SHORTER NOTICES.

Elements of Plane Trigonometry. By D. A. MURRAY. New
   York, Longmans, Green, and Company, 1911. ix + 136 pp.
   + 95 pp. of tables.

PROFESSOR Murray's Elements gives a much briefer treat-
ment of the subject than the Plane Trigonometry previously
published by him. Among the topics receiving more or less
special emphasis are the variation, periodicity, and graphs of
functions, general expressions for all angles having one func-
tion in common, and methods of checking solutions.

Problems requiring the use of trigonometric tables are
introduced almost at the very beginning of the book. One
wonders if it might not be better to defer the first use of such
tables, which, for some reason or other, the student usually
finds rather difficult, until he shall have grown more
familiar with the meaning of trigonometric functions by
use of the functions of 45°, 30°, and 60°, and by the solution
of problems such as those involving the determination of the
remaining functions of an angle from a single given function,
and the solution of right triangles from one side and a function
of one angle.

In the matter of oblique triangles, the various formulas
connected with the solution of such triangles are first worked
out merely as "relations between the sides and angles of a
triangle." Then, in a separate chapter the solution of
triangles is taken up and the formulas previously developed
are made use of. While this arrangement may serve to
emphasize "theory for the sake of theory," it would seem
that a combination of the two chapters in one might, without
detracting much, if any, from this emphasis, make the work
more simple and interesting for the student.

                                    CORA B. HENNEL.

A Brief Course in Analytic Geometry. By J. H. TANNER and
   JOSEPH ALLEN. New York, American Book Company,
   1911. x + 282 + xxiv pp.

THE student beginning the study of analytic geometry
usually finds himself, almost at the very start, in the midst of

a mass of formulas, without realizing what they are all about. In Tanner and Allen's Brief Course in Analytic Geometry, an abridgment of the same authors' Elementary Course, this difficulty appears to have been overcome. After a brief introductory chapter, giving a review of the parts of algebra and trigonometry the student will have use for, the notion of rectangular coordinates is carefully explained; elementary applications, including the distance between two points, the area of a triangle, slopes of parallel and perpendicular lines, are given; and the relation between the graph and the equation is clearly stated and brought home to the student by numerous examples given for him to solve. Then, and not until then, is the student introduced to the various forms of the equation of the straight line, and the numerous formulas connected with it.

In the treatment of the conic sections, also, the authors' arrangement is somewhat unusual. After the circle has been discussed in detail, the equations of the conic sections with reference to coordinate axes in any position are worked out and the general second degree equation is discussed. Then follows a treatment of secants, tangents, normals, and diameters for all conics, and finally a separate study of each conic with its geometric properties.

That the authors believe that students learn by doing is evidenced by the sixty-six lists of exercises, containing eight hundred and fifty-one problems, given in the first part of the book, which covers plane geometry. That they realize also the difficulties of literal notation and general proofs is shown by their "introduction of the demonstration of general theorems by numerical examples."

The subject of solid geometry is very briefly treated in the second part of the book, which contains also a short discussion of higher plane curves.

CORA B. HENNEL.

Gedenktagebuch für Mathematiker. Von Prof. Dr. FELIX MÜLLER. Dritte Auflage. Leipzig und Berlin, Teubner, 1912. iv + 121 pp.

MANY office and desk calendars of more or less pretentious proportions are widely distributed—and early—each year and many of these give honorable mention on the proper