

Studies in modern topology, ed. by P. J. Hilton. MAA Studies in Mathematics, Vol. 5. Prentice-Hall, Englewood Cliffs, N. J., 1968. 212 pages. U.S. \$3.00 (members); \$6.00 (non-members).

This is the fifth volume of the MAA Studies in Mathematics series and gives a survey of recent results and current research in topology. It is aimed at readers who are familiar with the elements of general and algebraic topology and want to get an idea of how far this discipline has developed. Therefore it is of particular interest to university teachers as well as senior and beginning graduate students who might be guided by it in their choice of a suitable field of research.

The volume starts with an introduction by the editor P. J. Hilton which many readers will find the most illuminating part of the book. It succeeds in a mere 20 pages to give a clear and readable survey of the advances in topology during the last decade, and outlines the major areas of active current research.

Each of these is represented in the following five expository articles: general topology in G. T. Whyburn's "What is a curve?"; geometric topology in W. Haken's "Some results on surfaces in 3-manifolds"; algebraic topology in V. K. A. M. Gugenheim's "Semisimplicial homotopy theory"; and again, with some of the applications of algebraic methods to differential topology, in E. Dyer's "The functors of algebraic topology"; and finally differentiable topology in V. Poénaru's "On the geometry of differentiable manifolds".

The articles vary in their style and level of sophistication. The easiest and perhaps most readable is the short one by G. Whyburn which shows the need for and supplies an explicit definition of a curve, illustrates it by different types of curves, and ends with a recent application to complex analysis. - The results from W. Haken's long article, due to him and others, are somewhat specialized, but the fairly detailed proofs give the reader a thorough taste of the visualization characteristic of a geometric proof. - V. K. A. M. Gugenheim outlines in a clear and logical manner the developments due to D. M. Kan and J. C. Moore. There are hardly any proofs, but frequent references to the bibliography make this article a very useful guide to the literature in the field. - A comprehensive treatment of algebraic topology based on combinatorial homotopy theory, with applications to cobordism and K-theory, is a rather wide topic to survey on about 30 pages; E. Dyer's treatment is well structured, but the many definitions and, by necessity, very sketchy proofs might be difficult to follow for some. - V. Poenaru deals in a well motivated fashion with some basic ideas on the geometric problems connected with differentiable manifolds, in particular with embeddings, cobordism, and the use of Morse theory and surgery for the classification of differentiable manifolds.

Each article includes a useful bibliography, and the book ends with quite a good index - probably not easy to assemble for a book of this type.

I wish the volume a wide readership. Its different articles should include something stimulating for mathematicians of different backgrounds, tastes, and aspirations.

Helga Schirmer, Carleton University

Uniformisierung von R. Nevanlinna. Zweite Auflage. Springer-Verlag, Berlin - Heidelberg - New York, 1967. x + 391 pages. U.S. \$13.40.

Although this book is designated as a second edition, it is really just a