

SOVIET GENETICS AND WORLD SCIENCE. By J. S. Huxley. London : Chatto and Windus, 1949. Pp. 245. 8s. 6d.

The genetics controversy between Russia and the West is unique among present-day scientific controversies in its methods as well as in the passionate participation of the lay-public on both sides of the Iron Curtain. These two aspects are closely related. The Russian methods—which consist in an appeal not to scientific argument and facts, but to doctrine and the authority of certain “infallible” authors; in vilification of the moral character of scientific antagonists; and, in the last resort, in persecution—are those in use whenever a new scientific concept challenges cherished traditions and beliefs. In various degrees of severity they have been used against the adherents of Copernicus, against Darwinists and, in Nazi Germany, against Einstein and his disciples.

A special factor of the genetics controversy is that the Russian political orthodoxy tries to give a semblance of scientific authority to their anathema on disliked truths by officially supporting the fantastic theories of Lysenko who, in his ignorance of genetical science and, indeed, of scientific method in general, naïvely believes that he can overthrow the whole edifice of modern genetics by hurling against it a few unproven claims to new discoveries. In fact, it is obvious to every geneticist that those discoveries, even if confirmed by proper scientific experimentation, might at the best mean an interesting extension of our knowledge of heredity, but could in no case shake the well-secured foundation of “Mendel-Morganism.”

Indignation against the Russian methods on the one side, loyalty to the Communist dogma on the other, have made it difficult also for Western geneticists to conduct the discussion in that spirit of cold dispassionate objectivity which should prevail in the search for truth; indeed, few if any of them have been capable of so much self-discipline. Having seen the expert rush into the arena without the halo of authority which cold objectivity weaves round his head, the lay public felt entitled to join the issue; in Russia, of course, only on one side, in the West on both. Newspapers and magazines were flooded with letters and articles by persons whose only claim to take part in the discussion often was a passionate political belief. Many of them obviously had not even taken the trouble to read an elementary treatise on genetics; but even scientists of high standing in their own field forgot their customary caution when treading on scientifically unfamiliar ground, and did not hesitate to make pronouncements on genetics which to the expert only revealed lack of knowledge, but to the lay person must have been particularly confusing. The ignorance, the deliberately or unconsciously muddled thinking, the ingenious side-trackings, and the naïve manifestations of wishful thinking revealed in these letters and articles would have made amusing reading, had they not led to the melancholy reflection that the respect of the twentieth century for science and scientific method is only a very thin veneer which all too easily flakes off under emotional stress.

Clearly, a complete, lucid and dispassionate exposition of the whole issue was required. The admirable book by Hudson and Richens is not easily accessible to the general reader and is, in any case, addressed to persons with some genetical knowledge. There can be few who are better suited than Dr Huxley to write a more general account of the subject. He is one of the leading authorities on genetics and evolution; he has

experience in explaining these subjects to students as well as to lay-persons ; he is neither a Communist nor a violent anti-Communist ; he has, in preparation for an article in *Nature*, studied carefully all available sources of information, often comparing different translations of the same Russian text ; he has visited Russia, heard a speech by Lysenko himself, and has had discussions with him as well as with other Russian scientists ; finally, his wide scientific connections have put him in possession of much private information, which in many places lends a pleasantly informal and personal character to the book.

Already in the brief preface, and throughout the book, the hard core of the controversy is deftly disentangled from the manifold and woolly envelopes of side-issues with which it has been surrounded by friend and foe, such as the need of the U.S.S.R. for rapid agricultural progress, or the perversion of Mendelism by the Nazis, or the financial difficulties of Western scientific institutions. To quote Huxley himself : " The major issue at stake (is) not the truth or falsity of Lysenko's claims, but the overriding of science by ideological and political authority." " There is now a party line in genetics. . . . A great scientific nation has repudiated certain basic elements of scientific method, and in so doing has repudiated the universal and supranational character of science. That is the major issue."

The first chapter deals with the nature and history of the controversy and contains a short preliminary characterisation of the two antagonistic conceptions : the scientific disciplines of neo-Mendelism and neo-Darwinism on the one hand, the doctrine of Michurinism on the other. Chapter two is devoted to the ideological issue and is largely taken up by verbatim quotations which abundantly bear out the statements that in the U.S.S.R. " the appeal to fact has been overridden by ideological considerations " and that " scientists (in the U.S.S.R.) who hold certain scientific views can be called names implying that they are unpatriotic or hostile to the political system." This chapter makes depressing reading ; most of all the obsequious recantations of intimidated " converts " from Mendelism to Michurinism, in particular a letter by Zhdanov, printed in full in a postscript. In case the non-scientific reader should be led to the assumption that this state of affairs is usual in heated scientific controversies, Dr Huxley cleverly contrasts each phase of the conflict with what would be expected in a similar controversy among " bourgeois " Western scientists. Chapter three, on " The scientific issue," analyses in detail Lysenko's scientific claims, methods and theories. Chapter four, " Genetics as a science," brings a closely-knit exposition of modern genetics and Neo-Darwinism, with the emphasis on the nature of scientific procedure and argumentation, and states clearly and fairly the reasons why Lamarckism has failed to succeed as a theory of evolution. In the fifth chapter, " The totalitarian regimentation of thought," the Soviet attack on genetics is fitted into the larger picture of the general cultural situation in the U.S.S.R. ; a great number of verbatim quotations show that in many fields other than genetics individual creative or critical activity is subordinated to State and Party doctrine. In this chapter, too, Dr Huxley tries to give an answer to the question, which must have puzzled many scientists among the friends of the Soviet Union, why the Soviet authorities have chosen to support the mystical and ill-founded teachings of Michurin, Present and Lysenko to

the acknowledged and progressing science of modern genetics. This is the more astonishing since, as Crane has emphasised, Michurin himself was far removed from the wholesale condemnation of Mendelism which characterises the attitude of his disciples. The last chapter, "The situation of science," discusses briefly how in any modern state an integration of science with other social activities can be reconciled with the autonomy and unity of science. The author's lively interest in education is shown by the fact that a large part of this chapter is taken up with interesting and valuable suggestions for the aims, scope, and methods of a revived form of biological teaching in schools and universities.

The ultimate success of a book on scientific matters depends largely on the answers to two questions: for whom is the book intended? will it prove satisfactory to the class of intended readers? Dr Huxley clearly intends his book for the general educated reader; for he presupposes no knowledge of genetics, biology or scientific procedure in general, and no more knowledge of the Lysenko controversy than any reader of newspapers cannot have helped imbibing. But also the expert, who may think himself thoroughly surfeited with the subject, will find his interest re-awakened by the many new details added in quotations and personal reminiscences. There is, however, the danger that a book which appeals to the expert as well as to the lay-person may, in the end, not satisfy either. In the reviewer's opinion, this danger has not been completely avoided in the present case. In particular it seems that the general reader may be the sufferer from the wide scope of the book. The exposition of genetics and evolution in chapter four may prove somewhat too condensed for him; it also comes too late to help him to an understanding of genetical questions touched upon in the first three chapters. The last two chapters will be of interest to every cultured reader, geneticist or non-geneticist; but from the narrower point of view of the genetics controversy they may weaken the impression made by the first part of the book. There is no doubt that there will be many readers who, for political reasons, are bent on finding excuses for the Russian attitude and on finding fault with Dr Huxley's presentation of it. It will be difficult for them to do so while Huxley is in his own field. By venturing out of it, and especially by bringing in political arguments, Dr Huxley opens the way for just those types of argument which he previously has been at great pains to show up as irrelevant to the major issue. It is, of course, obvious that one of the objects of the book is just this widening of the issue to embrace the whole problem of State interference with any kind of cultural activity: but it would be a great pity if Dr Huxley, by casting his nets too wide, should have reduced the chance of succeeding in his prime purpose which consisted in "dispelling the fog of misunderstanding" which surrounds the genetics controversy.

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DEATH OF A SCIENCE IN RUSSIA. By Conway Zirkle. Philadelphia: University of Pennsylvania Press, 1949. Pp. 319. \$3.75.

This book is one of a number of works dealing with the "Genetics Controversy" in the Soviet Union. It contains an exceptionally complete account of the events which have taken place in that country since 1936, culminating in the destruction of the science of genetics in 1948. Gathered