Pressure in Relation to the Diurnal Winds,'
' A System of Fundamental Constants and
Formulæ and Reduction Tables,' ' The Theory
of Cyclones and Anticyclones,' ' Discussion of
the Cumulus and Cumulo-Nimbus Clouds,'
' Reduction of the Pressure and Temperature
Maps at Sea-level, 3,500-foot Level, and 10,000-
foot Level,' ' The Amount of Heat that would
Convert an Adiabatic Atmosphere into the
State Actually Existing.'

The reading of this report cannot be lightly
undertaken. Indeed, the very completeness of
it and the elaborate mathematical discussions
which find a place in it, will undoubtedly pre-
vent many persons from attempting to find
out what the volume really contains. We do
not wish to be understood as saying that work
of the sort that Professor Bigelow has here
given us is unimportant, or out of place in a
thorough study of the observations with which
he has had to deal. Far from it. But we
cannot help feeling, and feeling strongly, that
the observers of the Weather Bureau, both
regular and voluntary, and the public generally,
should have the chief results of the international
cloud observations in this country put before
them in a simple, compact form. We hope that
the chief of the Weather Bureau may look at
this matter in the same light, and may perhaps
sanction the publication of a Weather Bureau
Bulletin, of say 100 pages, in which the results
of Professor Bigelow's painstaking research,
which are of most general interest, may be set
forth.

Professor Bigelow is to be congratulated on
the completion of this report, which stands on
a far higher plane than most of the meteoro-
logical work published in this country.

R. DeC. WARD.

Plane Trigonometry. By DANIEL A. MURRAY,
Ph.D., Instructor in Mathematics in Cornell
University. New York, London and Bombay,
Longmans, Green & Co. 1899. Pp. xiii +
301.

The author has aimed to ' avoid the extremes
of expansion and brevity.' Only such topics
are fully treated as make up the usual course
in plane trigonometry. The thickness of the
volume is largely due to the presence of an

appendix of historical and other notes, a long
list of exercises for practice and review, a table
of answers, a four-place and a five-place table
of logarithms of numbers, a five-place table of
logarithms of the sine, cosine, tangent and
cotangent, a four-place table of logarithms
(augmented) of trigonometric functions, and a
four-place table of values of trigonometric
functions. These components constitute little
less than half of the book. The other and
larger half contains an unusually full exposition
of principles. The composition is throughout
careful and scholarly. While acquiring a
knowledge of the elements as here presented,
the student can hardly fail to become aware of
the larger aspects of the science.

As regards arrangement and disposition of
matter, there is, of course, always room for
difference of opinion. Doubtless many teachers
would for example prefer to have the notion of
the radian introduced at an earlier stage; and
there are not wanting reasons of some weight
for preferring to present the general ratio defini-
tions of the functions in connection with the
conventional system of coordinate axes boldly
in the *beginning,* instead of reserving this most
commanding point of view, as is here done, for
so advanced a stage as Chapter V. However,
in things pedagogical, *quot homines, tot sententiæ.*

It remains to say that while paper and typog-
raphy are good, the book deserves to be more
substantially bound.

C. J. KEYSER.

COLUMBIA UNIVERSITY.

BOOKS RECEIVED.

A de Bary's Vorlesungen über Bakterien. Edited by
W. MIGULA. Leipzig, W. Engelmann. 1900.
Pp. vi + 186. M. 4. 60 Pf.

Outlines of Human Physiology. F. SCHENK and A.
GRÜBER, translated by Wm. D. ZOETHOUT with a
preface by JACQUES LOEB. New York, Henry Holt
& Co. 1900. Pp. viii + 339.

Leçons de physiologie expérimentale. RAPHAEL DU-
BOIS. Paris, G. Carré and C. Naud. 1900. Pp.
vi + 380.

SCIENTIFIC JOURNALS AND ARTICLES.

THE *Journal of the American Chemical Society*
for December contains the following articles:
' The Production of Alloys of Tungsten and of