OLIVER SIR LODGE

LIFE AND MATTER: A CRITICISM OF PROFESSOR HAECKEL'S "RIDDLE OF THE UNIVERSE"

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Preface

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This small volume is in form controversial, but in substance it has a more ambitious aim: it is intended to formulate, or perhaps rather to reformulate, a certain doctrine concerning the nature of man and the interaction between mind and matter. Incidentally it attempts to confute two errors which are rather prevalent:—

1. The notion that because material energy is constant in quantity, therefore its transformations and transferences—which admittedly constitute terrestrial activity—are not susceptible of guidance or directive control.

2. The idea that the specific guiding power which we call "life" is one of the forms of material energy, so that directly it relinquishes its connection with matter other equivalent forms of energy must arise to replace it.

The book is specially intended to act as an antidote to the speculative and destructive portions of Professor Haeckel's interesting and widely-read work, but in other respects it may be regarded less as a hostile attack than as a supplement—an extension of the more scientific portions of that work into higher and more fruitful regions of inquiry.

OLIVER LODGE.

University of Birmingham,
October 1905.

LIFE AND MATTER

CHAPTER I

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MONISM

In his recent Presidential Address before the British Association, at Cambridge, Mr Balfour rather emphasised the existence and even the desirability of a barrier between Science and Philosophy which recent advances have tended to minimise though never to obliterate. He appeared to hint that it is best for scientific men not to attempt to philosophise, but to restrict themselves to their own domain; though, on the other hand, he did not appear to wish similarly to limit philosophers, by recommending that they should keep themselves unacquainted with scientific facts, and ignorant of the theories which weld those facts together. Indeed, in his own person he is an example of the opposite procedure, for he himself frequently takes pleasure in overlooking the boundary and making a wide survey of the position on its physical side—a thing which it is surely very desirable for a philosopher to do.

But if that process be regarded as satisfactory, it is surely equally permissible for a man of science occasionally to look over into the philosophic region, and survey the territory on that side also, so far as his means permit. And if philosophers object to this procedure, it must be because they have found by experience that men of science who have once transcended or transgressed the boundary are apt to lose all sense of reasonable constraint, and to disport themselves as if they had at length escaped into a region free from scientific trammels—a region where confident

assertions might be freely made, where speculative hypothesis might rank as theory, and where verification was both unnecessary and impossible.

The most striking instance of a scientific man who on entering philosophic territory has exhibited signs of exhilaration and emancipation, is furnished by the case of Professor Haeckel of Jena. In an eloquent and popular work, entitled *das Welt-Räthsel*, the World Problem, or "The Riddle of the Universe," this eminent biologist has surveyed the whole range of existence, from the foundations of physics to the comparison of religions, from the facts of anatomy to the freedom of the will, from the vitality of cells to the attributes of God; treating these subjects with wide though by no means superhuman knowledge, and with considerable critical and literary ability. This work, through the medium of a really excellent translation by Mr M'Cabe, and under the auspices of the Rationalist Press Association, has obtained a wide circulation in this country, being purchasable for six-pence at any bookstall; where one often finds it accompanied by another still more popular and similarly-priced treatise by the same author, a digest or summary of the religious aspect of his scientific philosophy, under the title *The Confession of Faith of a Man of Science*.

Professor Haeckel's credentials, as a learned biologist who introduced Darwinism into Germany, doubtless stand high; and it is a great tribute to his literary ability that a fairly abstruse work on so comprehensive a subject should have obtained a wide notoriety, and have been welcomed by masses of thinking readers, especially by many among the skilled artisans, in this country.

From several points of view this diffusion of interest is most satisfactory, since the spread of thought on serious topics is greatly to be welcomed. Moreover, there is a vast mass of information in these writings which must be new to the bulk of the inhabitants of these islands. There is also a great deal of criticism which should arouse professors of dogmatic theology, and exponents of practical religion, to a keener sense of their opportunities and responsibility. A view of their position from outside, by an able and unsparing critic, cannot but be illuminating and helpful, however unpleasant.

Moreover, the comprehensive survey of existence which can be taken by a modern man of science is almost sure to be interesting and instructive, when properly interpreted with the necessary restrictions and expansions; and if it be found that the helpful portions are unhappily accompanied by over-confident negations and supercilious denials of facts at present outside the range of orthodox science, these natural blemishes must be discounted and estimated at their proper worth; for it would be foolish to imagine that even a diligent student of Nature has special access to the kind of truths which have been hidden from the nominally "wise and prudent" of all time.

So far as Professor Haeckel's writings are read by the thoroughly educated and well-informed, they can do nothing but good. They may not, indeed, convey anything particularly new, but they furnish an interesting study in scientific history and mental development. So far, however, as they are read by unbalanced and uncultured persons, with no sense of proportion and but little critical faculty,

they may do harm, unless accompanied by a suitable qualification or antidote, especially an antidote against the bigotry of their somewhat hasty and scornful destructive portions.

To the intelligent artisan or other hard-headed reader who considers that Christian faith is undermined, and the whole religious edifice upset, by the scientific philosophy advocated by Professor Haeckel under the name "Monism," I would say, paraphrasing a sentence of Mr Ruskin's in a preface to *Sesame and Lilies*:—Do not think it likely that you hold in your hands a treatise in which the ultimate and final verity of the universe is at length beautifully proclaimed, and in which pure truth has been sifted from the errors of all preceding ages. Do not think it, friend: it is not so.

For what is this same "Monism?"

Professor Haeckel writes almost as if it were a recent invention, but in truth there have been many versions of it, and in one form or another the idea is quite old, older than Plato, as old as Parmenides.

The name "Monism" should apply to any philosophic system which assumes and attempts to formulate the essential simplicity and *oneness* of all the apparent diversity of sensual impression and consciousness, any system which seeks to exhibit all the complexities of existence, both material and mental—the whole of phenomena, both objective and subjective—as modes of manifestation of one fundamental reality.

According to the assumed nature of that reality, different brands of monistic theory exist:—

1. There is the hypothesis that everything is an aspect of some unknown absolute Reality, which itself, in its real nature, is far beyond our apprehension or conception. And within the broad area thus suggested may be grouped such utterly different universe-conceptions as that of Herbert Spencer and that of Spinoza.

2. According to another system the fundamental reality is psychical, is consciousness, let us say, or mind; and the material world has only the reality appropriate to a consistent set of ideas. Here we find again several varieties, ranging from Bishop Berkeley and presumably Hegel, on the one hand, to William James—who, in so far as he is a monist at all, may I suppose be called an empirical idealist—and solipsists such as Mach and Karl Pearson, on the other.

3. A third system, or group of systems, has been in vogue among some physicists of an earlier day, and among some biologists now; viz., that mind, thought, consciousness are all by-products, phantasmagoria, epiphenomena, developments and decorations, as it were, of the one fundamental all-embracing reality, which some may call "matter," some "energy," and some "substance." In this category we find Tyndall—at any rate the Tyndall of "the Belfast address"—and here consistently do we find Haeckel, together with several other biologists.

This last system of Monism, though not now in favour with philosophers, is the most militant variety of all; and accordingly it has in some quarters managed to obtain, and it certainly seems anxious to obtain, a monopoly of the name.

But the monopoly should not be granted. The name Materialism is quite convenient for it, just as Idealism is for the opposing system; and if either of these titles is objected to by the upholders of either system, as apparently too thorough-going and exclusive, whereas only a tendency in one or other direction is to be indicated, then the longer but more descriptive titles of Idealistic-monism and Materialistic-monism respectively should be employed. But neither of these compromises seems necessary to connote the position of Professor Haeckel.

The truth is that all philosophy aims at being monistic; it is bound to aim at unification, however difficult of attainment; and a philosopher who abandoned the quest, and contented himself with a permanent antinomy—a universe compounded of two or more irreconcilable and entirely disparate and disconnected agencies—would be held to be throwing up his brief as a philosopher and taking refuge in a kind of permanent Manichæism, which experience has shown to be an untenable and ultimately unthinkable position.

An attempt at Monism is therefore common to all philosophers, whether professional or amateur; and the only question at issue is what sort of Monism are you aiming at, what sort of solution of the universe have you to offer, what can you hold out to us as a simple satisfactory comprehensive scheme of existence?

In order to estimate the value of Professor Haeckel's scheme of the universe, it is not necessary to appeal to philosophers: it is sufficient to meet him on scientific ground, and to show that in his effort to simplify and unify

he has under-estimated some classes of fact and has stretched scientific theory into regions of guess-work and hypothesis, where it loses touch with real science altogether. The facts which he chooses gratuitously to deny, and the facts which he chooses vigorously to emphasise, are arbitrarily selected by him according as they will or will not fit into his philosophic scheme. The scheme itself is no new one, and almost certainly contains elements of truth. Some day far hence, when it is possible properly to formulate it, a system of Monism may be devised which shall contain the whole truth. At present the scheme formulated by Professor Haeckel must to philosophers appear rudimentary and antiquated, while to men of science it appears gratuitous, hypothetical, in some places erroneous, and altogether unconvincing.

Before everything a philosopher should aim at being all-inclusive, before everything a man of science should aim at being definite, clear, and accurate. An attempt at combination is an ambitious attempt, which may legitimately be made, but which it appears is hardly as yet given to man to make successfully. Attempts at an all-embracing scheme, which shall be both truly philosophic and truly scientific, must for the present be mistrusted, and the mistrust should extend especially to their negative side. Positive contributions, either to fact or to system, may be real and should be welcome; but negative or destructive criticism, the eschewing and throwing away of any part of human experience, because it is inconsistent with a premature and ill-considered monistic or any other system, should be regarded with deep suspicion; and the

promulgation of any such negative and destructive scheme, especially in association with free and easy dogmatism, should automatically excite mistrust and repulsion.

There are things which cannot yet be fitted in as part of a coherent scheme of scientific knowledge—at present they appear like fragments of another order of things; and if they are to be forced into the scientific framework, like portions of a "puzzle-map," before their true place has been discovered, a quantity of substantial fact must be disarranged, dislocated, and thrown away. A premature and cheap Monism is therefore worse than none at all.

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"THE LAW OF SUBSTANCE"

I shall now endeavour to exhibit the way in which Professor Haeckel proceeds to expound his views, and for that purpose shall extract certain sentences from his work, *The Riddle of the Universe*; giving references to the sixpenny translation, now so widely circulated in England, in order that they may be referred to in their context with ease. To scientific men the exaggeration of statement will in many cases be immediately obvious; but in the present state of general education it will often be necessary to append a few comments, indicating, as briefly as possible, wherein the statement is in excess of ascertained fact, however interesting as a guess or speculation; wherefore it must be considered illegitimate as a weapon wherewith to attack other systems, so far as they too are equally entitled to be considered reasonable guesses at truth.

The central scientific doctrines upon which Professor Haeckel's philosophy is founded appear to be two—one physical, the other biological. The physical doctrine is what he calls "the Law of Substance"—a kind of combination of the conservation of matter and the conservation of energy: a law to which he attaches extraordinary importance, and from which he draws momentous conclusions. Ultimately he seems to regard this law as almost axiomatic, in the sense that a philosopher who has properly grasped it is unable to conceive the negative. A few extracts will suffice to show the remarkable importance which he attaches to this law:—