SHORTER NOTICES.

Ebene und räumliche Geometrie des Masses von DR. L. HUEBNER,
Professor am Gymnasium zu Schweidnitz. Zweite Aus-
gabe. Leipzig, B. G. Teubner, 1895. 8vo. 16 and 340 pp.

This is an introduction to Circular and Hyperbolic Func-
tions, with applications to Mensuration, of an unconven-
tional kind. For instance, physical applications are sought
out, such as pendulum motion and the paths of comets.
The mensuration problems are extended to the finding of
the volume of an ellipsoidal cap and analogous volumes, by
aid of Cavalieri's principle. And the chapter on spherical
Trigonometry is followed by one on spherical "Geometrie
der Lage," which touches on the sphero-conic. The reason
for speaking of spherical ellipses *and* hyperbolas does not
appear.

Again, as to method, the book is in striking contrast to
the stereotyped elementary trigonometry in refusing to
attach the signs $+$ and $-$ to opposite lengths. It is sup-
posed that the learner, familiar with these signs in their
arithmetical use, will be confused by this new geometrical
use. It would seem better to give all necessary preliminary
explanation rather than to ban this excellent illustration of
negative quantity, which seems to us to find its proper
place in actual teaching at the outset of Algebra.

We note that the symbol θ is used for $1/0$ in contradistinc-
tion to $\infty = 1/\varepsilon$. Thus we have $\tan 90° = \theta$. This has an
anarchistic look, but the point of view is not explained.

A theorem referred to as Feuerbach's, in connection with
the triangle, is not the celebrated one, but a quite trivial
thing which might have occurred to anyone.

And, to make a last, but important exception, the power-
series for the sine and cosine, if at this stage they are
proved at all, should be proved with some rigor.

At the same time, this independent book might well give
suggestions to one wishing to reform his teaching of ele-
mentary Trigonometry; and the references show that several
German teachers are in a state of dissatisfaction with the
teaching of this subject by others.   F. MORLEY.

The Scientific Papers of John Couch Adams. Vol. I. Edited
by W. G. ADAMS, Sc. D., F. R. S. With a memoir by
J. W. L. GLAISHER, Sc. D., F. R. S. Cambridge Uni-
versity Press, 1896. 4to. liv+502 pp.

Amongst the "collected works" of noted mathematicians