constructed via something like a projective limit from a totally ordered compact set X and for each $x \in X$ a cylindrical semigroup S_x and maps $\mathfrak{M}_{xy}: S_y \to S_x$ for $x \leqq y$ which satisfies various properties. Then they show compact S is irreducible iff S/H is an I-semigroup and S is irreducible iff S is a hormos with trivial group of units and some additional conditions on $\mathfrak{M}_{xy}$'s. This clears up the structure of irreducible semigroups, a result due to the authors, and appearing in print for the first time here. The authors sum up all these results of Chapter B and call it the "Second fundamental theorem of compact semigroups."

The next chapter, Chapter C, applies the previous results to some rather special cases. The final chapter (before three appendices) contains 42 pages of examples with pictures, many due to Hunter and Anderson.

All in all Hofmann and Mostert have given us an important and successful book.

We have come to the end.

You lovers of semigroups can run out and purchase Clifford and Preston's book or Hofmann and Mostert's book. For the rest of you I leave you with the advice of Rousseau's deformed (one nippled) mistress, "Zanetto, lascia le donne, et studia la mathematica."

JOHN RHODES

Statistical Mechanics by David Ruelle, Benjamin, New York, 1969. 11+219 pp. $7.95 paper, $17.00 cloth.

Statistical Mechanics used to be exclusively a branch of physics. In the last fifteen years it has become a recognizable part of mathematics. Ruelle's book is one of the first to bring out clearly the intrinsic mathematical content of the subject.

Most textbooks on statistical mechanics written by and for physicists tend to be carbon copies of each other. They traditionally begin with an introductory chapter pretending to lay the foundations of the subject, but usually concluding that the outstanding problem in this line is the ergodic conjecture, which is barely discussed and promptly discarded as in the domain of mathematicians. Such a book then proceeds to deal with systems of noninteracting particles, or occasionally with crude approximations for interacting systems, whose justification is again based more on common—and tacit—consent than on even the rudiments of an acceptable proof. While it is true that considerable progress has been made on the ergodic conjecture (which is not touched upon at all in the present book),