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Book Review

Ideology and Biology

(By Tvrtko Švob, Sveučilišna knjižara, Zagreb, 2002)

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»In the past ideology was conceived as a mental superstructure i.e. a system of ideas and notions taking different forms of either advanced or conservative consciousness. Nowadays ideology is referred to almost exclusively in a negative sense as a twisted, depraved, fetishized, false consciousness taking root in human alienation. Such consciousness derives from a specific way of being conditioned and determined and therefore refers to social and political reality« (p. 7).

Ideologies usually explain the world in keeping with the interest of a certain social group or class, whereas science starts from the assumption that the world exists, that it can be cognized and that this cognition has some value by itself.

This book provides a survey of leading ideologies in action in the course of history, those that were essential for the comprehension of the living world. The book consists of ten chapters and besides the principal ideas relating to the living world, the following ideologies have been covered: creationism, teleology, Social Darwinism, racism, eugenics, sexism, behaviorism, bioethics and futurology. Tvrtko Švob is one of the leading Croatian biologists, presently a professor of biology at the Medical Faculty in Sarajevo; he also used to lecture at the universities of Zagreb, Ljubljana, Tuzla and Banja Luka. He taught genetics to post-graduate students of the Medical Faculty. Subjects of his particular interest are morphophysiology, genetics, anthropology and history of biological sciences. He has published over three hundred scientific, professional and popular studies on biology and border areas (including eighteen books) in the country as well as abroad. In view of the fact that the entire work of professor Švob has been connected with science, it is interesting to observe the way he confronts particular ideological claims in terms of comprehension of the living world with scientific, biological results. In each chapter the author presents the basic features of a particular ideology, its opposition to science and the living world in general, and then points out the influence of individual ideological claims on the progression or regression of cognitions concerning the living world.

In the first chapter the author deals with fundamental concepts concerning the living nature, the development and the history of biology and anthropology, from their beginnings in ancient civilizations of the Mediterranean countries up to the present-day meaning and destination of these sciences. It offers a concise survey including the works of philosophers and physicians of the Antiquity (Hippocrates, Aristotel, Galen) and their first attempts at synthesizing biological cognitions, over the Middle Ages when the views caused a stagnation of the biological science up to the Renaissance renewal which gave an impulse to the development of natural science based on

investigation of nature by various empiricists. In the 16th century the long-forgotten works of the naturalists of the Antiquity were again brought to light, whereas numerous geographical explorations facilitated the discovery of unknown fauna and flora, while at the same time human anatomy became a subject of research and education. The 17th century brought forth Descartes's concepts of mechanicistic materialism as well as the first attempts at classifying the animals and plants (Ray) which were to be continued in the 18th century by Linné; it also witnessed the appearance of a – still insufficiently elaborated and founded – evolutionistic idea. The development of chemistry led to the advent of vitalism, but the concrete results of Wöhler's and Fisher's research work questioned the influence of vis vitalis on the process of creation of matter the living creatures are made of. It was not until 19th century that completely elaborate evolutionistic ideas – starting with Lamarck and followed by Darwin's remarkable explanations and evidence – sufficiently confirmed the cellular theory paving the way to scientific genetics. This introduction brought about the conclusion that biology is an exact and experimental science.

Having determined the fundamental tenets and orientation of biological sciences, the author expounds the leading ideologies starting with creationism, a teaching about the supernatural origin of the world, of natural phenomena, of life and human communities. The focus of these considerations was placed on the Judaic-Christian tradition. The author expounds the basic terms of reference of the book of Genesis opposing it to Darwin's theory of evolution. Darwin's work and concrete material evidence he brought forth had modified the established religious teaching concerning the origin of living creatures and the Earth. The author poses the question of origin of life explaining the theories that had appeared in the course of the history of mankind: abiogenesis (the theory of spontaneous generation or self-generation) and vitalism; biogenesis (according to which life has always existed) and the evolutionary theory of origin (according to which life suddenly appears as a new quality in the course of evolution of the matter). He offers a survey of biological research into the origin of the Earth and the life on it: Müller's and Kaplan's theories as well as Oparin's coacervatic theory.

Another ideological line presented here is teleology – the one referring to the final purpose or aim – which is contrasted with the theory of organic evolution. The author also points to misconceptions of the evolutionary theory – those by the followers of Lamarck and Lisenko as well as psycho-lamarckists. A number of examples are brought forth proving the relativity of the concept of purposefulness in nature.

Social Darwinism is one of the forms of biologism according to which social manifestations should be reduced to biological patterns and processes. It refers to Darwin's theory of natural selection which holds the »struggle for survival« the prime-mover of social development. The author points out that the application of the theory of natural selection on human society has often been intended to justify social inequality and colonial politics, and that it is conspicuously present in the contemporary culture in spite of the results obtained by present-day biology, genetics and ecology which undermine the ideology of Social Darwinism.

In the chapter on racism the author surveys the development of the ideology of racism starting with its founder J.A. Gine and his »Essay on Inequality of Human Races« and his followers De Lapong, H.S. Chamberlaine, Förster and Düring up to contemporary forms of racism materialized in German nazism. The racists'

genetic interpretation – according to which the human type is entirely determined by its physical anthropological properties – has also misused the knowledge about biological blood properties; war is considered by them to be a biological form of struggle for survival. The author presents some of the extreme examples of misuse of Darwin's teaching, of biological, medical and anthropological concepts and research results aimed at justifying racial cleansing and crimes. To the racial interpretations he opposes concrete biological evidence that some of those claims and interpretations are unjustifiable.

Eugenics arose as a sort of political expression of genetics, and it deals with influences likely to improve innate properties. Eugenicists consider that in nature the individuals incapable of survival get eliminated and that their harmful traits disappear in the process, whereas in humans this harmful factor gets eliminated owing to the social organization and medicine. The author illustrates the so-called negative eugenic policies such as prohibition of marriage and sterilization of mental patients, and positive eugenic policies the task of which would be to ensure more abundant progeny to healthy and gifted individuals. Along with its negative aspects he emphasizes the importance of eugenics, especially in diagnosing hereditary illnesses and deformities, as well as the influence of molecular biology on eugenics, which conveyed new dimensions to this science.

The chapter on sexism expounds sexual discrimination and its causes in the course of history, and simultaneously surveys the history of feministic movements and struggles for women's rights.

In chapter eight the author deals with behaviorism, a movement that focuses on the study of external manifestations of animal and human behavior caused exclusively by stimuli coming from the environment. Švob singles out a heavy drawback of behaviorism: its non-recognition of the role of heredity, illustrated by examples clearly pointing to the importance of genetic factors, which this movement has neglected.

Bioethics, a concept introduced by Potter in 1970, contains the dimension of the ideal to be pursued, which has often been ignored or neglected in the course of history and even in modern times. It pleads for the search of social policies which would hinder the so-called natural disasters that result from anti-natural action of humans, and has its origin in ethical explorations in the field of biology of the humans and other organisms; it requires an evaluative, normative approach to biological and medical progress, more particularly to its planning and directing. The author has closely considered the bioethical issues relating to animal rights, homosexuality, breach of pregnancy, contraception, euthanasia, cloning and genetic engineering.

In the last chapter the author presents futurology, which involves the highest level of uncertainty and speculation. It deals with the issue of satisfying future needs and with discrepancies between individual objectives that have been set. It warns us about the fact that no natural law inevitably guarantees progress in the future. The essential question the author poses is: do scientific advances and modernization lead to progress or to decline? Unlike those ideologies that enforced a certain social system and objective, the humanistic vision of the world expresses only the endeavor to »create humane living conditions for everybody and freedom for future adventures« (p. 147).

The book »Ideology and Biology« presents a number of topical questions, it critically reviews some ideologies confronting them with scientific phenomena in the living world. It offers a very clear historical view of the development of biology as a science pointing to some ideological

obstacles and blunders this science has collided with and still does. Along with the dogmatism of various ideologies the author critically reviews the errors of the biological science itself. This book is precious as a refresher course on the most important ideological movements and their tenets and as a history book on the biological science. It has been written in an appealing style, and owing to its popular quality and to the topicality of the themes it is equally accessible to the less knowledgeable and to the scientists; it offers them new cognitions, answers to certain issues and a possibility to formulate and to question their positions and convictions.

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