

The chapters dealing with the dynamics of the solar system are admirable. The author writes as one who knows the beauty of the mathematical treatment of the subject and who thoroughly appreciates the value of the contributions of the great astronomers of past centuries. Much of this admiration and appreciation is conveyed to the student. The clearness of the presentation is the more remarkable considering the fact that this is a decidedly mathematical subject, and that mathematics is, unfortunately, almost completely banished from college textbooks on astronomy.

It is hardly necessary to add that mathematically and historically the book is very accurate. Among other subjects the discussion of the discovery of Pluto (p. 243) deserves being mentioned for its accuracy.

The author's individuality pervades the whole book. This renders it especially interesting to the reader who has sufficient knowledge of the subject to appreciate variations from the presentation by other writers, even if he cannot always agree with the author's emphasis on certain aspects of the science.

The outward form of the book is very attractive: pleasant type, numerous diagrams and reproductions, and some very good star charts. Printing errors are rare, and usually of the innocent type, like *members* for *numbers* and *Betelgeuse* for *Betelgeuse*.

DIRK BROUWER

*De l'Emploi des Droites Isotropes comme Axes de Coordonnées. Nouvelle Géométrie du Triangle.* By André Haarbleicher. Paris, Gauthier-Villars et Cie., 1931. vi+76 pp.

This interesting little book serves excellently as an introduction to the analytic geometry of the triangle when the minimum lines through a point are taken as axes of coordinates. The author takes the center of the inscribed circle as origin, develops briefly the necessary formulas, then applies these results to a sequence of problems in the geometry of the triangle, carefully selected to show the value of the method and the types of reasoning employed. The sequence ends with the following problem, which is due to Darboux: Find the locus of a point  $P$  such that, among the conics through  $P$  and the vertices of a given triangle, there is one to which the normals at these four points concur. Our author remarks "The solution of this problem offers an entirely satisfactory (complet) illustration of the application of isotropic coordinates."

To the student of mathematics, especially if he is preparing to teach in secondary schools, the study of the geometry of the triangle, and allied topics, brings into prominence a number of concepts and methods of interest and permanent value. In this text, he will find an able exposition of a good method of approach to this field from its analytic side. Equally interesting, although the author does not pause even to mention them, are the ideas of projective metric geometry, and of the analytic geometry of the complex plane, to which this method of analysis naturally leads.

American students will doubtless find that the author's frequent introduction of unfamiliar and undefined terms is sometimes troublesome. Otherwise, the text is clear and well written.

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