The author devotes considerable space to it, taking for the plane of projection the equatorial plane, or the plane of a meridian, or the plane of the horizon of a given place.

Another important case is that in which a given parallel is represented by a circle whose radius is equal to an element of the tangent cone to the earth's surface along the parallel and included between the point of contact and the vertex. Parallels are spaced along the central meridian in proportion to their true distances along this meridian. This is the case usually referred to as polyconic projection. (See the article on *Mathematical Geography* by Col. Sir A. R. Clarke in the ENCYCLOPAEDIA BRITTANICA.) This projection has been used extensively by the U. S. Coast and Geodetic Survey.

The book might be improved considerably by numbering the formulas and by making the important ones stand out more prominently than is done in the text. For example, the equation for a meridian in the general polyconic projection is derived on page 12 without comment as to its basic importance, indeed without stating that it is the equation for a meridian.

Those who are interested in the practical construction of maps will no doubt find the book of great assistance, and to these it must make its appeal.

<div align="right">L. W. DOWLING.</div>

Einleitung in die Mengenlehre. By A. Fraenkel. Berlin, J. Springer, 1919. iv + 155 pages.

The author proposes to give an introduction to the theory of infinite sets which can be understood by anyone who has sufficient interest and patience. No other prerequisites are set down. The author tells that he had experience in this sort of presentation during the recent war, when he lightened many wearisome hours by explaining *Mengenlehre* to his comrades in the field.

Among the chapter headings are: the concept of set; the concepts of equivalence and infinite sets; countable sets; the continuum; the concept of cardinal number; comparability of cardinal numbers; operations on cardinal numbers; ordered sets and types of order; linear point sets; well-ordered sets, well-ordering and its significance; logical paradoxes and the concept of set.

The choice of topics and the extent to which each topic is treated are well determined. Scientific honesty is not sacrificed

for (apparently) easy assimilation by the reader. Of course, the treatment of many of the above topics must be incomplete in a presentation such as is given in this book, but the author points out any incompleteness in each definition or proof, and suggests possible ways of filling the lacunae.

Some of the exposition is prolix, but prolixity is difficult to avoid in an exposition designed for the general reader. Even with this prolixity the book is very readable. Many examples well illustrate the abstract treatment of the various topics. Some of the more detailed and technical material which may be omitted without destroying the continuity of the exposition is printed in small type.

In the last chapter the author becomes dogmatic in some statements concerning the principle of selection (das Auswahl-prinzip) of Zermelo; but enough is said to enable one to see that the author's point of view is not the only possible one. The axiomatic setting up of the theory of sets according to Zermelo, the paradoxes which are to be avoided in this way, and the bearing of the problem of well-ordering on these matters, are explained here quite clearly, considering the limitations imposed by a popular exposition of these abstruse subjects. The method of *logicizing*, and more particularly the theory of types of Russell, are not mentioned, although a footnote reference to Russell's books is given.

The book should be very useful for upper collegiate classes in mathematics and for those interested in mathematical philosophy in a general way. It should help to introduce to a wider circle the ideas and methods of a fundamental and interesting branch of mathematics.

G. A. PFEIFFER.

Descriptive Geometry. By Ervin Kenison and Harry Cyrus Bradley. New York, The Macmillan Company, 1917. vii + 287 pp.

This is one of a series of texts on topics in engineering edited by E. R. Hedrick. In their preface the authors state, "This book represents a teaching experience of more than twenty years on the part of both the authors at the Massachusetts Institute of Technology. . . . The point of view · · · is · · · that of the draftsman. Mathematical formulae and analytic computations have been almost entirely suppressed. . . . The method of attack throughout the book