The principal lines in the atomic spectra of the elements are first measured in the visible region, the Hilger constant deviation instrument being instanced as very suitable. The student then passes on to study series of lines in the ultra-violet spectra of elements, and a good knowledge of atomic structure is presumed. Electronic and rotation spectra come next, whilst the sixth experiment deals with the absorption spectra of gaseous molecules, notably hydrogen iodide, chlorine, sulphur dioxide and oxides of nitrogen. One would have liked to see also a study of the absorption spectra of rare earth salt solutions included, in view of the increased attention now being given to this branch of the subject. Perhaps the author will bear this in mind for future editions, which we feel sure will be required. The two last experiments deal with predissociation spectra and the structure of an infra-red absorption band.

On the whole, the experiments have been well selected. The book is tastefully got up, the type and diagrams are clear, whilst the eight photographs have been very beautifully reproduced. Any student who conscientiously completes the course of instruction may be regarded as possessing a sound knowledge of the elements of practical chemical spectroscopy. J. N. F.

The Oxidation States of the Elements and their Potentials in Aqueous Solutions

By Prof. Wendell M. Latimer. Pp. xiv+352. (New York: Prentice-Hall, Inc., 1938.) 3 dollars.

THE contents of Prof. Latimer's book are much broader than might be inferred from the title. Besides giving all the available information on oxidation-reduction potentials in aqueous solutions, carefully and critically sifted and presented on a uniform plan, it includes a great deal of numerical data based on thermodynamic calculations as applied to reactions which are not directly amenable to electrometric measurement. The volume will be extremely valuable to many workers—chemists, physicists and biologists—and it may be cordially recommended to their attention. It is well printed, strongly bound, and very moderately priced.

Introductory Qualitative Analysis

By Prof. Warren C. Vosburgh. Revised edition. Pp. vii+222. (New York: The Macmillan Company, 1938.) 10*s*. net.

"INTRODUCTORY Qualitative Analysis", a revised edition of Cornog and Vosburgh's book under the same title, is an elementary laboratory manual primarily intended for students of a particular university in the United States. The detailed practical instructions, suitable however for general use, include directions for analytical work on a semi-micro scale. Since the author states that qualitative analysis on this modified scale has been carried out at Duke University during the past four years, he might well have taken the bold step of abandoning ordinary scale directions entirely in favour of the new micro methods.

The theoretical part of the book, providing explanatory matter to be read contemporaneously with the practical exercises, covers the ground adequately and includes general chapters on electrolytic dissociation, chemical equilibrium and the theory of precipitation, in addition to a chapter dealing more particularly with the reactions used in qualitative analysis. It appears a defect that only the theory of complete ionic dissociation is presented, but, in general, the explanatory matter is treated with brevity and clearness.

Engineering

Stream and Channel Flow (Hydraulic Graphs and Tables)

By E. E. Morgan. Pp. xxii+240. (London: Chapman and Hall, Ltd., 1938.) 25*s*. net.

THIS manual is a convenient compendium of hydraulic graphs and tables for stream and channel flow, calculated from a modification of Manning's formula:

$$v = M\sqrt[3]{R^2}.\ \sqrt{S},$$

in which v is velocity of flow in feet per second; R, the hydraulic mean depth; and S, the sine of the angle of slope. M is the coefficient of roughness, corresponding to C, the coefficient of roughness in the Chezy formula, $v = C\sqrt{RS}$, which assumes so complex a form in the formula of Ganguillet and Kutter. The reasons for the adoption of the Manning formula, in preference to those of four other prominent authorities, are set out in Chapter xvi. The whole subject of velocity and discharge multipliers is examined at considerable length. The book is devised for ready reference with marginal finger cuts and a central subject indicator. There is also an index. B. C.

Cement and Concrete

By Rahel Friedland. (Written in Hebrew.) Pp. xii+276. (Haifa: Hebrew Technical Institute, 1939.)

THIS book is claimed to be the first Hebrew text-book in its own field, and will answer a real need in Palestine's rapidly developing building industry. It is written by a member of the staff of the Hebrew Technical Institute, Haifa, presumably as a text-book for its own students. Its style and lay-out are simple and straightforward, and the importance of giving adequate attention to industrial application and practice is fully realized.

Part 1 deals with cement, and is mainly devoted to a consideration of Portland cement; mixed, aluminium, and special cements are dealt with briefly, and the corrosion of cement by acids, alkalis and salts discussed. In each case, the composition, manufacture, physical and chemical properties and methods of testing are adequately described.

Part 2 is concerned with concrete, and chiefly with the composition and properties of concrete, particle size and its relation to the quality of the concrete,