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Vorlesungen über die Theorie der Polyeder unter Einschluss der Elemente der Topologie, by Ernst Steinitz; edited and completed by Hans Rademacher, Springer, Berlin, 1934, viii + 351 pp.

Lehrbuch der Topologie, by H. Seifert and W. Threlfall, Teubner, Leipzig and Berlin, 1934, vii + 353 pp.

These two books present an interesting contrast; both have to do with topology in a pure, or combinatorial form, but otherwise they have little in common. The one is a memoir; the other is a textbook. The one is an isolated chapter of geometry which bears little relation to the main stream of contemporary topological research, but which stands by itself, firm in its own intrinsic worth. It deals with a question almost as old as analysis situs itself—the combinatorial classification of ordinary polyhedra. The other is an exposition of the rudiments of modern topology—the homology theory of n-dimensional complexes and manifolds. It aims to give the student a glimpse of the far-reaching developments of present-day topology, and to acquaint him with the vital ideas at their root.

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The textbook of Seifert and Threlfall should do much to smooth the path of the student who wants to learn the fundamentals of (combinatorial) topology. The authors have concentrated on basic concepts and methods, avoiding generalizations; they have explained these concepts and methods in as simple and concrete a fashion as possible, yet one which is thorough and rigorous. The exposition proceeds by easy stages, with examples and illustrations at every turn. It presupposes nothing; even the necessary group theory is developed in a special supplementary chapter.

The book follows the lines laid down in Veblen's *Analysis Situs* (1922, 2d ed. 1931), van Kampen's dissertation (1929), and the early chapters of Lefschetz' *Topology* (1930). The influence of American topologists has been so strong that terminology hitherto confined to English has been translated; for example, "chains" finally appear as "Ketten." The influence of the German algebraic school is reflected in a frank use of group theory. A particularly valuable feature of the book is the attention paid to the fundamental (Poincaré) group, covering spaces, and three-dimensional manifolds; in no other single place in the literature has so much interesting information been gathered together on these topics. The investigations of the authors themselves find place in the chapter on three-dimensional manifolds.

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