fact that no convincing interpretation had previously been offered. What we have in this book is an ingenious but coherent interpretation which, in spite of the necessity for a good deal of imaginative reconstruction and speculation, is, in broad terms, convincing. Moreover, the analysis is always stimulating and could hardly fail to reveal many new insights. I have two main regrets. First, the exorbitant price of the book. At this price one might have expected facsimile reproductions or transcriptions of Harrison's texts as well, which would largely have nullified my second concern: that it is not always easy or even possible to tell from the book alone what is in Harrison's texts and what is speculation or reconstruction. There are some mistakes and misprints, which most readers will have no trouble in spotting and correcting, but which would prove confusing to a reader with little scientific background.

This book is an important contribution to horology and to the history of science. The general reader, who will require only a very elementary background in mathematics and physics to follow the arguments, will also find it fascinating and stimulating. If it does not sell well, it will be because of the price rather than the content. □

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Ecology of plankton

G. E. Fogg

Marine Plankton Ecology. By Paul Bougis. Pp. ix+355. North Holland: Amsterdam and Oxford; American Elsevier: New York, 1976.) Dfl.130; $49.95.

In some ways the ecology of plankton may be simpler than that of terrestrial communities. For most purposes there is only one phase to deal with and the organisms are generally smaller and less complicated than those on land. But apart from the inconvenience, expense and limitations of working at sea, the marine plankton ecologist has the difficulties of investigating events, following each other much more rapidly than in terrestrial situations and in an ever-shifting medium, which may be directly related to others that have taken place thousands of miles away. It is only comparatively recently that the resources needed to deal, even inadequately, with this situation have become available and the writers of textbooks are only just beginning to catch up.

Professor Bougis, who is Director of the Zoological Station at Villefranche sur Mer, has, however, produced an admirable and comprehensive account of this rapidly developing subject. He deals with phytoplankton and zooplankton equally, and with each he begins with a necessarily brief survey of the systematics of the amazing variety of organisms concerned.

For the phytoplankton he devotes chapters to the factors affecting photosynthesis, the nitrogen and phosphorus cycles, other nutrient elements and organic growth factors, enumeration and periodicity, and primary productivity. For the zooplankton he gives accounts of quantitative studies and distribution, vertical distribution and diurnal migration, nutrition, metabolism and energy conversion, and secondary production.

A final chapter considers the place of plankton in the marine ecosystem, touching on its economic importance and possible exploitation. Appendices deal with such diverse topics as the derivation of the Sverdrup equation defining the conditions required for the spring outburst of phytoplankton and the design and construction of plankton nets—information which is not readily obtainable from other textbooks.

With such a broad canvas it is inevitable that some areas should not be as well covered as others and one such is the topic of phytoplankton buoyancy, which is treated simply as a matter of cells remaining afloat in the illuminated surface waters. The possible value of sinking as a means of increasing nutrient uptake, its interaction with wind-induced Langmuir circulation (which is mentioned in relation to zooplankton distribution only), and the possible role of differential rates of sedimentation in determining species succession, are not considered.

The book is well illustrated and the translator has done an excellent job. There is, however, the increasingly common mistake about the plural of flagellum; fluorescence and luminescence are confused; and a unicellular film of ferric hydroxide is referred to when, presumably, a monomolecular film was in mind. There are also quite a few errors that have escaped the proofreader. Nevertheless, these are minor matters and the book will undoubtedly be most useful to students, teachers and research workers in marine biology who have access to a library that can afford to buy it. □

G. E. Fogg, FRS, is Professor of Marine Biology at University College, North Wales, Bangor, UK.

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