Historical notes are found at the ends of some sections and chapters; there are helpful exercises at the end of each section, and the bibliography is fairly extensive.

It should be pointed out that the role of resolutions in this book is secondary. They are introduced after the definitions of Ext and of Tor as computational devices. In MacLane's approach they are not (and should not be) basic to the definitions.

There is a great temptation to ask that this book include many more applications in many more areas than it does. However, if we keep in mind the fact that the title of the book is *Homology*, and that the author assumes that we all know by now why we should study homology, we can appreciate the selectivity which the author has displayed. In the light of recent developments, Chapters IX and XII may well be a little out of date, but MacLane points out in his introduction that the subject is still in a state of flux, and it's anybody's guess as to what the final word may be (if any). In any event, this is a book which can be given to a student with the assurance that if he absorbs the material in it he will have learned a great deal. Moreover, the students who have been reading this book have found it to be extremely helpful and clear.

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Introduction to differentiable manifolds. By Louis Auslander and Robert E. MacKenzie. McGraw-Hill, New York, 1963. 9+129 pp. $9.95.

There seem to be two main routes toward an understanding of contemporary differential geometry and its allied disciplines. One way proceeds in historical order through the classical material on curves and surfaces in three-space, then on to global problems and the full development of manifold theory. The second approach starts in higher dimensions, leading directly from Euclidean spaces to the fundamentals of manifold theory. Although several good books have appeared recently following the first approach (for example, those by Willmore and Guggenheimer), there is a vital need for material presenting the intuitive background for the second. This book is a very welcome contribution to this goal, presenting in clear readable form of the basic concepts of the geometry of manifolds.

Chapters 1 and 2 introduce differentiable manifolds and their tangent spaces, proceeding from Euclidean spaces to submanifolds of Euclidean spaces and then on to abstract manifolds. To give further motivation for introducing the abstract objects the next chapter introduces the non-singular projective algebraic varieties as mani-