

American Meteorological Rocket Network up to January 1, 1965. There are details of the *EOLE* drifting balloon experiment (P. Morel) and of the even more elaborate *GHOST* scheme (V. E. Lally). Professor K. P. Feoktistov and others give a fascinating account of various observations in atmospheric optics made by the Soviet astronauts aboard the *Voskhod*.

These and five other papers (I overlook two useless abstracts) rather more than fulfil the editors' claim to "offer an up-to-date account of the progress made in the use of rockets and satellites for meteorological research and of the promises for the near future".

The book is very well produced.

C. D. WALSHAW

Bio-organic Mechanisms

Vol. 2. By C. Thomas Bruice and Stephen J. Benkovic. (Frontiers in Chemistry Series.) Pp. viii + 419. (New York and Amsterdam: W. A. Benjamin, Inc., 1966.) \$25.

THIS book is the second volume in Drs. Bruice and Benkovic's survey of bio-organic mechanisms, which they define as "those mechanistic studies likely to be of importance in the understanding of enzymic reactions or chemical transformation of biochemically important compounds such as the co-factors". This book is intended as a reference work for research workers and advanced graduate students and contains chapters on phosphate esters, phosphoro- and phosphonohalides, polyphosphates, thiamine pyrophosphate and pyridoxal-5-phosphate, nicotinamide, nucleotides, folic acid and biotin. It achieves its objective as a reference work on biorganic mechanisms from the standpoint of a physical organic chemist, and for this reason alone would make a valuable addition to an enzymologist's bookshelf. There is, however, a marked bias towards the study of model systems as opposed to studies on compounds of known biological significance and enzyme reaction mechanisms. For example, three chapters on phosphate derivatives without an adequate discussion of enzyme phosphate transfer mechanisms, the mode of action of phosphorohalides and the properties of nucleotides and polynucleotides cannot be described as "reasonably complete coverage". Nevertheless, the objectives of the book are fully realized in the succeeding chapters on enzyme co-factors. It is unfortunate that a chapter on flavins could not be included in this volume.

D. E. GRIFFITHS

Genetics of the Dog

The Basis of Successful Breeding. By Marca Burns and Margaret N. Fraser. Pp. viii + 230 + 18 plates. (Edinburgh and London: Oliver and Boyd, Ltd., 1966.) 45s.

THE first edition of this book, by Dr. Marca Burns, a livestock breeding research worker and a breeder of cocker spaniels, appeared in 1952. The present edition, to which Miss Margaret Fraser, of the Commonwealth Bureau of Animal Breeding and Genetics, has contributed chapters on behaviour, is much enlarged, and the whole brought up to date in the light of much recent work on dog genetics. Genetic abnormalities in dogs, some of them distressing to the dog and unattractive to its owner, are common: some would say far too common, although the authors point out that they occur in mongrels perhaps as frequently as in show breeds. There is, however, little doubt that favouring certain extreme characters on the show bench can bring suffering to the dog and little credit to breeder or judge.

This balanced and well documented account of the genetics of the dog is written in language that any intelligent breeder can understand. It ought to lead to more sense and humanity in pedigree breeding than have been seen in certain breeds—bulldogs, dachshunds and German shepherds, to mention only three. There are eighteen plates (one in colour), 559 references, an index of breeds and a subject index. The book is well produced.

W. LANE-PETTER

OBITUARIES

Professor H. H. Swinnerton

EMERITUS PROFESSOR HENRY HURD SWINNERTON died on November 6, aged 91. He was a palaeontologist of world-wide repute, an outstanding teacher of the natural sciences and a man regarded with deep affection by many students and colleagues. Swinnerton belonged to a generation of scientists with many interests which it is difficult to match today. He took his degrees in London as a zoologist, and moved to the department of natural sciences at Nottingham to teach zoology, geology and botany, and developed the department of geography there; but he made his main scientific impact as a geologist, with archaeology and the study of modern land forms as sidelines.

He was awarded his D.Sc. at the Imperial College of Science and Technology, for investigation of the skeletons of the primitive lizard *Sphenodon* and modern fishes. There, influenced by Professor A. Morley Davies, he developed the interest in palaeontology which became his main scientific concern. In all his writings, and particularly in his classic textbook *Outlines of Palaeontology*, he stressed the dynamic aspects of evolution and classification, and in his presidential addresses to the Geological Society and to the British Association he dealt particularly with the mechanics of evolution. His other researches included work on the Triassic rocks of the Midlands and their fish faunas, the stratigraphy and fauna of the Cretaceous rocks of Lincolnshire, the glacial and post-glacial deposits of the East Midlands and the Lincolnshire coast and the physiographical development of eastern England. He also wrote a series of popular books on geology.

Apart from science he had a particular interest in young people and their intellectual problems—problems which had worried him while he resolved the conflict between religion and science—and he gave a great deal of his time to this in the Church and in the schools with which he was connected. In retirement Swinnerton continued his work on the Jurassic oyster *Gryphea*, a highly variable genus of which specimens were available at many horizons in numbers sufficient for statistical analysis; his final paper was published a year before his death.

P. E. KENT

Michael Stewart Pease

MICHAEL PEASE died on July 27, aged 76. He had retired as director of the Poultry Research Station in 1957.

Pease took his natural sciences tripos and diploma in agriculture at Trinity College, Cambridge, in 1909-13. He went to Germany to do postgraduate work in genetics, but at the beginning of the First World War he was interned in Ruhleben camp. He returned to England in 1919, and joined Professor R. C. Punnett at the Small Animal Breeding Station, where they worked on the development of autosexing breeds of poultry—animals which show differential sex characters when they hatch.

In 1934 he went to the Animal Nutrition Institute, and from 1940 he was also in charge of the Small Animal Breeding Station. In 1951 he took up his last post at the Poultry Genetics Station and became a senior principal scientific officer. Until his retirement Pease worked mainly on the effects of inbreeding and subsequent crossing on poultry. Some of the lines of chickens which he developed are still used by immunologists, as the only highly inbred chickens available. Pease never held a university post, but he was a regular lecturer in animal genetics at the School of Agriculture in Cambridge.

Pease, who came of a Quaker family, was socially and politically very active. He was a parish councillor; a member of his rural district council for thirty-eight years, and of Cambridgeshire County Council for eight years. He received an O.B.E. for political and public service.