

rules. Maurer's diagram is open to objection because it does not take into account the varying thickness of castings, but it is a useful guide, and can be modified to give graphical methods of calculating compositions which have proved to be of real use in the foundry, so that it should have been mentioned. The statement concerning viscosity on p. 275 is incorrect, and is based on a misunderstanding. The work of Wimmer on the viscosity of molten cast iron was perhaps published too late for inclusion.

C. H. D.

*Die Massanalyse.* Von Dr. J. M. Kolthoff. Unter Mitwirkung von Dr. H. Menzel. Erster Teil: *Die theoretischen Grundlagen der Massanalyse.* Pp. xii + 254. Berlin: Julius Springer, 1927.) 10.50 gold marks.

DR. KOLTHOFF, of Utrecht, has undertaken in an able manner the task of producing a readable volume dealing with the fundamental principles of volumetric analysis from the point of view of the ionic hypothesis and the law of mass action. The justification of such a work is that by the application of these principles new methods of analysis may sometimes be deduced by direct rather than by empirical reasoning. This is particularly true of reactions involving neutralisation, precipitation, and the formation of complex ions, with which the first part of the book deals. Oxidation processes, on the other hand, are more elusive, since the range of indicators which will detect a definite oxidation-potential is at present somewhat restricted. Attention is directed to the promising results, published by W. M. Clark and others in the U.S. Public Health Reports, on the use of indigo-sulphonic acids and indophenols. In many cases, however, the disturbing influence of catalysts or of induced by-reactions has to be taken into account.

Special attention is also devoted to the theory of indicators, to titration errors and to adsorption phenomena, and a chapter deals with the application of volumetric analysis to organic chemistry. The author is mainly concerned with titrations requiring indicators, but potentiometric methods are briefly described in the last chapter. Tables of useful constants form an appendix and there are numerous references to modern literature in the foot-notes. The German text has been produced in collaboration with Dr. Menzel, and a later volume on the practical application of the methods is promised.

*Kings of the Hittites.* By Dr. D. G. Hogarth. (The British Academy: The Schweich Lectures, 1924.) Pp. viii + 67. (London: Oxford University Press, 1926.) 6s. net.

DR. HOGARTH has published his Schweich Lectures for 1924 practically in the form in which they were delivered before the British Academy, his reason being that owing to the still imperfectly published state of the results of excavation, the time has not yet come for fuller treatment. In this he has been wise, for, well argued as are his conclusions, his method of treatment in lecture form serves to emphasise their still extremely tentative character.

His kings of the Hittites are those of the Biblical narrative, the rulers of the southern Hittites, to whom reference occurs in the Chronicles of the historic age as holders of States to the north of Palestine in the earlier period of the Jewish monarchy. His purpose has been to illustrate their civilisation and to try to discover their origin and racial character.

The evidence upon which Dr. Hogarth draws is that imperfectly published, as already stated, from the sites of Zenjirli, Sakjegeuzi, and Carchemish. In discussing the connexion with the Cappadocian Hittite, Dr. Hogarth is inclined to see a common origin rather than a direct connexion. For this origin he suggests we should look towards the east at the early part of the second millennium B.C. with a leaning towards its identification with the Mitanni. Dr. Hogarth by no means minimises our lack of knowledge of this people, and his readers will fully agree as to the need for exploration of the northern area of Mesopotamia, in which their influence was dominant, before we are likely to deal with any approach to finality in this and the other problems which he discusses.

*La technique photographique.* Par L.-P. Clerc. Préface de Ch. Fabry. In 2 vols. Tome 1. Pp. xx + 458 + 2 planches. (Paris: Paul Montel, 1926.) 100 francs les deux vols.

DURING the last decade or two there have been notable additions to our knowledge of the fundamental facts upon which the practice of photography depends, and some of the problems of twenty years ago have been at least partly solved. Added to this, new needs have arisen, and these have led to the production of new apparatus and new methods of working. It follows that for some few years the want of a modern text-book has been acutely felt by students and their teachers, and it is exactly this want that has been met by M. Clerc. We hope that it will not be very long before a similar text-book is produced in English. M. Clerc knows well, from his experience as a teacher, what the student of photography needs, and he has used his knowledge of this and of the subject with great discretion. He has not neglected old facts to make room for new, or so shortly summarised the new as to make the references to them unintelligible. The illustrations are good and well chosen—not from manufacturers' catalogues. The subjects dealt with in the first volume are light and vision, and the apparatus, materials, and processes used in making negatives, leaving the consideration of printing methods for the second volume.

C. J.

*Reptiles and Amphibians: their Habits and Adaptations.* By Thomas Barbour. Pp. xx + 125 + 52 plates. (London: George G. Harrap and Co., Ltd., 1926.) 70s. 6d. net.

THIS is one of the few books dealing with a neglected branch of natural history, and, though it aims chiefly at interesting a wider public in these much misunderstood animals and is consequently rather of the 'semi-popular' type, it will form a welcome addition to the library of the more serious student.