

MATHEMATICAL WEAKNESS OF  
SPENCER'S PHILOSOPHY.

1

THE FACTS OF EVOLUTION AND THEIR  
RELATION TO MATHEMATICAL TRUTH.

To the Editor of the New-York Times:

It is difficult to see how any unbiased mind familiar with the scientific facts which lie at the basis of Spencer's philosophy can deny that the keynote to a philosophic system has at last been struck, which shall as effectually supersede every other as the doctrine of Copernicus superseded all cosmic systems that had gone before. The development of the conscious from the unconscious is not a simple theory; it is an every-day fact as familiar as the conversion of the unconscious contents of the egg into the animated chick. The development of the attributes of humanity from those of the brute is not a simple theory. It is a fact noted by every mother who cherishes her babe. The development of living from lifeless matter is not a simple theory. It is as familiar as the growth of the plant and the consumption of food. The familiar facts regarding the influence of heredity and environment, regarding the differentiation of functions and of structures--all these and a hundred other scientific principles on which that philosophy rests are as well known to the boor as the philosopher. To say that a broad unity as well as uniformity of causation does not somehow run like a thread through all the analogies of creation, and that Spencer has not at last given a rational conception, and thus far apparently the only rational conception, of the way in which these discrete parts are linked together in a cosmic whole, seems like denying the evidence of the senses.

417

But it does not follow that that philosophy is in all respects correct, nor that many of its conclusions may not fail to stand the test of time. Comparatively few care to dispute the general soundness of the argument so far as relates to the development of inanimate creation. The crucial features are those which relate to the genesis and development of life. It is here that the philosophy seems mathematically defective. As popularly understood the argument is this: Given a certain concourse of atoms in proper juxtaposition under favoring conditions, and by the mere operation of those forces which in a broad sense we recognize as mechanical, and of those mechanical laws which we recognize as belonging to inanimate nature, life in all its varied forms will result. In other words, the same forces or affections of matter which are recognized in physics and in chemistry are adequate to accomplish all the processes of life. The proposition may be concretely stated thus: If an egg were resolved into its original elements, and it were possible to restore each separate atom to its previous place and thus reconstruct the egg mechanically as perfect as before, those particles, acting under the same mechanical forces or affections which they possessed in their state of dissolution, would proceed to group themselves together and construct the living chick. Viewed from a mathematical standpoint such a proposition seems like an absurdity. Granting an unequal distribution of atoms, the simple law of gravitation was adequate to explain the cosmogony of stellar and planetary systems with all their endless variety. A few familiar and comparatively simple mathematical laws are adequate to explain the geographical or geological or climatic changes recurring in the earth's history. Even in the still imperfectly comprehended departments of inorganic chemistry, of light, heat, and electricity, enough has been learned regarding the correlation of forces and the secrets of atomic combinations to show how the most curious results of the laboratory may be explainable by imposing on the atoms affections or forces which in their last analysis are obedient to simple mathematical laws.

But take any concourse of atoms imbued with all the affections or subject to all the forces of which we have any hint from the inorganic world, even those which build up the crystal, and attempt to conceive of any mathematical laws, however complex, by which each atom of an egg could be compelled to fall into its appropriate place and construct, not simply the anatomical bird, like a dead crystal, but a bird in which the atoms shall continue to respond to external influences and to internal inherited influences, which shall be imbued with that element, whatever it be, which we call self-consciousness, and capable in turn of reproducing the egg and perpetuating the system. Let it be remembered that the forces and affections of matter which are assumed to do this are no other than those which we recognize as mechanical or chemical in the material world, of which each atom in the original egg must have its special endowment. The assumption of such a possibility seems like the veriest mathematical absurdity. The most complex formula ever written or dreamed of would not suffice to express the law by which the atom must be governed.

It may be said in reply--indeed, it apparently must be admitted --that organized living matter has other conditions imposed on it

than those which are manifest in the inorganic world. If this be granted it removes the difficulty, but it also reveals the nebulous character of the chain in which the living and the non-living are linked together in the Spencerian philosophy as simple co-ordinate parts of one system of development. Grant that the original atom has all the force and affections needed under proper conditions for the manifestation of life, but latent until those conditions are present; or grant that the responses of the organic atoms are like in kind to those which are continually taking place in inorganic matter, that the difference is only one of degree, and we have the creed of the Brahmin or of the pantheist. Grant that the conditions are imposed by some intelligent, all-pervading power, and we have the creed of the theist, which finds its highest expression in the statement that the breath of life was breathed into the body of the first man and he became nephish hayaya, a living soul. But in either case the philosophy of Spencer must lose its popular conception as a construction of the universe through mere mechanical processes.

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