

Colloque sur l'Acoustique des Orthoptères, Jouy-en-Josas (5-8 Avril, 1954)

Annales de l'Institut National de la Recherche Agronomique. Série C: Annales des Épiphyties. Par René-Guy Busnel. Pp. 448. (5^e Année (trimestriel); Numéro hors Série.) (Paris: Institut National de la Recherche Agronomique, 1955.)

ALL the papers presented at the symposium on the acoustics of Orthoptera, held in France in April 1954, together with the subsequent discussions, have now been published as a supplementary volume in series C of the "Annales des Épiphyties". The meeting has already been reported in these columns by Prof. R. J. Pumphrey (*Nature*, 173, 1219; 1954), and thus it is only necessary to direct attention to certain features of the printed work.

The volume is divided into three sections: definitions, methods and techniques; acoustic emission of Orthoptera; and acoustic reception and behaviour. Of the seven papers comprising the first section, the one of most importance is that by S. Klein describing the ionic loudspeaker, a new tool of great interest in biological acoustics. The second section comprises ten papers on sound emission ranging from morphological description of the stridulatory apparatus to physical analysis of the sound, and indicates the magnitude of the problem from the physical point of view. The third section is the most important, containing in its six papers reviews by Prof. W. Jacobs and Prof. R. J. Pumphrey on behaviour and by Prof. H. Autrum on sense physiology. This latter paper emphasizes the paucity of knowledge of the acoustic receptors of the Orthoptera. Prof. Jacobs's paper treats the subject of the classification and analysis of the acoustic behaviour of Orthoptera by the analytical methods of Lorenz and Tinbergen, while Prof. Pumphrey stresses the need for examination of the functional importance of the phenomena.

The book will be valuable to workers as a reference to the main outlines of the problem, representing as it does preliminary work in this interesting field.

P. T. HASKELL

Minerals for Atomic Energy

A Guide to Exploration for Uranium, Thorium, and Beryllium. By Robert D. Nininger. Pp. xii+367. (New York: D. Van Nostrand Company, Inc.; London: Macmillan and Co., Ltd., 1954.) 55s. net.

THIS is an authoritative handbook written primarily for professional and amateur prospectors. The text is in three parts, with sixteen appendixes. Part 1 is a description of the more important uranium, thorium and beryllium minerals; Part 2 a survey of the known producing-areas of the world and of potentially favourable localities; and Part 3 a review of prospecting techniques with advice on the evaluation of prospects. The appendixes include mineralogical identification tables, a summary of the laws and regulations applying to prospecting in the United States and the British Commonwealth, and information on prices currently being paid for uranium ores and concentrates.

The search for uranium to-day is so intense that, even though it is little more than a year since the text of Nininger's book went to the publishers, the emphasis he gives to the potentialities of vein-type deposits as the future producers of uranium is already out-dated. It is now apparent that, as has been the case with copper and other minerals, large bodies of low-grade ore capable of being worked on

a vast scale will provide the bulk of the uranium of future years.

Typographical errors are infrequent and rarely cause confusion, but irregularities such as the use of 'thucholite' as a mineral species, 'columbium' in preference to niobium and the loose usage of 'secondary' (p. 42) might have been avoided. These minor errors fortunately detract little from the usefulness of the book. It is undoubtedly the most comprehensive publication of its kind and is deservedly in world-wide demand.

S. H. U. BOWIE

The Biochemistry of Vitamin B₁₂

A Symposium held at The London School of Hygiene and Tropical Medicine on 19 February 1955. Organized and Edited by R. T. Williams. (Biochemical Society Symposia, No. 13.) Pp. v+123. (Cambridge: At the University Press, 1955.) Paper, 13s. 6d. net; cloth, 20s. net.

AT the meeting in Oxford in 1911 of the newly formed Biochemical Club, now the Biochemical Society, it was proposed to hold meetings for the discussion of special subjects. At the first meeting in December 1914, under the chairmanship of Prof. A. Harden, micro-methods of analysis were demonstrated—truly a prophetic and apt beginning by biochemical pioneers. Further meetings followed at irregular intervals until 1928; after a gap of thirteen years they were resumed, as symposia, in 1941.

In 1948 the Biochemical Society began publishing full reports of these symposia, and now, ably organized and edited by Prof. R. T. Williams, the meetings and their reports are a well-established feature of biochemical progress. A welcome is to be extended to the appearance of the latest volume, the thirteenth of the series, devoted to vitamin B₁₂. Its subject-matter was reviewed earlier in *Nature* (175, 185; 1955) and need not be repeated here.

The symposium was held in February, 1955; barely five months later, an international team of workers, headed by Dr. Dorothy Crowfoot Hodgkin in Oxford and Sir Alexander Todd in Cambridge, announced the complete structural formula of vitamin B₁₂ (see *Nature*, 176, 325; 1955). It was a happy thought to print that formula in the volume, the last to be produced by Prof. Williams, who after long service is retiring from the editorship of the symposia. He takes with him the thanks and good wishes of all biochemists.

Compounds with Condensed Thiophene Rings

By Howard B. Hartough and S. L. Meisel. (The Chemistry of Heterocyclic Compounds: a Series of Monographs, Vol. 7.) Pp. xv+515. (New York: Interscience Publishers, Inc.; London: Interscience Publishers, Ltd., 1954.) 16.50 dollars.

THIS volume is one of a pair as well as one of a series, for it is the complement of an earlier volume by H. B. Hartough on uncondensed thiophenes. The ramifications of thiophene chemistry and its recent rapid development explain the need for two volumes to accommodate a survey which is at once comprehensive, critical and readable.

The present volume begins with a discussion of orientation in the substitution reactions of furan, thiophene and their benzo-derivatives: this touches on problems which are still incompletely resolved and extend beyond the chemistry of thiophenes. Subsequent chapters contain a systematic account of thianaphthenes, thioindigo, dibenzothiophenes and polycyclic thiophenes, including those in which