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# BOOK REVIEWS

*Cohomology of Groups*, by Edwin Weiss. Academic Press, New York, 1969. x+274 pp. $15.00.

When I first studied cohomology of groups, I disliked it. It seemed to consist of a batch of rather obscure definitions followed by theorems which were, if anything, even more obscure. The proofs generally consisted of formal manipulations which were simple enough individually, but which were heaped together in grotesque combinations, like a surrealist collage. And none of this ever seemed to be leading anywhere. There were virtually never any examples, and along the way there were almost no applications to anything else in mathematics. The only reason for persevering was the belief that eventually all of this would lead to something worthwhile—that there would be light at the end of the tunnel. It was not an image which inspired confidence.

The aim of Weiss' book is to provide the reader with all the cohomology theory that he needs to tackle class field theory. Thus he is concerned only with the cohomology of finite groups. Chapters I, II, and IV are devoted to the basic facts about cohomology: its definition, its properties under mappings, and cup products. The cohomology groups $H^n(G, A)$ (for all $n \in \mathbf{Z}$) are defined by means of $G$-complexes, rather than by some more abstract or axiomatic approach. Chapter III discusses an assortment of topics, including dimension shifting, the inflation-restriction sequence, cohomological equivalence, and the connections between the cohomology of a group and that of a Sylow subgroup. Chapter V is concerned with group extensions; it concludes with the group-theoretic principal ideal theorem. The last chapter begins with a discussion of formations and proceeds to prove the main theorems of abstract class field theory. Three of these chapters also include problems for the reader. In short, the book in its first four chapters provides the cohomological prerequisites for the Artin-Tate notes, and the last two chapters (which are similar in content to Chapters 13 and 14 of Artin-Tate) give a good introduction to the first part of those notes.

How successful is it? To begin with the easy part of the answer, the book is mathematically sound and is clearly written. Its approach is more "computational" than the other books on the cohomology of groups which I know; that feature makes it a good book to have around somewhere. The pace is more leisurely than in the other books, and I found it to be a book which lent itself, more than most