ioned in linguistic expression and technical details to modern terminology and mathematical technic. In this respect, its educational value might be rather high.

A few historical remarks might still be added. The well-known Cayley-Klein model of hyperbolic geometry is called the Klein-Beltrami model by the authors. At several places they assert that Klein constructed it on the basis of the earlier ideas of Beltrami. This revival of outlived priority objections is contradicted by Klein's historical report. Klein acknowledges his dependence on Cayley which is also supported by internal evidence, and for similar reasons it is quite clear that he became acquainted with Beltrami's paper only afterwards. Perhaps Cayley's non-Euclidean metric has been overlooked by the authors because it leans on group theory, which is of secondary importance in their work. Beltrami discovered that under a suitable parametrization the geodesics of surfaces with constant negative curvature become straight lines. Of course, this fact is related to Cayley's metric. The connection, however, with the projective group, essential in Klein's construction, could not be found by Klein in Beltrami's paper, but only in Cayley's.

Another point of historical interest or rather of historical curiosity: As "Thales' theorem" the authors introduce a theorem on similar triangles. In the German textbooks Thales is responsible for the rectangularity of the triangle in the semi-circle. Mathematical folklore may list still other Thales' theorems in other countries. By Eudemos, Thales is credited with no theorem on similitude. Maybe some amusing story about Thales visiting Egypt and surveying pyramids inspired some textbook writer to call this theorem Thales'. I wonder whether there may not be a folklore in which the formula for the sum of an arithmetical progression is called Gauss' theorem.

HANS FREUDENTHAL

Introduction to functional analysis. By A. E. Taylor. New York, John Wiley and Sons, 1958. xvi+423 pp. $12.50.

This book provides a carefully organized, readable, and unusually complete introduction to functional analysis. The central theme is the theory of normed linear spaces and operators between normed linear spaces. Where the property of completeness is crucial, Banach spaces are used. Special developments are given for Hilbert space when results of a distinctive nature can be obtained. There are many problems. These are chosen carefully and make a significant contribution to the completeness of the book.

The first two chapters introduce needed vector-space and topological material. Chapter 3 contains a brief introduction to the study of general topological linear spaces, with and without local convexity, and some basic facts about normed linear spaces, Banach spaces, and inner-product spaces. Chapter 4 contains basic material about operators and conjugate spaces (e.g., the closed-graph and continuous-inverse theorems, some study of reflexivity, and representations for certain conjugate spaces). Chapter 5 deals with spectral analysis for Banach spaces. The chapter presents some general theory, then the theory of compact operators, and finally the use of contour integration methods for closed linear operators. Chapter 6 contains proofs of the spectral theorem for bounded self-adjoint operators on Hilbert space (using the Riesz representation theorem for linear functionals on C), and for unitary operators. Chapter 7 is intended to provide preparation for the study of Banach algebras (although Banach algebras are not treated) and to show the close relationship between the theory of integration and linear space theory. Representation theorems are given for continuous linear functionals on certain spaces of continuous functions and for continuous linear functionals on spaces of bounded functions and spaces of essentially bounded functions.

The book is an introduction in the sense that basic foundations are carefully laid. It seems to be an excellent text for a graduate course, which is intended to stress general theory. Also, the introductory chapters would be very practical for use in a short beginning course in the foundations of linear space theory.

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