and reported in the volume entitled "Calcul simplifié." The several chapters describe instruments having a common purpose or having the same purpose and involving a common mechanical principle. At the end of each chapter there is given an almost complete chronological list of the instruments of the type described therein, with the names of inventors, dates, and frequently a remark to indicate the special characteristic. Frequent references are made to the articles by R. Mehmke and M. d'Ocagne respectively in the German and French editions of the Encyclopedia of Mathematical Sciences (French: tome I, volume 4, fascicule 2), which follow the same classification and supplement the volume under review.

There are treated instruments for the solution of problems of arithmetic, of algebra, and of analysis. These three broad types are further divided into numerous groups and classes, each with its history and development, with a description of the principle involved, a well-marked figure and enough detail, in many instances, at least, to enable even the amateur mechanician to make a similar instrument or machine.

CHARLES C. GROVE.

Mathematische Theorie der astronomischen Finsternisse. By P. SCHWAHN. Leipzig und Berlin, B. G. Teubner, 1910. 128 pp. + 20 figures in the text.

THIS very readable book forms part 8 of Jahnke's "Mathematisch-physikalische Schriften für Ingenieure und Studierende." Its aim is to give to students of natural sciences at large a clear and simple presentation of the theory of the eclipses of the Moon and the Sun, the passages of Mercury and Venus over the disc of the Sun, and the occultations of stars by the Moon. The theory of Bessel, on account of its inherent elegance was certainly best adapted for this purpose and the author has done well to select it in preference to those of Chauvenet and Wollaston. Since the book was not intended to serve as a guide to the astronomer at an almanac office, the author has introduced simplifications, wherever this could be done without injury to the final object the book was written for. The size of the book and the clear presentation of the material will make it a welcome gift to the professional astronomer, especially when reference to Bessel's original or to Chauvenet's more lengthy presentation of Hansen's method is not required. The publishing house of B. G.

Teubner deserves great credit for issuing the small library of science texts under Professor Jahnke's able editorship. It is believed that a similar undertaking in this country would be of decided benefit to our colleges and high schools, where often the lack of proper information is likely to turn valuable men from the realm of science. A glance at the list of authors of the Jahnke-Teubner series will show that in Germany the professor of the gymnasium is considered as preeminently fitted for this kind of work, since his daily contact with the student who has not yet specialized in a given field makes him for these intermediate texts a most excellent interpreter.

KURT LAVES.

Mécanique sociale. By SP. C. HARET. Paris and Bucharest, Gauthier-Villars, 1910. 256 pp.

THIS book, which presents rather entertaining reading to the student of mechanics tries to describe in mathematical language the phenomena of sociology. The social body—an assemblage of individuals, who act on each other and are subject besides to exterior forces of intellectual, economical and moral character—is considered for simplicity to be of invariable form, for a given length of time. Each individual is characterized by three rectangular coordinates, of which x stands to show the economic, y the intellectual, z the moral asset of the individual. On this basis it is not difficult to write out the differential equations of motion in this "social space." The author does not feel any hesitation in transcribing into this social space the axioms and theorems of rational mechanics, but it need not be pointed out to a mathematical audience, that the difficulties here encountered are enormous. The material in the hands of the sociologist today is hardly in such a shape that the mathematician may properly step in with such an ambitious-looking set of differential equations as our author does, and deduce from them statements which have a meaning only in the realm of physics, as far at least as we know at present.

KURT LAVES.