Die Binnengewässer

Einzeldarstellungen aus der Limnologie und ihren Nachbargebieten. Herausgegeben von Prof. Dr. August Thienemann. Band 16: Das Phytoplankton des Süsswassers, Systematik und Biologie. Von Dr. G. Huber-Pestalozzi. Teil 1: Allgemeiner Teil, Blaualgen, Bakterien, Pilze. Pp. v+342. (Stuttgart: E. Schweizerbart'sche Verlagsbuchhandlung. (Erwin Nägele, 1938.) 42 gold marks.

BRITAIN took the lead at one time in the making of big books of reference in botany and natural history; this was in the days, for example, of Bentham and of Hooker, of the *Challenger* Reports and of the British Museum Catalogues of Birds and of Fishes. But nowadays the Germans seem to have it all their own way, and here, drawing at last to a close, we have the sixteenth volume, or part of it, of the great work on "Die Binnengewässer", or what we have learned to call limnology, which the late Einar Naumann of Lund and Prof. Thienemann of Kiel began to publish a dozen years or so ago.

This last part, by Dr. G. Huber-Pestalozzi, deals with the phytoplankton, or so much of the fresh-water flora as floats or swims; and as the present volume includes neither the diatoms, nor the desmids, nor the Volvocineæ nor many more, there is still a deal to come. In fact we have here only the free-living bacteria and a few fungi and the blue-green algæ or Cyanophyceæ, with a hundred pages of introductory matter thrown in. The account of the Cyanophyceæ covers 150 pages and is very fully illustrated; as a compendium of many important genera, *Nostoc*, *Oscillatoria*, *Anabæna*, *Lyngbya* and the rest, it is all that could be reasonably desired. The introduction deals with many points of general interest. It divides the plankton into plankton proper and the so-called 'neuston'—a term new to us—which means the organisms the peculiar province of which is the surface-film; here various minute plants accumulate, here *Gyrinus* and *Ranatra* skate on top, and here *Scapholeberis* clings on below. A long chapter deals with *Schwebetheorie*, that is to say the conditions of magnitude, form and density which fit the organism for a floating life, and cause or help it to shift its place and depth according to time and season. Here Dr. W. Ostwald's well-known work, and that of other writers on the physical side, is duly dealt with; but this side of the case is by no means easy, and the author is more at home on the other.

Our Wandering Continents:

an Hypothesis of Continental Drifting. By Dr. Alex L. du Toit. Pp. xiii+366. (Edinburgh and London: Messrs. Oliver and Boyd, 1937.) 18*s*. net.

THE author is to be congratulated upon a brave project, the writing of a geological history of the earth in terms of continental drift. He has unrivalled credentials, based upon a special knowledge of South Africa, combined with comparative study of that sub-continent and South America, and with extensive travel in many other lands. His introductory chapters include useful summaries of the writings of Taylor, Baker and Wegener, to mention but a few. Then follows the Palæozoic and Mesozoic story of Gondwana and Laurasia, considered separately. The Carboniferous glaciations and *Glossopteris* flora of the former receive due consideration. More novel is a synthesis of the Samfrau geosyncline, named after South America, South Africa and Australia.

The subsequent history of the lands of the world as a whole is grouped geographically about the great double fold-girdle of Tertiary mountains, which in its southern loop embraces the scattered segments of Gondwana, and in its northern loop, those of Laurasia. Later chapters deal with such topics as oceans, the significance of chemical changes leading to condensation in depth, climatic changes, distribution of plants and animals, geodetic evidence, and, of course, possible causes of continental drift.

Readers should be warned in advance that they will find du Toit's book difficult to digest, and that they may feel affronted by uses that have been made of fragmentary evidence. On the other hand, it is to be hoped that they will have sufficient vision to be grateful to a courageous pioneer. E. B. BAILEY.

Botany for Fun

By Gareth H. Browning. Pp. xii+176. (London: Lindsay Drummond, Ltd., 1938.) 5*s*. net.

THIS delightful book is not intended as a text-book, but is designed to engage the interest of young readers in the study of plant life. With this aim in view, the author has adopted a unique style of writing which forces itself upon the reader so that he almost learns without thinking. Technical terms, though not altogether excluded, are relegated to the background, and though the style of writing is attractively conversational and non-scientific in the technical sense, no one would condemn the author for that. The teaching botanist would agree that such chapter headings as "Magic in the Factory", "Flower-Parents and their Children", "Adventuring into the Outer World" and "Family Gatherings" convey just the right shade of meaning to the child-mind.

It is very difficult to write in this style yet not stray from the path of scientific accuracy; but careful scrutiny shows that the author has succeeded in surmounting this difficulty. We are glad to see, for example, that the author writes of "food *materials* passing up from the roots to the leaves" and of the "stream of *manufactured* food" travelling from the leaves. He even goes so far as to emphasize the important words by using italics. Many botanical texts are guilty of erroneously referring to mineral salts, carbon dioxide, etc., as plant *foods* so that it is very difficult to teach children the essential similarity between plant and animal foods.

The illustrations are good and the interpolation of interesting historic episodes adds much of value to the whole.

Though the author emphasizes that this is not a text-book, we venture to suggest that it might with distinct advantage be adopted in classes of children of about eleven years of age.