

Subantarctic Campbell Island

By Alfred M. Bailey and J. H. Sorensen. (Proceedings of the Denver Museum of Natural History, No. 10). Pp. iii+305 (232 photographs). (Denver: Denver Museum of Natural History, 1962.) 7 dollars.

THE Denver Museum of Natural History arranged an expedition during January and February 1958 to Campbell Island, south of New Zealand. As the authors admit, the result of two months field work cannot be the basis for a book, but with the idea of producing an interesting account of the natural history for people in the United States, the gaps have been filled from existing literature.

The history of the island is given from its discovery in 1810, and includes references to scientific expeditions from the *Erebus* and *Terror* in 1840 to the *Galathea* in 1952. The geology and flora are noted, but more than three-quarters of the book is devoted to the fauna. Sightings of Right whales are given, and an account of the seals. The latter is slightly marred by the incorrect and confusing use of the term 'sea bear' for a female sea-lion, but this fault is redeemed by the inclusion of previously unpublished notes on seals that are not well documented.

As is almost inevitable, the book is primarily for the ornithologist. The history of the ornithological work is given, and a list of recorded birds. All sixty-one of these are described, although less than half breed on the island, and there are numerous weights and measurements. Particular attention is paid to the Wandering and Royal albatrosses, with notes on the hatching and growth of the chicks.

The book fulfils its purpose in giving a comprehensive account, is well presented, and the photographs in particular are excellent.

JUDITH E. KING

The Theory of Ordinary Differential Equations

By Dr. J. C. Burkill. (University Mathematical Texts.) Pp. ix+114. (Edinburgh and London: Oliver and Boyd, Ltd.; New York: Interscience Publishers, Inc., 1962.) 8s. 6d.

DR. BURKILL'S clear and concise text is one of the best in an admirable series. It is not concerned with the elementary techniques of explicit integration, but gives in brief compass a remarkable amount of information on what a differential equation can reveal about a function which satisfies it. Existence theorems, the Sturm-Liouville oscillation theory, solution in series leading to Legendre and Bessel functions, solution by contour integrals and by asymptotic series, are all expounded with rigorous simplicity and clarity. The new edition contains sections on the Laplace transform and on the equation $P dx + Q dy + R dz = 0$.

T. A. A. BROADBENT

Fluorescent Protein Tracing

Edited by Dr. R. C. Nairn. Pp. xv+280. (Edinburgh and London: E. and S. Livingstone, Ltd., 1962.) 42s. net.

THE use of fluorochromes as labels for antibodies was introduced by Coons some twenty years ago. This major advance resulted in the development of the technique of immunofluorescence which combines the sensitivity and specificity of immunological reactions with the precise visualization afforded by microscopy. This technique makes it possible to detect and localize minute amounts of antigens and antibodies in biological materials. Immunofluorescence has been applied with much success to many diverse research problems and is being used increasingly in routine clinical diagnosis.

There has been a need for a convenient source of information on the practical details and applications of this important technique. The survey of the principles of the technique, the methods of preparing fluorescent conjugates, the use of these conjugates in medical and

biological research and the extensive bibliography given by Nairn and his colleagues in their monograph satisfies this need. The practical aspects of the method are emphasized and are dealt with authoritatively and comprehensively. The chapter on fluorescence microscopy and photomicrography is excellent. The principles of the technique are dealt with briefly but adequately and the critical review of the applications of the method is satisfactory. The most successful parts of the book are, however, those devoted to practical information and to the applications in which the authors have had personal experience. The book is attractively produced and there are some excellent illustrations.

Immunofluorescence will, undoubtedly, be used in the future by many investigators of varied scientific disciplines. This book will be invaluable to them.

M. J. CRUMPTON

Geodesy

By G. Bomford. Pp. xvi+561. (Oxford: The Clarendon Press; Oxford University Press, 1962, second edition.) 90s.

THE study of geodesy, the determination of the Earth's shape is, of course, a venerable one dating back to the determination of the radius of the Earth by Eratosthenes, who measured the difference in the direction of the vertical at the two ends of a north-south arc.

The present book contains an exhaustive account of the modern methods of determining the shape of the Earth by the methods of triangulation and traverse levelling and by astronomical measurements. The subject soon becomes involved in the general problems of geophysics, for verticals are deflected by the unequal distribution of matter at the Earth's surface. We find, therefore, in Brigadier Bomford's book very useful accounts of the theory of the Earth's gravitational field, isotasy and the subtle distinctions between the geoid and co-geoid.

There are very useful discussions of the mathematical methods used in geophysics, such as spherical harmonics. The new edition contains discussions, of course, on the use of Earth satellite observations. This work is primarily for the specialist rather than for a person generally interested in the subject.

S. K. RUNCORN

Animal Health and Production

Proceedings of the Thirteenth Symposium of the Colston Research Society, held in the University of Bristol, April 10th-13th, 1961. Edited by C. S. Grunsell and A. I. Wright. Pp. xi+224. (London: Butterworth and Co. (Publishers), Ltd., 1962.) 42s.

THE title on the book cover is not very helpful. The thirteen discussions at the thirteenth conference held by the Society covered a range of unrelated subjects, all of importance. Some of the subjects have received great attention in recent years, notably magnesium metabolism in cattle, by Th. de Groot (The Netherlands), and two on bovine ketosis, one by S. J. Bach and the other by K. Peeters, W. Oyaert and J. H. Bouckaert (The Netherlands). Immunity was represented by papers on bacteriostatic properties of *Cl. welchii*, Type A, by J. J. Bullen and A. Dobson; by the value of living viral vaccines, by S. E. Piercy; by immunity to helminths, by E. J. L. Soulsby; by antigens and antibodies in the new-born, by A. E. Pierce; and by non-specific resistance to infectious diseases, by A. W. Gledhill. Three papers concerned poultry: sex hormone balance, by J. G. Campbell; Marek's disease and lymphoid leukaemia, by P. M. Biggs; and avian visceral lymphomatosis and related neoplasms, by R. R. Burmester and T. N. Fredrickson.

The discussions are dealt with by brief accounts of what each speaker said, but with nearly as much space for names as for text and are not very informative.