includes keys to the identification of the fifty-two genera described from Australia. The next two studies outline the zoogeographical distribution and speciation of fifty-one taxa of anuran Amphibia in south-eastern Australia and the ecological and evolutionary aspects of some anuran life histories. Finally, an account is given of the principal fishes of the Murray–Darling river system.

The concluding section of this book gives some account of the introduced fish species, together with a warning against the further introduction of fish and aquatic invertebrates. The biological consequences of alterations to the environment in response to man's needs and activities are outlined, and a plea is made for an active programme of conservation in Australia, not only for large terrestrial animals, but also for the aquatic fauna, many elements of which are of great scientific interest.

There are many tables and distribution maps and some of these must be criticized. Table 3.3 is unnecessarily complicated and is unintelligible at the point in the text at which it is inserted; the symbols in some figures are too small (Fig. 2.1) and merge with the coastline (Fig. 2.2) while some photographs are poor and not very instructive (Pl. 2.3; Pl. 2.6). These are minor points, however, and should not detract from a book in which there are few errors and which will undoubtedly be of value to all who are interested in aquatic environments.

B. M. GILCHRIST

# ORGANIC NITROGEN COMPOUNDS

## Houben/Weyl. Methoden der Organischen Chemie

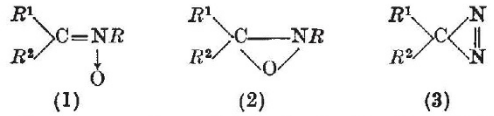
Herausgegeben von Eugen Müller. Unter besonderer Mitwirkung von O. Bayer, H. Meerwein und K. Ziegler. Band X, Teil 4: Stickstoffverbindungen 1/4. Bearbeitet von M. Bauer, B. Eistert, G. Heck, H. Metzger, Eu. Müller, M. Regitz, W. Rundel und H. Schwall. Vierte, völlig neugestaltete Auflage. Pp. xxxix + 1044. (Stuttgart: Georg Thieme Verlag, 1968.) 297 DM.

IT has already been noted (*Nature*, **210**, 58; 1966) that in the new edition of *Methoden der Organischen Chemie*, volumes 10 and 11 are devoted to the preparation and reactions of organic derivatives of nitrogen; volume 10 will ultimately consist of 4 parts, each a considerable and separate book, of which part 3 and now part 4 have appeared. Volume 11 has already appeared as parts 1 and 2, each a massive publication. It should also be noted that the first part of volume 11 deals solely with amines, and thus covers one of the largest and most widely handled classes of organic nitrogen compounds. Furthermore, volume 10, part 3, deals with aromatic diazonium salts and with diarylazo compounds, and thus covers what must be on the technical side the more important derivatives of the amines as a class.

These points have some bearing on the contents of volume 10, part 4, now under review. This volume deals with oximes, nitrones, oxaziridines (or isonitrones), aliphatic diazo compounds and finally diazirines.

The section on oximes, by Dr H. Metzger, gives an admirable and very full account of the various reactions which may be used for the preparation of oximes, and the wide range of types of compounds to which these reactions apply. The 215 pages devoted to this portion must constitute the most up-to-date and the most detailed account available of the preparation of oximes. The second portion is devoted to the reactions of oximes. Here a factor enters which is inevitable in this series; namely, that certain material which should logically enter at this stage has already been described in other connexions in earlier volumes. Thus the important subject of the Beckmann rearrangement of oximes to acylamides has arisen in previous volumes and is now briefly referred to in four pages, which are largely filled with more recent literature references. Similarly, the reduction of oximes is discussed in two pages, which again consist largely of modern references. Because the reduction of oximes in most cases gives rise to amines, the preparation of which has already been exhaustively discussed in volume 11, part 1, a full discussion in the current volume would be redundant. In spite of these occasional abbreviated passages, the account of the reactions of oximes runs to 190 pages, and includes a very valuable account of metal "salts" of oximes and particularly chelated metallic derivatives. The many hundreds of references are supplemented by a bibliography of review articles and of other works in which special aspects of oxime chemistry have been discussed.

A full account by Dr W. Rundel is given of the nitrones (1), which can be regarded as N-substituted derivatives of the ;NH isomeric form of oximes, and of the oxaziridines (2), which possess the central 3-membered ring system, and the diazirines (3), by Dr M. Bauer and Professor E. Müller.



(1) (2) (3)

The largest section of this book, by Drs B. Eistert, M. Regitz, G. Heck and H. Schwall, is that on aliphatic diazo compounds, which runs to 420 pages, and which, like several sections in various volumes of this edition, could have been published separately as a substantial and very valuable work in its own right. Most organic chemists, when looking through this section, will be surprised at the present volume and variety of our knowledge of the chemistry of aliphatic diazo compounds.

In accordance with the general practice adopted in the many volumes of this new edition, this volume contains many tables, each giving, for example, the known compounds to which a particular reaction applies, the general method used, and the final product, with in each case the particular literature references to be found below the table. Furthermore, a specific reaction is often illustrated by concise experimental details of an actual preparation in which this reaction is utilized.

A review, in the true sense of the word, of a volume of this size, so compactly filled with factual information, is hardly possible. It is a book of very high quality and one which will be of immense help to organic chemists working in these various fields.

The excellent arrangement and nature of the type employed give (as in all these volumes) a remarkably clear and fresh appearance to every page, so that reading involves the minimum of strain.

F. G. MANN

# GAS CHROMATOGRAPHY

## The Practice of Gas Chromatography

Edited by Leslie S. Ettre and Albert Zlatkis. Pp. xv + 591. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, 1967.) 140*s*.

As the title indicates, the object of this book is to provide a comprehensive account of all aspects of practical gas chromatography for those engaged in analytical chemistry. Although generally it succeeds, it is a little surprising to find scant attention given to preparative work.

The book consists of ten chapters each dealing with particular aspects of the subject written by an author who is an authority in his field. The first chapter, which deals with the setting up and operation of a gas chromatograph, will be particularly useful to newcomers to the subject. This is also true of the following chapter on the mobile phase, where questions of choice of gas, flow and pressure conditions are discussed.

Preparation of volatile derivatives of materials which are themselves non-volatile, or present problems of tailing,