Elements of Analytic Geometry. Vol. I. By Neilos Sakellarios. Athens, E. and I. Blazoudake, 1924. vi + 288 pp. (In Greek.)

This elementary text for undergraduates is decidedly more reminiscent of Weber and Wellstein than of Tanner and Allen. Admirable in its clarity, in the logical sequence of definitions and theorems, and in the frequent and abundant exercises provided for the student, there is throughout the book an exhaustive Teutonic precision and insistence on detail more properly characteristic of the treatise than of the elementary text, though it is only fair to add that this "classical" style of textbook writing has always been orthodox on the Continent. Examples of it are the rigorous distinction of line and sect, circumference and circle, geometric sum and difference from algebraic sum and difference; the systematic use of determinants, the inclusion of poles and polars for all conics, of the power of a point with respect to a circle and with respect to a sphere, and of the theorems of Menelaus and of Ceva.

From the outset, the analytic geometry of space is devěloped along with the analytic geometry of the plane. After a preface which traces the history of analytic geometry from Archimedes and Appolonius down to Plücker and Klein, the work is divided into five chapters. Chapters one and two, on completing the customary themes of coordinate axes, coordinates of a point, the various equations of the straight line, angles, and triangles, pass at once to the analogous discussion of the equations of the plane and of the line in space. Chapter three beginning with metrical properties in the plane, such as distance, perpendicularity, angle bisection, area of the triangle, leads likewise to the treatment of metrical properties in space. Similarly, chapter four makes use of the analysis of the circle to introduce the analysis of the sphere. The last chapter treats fully the ellipse, the hyperbola, and the parabola, in the order named, and concludes with a short comparison of curves of the second degree, algebraically, as loci of the general equation of the second degree, and geometrically, as sections of the cone. The analogous solid-analytic material of the last chapter, the treatment of quadric surfaces, is evidently reserved for the projected second volume, as is no doubt also the consideration of higher plane curves. The table of formulas at the end, as well as the printing of the statement of each theorem in heavy type, deserves praise. There are few typographical errors.

Any good book on geometry in the language of the race which gave geometry to the world should be of interest to mathematicians conversant with that language, especially so finely wrought a text as this is, in spite of the fact that the method of approach is not the ordinary one.

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