approximation than that of Renaldini is found by taking for
the side of the regular inscribed 17-side, one half the difference
of the length of a side of the inscribed equilateral triangle and
of a side of the regular inscribed hexagon.   For the unit circle
this leads to the length of a side of the 17-side as 0.36602,
which differs from the correct value by about 0.001.   Ac-
cording to Renaldini's construction the length is $1/\sqrt{7}$
$= 0.37796\ldots$, which is about 0.02 too large.

<div align="right">R. C. ARCHIBALD.</div>

BROWN UNIVERSITY,
    PROVIDENCE, R. I.

SHORTER NOTICES.

Plane Trigonometry and Tables.   Edited by GEORGE WENT-
  WORTH and DAVID EUGENE SMITH.   Ginn and Company,
  1915.   v + 188 + v + 104 pp.   Price, $1.10.

THE formulation of the subject matter in the mind of the
teacher largely determines the text he wants to use.   This
formulation is naturally the product of his experiences with
texts studied and taught, and of his own cogitations on the
subject and how he can most forcefully and successfully
present it.   The text under review fits into the plan of the
reviewer for present purposes more happily than any of the
many texts he has examined.

The authors state that as to sequence of material they
have followed the rule "that the practical use of every new
feature should be clearly set forth before the abstract theory
is developed."

The six functions of acute angles are defined as ratios and
put to practical use.   The functions of complementary angles,
and of angles of 30°, 45°, 60° are developed on pages 7 and
8 and put to immediate use.   On page 23 appear the line
definitions of the functions.   The changes in the functions as
the angle changes from 0° to 90° are exhibited through a
figure giving the lines representing the six functions.   Thus
the student is brought to visualize the subject.

The natural trigonometric functions are employed just
long enough to be known, and to cause the first twinges of the
vexation of multiplication, when the subject of logarithms is

clearly set forth. Thereafter, the sine, cosine, tangent, and cotangent serve all purposes in computation. The more serious work with right triangles follows, extending to page 77.

The functions of *any* angle are introduced as ratios involving the coordinates of a point on the rotating line or terminal side of the angle; yet, as before, these functions are at once visualized as lines.

The advanced theoretical portions are well presented and ample for any student in his college course through the calculus. A clear open-faced index ends the text, pages 187–188.

The ten tables in the latter half of the book are so varied and so superior in arrangement and appearance as to be worth the full price of the book, as the list of tables that the student might regularly use in the future, even if he goes into any one of many lines of technical work.

This new revision has all the good features of the former texts and a spring-like, refreshing breath from the Napier Tercentenary in 1914 brought to it by Professor Smith. It is also a text that will be likely to "dominate the teaching of the subject" in the next and more exacting generation.

<div style="text-align: right">C. C. GROVE.</div>

Modern Instruments and Methods of Calculation. A handbook of the Napier Tercentenary Exhibition. Edited by E. H. HORSBURGH with the cooperation of a committee. London, G. Bell & Sons, 1914. New York, The Macmillan Company. viii + 343 pp. 8vo. $1.90.

IT is very refreshing to read a book that provides so much more than its title leads one to expect, as does the volume under review. Even in its distinctively handbook features it gives copious notes concerning the special characteristics and history of the exhibits, the inventor, his period, etc. The editor states that "an endeavor has been made to make the Exhibition and Handbook useful to the laboratory computer, the engineer, the astronomer, the statistician, and to all who are interested in calculation," and success has crowned the effort in respect to the handbook at least.

There are a dozen sections lettered A to M, omitting J. In section A is an historical essay, reprinted from the *Proceedings* by permission of the Royal Philosophical Society of Glasgow, by Professor George A. Gibson on Napier's Life and Works.