developments of science of significance for the national security, and to advise on the effective utilization of scientific resources so as to assure their availability in mobilization. The former, the need for which was emphasized both by Dr. Vannevar Bush's report in 1945 and by the Steelman report in 1947, was established in 1947 to study and make recommendations in relation to the research and development programmes of the Government and the promotion of national welfare; increasing the administrative efficiency of Federal research and development programmes; and Federal policies and practices in support of research.

PROF. NORBERT WIENER: AN AUTOBIOGRAPHY

I Am a Mathematician

By Prof. Norbert Wiener. Pp. 380. (London: Victor Gollancz, Ltd., 1956.) 21*s*. net.

AUTOBIOGRAPHIES of mathematicians are not common; a book, therefore, by Prof. Norbert Wiener dealing with his adult life and mathematical development is of special interest. It can scarcely be said that mathematics ordinarily leads to the kind of life which would interest the general reader, but Prof. Wiener is no ordinary mathematician; his interests are far wider than the title of this book might suggest. They embrace, in addition to most branches of mathematics itself, electrical engineering, aspects of mathematical physics, neurophysiology, statistics and, to use a word which he himself invented, cybernetics. Moreover, Prof. Wiener has travelled extensively in the course of his life. A resident of Cambridge, Massachusetts, he has spent long periods in Cambridge, England, and is familiar with most European countries; of his travels farther afield, he has much to say of interest about Japan, China, India and, in his own hemisphere, Mexico.

The volume under review is not a complete autobiography; it is a companion to an earlier book entitled "Ex Prodigy", and deals with the author's life from the time of his first appointment, at the age of twenty, to the Department of Mathematics in the Massachusetts Institute of Technology, where he is now professor. It is throughout an interesting book, frankly written in a free and readable style. In the preface the author analyses the motives which led him to undertake this work. "Why did I assume this uninviting labour, which at best can add little to my stature as a working scientist and at worst must offer new opportunities for those who may be inclined to criticise me? All in all, I don't know. There have certainly been motives of literary vanity and the desire to show that, both as an individual and as a scientist I have been able to accomplish a task off my regular beat." Further on, other and less subjective reasons are given to which those acquainted with the author and his work will give greater weight.

Part of the book is, of course, taken up with accounts of the author's mathematical researches. These are numerous and varied; even mathematicians may be surprised at the number and scope of the researches which he has inspired. It is characteristic of the man that much of his work has been done in collaboration with others. Attempts to explain mathematical researches in everyday language to non-mathematicians almost always fail, and even Prof. Wiener is not really successful in passages of this kind. These sections of the book—happily short—are the least interesting. Many readers, particularly students of the subject, will enjoy most of all the stories of his contacts with well-known mathematicians of the past and the present. The book abounds with these, all quite short, but often illuminating. Such a one, taken from his account of the mathematical congress at Strasbourg in 1920, may be quoted: "Camille Jordan, who for all his ninety years accompanied us on our pedestrian excursions, was like a memory from the days of Louis Philippe. His recollections dated back to the great days when Cauchy was lording it over French mathematics and forcing all the younger men to pay tribute."

Readers of this book who do not know Prof. Wiener personally will be surprised and pleased to learn that, in spite of his many achievements, he is still only just past sixty years of age. His concluding remarks are: "How many years may be granted me—I do not know; but even now I can feel reasonably sure that my scientific career, though it began early, is lasting late." All readers of this book will sincerely hope that this proves to be so, and that we may, perhaps, have in due course the pleasure of reading a third instalment of this fascinating autobiography.

H. Jones

EXPERIMENTAL DESIGN AND STATISTICS FOR BIOLOGICAL WORKERS

Experimental Design and Its Statistical Basis

By Dr. D. J. Finney. (The Scientist's Library: Biology and Medicine.) Pp. xi+169. (Chicago: University of Chicago Press; London: Cambridge University Press, 1955.) 30*s*. net.

MANY text-books on experimental design tend to concentrate on the combinatorial aspects of the subject and on methods of analysis. (The notable exception is, of course, Sir Ronald Fisher's original treatise.) As a result, many biological research workers and students are discouraged in their efforts to appreciate the subject, while others, more persistent or perhaps more mathematically minded, have their attention directed from the ideas on which theory and practice are based to questions of technical detail.

Dr. D. J. Finney has written his book especially for these workers and students. They should find it a valuable and well-written account of the principles of a difficult subject. The basic ideas are clearly stated, and examples drawn from many fields of biological work are given at each stage of development. The most important experimental arrangements or plans are surveyed, including randomized blocks, Latin squares and incomplete blocks. An excellent short account of factorial experiments is also included. Here rather more prominence is given to fractional replication than to confounding, although the latter is, in practice, the more useful device. There is also a useful chapter on the various types of sequential experiment now under development. This is followed by a discussion of biological assay which serves to show how the principles of experimental design have been applied in a particular