it on his shelf. We would be glad to see the day when every candidate for the doctorate would be subject to examination on such a text. We will welcome the day when one course at least is given in every university, and required of all graduate students, in this survey of all the sciences, their history, progress, and present state as to methods, principles, and correlations.

A word as to the contents of the book is all that is necessary, as no briefer account of it can be given than the text itself. The opening chapter is on the development of mathematics and its relation to the other sciences. This is followed by chapters on Mathematics and astronomy, Mechanics and energetics, The physics of the ether, The physics of matter and chemistry, Mineralogy and geology, Physiology and biological chemistry, Botany and zoology, Medicine and bacteriology. Explanatory notes by the translator close the book, and these will be welcomed by the careful student.

Anything from the pen of Professor Picard will bear the mark of that perspicuous thinker, and this difficult piece of work is no exception. Moreover the style is so charming that one finishes reading it with satisfaction that scientific exposition can still be done so perfectly.

JAMES BYRNIE SHAW.

Maxima und Minima in der elementaren Geometrie. Von RUDOLF STURM. Leipzig and Berlin, B. G. Teubner, 1910. v+138 pp.

IN this book, the author makes use of nothing but elementary geometry and trigonometry, the latter being used in proving a few of the theorems. The first two theorems in the book are arithmetical, namely:

(1) Of n positive numbers whose product is given, the sum is smallest when the numbers are equal.

(2) If the sum of n positive numbers is given, the product is greatest when the numbers are equal.

These two theorems are the basis of quite a number of proofs on areas and perimeters of polygons. When the problem under consideration can be reduced to a sum or product with the necessary restrictions, the maximum or minimum values follow readily from (1) or (2). With all the possible combinations of restrictions on the sides and angles of a triangle, the author has dealt in detail. Polygons both regular and