penetrate the jungle of technical details and become fascinated by the kaleidoscopic picture which I have tried to unfold here of the history of the first and oldest natural science".

One can only hope that a future historian will be able to accomplish as much when the astronomy of the twentieth century has itself been reduced to a few odd books and some handfuls of fragments.

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Examples of groups, by Michael Weinstein, Polygonal Publishing House, Passaic, N.J., 1977, 307 pp.

"Why study examples?" asks the author as he opens his preface to this curious volume. Why, indeed. This is a question which I think many of today's graduate students and more than a few of their instructors could ponder profitably. The author gives us three reasons:

(1) to motivate new theorems,
(2) to illustrate and clarify old theorems,
(3) to obtain counterexamples.

While all of this is well put and certainly true, it seems to me that the main reason for studying examples is simply that we can't do without them. What, after all, is a theorem if it is not a simultaneous assertion about some properties of a large class of examples? What better way to understand what a theorem says than to apply it to some concrete examples? Everyone appreciates the power and desirability of generalization. Studying examples is just the reverse process of going from the general to the specific. Mathematics without examples would become the uninteresting exercise in formal deduction which it is sometimes mistaken for.

Unfortunately, the study of examples is seldom given the status which it deserves, particularly in some modern texts, and the present book is an admirable attempt to rectify this situation, as it pertains to the theory of discrete groups. How well does it succeed?

The author presents us with a rather long list of specific discrete groups; finite and infinite, abelian and nonabelian. In each case, a number of properties are obtained. For example, turning (at random) to p. 194, we see: "Result 5.11.5. G is not an M_1 group. Result 5.11.8. G is Hopfian." There is also a section of comments ("notes") following each example (e.g. "G shows that the class of cohopfian groups is not quotient closed") and a number of exercises. The first example appears on p. 101 and is preceded by an entire section devoted to some abstract construction techniques (e.g. direct, central, semidirect, and wreathed products) and some elementary facts about free groups and matrix groups. Additional elementary results appear in a series of ten appendices. All arguments are given in a very careful and complete manner, but the price we pay for this is a rather pedantic and heavy style:

"If k is a natural number such that $2 < k$, then 2 and k are distinct divisors of $k!$, and hence $2k \leqslant k!$. Also $2 < k$ implies $1 \leqslant k$ so $1 + k \leqslant 2k$. Thus $1 + k \leqslant k!$ for all k such that $2 < k$."