put in practice, even at the risk of adding slightly to the bulk of the text. Unfortunately misstatements are not infrequent and there is an unusual number of errors in the references.

E. E. SMITH.

ANNUAIRE DU BUREAU DES LONGITUDES, pour l'An 1900. Paris: Gauthier-Villars. 18mo. 800 pp. Price, 1.85 francs.

This handy little annual is, as its name would indicate, mostly concerned with astronomic data. The first three hundred pages are devoted to calendars, astronomic phenomena of 1900, data of all kinds concerning the sun, moon, earth, planets, stars, and comets. Then follow tables of various weights and measures, moneys, statistics of population, territory and mortality in different countries. These are followed by diverse tables, such as magnetic intensity in various parts of France; specific gravities of solids, liquids and gases; acoustic, optic, and electric data.

The scientific addenda contain a well-written article of thirty pages on "electric units," by A. Cornu; an essay of over eighty pages on "dynamo-electric machines" also by Cornu, concise but satisfactorily written, and a short essay on "the new gases of the atmosphere," by Lippmann.

Many of the tables concerning physical and chemical facts are incomplete, and do not give the very best, latest determinations. In general, the French determination only is given, whenever a datum has been determined by a Frenchman, and his value stands until some other Frenchman does it better. This may be very patriotic, but it is not scientific, or good sense.

Visitors to Paris this year will be interested in the statement that "The legal time in France is that of the observatory of Paris, and is that recorded by the dials *outside* the stations, the dials *inside* the stations being several minutes later, for purely administrative reasons!"

J. W. RICHARDS.

OPTICAL ACTIVITY AND CHEMICAL COMPOSITION. BY DR. H. LANDOLT, Professor of Chemistry in the University of Berlin. Translated with the author's permission by JOHN MCCRAE, Ph.D. London: Whittaker and Co.; New York: The Macmillan Company. 158 pp. Price, $1.00.

This little book is a translation of the eighth chapter of the well-known Graham-Otto "Lehrbuch der Chemie," which has passed through several editions. This eighth chapter was contributed by Professor Landolt who is the great authority on

everything connected with the subject of the optical activity of organic compounds. The discussion in this book covers briefly the subject of optical activity in general and the relation of this activity to the composition and structure of various groups of organic compounds. It does not deal with the practical applications of polariscopic methods at all, this larger field being fully covered by the important work of the author, "Das optische Drehungsvermoegen organischer Substanzen, und dessen praktische Anwendungen," an English translation of which is now being made by the writer of this notice.

Dr. McCrae's translation is an extremely clear and creditable one and the book will undoubtedly be found useful.

J. H. LONG.

CHEMISCH-TECHNISCHE UNTERSUCHUNGSMETHODEN. HERAUSGEGEBEN VON DR. GEORG LUNGE. Zweiter Band. 143 Abbildungen. Vierte Auflage. Berlin: Julius Springer, 1900. xii + 804 pp. Price, 16 marks.

This volume treats of Iron, by Th. Beckert; Other Metals, Metallic Salts, Dr. Pufahl; Fertilizers, Dr. O. Böttcher; Fodders, Dr. F. Barnstein; Explosives, O. Guttmann; Matches, Wladmir Jettel; Gas Manufacture, Ammonium Compounds, Dr. O. Pfeiffer; Coal Tar, Dr. H. Köhler; Inorganic Colors, Dr. Gnehm. In such a wide range of subjects some unevenness in treatment is inevitable. A careful examination of the book shows that in the main, the work has been well done though there are some omissions that will surprise the reader familiar with recent practice. For example, nothing is said of the methods for the determination of phosphorus in steel depending upon the reduction of molybdenum in the yellow precipitate and its determination by permanganate. Cupric ammonium chloride only is mentioned as a solvent for iron in carbon determinations. No reference is made either to the recent improvement in Jones' reductor or to Dr. Shimer's beautiful combustion method now so widely used. There are other omissions equally serious.

Rapid methods are absolutely essential in steel laboratories where the bulk of such work is done and any treatment which, like this, fails to give them proper prominence cannot be pronounced altogether satisfactory.

In a German book it is unusual to find so many references to American improvements. The Gooch crucible, Hoskins' gaso-