

We might at this moment remember that the work was started under the supervision of Darwin's great friend, J. D. Hooker, and has since been supervised by subsequent directors of Kew and carried out by numerous able, but often anonymous, helpers.

"Index Kewensis" is taken so much for granted by plant taxonomists working with angiosperms that it is often not fully appreciated. To anyone who has struggled, even briefly, with taxonomic and nomenclatural problems in groups such as algae, where no such index exists, the lack of it is keenly felt and the value of a catalogue of names with places of publication is soon fully realized. It is interesting to note in this connexion that an "Index Muscorum" is due to be published shortly—another descendant of the original Darwinian idea.

"Index Kewensis", the twelfth quinquennial supplement to which has now been published under the direction of Dr. G. Taylor, supplies far more information about flowering plants and papers concerning them than might at first sight appear.

For example, in the five-year period between 1951 and 1955 approximately 12,000 species of flowering plants have been described. This, after more than two centuries of taxonomic work in the post-Linnean period, is a staggering total and gives some measure of the imperfection of our knowledge of the dominant group of plants.

It is also easy to obtain from these Supplements references to important monographs and information about the geographical areas and the plant groups which have been the subject of special attention in the recent past, as well as the names of the workers concerned.

In conclusion, I may perhaps be allowed to repeat what has so often been said before: "Index Kewensis" is indispensable.

T. G. TUTIN

OPTICS: CLASSICAL AND MODERN

Concepts of Classical Optics

By Dr. John Strong. Pp. xxii + 692. (San Francisco: W. H. Freeman and Company; London: Bailey Bros. and Swinfen, Ltd., 1958.) 9.50 dollars; 80s.

THIS is a very good book, and one of its best features is the care taken by the author to ensure that the student understands what is going on. Mathematical treatment is kept to a minimum, but where it is necessary we are not left to flounder; the author explains what he is doing by means of a sort of running commentary, and even reassures us that although the solution we are after is buried in complication at the moment it is going to emerge safely in a minute. The only criticism here is that some simplification of the symbols used would lead to even greater clarity; for example, why was it necessary to use the symbol λ for mass early in Chapter 1, only to announce, a few pages later, that "we now abandon this for its customary use, symbolizing wavelength"?

The author also takes the trouble to expose and explain theoretical difficulties which are too often ignored. A good example of this is the section on "No Diffraction, by Cornu's Spiral", in which the limitations of this construction are pointed out, with the conclusion that "it affords the student an example of a typical theory in physics which has an impressive neatness, inspiring awe; which makes

necessary compromises, requiring prudence; which is blemished by a lack of complete validity, requiring understanding".

At first glance the most distinctive feature of the book is the character of the illustrations. These are in the style one associates with the author's well-known book on laboratory practice. They have a frehand appearance, are pleasant to look at and are extremely clear; for example, the drawings in the section on double refraction, which is inherently a difficult subject to illustrate, are models of clarity. What is even more important is that the drawings showing apparatus give one a good idea as to how it is actually constructed—too often one's first sight of the actual equipment comes as a shock after having seen only text-book illustrations. It is only in some of the attempts to reproduce optical images by means of sketches that actual photographs might have been better.

The book is described in the preface as being intended for an intermediate course in optics, taking one or two terms. This is a considerable understatement of the ground covered, and the book should be valuable for much more advanced students and also for general reference purposes. It in fact covers most of the physical optics required for an honours degree in physics.

The only real adverse criticism of this book concerns the price—£4—which is surely at least twice as much as most students would willingly pay for a single book. This is to some extent offset by the seventeen so-called appendixes, which occupy nearly half the book, and are in effect a series of short monographs by specialists. To quote the preface: "these are intended to give the student the flavour of current activities and interests in our field". The topics covered in this way include, among other things, interferometers, apodization, Fourier transformations and interferometric spectroscopy, radiation detectors, micro-wave optics, wave theory of image formation, lens design, fibre optics and filters. One of the appendixes supplies some of the mathematical background assumed in the rest of the book. This is well done, and includes frequent attempts to make the student think—both by formal examples and by interjected questions such as "(why?)" or "(how do we know?)" after mathematical steps in the text. J. E. GEAKE

BLOOD GROUP METHODS AND TECHNIQUES

Practical Blood Grouping

By Dr. F. Stratton and Dr. P. H. Renton. Pp. xxiv + 331 + 16 plates. (Oxford: Blackwell Scientific Publications; Springfield, Ill.: Charles C. Thomas, Publisher, 1958.) 42s. net.

OVER the past fifteen years mass grouping of blood donors and ante-natal cases has grown enormously, and of necessity special methods and techniques have been evolved to meet an entirely new situation.

The authors of this book, faced with the alternatives of describing a multiplicity of methods, or confining themselves to those known and well tried in their own laboratory, have wisely chosen the latter.

Not all would agree that the papain slide test offers substantial advantages over existing (and equally well-tried) techniques, for example, tube testing. Even if some small advantage could be