

## IDENTIFICATION OF ZOOPLANKTON

Conseil Permanent International pour l'Exploration de la Mer

Fiches d'identification du zooplankton, Nos. 1-17. Publiées sous la direction de Dr. P. Jespersen et F. S. Russell. Pp. 74. (Copenhagen: Andr. Fred. Høst et fils, 1949.) 10 kr.

ACTING on a recommendation made by its Plankton Committee in 1939, the International Council for the Exploration of the Sea has started to issue a series of identification sheets for the zooplankton of the north-western Atlantic. The object of this venture is admirably summarized by Dr. P. Jespersen and Mr. F. S. Russell in their editorial note. "These sheets are not intended to be short cuts to identifications, but they are to prevent unnecessary waste of time and possible introduction of errors of identification by plankton workers, who cannot be specialists in every animal group. The valuable Nordisches Plankton is now out of date for many groups, and it is difficult for a worker to make sure that all the latest literature on each group has been seen. Accordingly these sheets can be regarded as up-to-date guides on the present position in each group with references to the best literature for identification. Since they are issued in loose leaf form it is hoped that it may be possible to issue amendment sheets to keep them up to date." On seeing the sheets one feels confident that this, and more, will certainly be achieved.

So far, seventeen sheets are available, covering the Chaetognatha, Cladocera, Appendicularia, Thaliacea, Ostracoda, and, in part, the Hydromedusæ, Pteropoda and Copepoda; also we have been told by the secretary-general of the International Council that the following are now in the press: ten on Copepoda including one on their nauplii, two on the Hydromedusæ and twelve on the Mysidæ. We may hope that other important ones will soon follow, particularly those on the euphausians, the pelagic larvæ of molluscs, the fish eggs and fish larvæ. These sheets have, in every case, been prepared by a leading authority and, thanks to the excellent format selected, compress a wealth of data into a conveniently small space. The salient points of a concise and essentially practical key are illustrated by line drawings, and references are given to the best works on the description and systematics of each species. A table gives the known distribution of each species in the area, and there is a selected bibliography on the distribution and ecology of every group.

These sheets will not only be of value to planktologists and other marine biologists who have less frequent reason to resort to detailed identification, but also, and particularly so, to the student of invertebrate morphology and the less-experienced worker to whom the subject may be comparatively new. These latter will discover that the bibliographies have been expertly chosen, and that by using them it is possible to become familiar with the various plankton groups without the confusion and discouragement which may well arise from the many contradictory statements to be found if the literature is read without guidance.

The identification sheets should certainly be available in every library. Then, as the series grows, the worker who wishes to recognize his plankton will become well equipped. The expert will have beside

him an up-to-date guide to the literature and readily available data to aid his memory, while the student and the less experienced will be able to select the detail he requires without difficulty or waste of time. Biologists will frequently have reason to be grateful to the International Council, the editors and the many contributors for introducing this excellent source of information.

K. M. RAB

## THE INERT GASES

Handbuch der analytischen Chemie

Herausgegeben von R. Fresenius und G. Jander. Teil 3: Quantitative Bestimmungs- und Trennungsmethoden. Band 8a: Elemente der achten Hauptgruppe, Edelgase: Helium, Neon, Argon, Krypton, Xenon, Radon und Isotope. Bearbeitet von H. Kahle und B. Karlik. Pp. xii+120. (Berlin, Göttingen und Heidelberg: Springer-Verlag, 1949.) 19.60 D. marks.

METHODS of separating or determining different elements of this group have much in common, since they are based mainly on the same chemical property of inertness and on differences in physical properties such as volatility, density and refractivity. It is not surprising, therefore, to find that the practice hitherto adopted in the "Handbuch" of dealing with each element separately has been largely abandoned in the present volume in favour of a more general treatment.

Except for a short description of special procedures, including sampling and measurement of the gases, the scope of the book is strictly confined to methods of detection, separation and quantitative determination. The bulk of the subject-matter, contributed by H. Kahle, is arranged under three main headings: (1) determination of the total content of inert gas in a mixture; (2) methods of determining separate inert gases in an inert gas mixture; and (3) individual treatment of inert gases, classed as light (helium, neon), medium heavy (argon) and heavy (krypton, xenon, radon). The book concludes with a separately indexed section (twenty-one pages) by B. Karlik dealing with radon and its isotopes, thoron and actinon.

The methods are drawn from work published up to 1941 and, in some cases, from unpublished work of H. Kahle himself. A wide field of analysis is covered; but the treatment does not aim at being exhaustive. Rather, a selection is made of the more important methods, particularly with regard to the requirements of industry, for example, the testing of argon and neon for the traces of impurities harmful to their use in electric lamps and neon signs. Methods important in fundamental research, including micro-methods, also receive attention, and among the more recent developments reference is made to the work of O. Hahn and F. Strassmann on the separation and determination of minute traces of radioactive krypton and xenon from uranium fission. Descriptions of some of the methods are brief, but are well supplemented by references to original papers.

Features of the book are the methodical arrangement of the subject-matter and the profusion of line drawings. Because of its essentially practical value, the volume will appeal particularly to the laboratory worker.