

A Short Handbook of Oil Analysis. By AUGUSTUS H. GILL, S. B., PH.D., author of 'Gas and Fuel Analysis for Engineers;' Assistant Professor of Oil and Gas Analysis at the Massachusetts Institute of Technology, Boston, Mass. Philadelphia, J. B. Lippincott Company; London, 6 Henrietta Street, Covent Garden. 1898.

This little book is exactly what it professes to be—a short handbook. Yet, it is very seldom that one finds a book that contains more valuable material than is condensed within its one hundred and thirty-six pages. The book is not only very full and complete in itself, but its very extended references converts it into a catalogue of a small library of books and articles upon the subjects treated in its pages. This gives the book a value comparable only to the well known work of Allen, which appeared about ten years ago. In respect to convenient size for the laboratory table Dr. Gill's book is much to be preferred, while a very careful examination has failed to discover the omission of anything of importance, while absence of unnecessary details and the clear and systematic arrangement cannot be too highly commended. The book, too, belongs to that class that is not alone useful to the professional chemist, but is equally so to the practical technologist. It must not, however, be mistaken for a work on the technology of oils, which it is not.

The whole subject of 'Oil Analysis' has been covered so evenly and well that we found no occasion to call attention to particular pages. We commend the book as one that no chemist or technologist can do without.

S. F. PECKHAM.

Zur Kenntniss der Kern und Zelltheilung bei den Sphacelariaceen. Von WALTER T. SWINGLE. Berlin. 1897. Sep.-Abdruck, Pringh. Jahrbücher, B. XXX. H. 2-3, pp. 53, pl. 2.

Mr. Swingle is to be congratulated upon having made a considerable addition to the cytological knowledge of a group, which has received a great deal of attention from investigators. The important results were obtained, without exception, from the apical cell of *Stypocaulon scoparium*. The paper is quite complete historically and morphologically, but derives

its chief interest from the additional light it throws upon much debated questions in cytology.

According to the author, kinoplasm and trophoplasm are not only sharply differentiated in the Sphacelariaceæ, but the trophoplasm manifests also a distinct separation into a peripheral coarsely reticulate portion, and a much more finely reticulate central portion. The marked structural demarcation of the two parts is heightened by the presence of numerous granules in the outer meshes of the coarser portion. The same peculiar granules are found in the finer reticulum, and here and there throughout the cytoplasm, though in reduced number. The significance of this peculiarity of the trophoplasm admits at present of no adequate explanation. One cannot, however, feel quite as certain as the author that it is not an artefact. As for the kinoplasm, it is remarkably distinct and persistent.

The achromatic spindle of *Stypocaulon* is more or less unique in its development. It consists of three sets of fibres, those of an incomplete central spindle, those of the mantle, and certain free fibres which have no equatorial connection. The author concluded that the spindle arises from the intrusion of the kinoplasmic fibres, since the radiations in the kinoplasm decrease concomitantly with the appearance of the achromatic spindle. This might easily happen, however, as Cheviakoff has suggested, by the solution and transfusion of the kinoplasmic substance. The actual intrusion of the fibres of the kinoplasm could only be proved by the observation of the punctation or perforation of the nuclear membrane itself.

The investigation of the nucleolus in *Stypocaulon* furnishes no definite support to any of the multitudinous hypotheses concerning its presence and function. The author rather inclines to the view that the nucleolus may be a special store of organic nutrition for the kinoplasmic elaboration of the achromatic spindle. The centrosomes are permanently present in the kinoplasm, and undergo division regularly. In this connection, it is interesting to note the recently enunciated opinion of Carnoy, to the effect that the nucleoli of the pronuclei of *Ascaris* become the centrosomes, and that there

is, in consequence, no division of the centrosomes.

The cell wall, arising after division, is apparently built upon the walls of those meshes of the reticulum that come to lie in what corresponds to the equatorial plane. From the author's statement, however, it is not improbable that a more or less rudimentary phragmoplast really exists.

Das kleine botanische Practicum. Von EDUARD STRASBURGER. Jena, Gustav Fisher. 1897. Pp. 246, with 121 illustrations.

In the third edition of this excellent handbook, the subject-matter has been largely added to, chiefly on the subjects of microtomy, manipulation and Bacteriaceæ. The remainder of the text is essentially the same as in the second edition. It is quite superfluous to call attention to the originality and authoritative-ness of the text, and to the excellence of the illustrations. The book has been long enough before botanists to be thoroughly and favorably known. It is inexplicable that, with such an adequate text accessible, each year should see the publication of text books which serve to overcrowd an already well-filled oblivion. In all cases it may not be possible, for lack of time, to offer so thorough an elementary course as that outlined in the Practicum. In such instances, it would be practicable to omit a certain amount of detail without detracting from the integrity or thoroughness of the work. At all events, the system is one that, from the kind of training it involves, should be generally in vogue.

FREDERIC E. CLEMENTS.

THE UNIVERSITY OF NEBRASKA.

Stones for Building and Decoration. By GEORGE P. MERRILL, Curator of Geology, U. S. Museum. Second Edition, revised and enlarged. New York, J. Wiley & Sons; London, Chapman & Hall. 1897. 8vo. Pp. ix + 506.

The first edition of this excellent work was based upon the handbook of the same author and his catalogue of the building stones in the United States National Museum at Washington. The treatise here presented consists of the original, with revised and rewritten matter, and well-illustrated text, brought down to date and in various ways improved. Many pages

of new matter appear in the new edition and full-page plates have been interspersed in the text. Part I. consists of a discussion of the distribution, the composition and the character of the building stones of the United States, studied from the points of view of the physicist, of the chemist and of the geologist, as well as of the engineer and the architect. Part II. is devoted to 'Rocks, Quarries and Quarry-Regions,' and presents a detailed account and discussion of the several rocks employed in the arts, their composition, their varieties and their special characteristics. This section of the work is its principal portion, covering about 300 pages. Part III. describes the methods employed in quarrying, dressing and shaping stone, stone-cutting machinery, weathering, testing, protection and preservation. Part IV. consists of appendices of tabulated and other data relating to the valuable qualities of the stones, prices and costs, a list of important stone structures with dates of erection, and a bibliography and glossary. Eighteen figures in the text and nineteen full-page plates fully and handsomely illustrate the work.

The position and experience of the author of this treatise give ample guarantee of its accuracy, and an examination of the text will afford confirmation of this conclusion. It is well planned, well executed and exceptionally complete. The publishers have given it admirable form, a plain but neat and satisfactory binding, the press work and paper are good and the illustrations excellent, as a rule. The book has a good index. It will prove helpful to the architects and engineers of the country whenever important stonework is to be erected.

R. H. T.

SOCIETIES AND ACADEMIES.

ENTOMOLOGICAL SOCIETY OF WASHINGTON.

January 6, 1898: Fourteenth annual meeting. The address of the retiring President, Mr. C. L. Marlatt, was upon the subject of 'Old World Entomology.' The author recounted personal experiences and impressions gained during a four months' European tour, in the course of which matters entomological—and particularly as an applied science—were espe-