The book concludes with a chapter entitled "An Introduction to Projective Geometry" which motivates, in the Euclidean plane, the projective concepts of duality and polarity. The last paragraph is particularly interesting: a comparison of the real projective and inversive planes considered as extensions of the Euclidean plane; the former is motivated by gnomonic projection, the latter by sterographic.

Good problems are distributed throughout the book; hints and answers as well as a glossary of technical terms are provided at the end. Like most of Professor Coxeter's books, delightful quotations are found under all chapter headings.

C. W. L. Garner, Carleton University

Mathematics of Choice: How to count without counting, by Ivan Niven. Random House, New Mathematical Library No. 15. 1965. xi + 202 pages. $1.95.

This is a very readable book on elementary combinatorial theory, suitable for high school juniors and laymen. There are many illustrative examples. While the book is a valuable contribution to the popular mathematical literature, the more serious reader should be forewarned that the subject matter is not indicative of current research in combinatorics. Only counting problems are considered, and virtually all results mentioned were known well before 1850. A large number of problems and solutions are provided, few of them challenging. College students will probably find the pace too slow, certainly slower than most other books of the series.

W.G. Brown, McGill University

Lectures on rings and modules, by J. Lambek. Blaisdell Publishing Co., Waltham, Massachusetts, 1966. viii + 184 pages. $8.50.

This outstanding book deserves a place on the library shelf alongside Jacobson's classical Structure of Rings. The overlap in material in the two books is surprisingly small. Prof. Lambek's goal seems to have been to bring the reader to the frontiers of research into problems of rings of quotients by the shortest route consistent with clarity and motivation.

Chapters 1 and 3 deal with the basic tools of ring theory and a development of the classical structure theory. Chapter 2 is mainly an exposition of the theory of rings of quotients for commutative rings. The high point of the book is chapter 4, an account of the work of Goldie, R.E. Johnson, Faith, Utumi and the author on classical and complete rings of quotients. The final chapter is a brief but excellent introduction to homological algebra. It is a pity that this chapter was not developed to the point where it could be applied to some ring theoretic problems. The book ends with three appendices; the first concerns the representation of a commutative ring as a ring of functions and the second and third develop some of the theory of group rings. Appendix 3, on semiprime group rings, was written by I. G. Connell.

This should be an excellent textbook for a course in ring theory. There is a large selection of problems on all levels of difficulty.

A few typographical errors were noted. The only confusing one occurs on page 29, line 2: Replace $1 = rx$ by $1 - rx$. The author has also communicated the following correction: "Proposition 2 on page 110 and Colollary 1 on page 111 require the additional assumption that R_R be finite dimensional. The proof of the former is incomplete; it remains to be shown that, for any non-zero divisor r of R, $qr = 0$ implies $q = 0$. This is an easy consequence of the fact that rR is large, which is proved as follows, using an argument by Lesieur and Croisot (1959): Suppose $rR \cap sR = 0$ for some s in R, then $\Sigma_{i \geq 0} r^i sR$ is seen to be a direct sum, and the finite dimensionality of R_R leads to $s = 0$."

Gerald Losey, University of Manitoba

Ring and radicals, by N. J. Divinsky. University of Toronto. $7.50.

A review of a book on ring theory should start with a short summary of the history of the subject, and we take this opportunity to correct some of the historical remarks made by the author.

The general theory of associative rings has its roots in the theory of finite dimensional algebras as developed by Dickson and Wedderburn, and the abstract ideal theory introduced by Emmy Noether. Probably, the cornerstone of general ring theory was laid in Artin's famous paper of 1927, where the structure of rings with both chain conditions was given: Students of E. Noether have tried to extend this result, and the structure of rings with only the minimum condition was given almost simultaneously by Hopkin (1938) and Levitzki (1939). (Levitzki's paper had been sent earlier to Artin, but due to the pre-war conditions in Europe, the first copy was lost, and when this was found out it was published hastily some months after Hopkin's publication.)

The structure theory of rings emphasizes the radical N of a ring R, by which the structure problem can be split into three parts: characterization of semi-simple rings R/N; the structure of radical rings N, and finally the patching together of N and R/N (where cohomology may be useful). The various characterizations of the radicals, especially Perlis' (1942), led to the basic result of Jacobson (1945) on the structure of ring without finiteness conditions, which was a