

Photo-Electronic Image Devices

Proceedings of the Second Symposium held at Imperial College, London, September 5-8, 1961. Edited by J. D. McGee, W. L. Wilcock and L. Mandel. (*Advances in Electronics and Electron Physics*, Vol. 16.) Pp. xv + 654. (New York and London: Academic Press, 1962.) 130s.

ADVANCES in photo-electronics have largely centred around image devices, photomultipliers and other components for converting radiation into electronic signals. The spur to increase sensitivity, signal/noise ratio and spatial resolution and to improve reproducibility has kept technologists busy and has led to excursions into allied branches of applied physics, particularly electron optics and vacuum technology. The discovery of new physical effects likely to have far-reaching influence is not at present a primary aim of the subject, which, however, does not lack effects requiring clarification and justification on fundamental grounds. If the subject is compact, that is more than can be said of the workers in it, many of whom owe their first allegiance to particular fields of application. Prof. McGee, in organizing two symposia on the key-image devices, has thereby brought together scientists who might otherwise never have met.

The report on the second symposium on "Photo-Electronic Image Devices", held at the Imperial College of Science and Technology during September 5-8, 1961, is very factual; it shows no diminution of activity since the 1958 symposium, stresses the attention being directed to details to improve performance and leaves no doubt as to the contributions being made by users (compare the transistor, for which no user has also been a designer or technologist). Several astronomers are now using electronic cameras following pioneering work by Lallemand, Duchesne and a few others. The precautions needed to prevent the photographic plate spoiling the vacuum and hence the photocathode are central themes of two papers; a bakeable electronographic plate may still be required, however, despite its inability to match the large gain conferred by the conventional developing of a photographic plate. Image intensification is a fruitful subject at the moment and has received much attention; the television camera tube, on which so much effort has already been expended, did not figure so prominently, but infra-red and ultra-violet versions were described. Nuclear physicists are extending the versatility of scintillation counters, as several papers show, and further progress can be expected, based on applying techniques developed for other devices.

One or two laboratories surveyed their own work over the past few years, but review papers were otherwise absent; their inclusion in any symposium is a gamble for they may turn out to be mere catalogues or to be insufficiently critical. But two or three good reviews here would have improved an already impressive and readable report.

J. R. TILLMAN

Diseases of Turfgrasses

By Prof. Houston B. Couch. (Reinhold Books in Agricultural Sciences.) Pp. xiii + 289. (New York: Reinhold Publishing Corporation; London: Chapman and Hall, Ltd., 1962.) 80s. net.

THE production and maintenance of high-quality grass turf, whether for ornament or recreation, requires skilled management which involves effective control of diseases affecting turf grasses. A comprehensive treatment of this specialized topic would certainly be welcomed by turf specialists and plant pathologists; it is disappointing, therefore, to find that Prof. Couch's book does not fulfil the promise of its title.

The main text of the book occupies 180 pages and is divided into four chapters, the first of which deals briefly and in very general terms with the nature and causes of disease in plants. Chapter 2 (124 pp.) is concerned with fungal diseases. These are well described and the control

practices (where any are available) are clearly explained. The coverage on fungal diseases is certainly comprehensive and includes many diseases (for example, those affecting inflorescences, such as smuts and ergot) which might well have been omitted. Indeed, their inclusion only serves to exaggerate the omissions referred to below. The third chapter deals concisely with nematodes, and the main text concludes with a short chapter on the fundamentals of disease control.

Two notable omissions from this book are physiological and virus diseases. Their exclusion can scarcely be justified in a work which claims to be comprehensive. To be told (p. 5) that physiological diseases are already well covered in standard works on turf-grass management will scarcely satisfy the plant pathologist, particularly when no specific references to sources of information are given. Equally the omission of virus diseases, apparently on the grounds that "information concerning them is not yet sufficient to evaluate properly their importance", is scarcely acceptable. The same might be said of a great many of the fungal diseases described. The omission of virus diseases is all the more serious because recent work is showing that they may, in fact, be seriously damaging in agricultural swards; presumably they may be equally important in sports turf and lawns. The inclusion in this book of the symptoms, host-ranges and mode of transmission of the many grass viruses now known would have been most valuable if only in directing the attention of turf specialists to this group of diseases.

More than a third of the book is devoted to five appendix tables. Apart from the first (which is a short list of fungicides and nematocides), these constitute a particularly clear index of diseases and host species cross-referenced under their common and technical names. Certainly in this 100-page appendix the reader will have no difficulty in locating the items of information contained in the other 180 pages.

ELLIS GRIFFITHS

The Morphology of Pteridophytes

The Structure of Ferns and Allied Plants. By Dr. K. R. Sporne. Pp. 192. (London: Hutchinson University Library, 1962.) 12s. 6d. net.

THIS condensed but clear account of the morphology of the pteridophytes is evidently aimed primarily at an undergraduate public. Available at a most reasonable cost, it will surely be deservedly popular as a student text. An excellent feature of this book is the attention directed to the integration of the results of modern research with classical morphology. Not only are more obvious discoveries like *Stylites* described, but also recent developments in all aspects of the subject are included. Rather more than half the ninety items included in the bibliography were first published since 1945.

Great pains have evidently been taken over the production of the beautifully drawn figures, which are a joy to study. Nevertheless, one must regret that it has been found necessary to overcrowd the illustrations on certain of the figures (for example, Figs. 14-17), so as to confuse the eye, and to over-reduce certain of the illustrations (for example, Figs. 12A, 16E, and 17A) to such a degree that their evident quality is obscured. One appreciates with approval the intention to keep the price of this book as low as possible, but it is a pity that a larger page-size could not have been used.

Errors appear to be commendably few. There is an unfortunate misprint on the fourth line of p. 166, where *Phyllitis* is intended but *Athyrium* is printed, which may seriously mislead the unwary. It is not true that there are eleven species of *Equisetum* in the British flora, and *Phylloglossum drummondii* occurs also in south-western Australia, but these are small blemishes in an admirable text. This book is a valuable addition to the botanical literature, and is most warmly recommended.

J. D. LOVIS