

The extraordinarily low standard of the photomicrographs by which the acid-Giemsa stain is illustrated, in contrast to the general excellence of the plates with which the book is lavishly provided, may explain his distaste for the method.

The work of the early bacterial cytologists is well reviewed, and many of their original drawings are reproduced. The value of this historical research should not be underestimated; but it would be even greater if it were combined with an equally full account of studies performed since the early nineteen-thirties. There is, for example, only a single, brief reference to the work of Robinow, and the entire chapters upon the cytology of Actinomycetes and Myxobacteria make none at all to the exceedingly important papers of Klieneberger-Nobel, only one of which is quoted in the whole book. Phenomena now widely accepted and repeatedly confirmed, such as the *L*-form mode of reproduction, multicellularity of the higher bacteria, variety of types of cell-division, and the autogamous processes associated with sporulation, are either treated with exaggerated reserve or totally ignored.

The format of the book is very attractive and the illustrations are particularly good. Electron microscopists will find much to interest them in the numerous micrographs which are included.

K. A. BISSET

THE HOME LIFE OF AN ASTRONOMER

Ninth Astronomer Royal

The Life of Frank Watson Dyson. By Margaret Wilson. (Published for the Dyson Family.) Pp. xvi+294+14 plates. (Cambridge: W. Heffer and Sons, Ltd., 1951.) 25s. net.

THE biography of Sir Frank Dyson, ninth Astronomer Royal, by his daughter, Mrs. Wilson, gives a vivid account of the home background to his professional life. To those many who knew him personally and enjoyed his friendly hospitality in Greenwich or Edinburgh, this book will bring back happy memories of Dyson himself, his gracious wife and his cheerful family. But it must be admitted that the book would have gained considerably in value if it had included a full account of his scientific career and work written by an astronomical colleague. A clear picture of Dyson the man, as seen from the family circle, is given: Dyson the astronomer, however, is seen mainly from the same limited point of view, the account being supplemented by too little scientific appreciation. The result is a lack of balance in the picture.

This being said, we may turn with gratitude to what Mrs. Wilson has done in relating with such obvious enjoyment the story of the Dyson family. Like so many scientific men both in Great Britain and in the United States, Dyson was a son of the manse. His father was a prominent Baptist minister, and it was natural that Dyson as a young Cambridge graduate should follow his friend, T. R. Glover, as president of the Cambridge University Nonconformist Union. Typical of interests maintained throughout his life were the two papers he read to that body on "Robert Browning" and "The London Poor". But we must not omit, in speaking of his early days, to refer to the influence of his school. Dyson was fortunate in his headmaster and schoolfellows: Bradford Gram-

mar School under Keeling produced a notable set of brilliant boys who made a mark for themselves later in life—it must suffice to mention here Benjamin Gott, William Rothenstein and John Coates. In Cambridge Dyson graduated as second Wrangler (the Senior Wrangler of his year, Sir Gilbert Walker, still happily survives); he was first Smith's Prizeman the year after Sampson, whom he also followed a year later as Isaac Newton Student. Years later, Sampson was to follow Dyson as Astronomer Royal for Scotland.

Dyson's father, possibly influenced by the friendship of Dawes, a well-known observer of double stars, had foretold at his birth that he would become Astronomer Royal. The opportunity came when Christie invited him in 1894 to succeed Turner as chief assistant at the Royal Observatory, Greenwich. Dyson accepted with alacrity, and from that day his career was marked out clearly for him. His observational work at Greenwich was varied with solar eclipse expeditions to Oran, Pulo Aoer Gadang and Sfax, at all of which he was favoured with fine weather: his luck in this respect never deserted him, and he was successful in observing six total eclipses of the sun in six attempts.

In 1905 came the move to Edinburgh, where Dyson's experience as Astronomer Royal for Scotland prepared the way for a return to Greenwich five years later as Astronomer Royal. Here he proved to be an administrator of sound judgment and keen practical sense, a greatly loved chief. One of his most striking decisions was taken during the dark days of the spring of 1918: that was to back the preparations for the Einstein eclipse of 1919. It is in the account of this eclipse that we find this book at fault on the scientific side—Einstein's special theory of relativity being ascribed to Newton.

One feature of Dyson's great influence on the astronomical world of his day was his participation in the international side of astronomy. Both as a ready and genial host to foreign astronomers visiting England and as one who co-operated fully with them in congresses, he formed an important link in the network of joint schemes which covers the astronomical world. It was only natural that in due course he should become president of the International Astronomical Union. This was one of many richly deserved honours that came his way. Perhaps none pleased him more than the honorary degree of Sc.D. conferred upon him by the University of Cambridge. With the final passage in the speech of his old friend, T. R. Glover, the Public Orator, we may fitly close this review—*Litteris, amicitias, scientiis humanitate—sic itur ad astra.*

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TROPICAL ANIMAL NUTRITION

The Feeding of Farm Animals in India

By Dr. P. E. Lander. (Animal Husbandry Manuals.) Pp. xii+492+lii+46 plates. (Calcutta, Bombay, Madras and London: Macmillan and Co., Ltd., 1949.) 14 rupees; 25s. net.

THE temperate zones of the world are well supplied with text-books which give information obtained from experiments published in many different and often inaccessible journals and reports. If progress is to be made in agriculturally backward areas in the tropics, similar books are essential, for the soils, crops and livestock are so different in the