Books and Monographs

The Origin of Life. By J. D. Bernal. (Pp. xvi + 345; 29 plates + figures + charts. 55s.) London: Weidenfeld & Nicolson. 1967.

In a letter to Hooker in 1863, Darwin deplored the fact that he had 'trucked to public opinion and used the Pentateuchal term of creation. . . . It is mere rubbish, thinking at present of the origin of life; one might as well think of the origin of matter.' In a more characteristic expression of opinion 8 years later he held that life could arise in 'some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity etc., present. . . a proteine compound [would be] chemically formed ready to undergo still more complex changes'. It was, however, the first view rather than the second which prevailed until recent years, for it was held that Pasteur had proved the concept of *omne vivum ex vivo*, thus separating biology from the physical sciences. There was only a desultory interest in the nature and origin of life for the rest of the century and the early decades of the present century. The rise of new disciplines like biochemistry, genetics, and molecular biology in the present century and the considerable developments in molecular physics, geology, and cosmology have forced a reassessment of the whole problem. Since Copernicus, Kepler, and Newton the earth has been part of the universe, and since Linnaeus and Darwin man has taken his place among other living things. The evidence that is now accumulating tends to place life itself as an aspect and development of the inanimate.

Biochemistry has established the fundamental identity of all life in terms of amino acids and enzymes and while reproduction is now seen in terms of molecular replication, the gap between life and non-life is being bridged by such experimental studies as the synthesis by Urey and Miller of pre-organismal chemicals by means of ultraviolet light acting on the composition of the presumed earliest Earth's atmosphere of methane and ammonia, and by the findings of crystallography studies such as Bernal's on the replication and patterning shown by inanimate and animate matter. It is now possible to meet the challenge in the very title of Huxley's famous lecture on the *Physical Basis of Life*. Bernal visualizes life as the realization of the potentialities of the electron: there are successive states of chemical evolution from atom to molecule, monomer to polymer, and polymer to organism evolving first under anaerobic and later under aerobic activity. It is clear from the text and the impressive illustrations that the subject is no longer a schoolman's feast of speculation. 'Life is beginning to cease to be a mystery and becoming practically a cryptogram, a puzzle, a code that can be broken, a working model that sooner or later can be made.'

To a generation that is hurtling into space, the nature and origin of life is not entirely an academic problem. But not least of the fascination of Bernal's book is the vista it opens on the significance of the new conception of the universe to our contemporary ills and problems. Pascal's cry 'le silence de ces vastes espaces m'effraie' has taken on a new and immediate urgency, for seeing the universe as man's background is no longer an experience confined to the mystic and the philosopher. To Bernal it means the freeing of the mind from meaningless and parochial questions. In the serene synthesis he achieves he can be so catholic as to draw on astrophysics and atoms, on evolutionary time and the present, on Marx and on Teilhard de Chardin. The time is not yet when an *Origin of Life* to complement the *Origin of Species* is possible, but Bernal's study is a considerable stride in that direction.

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Clinical Genetics in Psychiatry. Problems in Nosological Classification. Edited by Hisatoshi Mitsuda. (Pp. xiii + 408; illustrated + tables.) Tokyo: Japan: Igaku Shoin. 1967.

This handsomely produced volume is the presentation to the world, through the medium of translation into English, of some of the most important work done in clinical psychiatry by Professor Mitsuda and his pupils and colleagues at the Osaka Medical College. It consists of 40 separate papers, most of which have been previously published, many of them however in Japanese and accordingly remaining inaccessible to European readers apart from their English summaries. Now that these works are brought together, with an introductory paper by the editor and most considerable contributor, we can see what significant results have been obtained by the systematic exploitation of a particular direction of study, i.e. by applying the chosen method of investigation (clinical, psychological, biochemical, electrophysiological, etc.) to groups of patients classified on a genetical principle. What emerges is a considerable body of knowledge which has been largely neglected by the West. There is now no further excuse for this neglect, since these papers have been translated into excellent English and are presented, most lucidly, with all the required detail.

Professor Mitsuda's most distinctive personal contribution is in the study of the atypical psychoses. He gives us a number of models of his way of looking at psychiatric syndromes, one of the simplest being to see the three syndromes of manic-depression, epilepsy, and schizophrenia as lying respectively at the three apices of a triangle ABC; then half-way along the side AB we shall