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