

of a paper read in 1884, before the Institution of Civil Engineers, by his father, Mr. S. B. Boulton, who gave a complete and valuable survey of the progress made up to that date. An account of the discussion which followed is reprinted and makes interesting reading, reminding us that the theory of the action of preservatives which was attributed to the coagulation of albumen was not yet dead at that date.

Recent developments are briefly summarised by Mr. Hubert Fergusson, and in the numerous appendices are reprinted some of the original patents and early papers referring to the action of preservatives. The history of wood preservation has been one of trial and error, but advance must always be slow in work where results from practical experiments do not become available for many years. Accurate scientific investigations are now beginning to take the place of empirical conclusions which have long been accepted as facts. The experience of the past is apt to be forgotten, and the volume under review is of value in recalling to us the work achieved and the considerable knowledge of the subject that had been gained half a century ago. The name of Boulton has long been associated with the progress of wood preservation, and it augurs well for the success of the newly formed British Wood Preserving Association that its first president should bear the name of the editor of this book.

The British Journal Photographic Almanac and Photographers' Daily Companion, with which is incorporated The Year Book of Photography and Amateurs' Guide and The Photographic Annual, 1931. Edited by George E. Brown. Pp. 748 + 64 plates. (London: Henry Greenwood and Co., Ltd., 1931.) Paper, 2s. net; cloth, 3s. net.

BESIDES the usual epitome of progress, formulæ, tables, and miscellaneous information, this volume includes concise essays on the makers of photography, modern enlarging, and colour photography, with a note on bromoil. The "Makers of Photography" is by the editor, and is a history of the development of photography from the earliest times up to approximately 1890, though, as might be expected, the last twenty or so years of the period is very sketchily done. The value of this article lies in the history of the earlier periods, practically the first half of last century, as certain items which have only recently come to light are duly incorporated for, we believe, the first time. The other articles also are excellent summaries of the subjects with which they deal.

The advertisements, which are a very valuable section of the work, show what great advances have been made in the development of the apparatus for cinematography. Lenses are now provided for it up to the extraordinary aperture of $f/1$, and cameras costing from a few pounds up to £250 or more.

The "Gravure Pictures" are not of scientific value; but a considerable number appear to us to have been made from very much under-exposed negatives. However, that appears to be the fashion at present.

Photo-electric Cells and their Applications: a Discussion at a Joint Meeting of the Physical and Optical Societies, June 4 and 5, 1930. Editor: Dr. John S. Anderson. Pp. 236. (London: The Physical and Optical Societies, 1930.) 12s. 6d.

A descriptive account of the discussion on photo-electric cells arranged by the Physical and Optical Societies appeared in the issue of NATURE for June 21, 1930. This volume contains the original papers contributed by various authors, together with the general discussion which took place at the meetings at the Imperial College of Science and Technology. The subject affords an excellent illustration of the importance of research in pure science, as few of the original workers in the subject of photo-electricity could have anticipated the various technical applications which have arisen in connexion with their discoveries. Not only in photometry, but also in connexion with such diverse problems as talking films and photo-therapy, photo-electric cells have been employed, and the successful solution of the problem of television is probably to be found through their use. The relative merits of different types of cell provided material for much discussion, but as the sensitivity of a cell is largely a matter of definition, no general agreement was reached. It is probable that the rivalry between the alkali metal cell and the selenium cell will continue, as each type seems to possess advantages for special purposes. Although theoretical questions were not the main subject of the discussion, some interesting papers were contributed dealing with the theory of photo-electric action, notably Dr. N. R. Campbell's paper on selective photo-electric emission.

The American Annual of Photography, 1931. Vol. 45. Edited by Frank R. Fraprie. Pp. 292 + Ad. 64. (Boston, Mass.: The American Photographic Publishing Co.; London: Sands, Hunter and Co., Ltd., 1930.) Paper, 7s. 6d.; cloth, 10s. 6d.

OF the twenty-nine literary communications to this 'Annual', we note specially Dr. Wightman's discourse on "Light and Matter", in which he traces the history of the subject and describes the theories at present held, and Dr. Maximilian Toch's "Scientific Photography of Oil Paintings". Dr. Toch demonstrates by examples that experts cannot judge of the condition of a painting from a photograph of it, "because it depends entirely upon how the photograph was taken as to whether the picture appears good or not". He gives some of the results of his prolonged experience. Mr. Neblette, as in previous years, contributes a review of the progress in photography for the past year. The very large number of formulæ given are for the most part set forth in convenient tables, which save space and facilitate reference and comparison. As the illustrations claim to be pictorial, we hesitate to remark upon them; but the under-exposure in many cases, and in some a slaty fog that covers the whole and is particularly conspicuous by artificial light, do not commend themselves to us as good photography.