or impulse, the whole problem of Immaterialism and Materialism is solved in favour of the latter. No modern physiologist has any difficulty in realising what seemed so insuperable a stumbling block to the Ancients and Locke—that sensation

and thought is due to matter (nerve substance). The whole difficulty seems to us purely imaginary, depending on preconceived fancies as to the twofold existence of spirit and matter in the universe, and the inferiority of the latter to the former—ideas of no greater value than the old prejudice of mathematicians as to the “perfection” of the circle, so mischievous in astronomical discovery—or the fanciful notion of peculiar sanctity attached to the numbers 3 and 7. We know nerves feel or sensate. We know equally well, both from physiology and pathology, that a special portion of the nervous system (the hemispheres of the brain) thinks.* From the medical or natural stand-point, the metaphysical notion that man is a dual being, compounded of soul and body, is in reality only the last lingering relic of the vicious, obsolete School-Physiology—the parent of occult therapeutical practice in the middle ages, and familiar in medical literature as the system of Van Helmont, a Flemish physician, who died about the time of Sir Isaac Newton’s birth. This system was based on the fallacy of the essential passivity of matter, and pre-supposed that in every organ of the body there is an Archeus, a ruling spirit, an Eu-demon in health, a kako-demon in disease—the active agent in function, whose sole *raison d’être* is the presumed incapacity of matter, “living or dead,” to exhibit, *proprio motu*, energy of any kind. This theory,

* “That the hemispheres of the Brain are the seats of the intellectual faculties—viz., Emotion, Passion, Volition, and at the same time essential to Consciousness—may be considered proved by these established facts:—

(1.) In the Animal Kingdom a correspondence is observed between the quantity of grey matter, the depth of the convolutions, and the sagacity of the animal.

(2.) At birth the grey matter in those parts is very defective, the convolutions being only superficial fissures confined to the surface of the Brain; and as the grey matter increases intelligence develops.

(3.) Vivisection shows that on slicing away the Brain the animal becomes more dull and stupid in proportion to the quantity of grey matter removed.

(4.) Clinical experience points out that in cases where disease has been found to commence at the circumference of the Brain (that is at the hemispherical convolutions) and proceeds towards the centre, the mental faculties are affected first; whereas in those diseases which commence at the central parts and proceed towards the circumference, the mental faculties are affected last.”—See Dr. Aitkin’s “Science and Practice of Medicine.”

To my mind the whole question at issue between Spiritualism and Materialism, is solved in favour of Hylozoism, by the fact stated in No. 3 of the above quotation from Dr. Aitkin’s invaluable Text Book of Medicine. Slicing the hemispherical ganglia of the Encephalon induces *insensibility and stupidity*, which is equivalent to stating it impairs the mind and moral feelings. No physical pain, no paralysis is the result, a fact dwelt on by early vivisectors with astonishment; only a purely mental one, which surely demonstrates that the organ injured is the primary seat of the mind—the “Dome of Thought, the Palace of the Soul.” We should certainly conclude that such was the case from similar experimental results in any other organ.—R. L.

identical with that of Divine and Demoniac possession in the Bible, which is quite incompatible with rational, theoretical and practical Physic, has long since fallen even into popular contempt as regards every other organ or series of organs in the body, except the Sensorium.*

The radical antithesis between the old dual doctrine of Body animated by Spirit and modern Physiology, may be well illustrated by reference to the different views as to the rationale of "suspended animation" in the two systems. In the one, where matter is held to be essentially inert—a vital principle—an animating spirit—*must* be assumed, which in syncope, asphyxia, &c., deserts its material tenement to emigrate as an indestructible, veritable entity elsewhere.* In the other modern scientific one we have with complete reason, and on sufficient grounds, abandoned this separation of soul and body, this emigration, during periods of insensibility and immobility, of the former to other spheres of activity. We now know, as certainly as we know any other demonstrated fact of science, to mention no other grounds for our certainty than the mechanical means of treatment successfully employed for the restoration of the apparently dead, that life resides in tissue as an immanent energy, with its corollary, that suspension of life is the consequence of the derangement, the arrest of those material conditions (the ultimate link in the chain of which is the contact of the oxygen of the atmosphere through the arterial circulation with the tissues), exactly as takes place in the case of a watch which ceases to "go" from derangement of its works.†

The bearing of this unity, and not duality of nature in man on what are called the "fundamental truths of Divine Revelation," must be apparent at a glance. What has been mistaken for supernatural interference resolves itself into Hyperæsthesia or Anæsthesia, dependent on increased or diminished nervous and cerebral action. It is quite unnecessary, from this physiological vantage ground, to allude seriously to the portents, miracles, prophecies, &c., claimed by mystagogues, successful or unsuccessful, which sanction their pretensions, as exceptionally privileged beings, to dictate authoritatively to their fellow creatures the behests of Heaven, from Moses to

* Error dies hard. In a modified form this old fallacy again reared its head, during the chloroform controversy in 1848.—See *Memoir of Sir James Y. Simpson*, by Professor Duns, D.D. Edinburgh: Edmonston and Douglas, 1873.

† The discredit into which Exorcism has fallen shows, that even in the unscientific mind, material force has been substituted for "vagrant spirit," now "in" now "out of the body," as the active agent in vitality.

Pius IX., and the author of the Book of Mormon. All such must be uncompromisingly negated by science in the 19th century as impostures—conscious or unconscious—the promulgator of an untruth not being, of course, less an impostor from being his own first dupe, even though he be the victim of circumstances beyond his own direct control.

It were an impertinence in the present state of physiology and physics, to argue in refutation of the incredible assertion that human beings can arrest the motions of sun and moon, change water into wine, lay the winds and waves by a word, cure old standing or congenital organic disease or deformity instantaneously by a touch, by the invocation of any name under Heaven, or in any other way alter or suspend the regular order of the universe by means corresponding with the idea of a miracle in theology. When we eliminate from matter the vital principle we nullify entirely the venerable hypothesis of Divine or diabolic inspiration and possession, and give scientific sanction to the Sadducean doctrine that all reported visions of angels and spirits, good or evil, are spectral appearances—symptoms of disturbed bodily function of organs within the skull, “coinages of the brain, bodiless creations,” like the apparition in Hamlet and apparitions everywhere else. Such assumed supernatural visitations as the “descent of the Holy Ghost” at Pentecost, and the conversion of Paul, to whom, and not directly to Jesus Christ or any of his immediate companions and disciples, Protestantism is chiefly indebted for its Evangelical doctrines, on his journey to Damascus—phenomena lying at the very root of the alleged Divine origin of Christianity—belong to the very alphabet of medical science, and may be confidently diagnosed as not preternatural occurrences at all, but merely symptoms of over-excitement—the result either of Anæmia or Hyperæmia—of the nervous centres in the head. “The sound from Heaven as of a rushing, mighty wind, the cloven tongues of fire,” are symptoms familiar to every clinical tyro of morbid action in the encephalic sensory ganglia connected with the auditory and optic nerves, and are, indeed, only exaggerations of that “singing in the ears” and “floating of motes” before the eyes, which every one who reads this must have himself experienced from the most trifling derangement, centric or eccentric, of the circulation of the blood within the brain, or from over-tension of the brain, eye, or ear nerve-tissue itself. The exaltation of the faculty of speech—a parallel case to which is well known as the Irvingite epidemic of “Unknown tongues”—is also the external sign of excited function at the

origin in the brain of another cranial nerve, the lingual or motor nerve of the tongue. The mental tumult, panic, and metamorphosis of ideas, feelings, and character, are also quite ordinary symptoms consequent on the participation of the cerebral hemispheres—seat of the moral feelings, ideas, and character—in the excited condition of the adjacent sensory ganglia. Identical symptoms, affecting both the organs of sense and the mental and moral faculties, are now quite familiar to us as exhibited by fanatics in “camp meetings,” and religious revivals, not uncommon since Whitfield and Wesley’s time, in Great Britain, North America, and Protestant Ireland. All such occurrences, whether they happened 1800 years ago in Palestine, or yesterday at our own doors, have no connection whatever with supra-mundane agency, but are simply the usual, constantly recurring, every-day indications of abnormal states of the sensorium.

The conversion of Paul falls under the same category, and resolves itself into an apoplectiform attack of the nature of sun-stroke with temporary amaurosis—a very common sequel to protracted cerebral tension and excitement, the probable proximate cause of the paroxysm, the active symptoms of which only lasted three days, though, as often happens in illness of this character, it revolutionized the whole future life of the sufferer, being exposure to the noon-day blaze of an Eastern sun. Such instances of mistaken diagnosis merit as little notice, other than professional, from contemporary medicine, as do the tales of witchcraft in former ages, or the shameful spiritualistic delusion of to-day. All such supposed evidences of supernatural power are merely indications of natural bodily *infirmity*.*

* The conversion of Colonel Gardiner, a well known cavalry officer, killed at the battle of Preston Pans, described by Dr. Doddridge, is another instance of the same kind, identical in its leading features with that of Paul. It was attended by similar ocular and acoustic hallucinations, and instantaneous life-long change of character and conduct, clearly traceable to recent concussion of the brain from an accident—a fall from his horse. It may also be mentioned that two famous mystagogues who have recently aspired to found new religions, Swedenborg and Comte, were in like manner the subjects of Brain affection. The case of the former has been most exhaustively treated by Dr. Maudsley in the “Journal of Mental Science,” in a series of articles, which I have vainly attempted to induce him to make more accessible to the general public than they can be in the pages of a professional journal. The medical history of Swedenborg is, *mutatis mutandis*, that of all successful

“Madmen who have made men mad
By their contagion; Conquerors and Kings,
Founders of Sects and Systems.”

Comte’s natural history is still a *desideratum*. Ordinary biographies of the founder of the “Religion of Humanity,” with all its extravagances and anachronisms, lacking physiological and pathological elucidation, are worthless and misleading.

As a necessary part of my argument, however, I am anxious to bring to bear upon the doctrine of a personal immortality—a doctrine which still seems to flourish amid the present wreck (at least on the Continents of Europe and America, and to a greater extent even in Great Britain than easy-going people and their supporters, either from sentiment or interest), of time-honoured creeds are willing to allow—the above fact of the unity, and not duality of nature in man. This belief, from the premises that there is in the human being, just as in inorganic and the lower animal creation, no such thing as a soul at all, must be dismissed to the limbo of other exploded superstitions. No doubt every mind capable of abstract thought has within itself, as the reflex, minister and interpreter of nature, which is in itself endless and eternal, the sense or feeling of immortality, of endlessness in time and space. Without that feeling we should be, indeed, strangers and aliens on this planet, itself only an atom in the infinite abyss of Immensity. Time and space are, indeed, not natural verities at all, but merely artificial, brain-created segments and analyses of eternity and immensity. Nature herself ignores all such limitations. Her only realities and syntheses are eternity as regards time, and immensity as regards space. All that has been said or sung, in pre-scientific ages, of God or Gods, may be predicated in this our age of the material universe, beyond which it is impossible for the human mind to range. *Higher than himself no man can think.* And this idea, this sensation of endless duration in time and extension in space—a sensation never absent for weal or woe in minds capable of high abstract power—but in the average mind only paroxysmally present—forced, too often horribly, on the attention in moments of exalted feeling, pain, terror, suspense, actual or anticipated torture, sleeplessness, dreams, nightmare, or under the action of certain narcotics, as opium, haschiz, and alcohol, has been confounded by precipitate theorists with the literal idea of resurrection from the dead, and a future eternal life of happiness or misery, apart from our present bodies, or with those bodies in a “glorified” form.*

* I need surely waste no words, at the present day, in pointing out the fatal fallacies and inconsistencies contained in the apology for this theory, in the 15th chap. 1st Corinthians, and elsewhere in the New Testament. No doubt it is a beautiful dream, looked at from the elect point of view, as there represented; but the truth is more beautiful still. Fruition is better than expectation, performance than promise, actual experience than faith or hope.

The apparently different ideas of ante-natal existence which forms part of most Oriental creeds, and is known to Occidental scholars as the Pythagorean doctrine of the Metempsychosis, and the modern Christian one of a post-mortem individual immortality, are really one and the same chimerical notion. Both are relegated, by sober, scientific analysis, from the domain of the actual into that of the ideal. Both are alike the ill-analysed, empirical conception, the cerebral function, untrained by scientific discipline, frames to itself of the infinite, the eternal—in the one case as applied to the past, in the other to the future. An actual, veritable immortality is perfectly superfluous, seeing we have already, in our present state of being, an ideal one in the sense of it.

“Heirs of immortality” we certainly are, but not in the theological sense of the phrase. Only in so far as during every pulse beat between the cradle and the grave our minds have an instinctive sense, more or less definite, of endless duration and extension. Man, then, as a sentient being, is launched into eternity, not when he dies, for at death he returns to the same condition of nothingness, as far as consciousness is concerned, as was the case prior to his embryonic existence, but when the first stirrings of life, including the life of the brain or ideation, begin. Healthy sensation, or perfect life in every organ, including the cerebral hemispheres, is thus our only heaven, morbid sensation, varying as it does from *ennui* or general *malaise* to mental and corporeal agony and anguish, our only hell. Earth is paradise, if the healthy operation of every anatomical structure could be preserved; perpetual sunshine of body and mind is the blessed result—a beatitude implied in the physiological aphorism, “the normal exercise of every organic function is pleasurable.” Wherever, therefore, *malaise* of body or mind is present, its cause must be sought for in deranged bodily function, and in no “higher” or more recondite region. All that is fabled by poets, saints, martyrs, founders of sects and systems, under the term Saturnian or Golden Age, Kingdom of Heaven, Paradise, &c., is comprehended in that supreme *bien aise* which results from the equilibrium of the bodily functions. That state, and that alone, in which, as in healthy infancy, no portion of the nervous system, indicating loss of general balance of the organism, obtrudes itself on our attention, is the true palingenesia, whether of mythology, philosophy, or Christianity. To attain and preserve that state of normal and material well being—

discarding all more transcendental aspirations as a mischievous and vainglorious Utopia and fool's paradise, ought all our efforts to be exclusively directed. It will be found, on experience, to have nothing in common with the "Let us eat and drink, for to-morrow we die" principle of the degenerate Epicurean, but to require for its attainment and preservation Herculean labours, taxing to their utmost legitimate limits, the vaunted intellectual and moral capacity of our race.

The following twelve theses—partly taken from the German—summarise the chief points contended for in this paper:—

1st. The genuine disciple of Nature and Life, which are one and indivisible, takes nothing on trust, but only believes what is known with positive certainty—that is, *on data* which can be universally verified.

2nd. Doubt is not, as Fiction pretends, the herald of dismay and despair, but the necessary preliminary of all order and progress; as without it there cannot be any inquiry, clear insight, or settled convictions whatever.

3rd. Natural Science is bound in conscience to divulge *all* her results, however much they may conflict with contemporary prejudices, in order to satisfy the human mind and leave it free for the further pursuit and enjoyment of truth. Mental Reservation and Prevarication, as habitually practised by contemporary English thinkers and savans, is disloyalty to humanity; and reason; dangerous alike to their country,* and to the cause of civilization throughout the world.

4th. Natural Philosophy in recent times has rendered trite the axiom, that everything in the universe proceeds by unalterable law.

5th. The sum total of Natural Law constitutes the system of the world (axiomatic truths of logic and mathematics).

6th. The world is from eternity to eternity. Nothing is ever created, nothing lost. Beginning or ending there is alike none. Only the form and condition of things is perishable. Everything that exists dates from eternity.

7th. The Universe is boundless in space and time. The divisibility

* England, as represented by her influential and cultured classes, from her pre-eminent adherence to the obsolete cause of traditional Supernaturalism, and consequent inaccessibility to the new order of ideas resulting from the light thrown on Nature and Human Nature by Science—presents in the 19th century a striking analogy to the *bravery* of Spain during the struggles of the Reformation. Lord Shaftesbury's inhuman *dictum* at Exeter Hall, on the 30th June, as chairman of the meeting, convened by the Church Association, to protest against the confessional in the English Church: "Perish all things so that Christ be magnified," is identical in spirit with that of the Grand Inquisitor in "Don Carlos:" "The voice of Nature avails not over Faith." Truly, as Milton says: "Presbyter is only Priest writ large." *Absit omen.*

of matter is infinite. The Universe *can* have no limits, eternity in time and immensity in space being correlative.

8th. As the logical inference from the above, millions and millions of millennia are before us, in which new worlds and systems of worlds shall flourish and decay; at their lapse the Universe *can* be no nearer its dissolution than at the present or any former period.

9th. Cosmical space is not a vacuum. Our atmosphere has no limits. The first living being had its germ in eternity, which is equivalent to negating Creation altogether. The present human being is only a link in an endless series—the goal of a past—the starting-point of a future developmental form in the Animal Kingdom.

10th. The so-called "Personal God" is merely an idol of the human brain—a pseudo-organism of pre-scientific man endowed with man's attributes and passions, a remnant of Fetichism. Jehovah, Jove, or the "Lord and Father" of the New Testament, are alike anthropomorphic inventions. Absolute Atheism is, however, no postulate of Science, which does not venture to impugn the evidence of Cosmical Design, or the existence of an unknown, inconceivable, intelligent First Cause, of whose Eternal Mind, the Eternal Universe may be a hypostasis. Some such belief is indeed a necessity during the earlier stages of our life, while, even in the soundest intellect, imagination is dominant over judgment.

11th. The further development of our race in intellect and moral feeling depends chiefly on education—the disuse of *à priori*, intuitive methods, and the systematic practice of rational habits of thought based on actual experience. At bottom this is equivalent to saying, superior enlightenment depends on proper exercise, in every possible direction, of the cerebral hemispheres.

12th. No satisfactory progress in virtue or happiness can be hoped for till the present supernatural theory of existence is overthrown, and the docile study of the great Book of Nature and Life, with its invariable sequences of cause and effect, supersedes the arbitrary, anarchic authority of falsely called "Divine Revelation."



