these are obvious but those in Definition 5.6 (wrong sign) and Theorem 5.7 ($C_2$ traversed in the wrong direction) will cause trouble.

The main criticism, however, concerns the cost. Certainly the book is beautifully produced. But when one considers that the main body of the text occupies 106 pages (the rest being appendices, bibliography, indices, etc.), £4·50 seems a tall order even in this day and age. Since books covering essentially the same material are available at under half the price, the high cost may well militate against the recommendation of the book as a text for students.

ADAM C. MCBRIDE

ANDERSON, F. W. AND FULLER, K. R., *Rings and Categories of Modules* (Graduate Texts in Mathematics, vol. 13, Springer-Verlag, 1974), ix+339 pp., DM.36.30, $14.80.

Beginning with the definition, rings are studied from the standpoint of their categories of modules. Care is taken not to become more involved than necessary in general category theory, and categorical ideas are introduced only when they are needed. For example, natural transformations of functors are discussed in § 20 and Morita equivalence in § 21.

Of course one would expect the Morita theorems to be included in such a book, and so they are, but there is much more besides, as the following summary of the contents shows: §§ 1-8, rings, modules and homomorphisms; endomorphism rings; direct sums and products; essential and superfluous submodules; generators and cogenerators; trace and reject: §§ 9-15, semisimple modules; finitely generated, finitely cogenerated (i.e. finitely embedded), artinian and noetherian modules; modules with finite length; indecomposable decompositions; semisimple artinian rings and primitive rings: §§ 16-19, hom and tensor functors; projective, injective and flat modules; projective covers and injective envelopes: §§ 20-24, natural transformations; Morita equivalence and duality: §§ 25-26, direct sums of projective, injective and countably generated modules; characterisations of noetherian rings: §§ 27-29, semiperfect and perfect rings; modules with perfect endomorphism rings.

This is not a book for the expert only, although he will find it a worthwhile addition to his library. The beginner will find this an attractive, well-motivated and informative introduction and account of quite a substantial part of the theory of rings and modules. It is particularly well suited to an M.Sc. course as the presentation is clear and at the end of each section there is a wide selection of exercises to test the understanding.

P. F. SMITH

BERBERIAN, S. K., *Lectures in Functional Analysis and Operator Theory* (Graduate Texts in Mathematics Vol. 15, Springer-Verlag, 1974), ix+345 pp., DM38.50, $15.70.

This is the fifth textbook in analysis that Professor Berberian has written, and it is of the high standard which we have come to expect from the author. In Chapter 1, the basic theory of topological groups is developed up to but excluding the introduction of Haar measure. Topics discussed include neighbourhoods of the identity, subgroups and quotient groups, uniformity in topological groups and metrisability of topological groups. Chapter 2 is devoted to the basic theory of topological vector spaces over the real and complex fields. There are sections on metrisable topological vector spaces, spaces of type ($F$), normed spaces, Banach spaces, hyperplanes and linear forms, finite-dimensional topological vector spaces and Riesz's theorem. Chapter 3 is entitled " Convexity ". There are sections on convex sets, Kolmogorov's normability criterion, the Hahn-Banach theorem, invariant means, generalised limits, ordered