Plane Geometry. By JOHN H. WILLIAMS and KENNETH P. WILLIAMS. Chicago, Lyons and Carnahan, 1915.

THIS text in my estimation is an excellent example of what a plane geometry book should not be. It starts with a lot of formal definitions followed by demonstrative work. There are so many inaccurate and incorrect statements, definitions, and proofs that I think it undesirable to list them. I shall however state a few: "An exterior angle of a triangle is the angle formed by producing one side of the triangle"; "A triangle is defined as a polygon bounded by three straight lines," and twenty pages later we find the definition of a polygon. "The limit of a variable is a constant which the variable is supposed to approach in value and can be made to differ from it by an amount that is less than any assignable value, but can not be made absolutely equal to it."

F. M. MORGAN.

Theories of Energy. By HORACE PERRY. New York, G. P. Putnam's Sons, 1918. vii + 231 pp.

THE title of this book is as misleading as the results are unsatisfactory. The author does not consider "theories of energy," but advances a theory of energy due to his own reading and reflection. The plural character is due to the fact that he considers as theories: theory of energial propagation, theory of the energetic atom, theory of spectral lines, theory of gravity, theory of color, etc. The unsatisfactory character lies in both the results of his reflections and the gaps in his theory.

In the first place (and to endeavor to point out the very long entire list of features of his explanation of energy would be tedious and unprofitable) we need to notice his idea of matter. He begins on the first page with the assertion that "All space is filled with matter, and in the infiniteness of space there is no vacuity anywhere, not even of the extent of an atom's size, and the universe, embracing all the matter in existence, is continuous throughout." This idea that the entirety of space is filled with a continuous material medium was new when Thomson's vortex atom was at its best, but is far in the past at present. Perry's ether is perfectly continuous in all space, but as it has no cohesion between its parts, there is "merely a togetherness without any forcible hold." It is a "perfect fluid with perfect passability."