

Reviews

THE BEGINNING OF LIFE

The Physical Basis of Life. By J. D. Bernal, F.R.S. (Pp. 80. 6s.) London: Routledge and Kegan Paul. 1951.

When Wöhler in 1828 showed that urea can be made from laboratory chemicals he broke down one of the high walls between the worlds of living and dead matter. More recently the discovery that some viruses can lie dormant as crystals for years, and then come to life on their host, seemed to break down another wall. But no such wall is ever the last; and to this day no scientist can sustain with experiments his private conviction that the organic molecules have grown from the inorganic molecules by natural and intelligible steps.

Professor Bernal is not a man to shirk his convictions, and in this small but fundamental book he has not been content with any makeshift answers. In what conditions could large protein-like molecules have grown? he asks. How did they reach the asymmetry which characterizes living molecules? And what was it about their structure which made them capable of copying themselves in the living process? Finally, why do the early conditions no longer hold to produce new life spontaneously to-day?

Professor Bernal answers by tracing the probable history of the sea and the air when first the earth cooled. The sea water would first contain ammonia, carbon dioxide, and hydrogen sulphide; the air would contain no oxygen, and therefore no curtain against the most penetrating ultra-violet light. Under its action, it is reasonable to think that some simple amino-acids would then be formed.

But now comes the crucial question: How would these be concentrated and built up into the first protein-like molecules? The essential property which Professor Bernal uses for this step is the catalytic action of clay in shaping molecules which grow in contact with it. This is commercial practice in the oil industry to-day, but it has not been proposed before as the foundation of a scientific theory of life. Clay alone would not grow asymmetric molecules; but quartz would; and in either case the resulting primitive protein might well have a structure stable enough to shape and copy other molecules by catalysis—that is, to become a primitive enzyme.

As for repeating the experiment, Nature can no longer do so, because plants have since filled the air with shielding oxygen. Moreover, the very growth of life has of course destroyed the aseptic conditions in which life began. It remains for Professor Bernal to improve on Nature and repeat the experiments in the laboratory.

This will not be the last book written on this subject. But it is a book of wide and vigorous learning which never compromises with its own uncertainties. Neither Professor Bernal nor the reader is meant to suppose that he has indeed hit precisely upon the very process, step by step, which Nature used to make life. But he has, I hope, killed once for all those idle speculations which look for life in the chance encounter of atoms and then learnedly compute the odds against it. Life was not created by accident; it grew continuously from its own probabilities; and Professor Bernal has made it plain that they are inherent in its simplest atoms.

J. BRONOWSKI.

BLEULER ON SCHIZOPHRENIA

Dementia Praecox or the Group of Schizophrenias. By E. Bleuler. Translated by Joseph Zinkin, M.D. Foreword by Nolan D. C. Lewis, M.D. Monograph Series on Schizophrenia No. 1. (Pp. 548. £3 3s.) London: Methuen and Co. 1951.

It would be an interesting exercise to consider what the effects on Anglo-Saxon psychiatry might have been had this classical monograph been translated from the German shortly after its first appearance in 1911. Certain it is that much of the confusion and controversy over the concept of schizophrenia—the name dates from Bleuler's book—would never have arisen if British and American psychiatrists had had earlier access to this clear exposition. It is true that excerpts have been incorporated in our popular English textbooks, so that the salient features of Bleuler's conception are familiar to all. But for many readers this translation will give the first opportunity to observe how a searching and creative mind took a mass of carefully collected clinical observations and out of these welded a comprehensive theory of the disease which has largely stood the test of time. The achievement is all the more remarkable when we recall that it took place in an era when Continental psychiatrists had not emerged from the necessary but comparatively limited "classificatory" phase.

Bleuler's restricted and cautious application of Freudian psychology to the major psychoses, his unorthodox and courageous approach to practical problems of treatment, and his penetrating and independent power of observation have made him one of the most influential personalities in twentieth-century psychiatry. All these facets of the true scientist are to be seen in this book, and here for the first time he distinguishes between primary and secondary psychological symptoms—that is, between those specific symptoms caused by the basic disease process and those accretions which are the reaction of the mind to the primary changes. Although Bleuler's application of this principle to schizophrenia has dated—as naturally many other of his ideas have dated with the passage of time—the principle itself has found wide recognition and from it has grown the "pluridimensional approach" (of Kretschmer and Birnbaum) to psychiatric symptomatology and diagnosis. Bleuler's concept of a hierarchy of symptoms—specific, constitutional, reactive, accidental, etc.—has proved far superior to the uniform sequence of "reaction types" which was conceived about the same time by Adolph Meyer. Dr. Zinkin has made a faithful rendering of Bleuler's thought and couched it in easily readable English.

W. MAYER-GROSS.

COELIAC DISEASE

Management of Celiac Disease. By Sidney Valentine Haas, M.D., and Merrill Patterson Haas, M.D. (Pp. 188; 12 illustrations. £2.) Philadelphia and London: J.B. Lippincott Company. 1951.

It is a misfortune that this book should have appeared just at a time when, thanks to the work of Dicke and others in Holland and Sheldon in London, the exact part played in this malady by carbohydrates is becoming clearer. The distinction which can now be made between the effects of wheat flour and those of wheat starch must surely lead to some modification of the Haas hypothesis, which condemns all polysaccharides. This hypothesis pervades the whole book and detracts