Nichteuklidische Geometrie, Hyperbolische Geometrie der Ebene
by R. Baldus, 4th edition, completed by F. Löbell. Sammlung Göschen
No. 970-970a. Walter de Gruyter, Berlin, 1964. 158 pages.
Price DM 5.80.

This new edition is not essentially different from the earlier ones.
Since these, however, do not seem to be very well known on this
continent the following brief review may be of interest. Like several
other books of the Sammlung Göschen it is very readable and appeals
to students from the point of view of its mathematical content as well
as of its elegant style which may make it eligible as a text for those
who wish to improve their German.

Apart from some concluding remarks in Part VI, the book deals
with plane hyperbolic geometry only. The first part gives, on 13 pages,
an historical survey. Part II introduces the reader into the main ideas
of the axiomatic method; it contains Hilbert's axioms of the absolute
geometry with some simplifications due to the author. Coordinates are
introduced, based on the axioms of measurement. Euclid's fifth
postulate, discussed in Part III, completes the system of axioms into
that of euclidean geometry. Based on the reality of euclidean geometry,
it is shown in Part IV how the axioms of absolute geometry can be
realized also by denying the fifth postulate; from the various possibilities
the author has chosen Klein's projective model of hyperbolic geometry
where points are the points within a circular disk and lines are the
chords of this circle. Part V, the longest of all, derives the funda-
mental theorems of plane hyperbolic geometry. Theorems on triangles
are obtained by the method of the normal situation.

H. Schwerdtfeger, McGill University

Boolean Algebras, by Roman Sikorski. Ergebnisse der
Mathematik und ihrer Grenzgebiete (New Ser.) Bd. 25. Second Edition,
Springer-Verlag Berlin, Göttingen, Heidelberg. Academic Press Inc.,
New York, 1964. x + 237 pages. $9.50.

This book appears in the "Ergebnisse" - series of Springer's.
It is one of its many remarkable features that it could have appeared in
a series of basic textbooks as well. It gives a complete account of the
recent development of the theory, complete to an extent that the
reviewer would be unable to mention a single essential result on the
subject (disregarding axiomatic questions) not included in the text.
Yet, nothing beyond pure set theory is presupposed, all basic notions
are properly defined and illustrated by many examples, and all proofs
are given in full (except in the appendix), so that one could hardly think
of any better introduction to the subject.

The book is divided into two chapters and an appendix. In the first chapter, only problems involving finite joins and meets are considered. Most of the results are classical and contained in other books on lattice theory.

The core part is chapter two, which deals with infinite joins and meets. The problems and results of this chapter involve too many technicalities to be fit for a description in a review. They are centred around higher degrees of completeness, higher distibutive laws, set representations, topological representations, representations as quotient algebras and extensions of Boolean Algebras. Many results, obtained since the first edition of the book appeared in 1960, have been included, many of them initiated by the author's own work. The 122 pages of this chapter as opposed to the 78 pages in the first edition reflect the development the theory has taken in the last few years.

The appendix contains a brief description of the relations of Boolean Algebras to other parts of mathematics.

Sikorski's book should be recommended to everybody who, for whatever reasons, happens to be interested in the theory of Boolean Algebras.

G. Bruns, McMaster University

Darstellende Geometrie, F. Rehbock. Springer-Verlag, Berlin-Göttingen-Heidelberg-New York, 1964. II. verbesserte Auflage. xv + 235 pages.

Es handelt sich um die 2. Auflage eines erfolgreichen Lehrbuches der darstellenden Geometrie für technische Hochschulen und für Universitäten. Die Form der Erörterung blieb unverändert, d.h. hauptsächlich sind die Abbildungen betont. Es ist ein grosser Vorteil, dass der einer Abbildung zugehörige Text gleich auf der Nebenseite steht. Der Stoff ist sehr sorgfältig aus gewählt, so dass auf relativ wenigen Seiten viel Material gesammelt ist. Selbstverständlich ist das nur dadurch möglich, dass oft die Beweise von Sätzen ausgelassen sind.

Das Buch hat eine kurze Einleitung und 8 Kapitel: 1. Anschauliche Bilder, 2. Zugeordnete Risse, 3. Anschauliche Risse, 4. Einfache Flächen, 5. Durchdringungen, 6. Distanzpunktperspektive, 7. Messpunktperspektive, 8. Gebundene Perspektive.

Gegenüber der 1. Auflage machte der Autor an vielen Stellen kleinere Änderungen und ergänzte den Text durch einige Angaben; das trug gewiss zur Verbesserung der Verständlichkeit dieses Buches bei. Neu bearbeitet ist der Abschnitt über Perspektivität und Affinität,