

Microdiffusion Analysis and Volumetric Error

By Prof. Edward J. Conway. Revised edition. Pp. xix+357. (London: Crosby Lockwood and Son, Ltd., 1947.) 21s. net.

MICRO-DIFFUSION analysis represents a real advance in modern analytical technique. It seems strange, in fact, that the underlying principle of allowing the gaseous product of a reaction to diffuse, in a closed chamber, into a suitable absorbent or reactant should not have been used more extensively in analytical procedures at a much earlier date. Absorption of gases into appropriate reactants by distillation and aeration methods is, of course, the basis of many well-known, and important, chemical and biochemical methods of analysis, but the methods are usually tedious and extravagant in apparatus and material. Conway's technique involves the use of a simple and inexpensive glass apparatus (termed the 'Unit') consisting of an inner and outer chamber. The gaseous product of a reaction (for example, ammonia, volatile amines, carbon dioxide, acetaldehyde) passes from one chamber, where the gas exerts a certain tension, into an absorbent in the second chamber, where the tension approaches zero. Analyses are made of the contents of the second chamber, and the accuracy is limited only by the accuracy of delivering and titrating fluid volumes of the order of 1 ml. Conway claims that the method appears to be the "simplest possible consistent with the maximum attainable accuracy in the handling of micro-volumes". The technique has been adopted for analyses of ammonia, amides and amines, adenosine and adenosine derivatives, halogens, alcohol, acetone, lactic acid and glucose, carbon monoxide and carbon dioxide. It may be used also in the estimations of enzyme activities.

Conway's book describes his 'Unit', the various physico-chemical factors involved in diffusion techniques, the micro-pipettes and burettes required and the errors involved in their use. It gives details of the analytical methods involving the micro-diffusion technique which have now been adopted in many laboratories, and it has a most valuable section on the errors encountered in volumetric titrations. It has a good bibliography, and is well illustrated and produced. It is a book which should be in the hands of most biochemists and clinicians.

Archæology and Society

By Grahame Clark. Second edition, revised. Pp. xv+222+24 plates. (London: Methuen and Co., Ltd., 1947.) 10s. 6d. net.

THIS is a welcome new edition of a book which in October 1939 found a rapid sale, and should certainly do so now. It is one of the best and most readable short introductions to archæology in general, and though much in it has needed no revision, Dr. Clark has related his themes to their present-day setting with sound judgment. Archæology studies how men lived in the past: in partnership with documentary history if available, but in any event with confidence that it can do much that its partner cannot, in particular, of course, in the study of pre-historic times. This does not make it in itself altogether a science; yet it owes its modern precision largely to its growing capacity to collaborate with natural sciences, in the application of their techniques to the study of man's past doings. In that matter Dr. Clark at Cambridge has himself long been a leader, and this gives especial value here to his

chapters on archæological discovery, preservation, excavation and chronology. Finally, too, he gives us some excellent plain speaking on the all-important 'social relations' of his subject: research must be kept free of perversion by nationalism, and devoted to the honest pursuit of historical truth.

C. F. C. HAWKES

Faraday's Encyclopedia of Hydrocarbon Compounds

(Covering the Literature up to January 1st, 1947). Compiled by Dr. Joseph Escott Faraday. Vol. 4: C₉. Pp. lxxxviii+448. (Manchester: Chemindex, Ltd., 1947.) £5 10s.

DR. FARADAY, in accord with his promise, now presents us with volume 4 of his encyclopedia of hydrocarbons; the author and his publishers are to be heartily commended on being able to keep such a promise in these difficult times. The present volume deals with the C₉ compounds up to January 1, 1947, and follows closely the lines of the previous parts, now so well known to organic chemists.

It is stated in the foreword that future volumes will contain the Dyson cipher of the compounds described: this will greatly increase the value of the work if and when the Dyson cipher becomes widely used.

It came as a slight surprise to the reviewer to find indane called 1:2-trimethylane-benzene, and indene, 1:2-trimethylene-(7)-benzene; on reflexion, this possibly appears logical, but it will surely be some time before 1:3-tribromopropane is called trimethylane dibromide, and surely the group >CH₂ is methylene, although perhaps this term should be reserved for =CH₂. Hydrindane, which might be expected to be 1:2-trimethylane-cyclohexane, is bicyclo-hexane-(1,2)-pentane.

The reviewer is, of course, well aware of the difficulties of systematic nomenclature, and the above remarks cannot be taken as adverse criticism.

The Yearbook of the Universities of the Empire, 1947

Published for the Universities Bureau of the British Empire. Pp. xxxi+1098. (London: G. Bell and Sons, Ltd., 1947.) 21s. net.

THE usefulness of this valuable reference book is attested by the sorry condition to which the last issue, that dated 1940, must have been reduced in any institution or department in touch with university affairs. The war-time Supplement issued in 1941 carried on the information for but a short space, and it has been necessary to wait six years before the complete data relating to the staffs of the universities of the British Empire could be made available once more. Even now, due to the rapid expansion taking place in the universities themselves, and also to the longer time now required for printing such a book, it is not claimed that the information is up to date in the sense it used to be. The new volume contains about a hundred pages more than that for 1940—an indication of the growth of the universities that has taken place.

As before, the information under each university includes a directory of the officers and staff, general information and reports of events of outstanding interest during the previous year. There are appendices on the qualifications for admission to a first degree, statistics of foreign students in British universities, general conditions in American universities, and Anglo-American professorships.