BOOK REVIEWS

Vorlesungen über Inhalt, Oberfläche und Isoperimetrie. By H. Hadwiger. Die Grundlehren der Mathematischen Wissenschaften in Einzeldarstellungen, vol. XCIII. Berlin-Göttingen-Heidelberg, Springer-Verlag, 1957. 13+312 pp. DM 46.20. Bound DM 49.80.

This book contains an excellent presentation of a wealth of material relating to convex sets, isoperimetric inequalities, and integral geometry. It is based on lectures given by the author at the University of Bern over a period of years, and accordingly it seems to be well suited for use as a textbook in graduate courses in American universities. The book is subdivided into six chapters (elementary geometry of polyhedra; elementary volume; Jordan and Lebesgue measure; selected topics from the geometry of sets; volume, surface area, and isoperimetric inequalities; convex bodies and general integral geometry). Each chapter is followed by interesting and stimulating historical comments. All the main concepts and theorems are developed for Euclidean n-space, and many simple but annoying details, usually left to the reader, are worked out in an elegant and rigorous manner.

In recent decades the theory of measure and integration was developed mainly along extremely general and abstract lines, and thus even the specialist should find a surprising amount of fascinating results in this book which is concerned primarily with concrete geometrical situations in Euclidean n-space. This feature of the book makes it a valuable and in many ways admirable counterpart to modern presentations of the theory of measure and integration. On the other hand, the reviewer feels that the author should have included, at least in the *Anmerkungen* at the end of the chapters, some references to certain relevant modern developments. For example, in a book whose title includes the term *Oberfläche*, one would expect to find at least a passing reference to the Lebesgue concept of surface area and to the fact that this concept gave rise to a vast literature and to many still open problems of extreme difficulty, especially in the case of lower-dimensional varieties in general Euclidean n-space. Similar comments apply to many other topics discussed in the book without any reference to related important modern developments. This criticism could be met easily, of course, by additions to the *Anmerkungen* in future editions of the book which is doubtless a very valuable contribution.

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