may elicit some dissertations that may bring light on these
vital problems.

SHORTER NOTICES.

Die Mathematik im Altertum und Mittelalter. By H. G.
ZEUTHEN. Erster Abschnitt: *Entstehung und Entwicklung
der Zahlen und des Rechnens.* B. G. Teubner, Leipzig und
Berlin, 1912. 95 pages. Price unbound, 3 Marks.

THIS little work is a portion of Teil III of the volume entitled
Die mathematischen Wissenschaften, in the work edited by
Professor Hinnenberg, Die Kultur der Gegenwart. Teil III
has for its title Die mathematischen und naturwissenschaft-
lichen Kulturgebiete, and the part relating to mathematics is
under the editorial supervision of Professor Klein.

No opportunity was afforded, in the brief space allotted to
Professor Zeuthen, for any new contribution to the history of
mathematics. Therefore all that can be expected is a mere
résumé of the leading contributions to the science in ancient
and medieval times. Professor Zeuthen first treats of early
arithmetic, beginning with the primitive number systems,
passing to the early mechanical methods of computation, set-
ting forth the difficulties of notation in ancient times, tracing
rapidly the development of our numerals, and making clear
the obstacles met by all early peoples in the handling of frac-
tions. He then considers the applications of number to com-
merce, astronomy, mysticism, and puzzle problems, showing
the relation of this work to the primitive algebra of the
Egyptians.

He next takes up the geometry of the Egyptians and
Greeks. While giving only a cursory glance at the develop-
ment of the science, he takes occasion to refer to the fact that
the Pythagorean triangle is mentioned in the Sulva-sutras,
which he puts as late as the 5th or 4th century B.C. He does
not venture, however, upon the question of the antiquity of
the theorem in China, a problem which probably can be solved
only by the rise of native scholars who can give us a careful
textual criticism of the classics of their country. It is inter-
esting to see that Professor Zeuthen, than whom we have few
authorities better recognized in the history of Greek mathe-
matics, maintains the common view that the lunes of Hippo-