by numerous neat diagrams, of the theory underlying the stability of the complexes and the titrations. The use of dyes as metal-indicators arose from a chance observation made when hard tap-water containing calcium was being employed for washing vessels in which a complexone and murexide had been used. (The chance observation would probably have been wasted had it not been made by the eye of a genius.) The indicators are so sensitive that end-points are very sharp even with 0·01 *M*-titrants.

The use of masking agents, enabling mixtures to be titrated, is fully explained, as is also the preparation of the necessary *p*H buffer solutions. Nearly forty detailed determinations include examples of direct, indirect, substitution, and back titration and suggest many further applications.

This 'translation' is much more than the dry bones often covered by that term, for Dr. Irving has been associated with the author in the preparation of a second German edition and has not hesitated to make such alterations as seemed desirable. There are a few misprints, and some of these are important.

The publishers are to be congratulated on the production of a well-printed and well-bound book at a reasonable price. A. D. Mitchell

Biological Staining Methods

By George T. Gurr. Sixth edition. Pp. vi+102. (London: George T. Gurr, Ltd., 1957.) 5*s*.

THE diversity of staining techniques has increased so greatly in recent years that it is often difficult for the non-specialist to choose those most applicable to his problem. A book of this type, which presents clearly a wide selection of methods, is thus of great value, not only to students but also to all who use staining methods. This new edition of Mr. G. T. Gurr's book follows the plan of previous issues, devoting sections to bacteriological, hæmatological and general methods. Some new techniques have been added, together with a section on fluorescence microscopy, a method which is of increasing importance in biological research. A most useful feature of the book is the expanded formulary, giving the composition of many staining solutions, and also the appendix which lists the solubilities in water and in alcohol of many common chemicals and stains. A possible improvement which might be incorporated in any later edition would be the separation of the histochemical methods from the general stains and their expansion into a separate section. This, however, is a minor criticism, and the book in its present form will, I feel, prove a most useful reference work, particularly to students and laboratory technicians.

S. Bradbury

Metrology and Gauging

By S. A. J. Parsons. Pp. xxii+286. (London: Macdonald and Evans, Ltd., 1957.) 25*s*.

THE ever-present demand for greater precision in manufactured articles has created the need for a wider knowledge of metrological techniques among those engaged in production processes, not least the designer himself. It is becoming increasingly recognized that instruction in this subject should form part of the curriculum of the engineering student, and the book under review has been particularly designed to cover the syllabus requirements of examinations leading to corporate membership of the Institution of Mechanical Engineers and the Institution of Production Engineers, and similar examinations. However, the author's treatment of the subject makes the book equally valuable to the practising engineer.

An introductory chapter deals with the fundamental standards of length, and this is followed by a description of the use of light-waves as length standards and various forms of interferometer embodying this principle.

After a chapter on the interchangeability of components, the author discusses in considerable detail the design, manufacture and testing of limit gauges. This is followed by several chapters on commercially available measuring instruments, which have been grouped according to their principle of operation, namely, optical, mechanical, electrical or pneumatic. The application of these instruments to screw thread measurement and the testing of straightness, flatness and alignment follows. Two chapters are devoted to the measurement of gears and surface finish. The appendixes include a list of relevant British Standards and some typical examination questions.

This book, having regard to its purpose, quite adequately introduces the subject of metrology, and clearly indicates present trends in measuring techniques. However, the author's presentation of his material could have been improved by re-grouping it in a more logical sequence, and the list of chapter contents could with benefit be shortened. The illustrations are plentiful, and a clear fount makes the book pleasant to read. P. W. Harrison

The Rolling of Strip, Sheet and Plate

By Eustace C. Larke. Pp. xi+404. (London: Chapman and Hall, Ltd., 1957.) 63*s*. net.

IN this book a remarkable amount of material has been compressed into one volume. The opening chapter deals with modern rolling plant. Then a chapter on multi-roll mills describes the fascinating Sendzimir mill and its advantages. There follow chapters on roll cambers, gauge variation of rolled strip, rolling loads and rolling schedules. Numerical and graphical methods for computing the latter are fully described in simple terms, and nowhere is the text so condensed that the reading becomes difficult. A whole chapter is given to the influence of coiler and decoiler tension on the rolling load. Then come chapters on deformation, hot rolling and the calculation of hot-rolling loads. Finally, there are chapters on the energy consumed in cold and hot rolling and on the productive capacity of strip mills. This last chapter presents practical methods for calculating the capacity, and effects considered include handling time, waiting time, length and weight of coils and rolling speed.

A considerable part of the book is devoted to methods of calculation, and it may not be out of place to make two comments. The amount of *ad hoc* approximation made in order to simplify complex mathematical equations might be largely avoided by using an electronic computer to solve some of the design problems; and, for complicated situations where the validity of the assumptions leading to the theory are in doubt, there may be something to be gained by using statistical design in experimentation. For example, improvement in the use of existing productive plant may be sought by the use of the Box technique of evolutionary operation.

It is to be hoped that the book will be of interest to mill managers and their technical staff as well as students. L. S. Goddard