an unfamiliar, but certainly valuable, point of view. The book should be in the hands of anyone working in nilpotent group theory (in the widest sense) and of anyone interested in seeing homological techniques put to work in group theory.

K. W. GRUENBERG

Aspects of constructibility, by Keith J. Devlin, Lecture Notes in Math., Vol. 354, Springer-Verlag, New York, 1973, xii+240 pp., 22DM-

Gian Carlo Rota [1] named the years 1930-1965 as "The Golden Age of Set Theory." Some of the results presented in this book call for extending the Golden Age beyond 1965. What made 1965 seem like a natural end to the Golden Age is, of course, P. J. Cohen's proof (1963) of the independence of the axiom of choice and of the continuum hypothesis. What followed was a rich crop of independence proofs which showed that a long list of "classical" problems were not solved exactly because they cannot be decided on the basis of the presently accepted axiom systems for set theory. The fact that there are statements in set theory which are independent of the axiom system is no surprise to anybody aware of Gödel's Incompleteness Theorem. The remarkable fact is that the problems which are now proven to be independent are more "natural" in the sense that they are raised by mathematical practice and not especially conceived so as to show independence. We do not claim that the problem of consistency of set theory is not natural for the student of foundations, but that for some reason the working mathematician is not bothered by it.

One direction (the consistency) of the independence of the continuum hypothesis was proved by Gödel in 1938 by introducing the constructible universe, which is a subclass or subcollection of the class of all sets (not necessarily a proper subclass). Gödel showed that the constructible universe is a model of all the axioms of set theory (including the axiom of choice). In fact, this class of the constructible sets (usually denoted by L) is the smallest such model including all the ordinals. Besides, L satisfies the generalized continuum hypothesis, i.e. $2^{\aleph_{\alpha}} = \aleph_{\alpha+1}$ for every infinite cardinal \aleph_{α} . Gödel also noted that some other problems are settled once we restrict ourselves to the universe of the constructible sets, i.e. we assume V=L where V is the class of all sets.

It will not be an exaggeration to suggest that after the introduction of L by Gödel, the major part of the study of L is due to one person, Ronald B. Jensen. Jensen's results in the 60's and 70's show that the majority of the problems which were shown to be independent of the axioms of set theory are settled once we assume V=L. (That includes Souslin Problem, Kurepa Hypothesis, different partition problems, two cardinals problems in model theory, etc.) We do not claim, of course, that every problem in Set Theory is settled by V=L, Gödel's Theorem forbids!, but in some ill defined sense, every "natural" problem seems to be decided in the constructible universe.