

type to which to breed? Further, the proliferation of the alleged inferior classes of the population is, after all, only in accordance with Nature's method of ensuring in any species that out of an innumerable progeny the fit shall survive. This is not an argument in favour of the physically and mentally degenerate; but the history of

English society is the last which should be called on to testify that the product of any one grade is 'inferior'. If, however, it is maintained that such an excess in numbers of offspring constitutes a social burden, the argument is removed from the biological to a sociological plane and constitutes a problem of a different character.

Dialectical Materialism in Biology

Biology and Marxism

By Prof. Marcel Prenant. Translated by C. Desmond Greaves. Pp. xxiii + 223. (London: Lawrence and Wishart, Ltd., 1938.) 10s. 6d. net.

MANY readers of NATURE will ask what Marxism has to do with biology. It would be possible to write a volume on the economic influences which have done much to determine the course of biological research. For example, botany was at one time largely concerned with medicinal herbs. The greatest age of systematic botany was that of the crude exploitation of Colonial floras, and interest in plant genetics arose with the need for improvement in Colonial plants, such as Canadian wheat and Javan sugar-beet.

But Prof. Prenant's book is an attempt to apply to biology the principles of dialectical materialism, the philosophy of Marx, Engels and Lenin. It was written for working-class students to whom Marxism is already familiar, and not primarily for biologists. Nevertheless, every biologist who recognizes that Marxism, whether true or false, is an important philosophical movement, will find the book extremely interesting.

The author points out that Marxist ideas are peculiarly applicable in biology because both biology and Marxism are concerned with change; and he is primarily concerned with evolution, both individual and social. Here Marx's and Engels' criticism of Darwin, whose results, as a whole, they accepted, is of great interest. In 1878, Engels wrote, "Darwin, when considering natural selection, leaves out of account the causes which have produced the variations in separate individuals, and deals primarily with the way in which such individual variations gradually become the characteristics of a race, variety, or species". On the other hand, many biologists will consider the criticism of Darwinism quoted on p. 194 less valid.

It is particularly interesting to see how a modern Marxist tackles some of the outstanding problems of biology. A Marxist must be materialistic

without falling into mechanism, and Prof. Prenant certainly does his best to steer a course between the Scylla of epigenesis and the Charybdis of preformationism when discussing theories of embryonic development. In his account of heredity, while admitting the main results of the Morgan school, he stresses the importance of the cytoplasm, and above all the fact that at no time can the chromosomes be regarded as independent of their surroundings.

In my opinion, Prof. Prenant under-estimates the importance of selection for man. It is true that natural selection, in the strictly Darwinian sense of selective killing, has been largely replaced by what Karl Pearson called reproductive selection, based on differential fertility. However, under this new form, selection is perhaps as important as ever; and Dr. Needham's critical notes show that there is plenty of room for divergence between Marxist biologists on quite fundamental questions.

Indeed, should interest in Marxism spread, as appears to be probable, there is no doubt that biological and other scientific problems will be more and more discussed from a Marxist angle. That this need not involve any slavish acceptance of Marxist writings as 'gospel' will be clear to any reader of Prof. Prenant's statement (p. 198) that "in explaining life as an innate property of protein Engels was straying from the dialectical path". Provided Marxists are willing to follow this example, I do not think that non-Marxist biologists need fear an attempt to impose Marxist dogmas on science, such as probably occurred in some quarters in the Soviet Union between 1922 and 1932; and they may even admit that Marxism makes for a novel approach to certain problems which is bound to stimulate thought and experiment.

The translation is almost uniformly excellent, and the publishers may be congratulated on a book which will certainly interest Marxists in biology, and should also interest many biologists in Marxism.

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