

connexion with the performance of the modern engine, particularly in aeroplanes at high speeds. Indeed, some of the more daring experts predict the advent of a day when crude oil is first cracked to gas and the fragments reunited in a controlled manner to form high-grade products.

(3) In the United States, Carleton Ellis is an equally prolific writer, and vol. 2 of his "Chemistry of Petroleum Derivatives" appears four years after vol. 1. It is very long and contains a wealth of information in fifty-four chapters. With the industry greedy to make use of his discoveries, the chemist has achieved much in this field and it

would make an interesting task, far too lengthy to undertake here, to contrast the state of knowledge relating to the hydrocarbons forty years ago and to-day. It is possible even to suggest that Mr. Henry Ford, when he made the automobile available to everyone, unknowingly inspired even more chemical research than engineering development. To-day this is going on faster than ever, partly because there is no knowing which particular line of work may become a major technical development in the near future.

Such a book as this saves hundreds of hours of valuable time to the worker, and in this way accelerates the tempo of new work.

Microchemistry

(1) *Qualitative Analyse mit Hilfe von Tüpfelreaktionen* :

Theoretische Grundlagen, Praktische Ausführung und Anwendung. Von Dr. Fritz Feigl. Dritte neu bearbeitete Auflage. Pp. xii + 554. (Leipzig : Akademische Verlagsgesellschaft, m.b.H., 1938.) 30 gold marks.

(2) *An Introduction to Microchemical Methods* : for Senior Students of Chemistry. By Dr. Cecil L. Wilson. Pp. xi + 196. (London : Methuen and Co., Ltd., 1938.) 7s. 6d. net.

(1) **T**HE popularity of spot methods of analysis is evident not only from the increasing number of text-books dealing with this section of microchemistry but, more particularly, from the fact that in the course of seven years three editions of Prof. Feigl's authoritative treatise have been called for, while, in addition, there have been English and Russian translations. To each edition subsequent to the first there have been made numerous additions, and this third German edition contains many new tests, some of which have not hitherto been published. The theoretical part of the book has also been enlarged, not only by the amplification of many of the original chapters, but also by the inclusion of chapters dealing with fluorescent analysis and spot tests, and the influence of substitution on solubility.

In the practical section, drop reactions are given for the first time for germanium, platinum, indium, gallium, lithium and caesium, and for hydrazoic acid, while the chapter on the systematic investigation of inorganic mixtures has been expanded by the inclusion of preliminary tests for the detection of anions. To the organic compounds and radicals

dealt with in the second edition (reviewed in *NATURE*, 136, 89; 1935), there have now been added schemes for the detection of formaldehyde, methyl alcohol, *p*-phenylenediamine, phosgene, aromatic *m*-nitro compounds, oximes and hydroxamic acids, acid amides and nitriles, pyrrole derivatives, and α -amino acids. A number of new applications of spot tests is also given.

In order that the size of the book should not be unduly increased, space has been saved by omitting the preparation of reagents and by mentioning only briefly those tests which are less sensitive or well known.

(2) This interesting, although somewhat ambitious text-book, is meant to serve as an introduction to microchemistry, and is intended primarily for senior students in chemistry. With the exception of quantitative organic analysis, it treats of all the usual sections of the new science, such as chemical microscopy, the use of the polarizing microscope, spot tests, inorganic qualitative and quantitative analysis, organic qualitative analysis, colorimetry, photomicrography, and spectroscopy. It is obvious that in such a small compass the author can be but briefly descriptive, that practically all theoretical treatment must be omitted, and that the number of examples provided must be limited. Nevertheless, enough is given to illustrate the various methods, and to enable the student to acquire sufficient confidence and skill to permit him to make effective use of more advanced text-books.

Although much is compressed into a little space, the monograph is clearly written, and is easy to read, while the text is effectively illustrated by numerous figures and photomicrographs.

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