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Human Evolution at the Crossroads.

"Essays of a Humanist" by Julian Huxley
Chatto and Windus, 288, 30s

by Walter F. Bodmer

The central theme in this collection of essays by Julian Huxley is the importance of what he calls "Psychosocial Evolution" in a reappraisal of Man's present and future position on earth. The topics covered range from the description of an expedition to a bird sanctuary in Spain, to an attempt to define a new religion based on evolutionary humanism. As has often been emphasized in the pages of this journal and elsewhere, Man is now in the unique position of being able consciously to control his own future evolution. Since he is the dominant biological species, this necessarily implies the ability to influence in a major way the whole pattern of biological existence. If he uses his power unwisely, the results may be wholesale destruction. To take on the burden of nature's decisions is no easy task.

As is appropriate for a book with evolution as its central theme, the first chapter entitled "The Emergence of Darwinism", is a historical analysis of the development of Darwin's ideas on evolution by natural selection. Darwin, it seems, failed to recognize that Man, in contrast to other animals, has the unique capacity to transmit cumulative experience from one generation to the next through his development of the written and spoken language. He is thus able to accumulate not only hereditary information by the relatively slow process of natural selection, but also "cultural" information by the much more rapid process of direct acquisition,

BODMER

by the spoken and written word, of the information accumulated by his forefathers. It is not clear why Huxley considers this cultural or psychosocial evolution as nonbiological. Man is, after all, still a part of the biological world. These special features of human evolution are further emphasized in a discussion of what is meant by higher and lower organisms. The evolutionary development of the mind is clearly the major single factor which has resulted in Man having this unique capacity for rapid cultural evolution.

Here, as elsewhere in the book when discussing ethology or the science of animal behavior (particularly in birds), Huxley points out clearly those aspects of human behavior which are not unique to the species. Man has inherited components of behavior as do other animals. However, the hereditary program for his brain (computer) must occupy a relatively small part of its total storage capacity. The modification of this hereditary program, the creation of appropriate new programs, and the acquisition of data, are the primary functions of education. Huxley considers that a major goal of education should be to insure further evolutionary progress. Moreover, he also considers that an evolutionary viewpoint should underlie all education for, "evolution is the most powerful and the most comprehensive idea that has ever arisen on earth". To achieve the next stage of cultural evolution, education must cope with the "knowledge explosion". The student now has to learn more and more before he can reach the frontiers of present knowledge. It is difficult to escape the need for greater specialization, in scientific training at least, which must be coupled with a more efficient collaboration between

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specialists. The proper balance must be sought between a breadth of training adequate for a general cultural education and for communication with others, and the narrowness required by greater degrees of specialization. Here we have not considered the nature of the education needed for the non-specialist, perhaps the victim of automation. Surely there is a need for much more intensive research on methods of education and in particular for research aimed at long term evaluation of our teaching programs.

The problems of man interfering with his environment are strikingly illustrated by the discussion of the fate of big game in Africa. Here Man is thoughtlessly destroying the balance of nature built up by millions of years of evolution. What is more, he is doing it to his own economic detriment. For Huxley points out that proper farming of wild ungulates could yield 5-10 times as much protein per square mile as farming of domestic cattle in these same areas. One is reminded of the current problems in the control of the use of insecticides.

"Evolutionary humanism" as a religion, is discussed in three articles. The first is a specific description of Huxley's view on how a theistic religion must be replaced by an evolutionary religion with evolution replacing God. The second is a comment of the Bishop of Woolwich's book "Honest to God", and the third a historical commentary on Teilhard de Chardin.

The last three essays are concerned with the population explosion and the practical prospects for eugenics. It is interesting to learn that Sir Walter Raleigh foreshadowed the idea of evolution through a consideration of the fact that Noah's ark could not have been large enough to hold all the species, some of which, therefore, must have been reconstituted by hybridization! There is a good historical development of the "enlightenment" with respect to the population explosion and the current

need for wide-spread birth control. Once again the problem of man in relation to his environment is at the center of the discussion. So much so, in fact, that Huxley considers "Ecology - the basic science of the new age with physics, chemistry and technology as its hand maidens". Positive eugenics or selection for excellence along with EID (eugenic insemination by donor) is strongly advocated and "eugenics is revealed as one of the basic human sciences". Discussion on this subject is never ending and the future possibilities for eugenics and euphenics almost unimaginable.

The whole book has the mark of Huxley's lively style and erudition. Phrases like "the tick of evolution's clock", and the description of "taster" chimpanzees spitting PTC back at their investigators spring to the mind. Whether or not one agrees with Huxley on many of the issues he raises, this book can be read with profit by all those who are concerned with the study of Man and his future. This study should surely be one of our main fields of endeavor.