

The book provides a very convenient and useful collection of many modern references to methods for the determination of trace elements in the petroleum industry. For those who are inexperienced in this field, the recommended methods should be extremely valuable, but they should not be new, except perhaps in detail, to the experienced petroleum analyst.

Chapter 1, "Introduction", provides information on the necessity for trace analysis, and the first half of Chapter 2 (28 pp.), on "Principles and Practices", is devoted to matters of interest to all trace analysts, for example, sampling, contamination, reagent purity, storage of solutions, and blank determinations. The remainder of the chapter deals with decomposition techniques, separations and finishing techniques. The following eleven chapters, at an average of six pages each, deal with the determination of arsenic, chlorine and bromine, copper, iron, lead, nickel, nitrogen, phosphorus, sodium and potassium, sulphur and vanadium. The reason for the presence and the analysis of each element is discussed and applicable methods are reviewed and well referenced. The author gives his recommended method for each element and all the methods are based on chemical procedures with the intention that they can be carried out by laboratories which are only modestly equipped. Some instrumentation is necessary, of course, in the form of spectrophotometers, flame photometers, etc.

In these chapters it is perhaps a little surprising to find the author, aware of the usefulness of benzene and xylene sulphonic acids, recommending the ashing of petroleum materials with sulphuric acid for the determination of iron, nickel and vanadium. All the recommended procedures quoted are complete in themselves, apart from that for sulphur, which requires reference to another publication.

The final chapter (19 pp.) reviews methods for determining eleven elements (barium, boron, calcium, cobalt, fluorine, magnesium, manganese, molybdenum, oxygen, silicon and zinc), which are less frequently determined in trace amounts, but no recommended procedures are given. The index, considering the size of the book, is adequate.

E. THORNTON

#### Tsetse Flies in Northern Nigeria

A Handbook for Junior Control Staff. By Howell Davies. Pp. 211. (Zaria, N. Nigeria: Gaskiya Corporation, 1963.) 20s.

THIS book has been expressly written as a pocket instruction manual for African tsetse control staff, and as such is outstandingly good and a model of its kind; Howell Davies has clearly given a great deal of thought to how a large body of information can be simply and attractively presented to his junior African reader, not only in a way that is easily readable but also easily memorized.

Although primarily concerned with Northern Nigerian species, this book should commend itself to any layman wanting to get quickly to the facts about tsetse flies in general, for a wealth of information is given which is easily tapped by means of the excellent index. Each fact is given very clearly in concise numbered paragraphs, and almost every aspect of tsetse flies is covered—including their recognition, bionomics, disease transmission, control and how to carry out tsetse surveys. The main text is augmented with useful glossaries giving the local Hausa names of trees and animals often associated with tsetse in their natural environment, and simple drawings help the reader to picture things not easily described in words. Sketches of the spoor of large game animals are included, perhaps rather optimistically in face of the extreme rarity of such animals as elephant and giraffe in Northern Nigeria. Altogether an admirable little book, but, unfortunately, very poorly bound.

R. W. CROSSKEY

#### Physiologie, Comportement et Écologie des Acridiens en Rapport avec la Phase.

(Colloques Internationaux du Centre National de la Recherche Scientifique, No. 114, Paris, 9-13 Avril, 1962.) Pp. 342. (Paris: Éditions du Centre National de la Recherche Scientifique, 1962.) n.p.

THIS volume presents the proceedings of the five-day colloquium on the physiology, behaviour and ecology of locusts in relation to phase held in Paris during April 1962. Eighteen speakers from widely scattered countries gave papers on a wide variety of topics within these three aspects of locust biology. M. J. Norris, M. Papillon, M. Verdier, P. Joly, J. de Wilde (and G. B. Staal) and K. C. Highnam spoke on physiology, P. E. Ellis, P. T. Haskell and C. E. E. Rungs on behaviour, and R. C. Rainey, Z. Waloff, E. M. Shumakov, P. E. Kohler and H. A. F. Lea on ecology; M. L. Roonwal, J. S. Kennedy, R. E. Blackith and F. O. Albrecht spoke on more general topics within the subject of the colloquium. The colloquium was convened by F. O. Albrecht, under the presidency of Sir Boris Uvarov.

The papers are published in the language of their delivery, with French and English summaries, except for two which appear in two languages. The discussions are entirely in French, having been translated where necessary. The colloquium has served an invaluable purpose in bringing together a large number of important papers on topics within its broad subject, and this volume will be not only of great value to all those engaged in locust research, but also useful to workers on the physiology, behaviour and ecology of insects generally.

D. R. RAGGE

#### Méthodes Statistiques à l'Usage des Médecins et des Biologistes

Par Daniel Schwartz. Pp. 290. (Paris: Éditions Médicales Flammarion, 1963.) 60 francs.

SEVERAL books on medical applications of statistical methods have appeared recently in languages other than English, and Dr. Schwartz's book is an elegant addition to their number. The author's treatment of basic statistical methodology is rather fuller than that in Bradford Hill's *Principles of Medical Statistics*, and includes brief descriptions of one- and two-way analysis of variance and of multiple correlation. Examples are drawn from clinical and laboratory research, but there is no discussion of vital statistics or of the problems of data collection and processing. The exposition is non-mathematical and the basic concepts are carefully explained. The book as a whole has a slightly academic flavour, but this may be because the author has deliberately restricted its scope. Discussions of clinical trials, aetiological investigations, biological assays and other topics are promised for further volumes.

P. ARMITAGE

#### La Chromatographie

Par Prof. L. Savidan. 2<sup>e</sup> Edition. (Monographies Dunod.) Pp. x+115. (Paris: Dunod, 1963.) 9.60 francs.

THIS extremely brief volume gives, in French, an account of all aspects of chromatography at the lowest possible level. The brevity of the treatment may be judged from the fact that the numerous techniques of paper and film chromatography are dealt with in eleven pages and the whole of gas chromatography in twenty more. The material is clearly presented but is in most instances rather dated. The only gas chromatographic apparatus illustrated, for example, dates from 1953. As an introduction to the subject the book would prove useful, although students in Britain would find considerably better value in the several introductory books available in English.

J. H. PURNELL