BOOK REVIEWS

HERITAGE OF MENDEL

The Origin of Genetics

A Mendel Source Book. Edited by Curt Stern and Eva R. Sherwood. Pp. xvi + 179. (London: W. H. Freeman Company, Ltd., 1966.) 36*s*. cloth; 18*s*. paper.

Heritage from Mendel

Edited by R. Alexander Brink with the assistance of E. Derek Styles. (Proceedings of the Mendel Centennial Symposium sponsored by the Genetics Society of America, 1965.) Twenty-seven contributors. Pp. xii + 455. (Madison, Milwaukee, and London: The University of Wisconsin Press, 1967.) 75*s*. net; $10.00 clothbound; $7.5 paperbound.,

If we look for the sources of genetics we are bound to look first at Mendel's paper on peas. Eva Sherwood has made a new English translation of this paper and to it she has added a series of other translated and reprinted articles. First there is Mendel's seven-year correspondence with Carl Nägeli, that eminent but opinionated botanist. Secondly, there is Mendel's fruitless paper on the breeding of what we now know to be sub-sexual *Hieracium*. Thirdly, there are the articles and letters of the rediscoverers, both the enquiring and ingenuous Correns and the dogmatic and disingenuous de Vries. And to cap the story there is Fisher's startling re-examination of Mendel's numbers.

What of the new translation? The words used in the first English version of Mendel's paper from "character" to "round and wrinkled" have over a period of sixty-six years passed into the language of genetics. An important step in genetics was taken when Bateson showed that the heterozygote in respect of the character difference round-versus-wrinkled could be recognized and the source of the difference explained. The new translator now speaks not of "characters" but of "traits" and not of "wrinkled" but of "angular". No one probably will follow her unfortunate example. So also with other amendments—whatever they may be, for the translator has given us no help in finding them. Her successes and her failures together are therefore likely to pass unnoticed.

The book as a whole, however, we must treat on a different level. It takes us a step forward in understanding Mendel's work. Fisher has said of this work (on page 171 of the present book) what is true of many smaller revelations, that "each generation perhaps found in Mendel's paper only what it expected to find". The first generation indeed found a jumble of words and numbers concerning hybrids and peas. The second generation found genetics. A later generation (in the coming century) will find that Mendel's ideas in this paper reached out so far as to be almost indispensable for a serious and civilized education.

After Fisher's analysis of Mendel's numbers showing that they agreed too well with Mendelian expectations there follows a neat and just re-assessment by Sewall Wright. Neither is concerned, as Mendel was, with the foundations of biology. On the contrary both offer us an exercise in statistical virtuosity. But what a happy exercise it is! Happy also am I to see so much indignation avoided by a posthumous correction now posthumously corrected.

The fact is that if Mendel had taken and discussed all the statistical precautions which his successors have envisaged he might, even in 1900, have missed having any listeners, let alone readers or successors. And, as we may see here, de Vries was incapable of learning from the simplest practices of Mendel how to set out his own numerical records with veracity: he thought a percentage was a good enough statement of his observations. From de Vries back to Mendel and on to Sewall Wright we are taken in one quick journey through a large part of the evolution of statistical understanding.

In *Heritage from Mendel* twenty-one articles, twelve American, nine foreign, discuss genetics as it seems to their authors today. Nearly all are concerned with looking very closely and deeply at problems covering separately, and with little overlap, a large part of genetics. Of the connexions between these articles the authors and their readers may or may not be aware: we cannot tell.

This book makes clear, if it was not clear already, that the heritage of Mendel has now attached itself to the whole movement of biology. It is not therefore possible to produce a volume with the purpose expressed by the present editors of honouring Mendel without some attempt at co-ordination and elucidation before and after the manuscripts are collected. Of such an attempt this *dysposium* provides evidence in a few articles which indicate the development of their subject. In this way Beermann, Sewall Wright and Crow tell us things which connect one another. And one contributor, Beadle, tells us things which even connect with the origin of genetics. These writers indicate the size of the opportunity that has been missed.

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DEVELOPMENT OF PSYCHIATRY

Mental Illness

Progress and Prospects. By Robert H. Felix. Pp. 110. (New York and London: Columbia University Press, 1967.) 35*s*. 6*d*. net.

This book consists of four lectures given by Professor Robert H. Felix, Dean of the Medical School of St. Louis University, at Columbia University. The first lecture describes the history of mental illness from the earliest times until the nineteenth century. The second lecture deals with the realization in America, during the Second World War, that there were thousands of people who were mentally unfit, ranging from the insane to the neurotic. Between 1942 and 1945 out of approximately 15 million examinations for admission to the American armed forces 1,875,000 individuals were found to be suffering from neuropsychiatric disability. Out of every 100 men examined twelve were rejected for this reason. They exceeded the numbers assigned to the Pacific theatre of operations during the war. This was not all. It was found that those in mental hospitals were increasing, as for example, from 183·6 in each 100,000 in 1904 to 412·6 in each 100,000 in 1950.

The third lecture concerns the advances made in dealing with the 47 per cent of the mentally ill patients, out of the 750,000 sick in hospital, on any one day in America. Professor Felix points out that the discovery of tranquillizers which have had such a beneficial effect in reducing the number of patients in mental hospitals was really incidental. Chlorpromazine, for example, was discovered when research was being carried out on hypothermia in France, and reserpine was found during work on *Rauwolfia serpentina* as a hypotensive element.

The last lecture seems to be the most unsatisfactory of the four, although it might have been expected to be the most exciting. The author seems to have become bogged down with administrative matters, instead of scientific possibilities. He does not mention that there are tremendous advances to be made in the causes of mental deficiency, the reduction of organic dementia caused by unsuspected agents, the elimination of psychosis by the discovery and removal of the causes of schizophrenia and manic depression. The tranquillizers, for example, have reduced the resident population of the mental hospitals