

and Accuracy of Photographic Registration of Position." Throughout the book the historical development of the subjects treated has been emphasised in a way that makes it easier for the reader with no previous knowledge of the subject to understand the fundamental problems involved. The chapter on graininess, by A. C. Hardy, is exceptionally well written, and should be of interest to all those engaged on problems involving great magnification of photographic negatives, as in cinematography. Chap. ii. contains a vast amount of information on the methods of astronomical photographic photometry, *i.e.* the method of obtaining the magnitude of a star from its image as impressed on the plate, and, with the remaining chapters, shows to the reader what a host of pitfalls and difficulties in astronomical photometry arise owing to the complicated structure of the photographic plate.

Mr. Ross is to be congratulated on having brought together into one volume a mass of information largely unknown to the average photographic worker, and of great value to the astronomer. The criticisms which can be made are not serious. In a volume with such a comprehensive title one would have expected to find the question of light scatter by the negative treated in relation to the well-known fact that the photographic density depends on the degree of diffusion of the light, etc.—a fact which has caused uncertainty in density measurement ever since it was introduced in 1890 by Hurter and Driffield. The more mathematical parts of the book suffer in the same way as most of these monographs have done, though not to the same extent as some, in that the text is sometimes difficult to follow. The photomicrographs are very fine; especially will they be appreciated by those who know the difficulty of photomicrography at high magnification of cross-sections of emulsion layers.

F. C. TOY.

*College Manual of Optics.* By Lloyd William Taylor. Pp. ix + 236. (Boston, U.S.A., and London: Ginn and Company.) 12s. 6d. net.

THE co-ordination of laboratory and class work is usually a problem of much difficulty in physics courses above intermediate standard, so that not infrequently there is little if any attempt made in this direction. The manual under notice sets out to bridge the gap between the two lines of study. It would obviously be impossible to treat both comprehensively in one volume of reasonable dimensions, and probably the most serious criticism to which the book could be subjected would be in respect of the matter omitted from it. Undoubtedly the most interesting section is that dealing with diffraction and interference effects observed with one and two slits. The essential differences between the two phenomena are clearly brought out, and Michelson's astronomical application of the latter is for once intelligibly presented and, further, strikingly illustrated by a laboratory experiment. The section on the Michelson interferometer is particularly good, as one has a right to expect from a book associated with the University of Chicago. Yet curiously enough there would appear to be no mention of the remarkable achievements of the instrument in optical testing work. The Fabry-Perot interferometer receives something less than adequate treatment; the student would probably obtain a quite erroneous idea

of the relative importance of the two instruments in modern high-resolution work. The echelon spectro-scope is not even mentioned, but no doubt this is because it is not usually met with in a laboratory course.

There are one or two points in the chapter on polarimetry to which exception can be taken. For example, the Laurent polariser (which is described here) has long given place to the Lippisch (which is ignored) as a research and commercial instrument. Again, contrary to what is stated, a yellow light filter is indispensable when a sodium flame is employed as source, at any rate for considerable rotations. It is surely not permissible to employ white light and a filter in any polarimetric measurements; the filter which will supply even approximately monochromatic light under such conditions has unfortunately yet to be invented. But these are minor blemishes, more than counterbalanced by many merits. It is a stimulating and original book, refreshingly lucid and direct in its methods, and provides without doubt a very valuable supplement to the ordinary text-books of optics.

*The Central Caribs.* By William Curtis Farabee. (University of Pennsylvania: The University Museum. Anthropological Publications, Vol. 10.) Pp. 299 + 40 plates. (Philadelphia: University Museum; London: Bernard Quaritch, Ltd., 1924.) 44s. net.

THIS sumptuously equipped and splendidly illustrated volume has all the virtues and some of the defects of the so-called "survey-work," that is, work carried on over an area very extended, relative to the time devoted to its study. Hence the traveller, unable to learn the native languages, has to rely on interpreters and informants, he has to collect material objects and to be satisfied with observations which can be made rapidly and yet correctly. It is possible in such work to obtain a clear idea of the material culture of a tribe and a general view of their beliefs and social organisation; to map out the differences between the peoples of the region studied; to signal strange customs of outstanding importance. The insight into the native ways of life and modes of thought, however, the intimate perspectives of their moral outlook, of their *Weltanschauung*, and of their social order are given only to those who have the opportunities and the patience indispensable for the study of the local idioms and for a life led among the natives.

Dr. Farabee has carried out his survey work among the Central Caribs exceedingly well. One tribe, the Macusi, were studied in some detail, the information about them taking up some three-fifths (about 140 pp.) of the text, while the remaining twelve tribes are dealt with on some 100 pages. The material culture of the Macusi is described at some length, and this part of the contribution is naturally the most satisfactory. Under the heading of "Social Culture" we find such subjects as clothing and ornamentation; music, dances and games; magic, belief and mythology, while only one page is devoted to "political organisation," and a few pages to marriage, family and kinship, *i.e.* the really sociological themes. This is natural, for sociology can be studied only very inadequately in survey work. But every statement found in this book is clearly