Infinitesimal Calculus. By F. S. CAREY. Longmans, Green
and Company, 1917.   Section 1, 144 pp.; Section 2, 207 pp.

THIS text is bound in two separate sections, the first contain-
ing sufficient material for a good elementary course, while
the two sections together cover the topics usually presented
in a longer elementary course.   Chapter one reminds one of
function theory, for the author treats of such topics as sequence
of numbers, the arithmetical continuum, closed and open
ranges, etc.   The reviewer doubts if a beginner can grasp such
concepts.   Chapter two, on "Limits," contains many interest-
ing examples to illustrate what a limit is, but nowhere is there
to be found a concise definition of the word.   The question
of left hand and right hand limit, the question of the limit of
a sum, product and quotient of two functions, is very thor-
oughly discussed.   In the third chapter the rules for the
derivative of a sum, a product and quotient of two functions
are derived, but the last two derivations are very blind.
The next chapter "The sign of the differential coefficient"
treats of maxima and minima, and many fine examples are
to be found among the exercises.   This is followed by a chapter
on algebraic functions.   The remaining topics treated in the
short elementary course are: "The inverse of a function,"
"Function of a function," "Tangent and normal," "Para-
metric equations," "Point of inflexion," "Circle of curvature,"
"Order of magnitude," "Inverse differentiation," "Logarith-
mic functions," "Areas," "Volume," "Parabolic approxima-
tion," "Simpson's rule," "Moments" and "Center of gravity."
No definite integrals are used, in fact the symbol $\int$ is not
introduced.

Section two starts with an excellent chapter on exponential
and hyperbolic functions.   The results of several integration
formulas are expressed in terms of these functions.   This is
followed by a discussion of the motion of a particle along an
axis.   The definite integral is now introduced and many of
the elementary properties which we usually assume in an
elementary course are proved in full detail.   This is followed
by a chapter on polar coordinates in which pedal curves and
intrinsic equations are discussed together with the usual
material to be found in such a chapter.   Work on partial
differentiation, double integration, triple integration, expan-
sion in power series, curve tracing, singular points, Newton's
method of ascertaining the form of a curve at the origin and

at infinity, envelopes, involutes, roulettes and planimeters, finish the work in the calculus. This is followed by a short course in differential equations and a short but very interesting chapter on nomography.

The book is well written and the typographical errors are few, there being more, however, in the second section than in the first.

<div align="right">F. M. MORGAN.</div>

Annuaire du Bureau des Longitudes pour l'An 1919. Paris, Gauthier-Villars.

THERE are few changes in the *Annuaire* for 1919 which call for special notice. Every year the editors have evidently to consider the pressure of matter for which there is a demand and the chief problem appears to be in finding out what can be omitted in order to make room for new data. The tendency seems to be in the direction of making the volume more useful to the person with scientific interests, rather than to the general reader, for we notice that articles on such subjects as coinage, legal measures, and geography are either suppressed or cut down.

An interesting summary of our present knowledge of the figures of the equilibrium of a liquid is furnished by M. Appell. The account is free from mathematical developments and it is written in a style which gives the main facts; there is an excellent list of the chief memoirs on the subject attached to the end of the article. This subject has been lately revived on account of the papers continuing Darwin's work in the *Transactions of the Royal Society* by Jeans. M. Hamy, in a second appendix, discusses the possibilities of the determination of the actual dimensions of stars by interference methods. He believes that some indications of value can be obtained in this way in spite of the extremely minute angles that the diameters of even the nearest stars subtend at the earth.

<div align="right">E. W. BROWN.</div>