with pupils of the ages named. Such an example is furnished
in Borel's texts. As Stäckel remarks, this publication is in-
tended only for teachers. Since the reform movement in France
and Germany is essentially the same as in the United States,
the book under review, coming from authors of distinction,
cannot fail to be of interest to American readers.

<div align="right">FLORIAN CAJORI.</div>

A Treatise on the Mathematical Theory of Elasticity. By A. E.
  H. LOVE, M.A., D.Sc., F.R.S. Second edition. Cam-
  bridge University Press, 1906. xvii + 551 pp.

THE first edition of this important work was published in
two volumes in 1892 and 1893. The present edition is a new
treatise which contains some extracts from the old one. The
object of the book is threefold, namely, to be useful to engi-
neers, to set forth the physical notions and analytical processes
which are also used in other branches of physics, and to afford
a complete picture of the present state of the science of elas-
ticity. The book commences with an excellent historical intro-
duction which explains the parts taken by various eminent
mathematicians in establishing the theory. The first four
chapters are concerned with the analysis of strain and stress,
the equations of equilibrium and small motion, the expression
of the stresses as functions of the strains, and the connection
between the mathematical theory and technical mechanics.
Chapter V opens with a useful recapitulation of the essential
parts of the preceding chapters and the author proceeds to
illustrate them by a number of simple examples which are
needed for the subsequent development of the subject. In
Chapter VI there is a discussion of the elastic constants. The
6 components of stress are linear functions of the 6 compo-
nents of strain and hence depend on 36 constants. The law
of conservation of energy reduces the number of constants to
21. The hypotheses of Navier and Cauchy concerning the
constitution of matter (according to which bodies are regarded
as made up of material points which are supposed to act on
each other so that the mutual action between each pair of points
is along the line joining them and is a function of the length
of the line) leads to 6 relations which are called Cauchy's re-
lations, so that the number of constants is reduced to 15. As
the author remarks in the historical introduction, our views
concerning the constitution of matter have changed so that the