

*Die Geschichte der Natur*

BY CARL FRIEDRICH VON WEIZSÄCKER

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In the summer of 1946 the physicist Carl Friedrich von Weizsäcker delivered at the University of Göttingen a course of lectures which have now appeared in book form with the title *Die Geschichte der Natur*. The author's intent was to make use of the latest astrophysical discoveries to construct a cosmology and cosmogeny, and at the same time (by way of biology and geology) to establish a connexion with biological, philosophic, and anthropological thought. Thus it follows that this history of nature was at the same time to be considered a doctrine of the cosmos and one applicable to man as well. Unity was to be arrived at by means of the concept of development, or more precisely, by that of historicity.

Since this concept is a metaphysical one, the author was obliged to have recourse to a large number of philosophic arguments in the course of his exposition. Buffon's *Histoire Naturelle et Particulière*, written in 1749, proves that such encyclopaedic ventures are not novel; and in the course of the development of scientific theory such attempts must of necessity recur. At a certain period the result of such labours was called 'The Natural History of Creation'. Today we are aware that, appraised from the point of view of philosophy, the thinking of those periods was intellectually speaking not of the highest quality. Von Weizsäcker has certainly taken care to avoid the pitfalls of shallow cognitive theorising and of metaphysical thinness.

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It was a matter of course that he would write from an all-embracing background, a *Weltanschauung*—in his case that of Christianity and its metaphysics—which does not appeal to everybody alike, nor is its applicability demonstrated in every respect. Notwithstanding, the reader never has the impression that the personal belief of the author has any tendency to improve on scientific theories, nor does it erect barriers to any philosophic train of thought.

The book is written for the general reader. It shows the author to be an outstanding scholar and researcher as well as an excellent stylist. In this respect it is akin to other important scientific publications. I think in the first line of Euler's *Lettres à une princesse d'Allemagne sur quelques sujets de physique et de philosophie* (1768–72), then of Oersted's *Geist in der Natur*—which also originated in a course of lectures delivered by the discoverer of electromagnetic phenomena in the 1830's; of Faraday's *Lectures on the Chemical History of a Candle*, and of Liebig's *Chemische Briefe*, perhaps even of Haeckel's *Weltraetsel*. In the plan of the whole book, giving space to factual presentation as well as to philosophic discussion, in the style of the lectures with their high literary quality and philosophic viewpoint, Weizsäcker's work is probably closest to Oersted's lectures. Both of them, to use a phrase of the Dane, 'seek the spiritual in the corporeal', Oersted *via* the 'physics of the beautiful,' Weizsäcker in conjunction with the idea of historicity. Both of them define natural science in its relation to religion and religion for both means Christianity.

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The strength of Weizsäcker's book lies in its presentation of the interrelation amongst almost all the branches of natural science. This synopsis of natural science is requisite in order to bring all the natural processes inclusive of the human into focus both philosophically and cosmologically. It becomes clear that one can deal with modern 'natural philosophy' only on a basis of natural science; that to determine 'man's place in the cosmos' one must first grasp its time-space and matter-energy structure. This methodological point of view from which the author never deviates is very ancient. It occurs in Aristotle's instructive letter to Alexander the Great *On the World*, a work which might well be called the oldest literary, scientific, and philosophic ancestor of Weizsäcker's book.

On the one hand the book is typical of the abundant speculative and all-embracing subject-matter of modern theories of natural science; on the other hand, it shows up the sociological, critical, and metaphysical problems facing the modern scholar in the field of the natural sciences, or, more precisely, the physicist, the astronomer, and the anthropologist. The increased conceptual subtlety of these modern theories is paralleled by enlarged possibilities for applying them metaphysically. We find, therefore, that there are certain physical hypotheses and theories which are of much greater interest to the philosopher than to the physicist. Furthermore: while the development of the natural sciences in the nineteenth century tended towards the decrease—at times even the destruction—of philosophical ways of thinking, in the twentieth

century, physics, at least, is notable for extending a welcome to metaphysics, or philosophy respectively.

In his *Philosophie der Mathematik und Naturwissenschaften* Hermann Weyl, writing in 1928, has pointed out how the humanities have lagged behind the natural sciences. Von Weizsäcker finds this gap between two important branches of knowledge to be dangerous but bridgeable. This is the fulcrum of his epistemologico-sociological discussion. He finds the concept of historicity to be the connecting link, the reconciling factor. But precisely at this point the distinction is not sufficiently sharp between his ontologically expanded concept of history—a concept which is to cover not only nature but also man as a thinking being—and history as a science, which has its place between the humanities and the natural sciences. The metaphysical concept of historicity—as demonstrated in Weizsäcker's exposition—may be able, in the framework of a philosophical system, to bridge the existing gap between nature and mind. But neither for research nor for instruction does it do away with the cleavage between the humanities and natural sciences. The metaphysical solution, which is purely theoretical, has little bearing on the epistemologico-sociological solution which is purely practical, and the latter one is not dealt with adequately in Weizsäcker's book. For my feeling, there is only one possible way of arriving at a union of the humanities and the natural sciences: that is to study, more intensively than at present, the history of the natural sciences.

Here we arrive at a basic premise of

Weizsäcker's work. It is contained in the sentence: 'Man is in fact a historical being; such he can be because he springs from nature which is itself historical.' A modification follows in the next sentence: 'What distinguishes man is not merely that he has history, but that he understands something of his history' (p. 9). The first sentence seems to mean that the historicity of man is the same as that of nature. Such a thesis however is not admissible; indeed the author is apparently eager to limit the implications of his first statement by adding the modification. But his further discussion is based on the first statement rather than on the second. The historicity of nature—natural history—becomes clear from the metaphysical angle in the classic theme of being of 'theodicy', described in its purest form in Leibnitz's book with this title, which appeared in 1710. Since nature within the framework of theodicy appears as the 'best of all possible worlds', its development, its course, its history denote no process coming under the idea of perfection. Human historicity, however, in its essence means the history of a creature, historical only because it is essentially imperfect. Human history is the history of an imperfect being. Weizsäcker does not distinguish these two conceptions with sufficient clarity. For from this angle the history of man does not correspond to the history of nature. The concept of consciously achieved history comes from Hegel's *Phaenomenologie* and Marx' *Pariser Manuskripte*. Marx, indeed, in his *Kritik der Hegel'schen Dialektik und Philosophie ueberhaupt* extols the fact that 'Hegel views the autonomous creation of man as a

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process'. I, for my part, cannot see that the same may be claimed for nature which, as Weizsäcker himself says, knows nothing of its own historicity. The two factors 'nature' and 'human existence' which Weizsäcker would like to combine represent actually two clashing theories of being, the classic and the non-classic, the thesis of theodicy and the thesis of fundamental ontology. They differ essentially in their relation to the temporal and in their historicity. It would have been well if Weizsäcker had occupied himself with the distinctions between the naturalistic process of things in time and the historic process of things in time, which play a part in Heidegger's *Sein und Zeit*, in Oscar

Becker's *Mathematische Existenz* and in his *Logik der Modalitäten*. Such a discussion would have been of the greatest importance and interest within the framework of a book written from the physicist's point of view.

This comment is not intended to arouse controversy. It is meant as part of possible philosophic criticism of a book dealing with the philosophy of nature. The intellectual position of the author and the high scientific level of the work are too prominent to permit of any polemic against it. The purpose of this critical comment is rather to serve as introduction to fruitful discussion which the author of the book will doubtless welcome.