(A scholarly compilation of eighteen pages.) *Index.* (Detailed and usable.)

A few words are in order on what the book does *not* contain. It does not contain "topological dynamics," the theory of geodesic flows, and most of the connections of the subject with spectral theory. These omissions are deliberate, presumably in order to keep the volume finite. The book also does not contain the work of Chacon and Ornstein (on the Dunford-Schwartz generalization of the ergodic theorem) and the work of De Leeuw and Glicksberg (on almost periodicity). The author mentions these omissions sadly; they are caused by a mixture of considerations involving space and timing. Finally, the book does not contain (not even by bibliographic mention) the recent work of Kolmogorov, Rohlin, Sinai, and others on the concept of entropy. This omission is most regrettable.

The style of the main body of the book is condensed, but clear and readable. The organization is excellent. The work as a whole is a must for every serious student of ergodic theory.

P. R. HALMOS

Topologische Räume. By H.-J. Kowalsky. Birkhauser Verlag (Mathematische Reihe Band 26), Basel und Stuttgart, 1961. 271 pp. DM 35.

The book treats many topics briefly: the basic ideas and results of general topology, and varied further developments. Within its limitations it is a remarkably well-organized and stimulating introduction to the field. The viewpoint is generally analytic (no homotopy, practically no dimension theory). Partial order is very heavily stressed; this affects definitions, choice of topics, and the order of introduction of the basic ideas.

Chapter I consists of three sections: naive set theory, lattices, filters. Emphasis is laid on the lattice of all filters in a set (how distributive is it? how many atoms are there in it?). Chapter II defines a topology by filters of neighborhoods. The usual equivalent definitions are established, but separation axioms, metric topologies, and order topologies are formulated filterwise. The main result of the chapter is the complete normality of linearly ordered spaces.

In Chapter III we find compactness, called "vollkompaktheit"; however, the partial compactnesses (except countable compactness), disappear after six pages. Paracompactness is rather fully treated (including the standard equivalences). Next there are short sections on connectedness and local connectedness, to be continued in Chapter V.