Book Reviews

Books and Monographs


In a letter to Hooker in 1863, Darwin deplored the fact that he had 'truckled 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 uivo, 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 hurrying 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.

ARNOLD SORSBY


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 genetic 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
find the ictal depressions, along the side BC oneirophenia, and along the side CA the schizo-affective psychoses. Investigating the families of patients suffering from atypical schizophrenic illnesses, Mitsuda finds psychotic states of a heterogeneous kind, typical and atypical schizophrenias, affective illnesses and epilepsy, a raised incidence of abnormal EEG rhythms, etc. Family pedigrees may suggest dominance (e.g. with affected individuals on only one side of the family), recessivity (excess of abnormality only in the sibs), or intermediate (e.g. neither of the above but with some morbidity in sibs of parents or cousins). Classifying schizophrenic patients according to their family histories, one finds recovery or a periodic course predominating in the dominant group, chronic and deteriorating course of illness with recessive family history. Secondary cases of psychosis found in the families of schizophrenics tend to have a bad prognosis in the families of nuclear schizophrenics, a good one in the families of patients of the peripheral (atypical) groups. ECG abnormalities were found in 67% of cases of the peripheral group, as against 24% in the nuclear group; but atrophic brain changes shown pneumoencephalographically were commoner in the nuclear than the peripheral cases.

There is a wealth of information, gathered along clinicogenetic lines by the investigation of parents and sibs and twins, now made available to easy reference in this book. Apart from the intensive work on the atypical psychoses, there are interesting studies on childhood schizophrenia, involutional depression, chronic alcoholism, early childhood neuroses, and juvenile delinquency in twins.

Eliot Slater


These two books offer a very sharp contrast, in their aims, their achievements, and their presentation. It is fair to say that only the first is a work of science; the second is a speculative contribution to the study of history, and should not be judged by the standards we apply to the first.

The work by Wetterberg records the results of a well-planned and thoroughly carried out investigation, which adds considerably to our knowledge of acute intermittent porphyria (AIP) (sometimes called the Swedish form of the disorder). To begin with we have the mental hospital enquete, which shows that 170 patients (9%) of 1907 mental hospital patients had an abnormally high urinary excretion rate of porphobilinogen (PBG) or a like-reacting substance; these patients were mostly on phenothiazines. On thorough testing, 3 of these patients were found to be true cases of AIP.

The next study was based on 225 members of 40 AIP families, 197 sibs of patients, and 28 parents. Urinary excretion both of PBG and of δ-aminolaevulic acid (ALA) was estimated and showed sharp differences between the 89 unaffected individuals and the gene-carriers, both latent (32) and manifest (76). The mean excretion rate both of PBG and of ALA was a good deal lower in the latent cases than in the manifest ones. Genetical facts of great interest emerge. While the sex ratio in the manifest cases shows, as is generally the case, a marked female preponderance, this is exactly balanced by a male preponderance in the latent (symptom-free) cases. It is estimated that gene penetrance is complete or nearly complete when measured by the PBG output in the urine; 60% of gene carriers go on to be manifest cases, 73% of females and 49% of males. Three sibships were found in which both parents were affected; of the males 3 were manifest AIP cases, 4 were latent, and 3 were unaffected; of the females correspondingly 6, 3, and 3. In these sibships there were no abortions or miscarriages. This suggests that homozygotes for the gene survive and are not clinically distinguishable from heterozygotes. The disorder is not evenly distributed geographically. Wetterberg estimates that in two northern counties the AIP-gene frequency is about 1/1800, but only 1/40,000 for the rest of Sweden.

The main emphasis of the investigation was to answer the question whether the difference between those porphyrics who become mentally ill and those who do not is related to non-genetical differences, to differences in the genetic milieu independent of the AIP-gene, or to the existence of more than one AIP-gene. To pursue this inquiry 40 families were taken from a fairly complete registration of AIP in Sweden, consisting of two equal groups, one in which the propositi had AIP as well as mental illness (A group), and the other (B group) in which the propositi displayed the symptoms of AIP only. No A:B phenotypical differences were found; but there was significantly more mental illness in the A families than in the B families, shown just as much in the relatives free of AIP as in the latent and manifest gene-carriers. The conclusion seems to be justified that this association was due to the greater prevalence of independently transmitted mental illness in the A families. However, the presence of the AIP gene is correlated with mental illness, and the gene appears to favour the manifestation of other predisposing agents. As a result of clinical analysis, it was found possible to distinguish the mental syndrome which could be specifically attributed to AIP, as a phasic illness with slight to moderate depression, transitional confusional states, frequently visual hallucinations, and neurological signs, central and peripheral. The mental changes are in part due to temporary and reversible metabolic changes affecting the nervous system, with some changes proving irreversible and leaving focal lesions. The risk that attacks of AIP will cause simultaneously CNS lesions so extensive or so located as to cause mental illness is estimated as 1 in 6 to