(upwards of £20) unbound, and three further parts are planned. It will be clear that the cost is almost prohibitive for the private individual, and it may be questioned whether a treatment on a less ambitious scale would not have been more valuable. The need is for a work of a less-expansive character that could be published at a price which would render it accessible to more than libraries and institutions.

The particular part under review deals in the first place with the Cryptophyceæ and Chloromonadineæ, of which no detailed systematic treatment has appeared since that of Pascher in the "Süsswasserflora" (1913). Scherffel's problematical genera *Monomastix* and *Pleuromastix*, the affinities of which are hard to assess, are grouped as a sub-class Monomastigineæ, the remaining Cryptophyceæ forming the sub-class Cryptomonadineæ. The latter are urgently in need of a critical revision, as Pringsheim (1944) has pointed out, and the material brought together by Huber-Pestalozzi will afford a basis for future work on the group. The author provides a useful key to the thirty-two described species of *Cryptomonas*. In the treatment of the Chloromonadineæ no reference is made to recent French work (Chadefaud 1937, Hovasse 1945), especially that relating to *Gonyostomum*, from which better figures than that of Stein of *G. semen* could have been obtained. The author appends to the account of the Chloromonadineæ a discussion on trichocysts which both French authors have studied in some detail. The greater part of the volume is concerned with the important planktonic group Peridinieæ, of which Schiller has comparatively recently (1931) given a detailed systematic account in Rabenhorst's "Kryptogamenflora". The restriction to freshwater species and the provision of detailed keys for such large genera as *Gymnodinium*, *Glenodinium*, and *Peridinium* will make Huber-Pestalozzi's treatment useful to workers on freshwater plankton.

The majority of the 350 illustrations are reproductions and, especially among Cryptophyceæ and Chloromonadineæ, the absence of fresh figures is disappointing. The bulk of the figures are grouped as plates on stiff paper, which must have added to the cost of the work, although most of them could equally well have been reproduced in the text.

F. E. Fritsch

TECHNOLOGY OF ALUMINA PRODUCTION

Tonerde und Aluminium

Ergebnisse und Erfahrungen aus der Betriebspraxis, 1920–1950. Von Dr. Wilhelm Fulda und Dr. Hans Ginsberg. Teil 1: Die Tonerde. Pp. viii+226. (Berlin: Walter de Gruyter und Co., 1951.) 26 D. marks.

THE publisher's notice of this authoritative work states that it is intended to provide what has as yet been lacking—a comprehensive account of the actual working practices of the alumina and aluminium industries. The present volume, on alumina production, certainly fulfils this intention.

While omitting mention of many processes now only of historic interest, it contains much more quantitative information on current operations than did Edwards, Frary and Jeffries's standard work, published in 1930.

After reviewing in detail the properties of European bauxites and to a less extent those of other countries, the book devotes nearly eighty pages to the development in Germany, during a period in which German aluminium production was expanded from about 14,000 tons (in 1920) to 260,000 tons (in 1943), of the classical Bayer process for extracting alumina from bauxite with caustic lye, and its modification the so-called 'tower process'. There follow some fifty pages describing the alternative 'sinter-alumina' process in which the bauxite is heated with sodium carbonate in a rotary furnace; methods of extraction, due to Pedersen and others, in which lime is the extracting agent and still higher temperatures have to be used; and such processes as that due to Haglund, which have as their object the removal of impurities from the bauxite rather than the direct extraction of the alumina itself. The remainder of the book is devoted to processes for extracting alumina from clays and other aluminosilicates.

The book is systematic, essentially practical from the point of view of the chemical engineer, and engagingly clear. It is well provided with flow diagrams and other illustrations. It has behind it the authority of two authors well known in the industry. Dr. W. Fulda died in September 1950; and while the surviving author acknowledges the collaboration of colleagues in the Vereinigte Aluminium–Werke A.G., the book achieves a noteworthy unity of presentation.

All who are concerned with the technology of the primary aluminium industry will welcome this book and will look forward keenly to the appearance of the succeeding volume, which is to deal with the production of the metal.

PRODUCTION OF GLASSHOUSE CROPS

Science and the Glasshouse

By William J. C. Lawrence. Second edition, revised. Pp. xiv+176+4 plates. (Edinburgh and London: Oliver and Boyd, Ltd., 1950.) 15*s*. net.

THIS book is divided into three parts: (1) the John Innes composts, (2) methods of cultivation, and (3) natural illumination in glasshouses, and gives an account of work done at the John Innes Institution on these subjects. Indeed, it is a progress report on experimental work carried out by Mr. Lawrence and his colleagues.

So far as Part 1 is concerned, little need be said; the John Innes composts for seedlings and growing plants are now widely used by growers, and there is no doubt that considerable improvement in plant production has thereby been brought about.

Part 2 deals with several fundamental aspects of plant production, for example, size of pot, firm or loose soil, watering, soil temperature for potting, type of benching in the glasshouse, etc. These are all factors in which tradition has decided the correct way, and tradition dies hard. Moreover, it is probable that tradition will govern many of these factors for some years to come, for to many growers of the 'old school' these new ideas are not welcome. Apart