

It is a pity that these defects detract from an otherwise concise and well-written book. A clear picture, not too cluttered with detail, is provided of the whole field; for readers requiring more detailed treatments, adequate references are provided. The layout is good and fortunately the proof reading has been done efficiently.

A. E. BROWN

Textbook of Organic Chemistry

By Carl R. Noller. Third edition. Pp. vii+760. (Philadelphia and London: W. B. Saunders Company, 1966.) 70s.

A TEXT-BOOK of organic chemistry should be a place where a student can look things up—such as the Wittig reaction or the chemistry of naphthalene; it should be a place to stumble on things he did not know before; ideally it should also provide a balanced and comprehensive digest of the subject. On the first two counts, Noller's *Textbook* is useful (it is a condensed and therefore cheaper version of the author's *Chemistry of Organic Compounds*, which is, of course, even more useful for those who can afford it).

The student will find at least a mention of most of the reactions he will need; he will find very many passages in small print relating the laboratory chemistry to that of important industrial materials; he will also find discussions under most of the traditional headings—functional groups, conformation, optical activity, etc. Mechanisms and infra-red spectroscopy are integrated with the text, with other spectroscopic methods relegated to a later chapter. Some points are open to criticism: cyclic and acyclic aliphatic chemistry has been separated, curly arrows are inconsistently (reluctantly?) and therefore unconvincingly used; structural diagrams of the skeletal type are used for aromatic compounds but only occasionally for others; the discussions of aromaticity, of photochemistry, and of "valence tautomerism" are shorter than one might expect in view of the current interest in these subjects; fish-hook arrows are not used for radical or even mass spectrometer reactions. It is unfortunate, too, that the molecular orbital theory is very inadequately presented and scarcely ever used, not even for benzene, for example.

These defects are symptomatic of the limitations of the book—a student who used it alone would be seriously handicapped. Noller remains a worthy standard but rather unexciting text. It is good value for money, but the bigger books are better.

IAN FLEMING

Gas Chromatography of Steroids in Biological Fluids

Edited by Mortimer B. Lipsett. (Proceedings of the Workshop on Gas-Liquid Chromatography of Steroids in Biological Fluids, held February 25–27, 1964, Warrenton, Virginia.) Pp. xix+315. (New York: Plenum Press, 1965.) \$12.50.

This volume is a collection of thirty research reports, being the proceedings of the workshop on "Gas Liquid Chromatography of Steroids in Biological Fluids", held in 1965 at Warrenton, Virginia.

Because of the complexity of structure and non-volatile nature of steroids, the present methods of analysis of these materials by gas liquid chromatography must be regarded as somewhat tentative. Many of the papers in this volume are, however, written by pioneers in this field and an attempt has been made to describe in detail techniques for the preparation of suitable columns, so essential if satisfactory results are to be achieved. The selection of a suitable support and liquid phase is emphasized in most papers, but the reader unfamiliar with present commercial catalogues may be confused by the variety of materials referred to only by trade or code names.

The book is divided into four sections dealing with the different classes of steroids (ketosteroids, corticoids, progestins, oestrogens) with a final section on the practical

aspects of gas liquid chromatography. Each of the papers is well illustrated by means of typical chromatograms and tables of retention data and quantitative recoveries. It is noted that preparation of volatile and less polar derivatives often facilitates analysis by reducing the temperature required for elution, reducing adsorption losses which are often considerable on the small amounts of sample available, and improving peak shape for area measurement. The techniques referred to are not confined to gas liquid chromatography, and thin layer chromatography is often used as a preliminary "clean-up" procedure, while ultra-violet adsorption is useful for identification purposes. Discussion material is included at the end of each section.

It is regrettable that this useful volume is marred by a number of trivial but irritating typographical errors and that the eighty-three item index is grossly inadequate for so comprehensive a treatise. In spite of these shortcomings, there is no comparable work in this field of study and it is particularly recommended to biochemists new to the field of gas liquid chromatography.

J. F. PALFRAMAN

Treatise on Analytical Chemistry

Edited by I. M. Kolthoff and Philip J. Elving. Part 2, Vol. 12: Analytical Chemistry of Inorganic and Organic Compounds. Pp. xvi+383. (New York and London: Interscience Publishers, a Division of John Wiley and Sons, 1965.) 113s.

THIS volume is one of many in a comprehensive treatise on analytical chemistry. The six sections have been contributed by a total of eight authors and are, therefore, varied in style, treatment and appraisal of the material. The subjects included are the determinations of oxygen, sulphur, fluorine, boron, silicon and "other elements".

The various sections are, in general, critical reviews of the field of activity and where possible the practice of presenting preferred methods is to be applauded, although one finds it difficult to reconcile the use of an automatic colorimetric finish in the determination of fluoride with the lengthy preliminary procedure necessary for preparation of samples. The value of such a set of reviews is that they provide a fairly comprehensive survey of "the state of the art" at the time of writing and for most purposes additional literature surveys may be restricted to the past three or four years.

R. SAWYER

Commonwealth Universities Yearbook 1966

A Directory to the Universities of the Commonwealth and the Handbook of Their Association. Pp. xxxii+2496. (London: The Association of Commonwealth Universities, 1966.) 126s.; \$18.

THE 1966 edition of the *Commonwealth Universities Yearbook* is the forty-third to be published since it first made an appearance in 1914. The volume is not greatly changed from previous years, but contains more details about entrance requirements and contents of courses. Brief country by country introductions have been contributed to amplify and explain these new details. This additional information will be particularly useful for graduates contemplating a postgraduate course in a Commonwealth University, and will satisfy the demand of the 1964 Commonwealth Education Conference for more information on which comparison of degrees in different countries could be based.

The expansion of the University section, which contains twenty-seven new institutions, reflects the growth of higher education throughout the Commonwealth. The two main indexes are supplemented by seventeen other indexes, tables and lists, which make the use of the volume comparatively simple. The *Yearbook* remains a vital source of information for all those concerned with higher education in Commonwealth countries.

N. HAWKES