

cutting of ultra-thin sections of bacteria for examination in the electron microscope.

The general plan of the book is unaltered, with sections on techniques, surface structures, the bacterial nucleus, reproduction and sexuality, life-cycles in bacteria, macroformations, and evolutionary relationships. The final chapter, on the genetics of bacteria, is unsatisfactorily short, and the subject would surely be better considered in relation to the chapters on nuclear structure and development. The number of illustrations has been considerably increased, and almost all of them are excellent and illustrate clearly the points at issue.

This monograph contains much that is stimulating, and it brings together a great deal of evidence which shows quite clearly that, despite their small size, bacteria are cells of considerable complexity. It is a pity that the author has in places adopted a rather over-enthusiastic style which detracts somewhat from the value of the book as a whole. C. S. CUMMINS

### The Sun and its Influence

An Introduction to the Study of Solar-Terrestrial Relations. By Dr. M. A. Ellison. Pp. xii+235+9 plates. (London: Routledge and Kegan Paul, Ltd., 1955.) 21s. net.

THE subject of solar-terrestrial relationships is one that has not always been well served by authors. It is a pleasure to welcome in this book an addition to the literature which gives the verified facts and indicates their possible significance while eschewing speculation.

Dr. M. A. Ellison uses his first three chapters in describing the Sun: its radiation, the structure of its atmosphere, and the activity therein that is associated with the terrestrial effects to be described later. Solar reactions on the ionosphere, on the Earth's magnetic field, on radio propagation and on the polar aurora are then dealt with in some detail; and the last two chapters are concerned with the Sun's radio emission and the problem of cosmic rays. It is perhaps disappointing that no mention is made of the weather—if only to dispel some of the widely held beliefs connecting its vagaries with sunspots, for which the evidence is insufficient or even non-existent.

The author's approach presupposes no more than 'school-leaving physics', and within this limitation he has achieved his object of introducing to the reader a fascinating subject that covers many widely different fields. The expert will not, of course, find his own subject treated exhaustively; but the astronomer will turn with interest to the geophysical sections and the geophysicist to the astronomical chapters, and the layman with a wide general interest in science will read the whole book with pleasure and profit. A. HUNTER

### Manual of Malayan Timbers

By H. E. Desch. Volume 2. (Malayan Forest Records—No. 15.) Pp. ix+329-762+plates 70-127. (Singapore: Malaya Publishing House, Ltd., 1954.) 15 Malayan dollars.

AS is explained in the foreword, this volume is the product of more than ordinary travail. Much of the original script was lost in 1942; but, after enlisting the support of Prof. Tanakadate, who was responsible for the publication of the "Foresters' Manual of Dipterocarps", by the late C. F. Symington, the author was enabled to rewrite most of it in Japanese prison camps between 1943 and 1945.

The format of the book follows that of Vol. 1, which was published in 1941. It is divided into sections, each dealing with one family, beginning with the Melastomaceae and proceeding alphabetically to the Winteraceae, with an additional section on the Coniferae. The scope of the work, originally intended to comprise only what was generally understood by commercial species, was eventually enlarged to contain any tree of which botanically authenticated material was available for study. The book includes a description of the wood of some four hundred different species, with details, wherever available, of weight, texture, durability, macroscopic features, mechanical, working and seasoning properties, amenability to preservative treatment, defects, importance and uses. Among the appendixes there is a most valuable bibliography listing 308 references.

The publication is well produced, and there are remarkably few printing errors. Some of the plates could have been better prepared and reproduced, but this is not the fault of the author. A revision of this manual may eventually become desirable, but this monumental compilation of data will remain a standard reference for many years to all who are interested in the timbers of South-East Asia.

### Proceedings of the First International Symposium on Condensation Nuclei at Dublin, April 1955.

Edited by Mario Bossolasco. (*Geofisica Pura e Applicata*, Vol. 31; 1955/II.) Pp. 202. (Milan: Istituto Geofisico Italiano, 1955.) n.p.

THIS volume contains twenty-six papers dealing with techniques for measuring the concentration and size of Aitken nuclei ( $5 \times 10^{-7} < r < 2 \times 10^{-5}$  cm.), their diffusion and coagulation, with the artificial production of these nuclei, and with related physiological studies.

A number of instruments based on the Nolan-Pollak counter, which measures nucleus concentrations by allowing them to become centres of condensation and measuring photo-electrically the extinction of a parallel-light beam by the fog, are described, but a novel modification by Rich which allows of size discrimination deserves special mention. R. Fürth contributes a valuable paper on the theory of diffusion and sedimentation of nuclei in a cylindrical container; this is used to good effect by Pollak and O'Connor in their experimental investigations of aerosol decay, from which they obtain information on the concentration, size and mass of the nuclei as a function of time. Two papers will be of particular interest to cloud physicists: Vittori describes the use of microchemical methods (Liesegang reactions) for the detection of atmospheric aerosols, especially chloride particles; Day presents some measurements of nucleus concentrations made over southern England and over the sea from an aircraft.

It is, perhaps, a little surprising that the main emphasis at this conference should have been upon the small Aitken nuclei when the larger aerosol particles are currently of greater meteorological interest. It is hoped that future conferences will pay more attention to the larger end of the spectrum and to such topics as the production, constitution and origin of atmospheric aerosol. However, this first meeting has produced a valuable set of papers, in the preparation and publication of which the organizers have achieved a high standard.

B. J. MASON