projection from one plane to another [Yaglom 2, p. 17]. I did not check too many among these references, but I noticed a few others of this kind: p. 78. If $OP>k/2$ (O the center of the inversion, k the radius of the invariant circle) the inverse of P can easily be constructed by the use of compasses only, without a ruler [Forder 1, p. 222]. The proof is given. It is not mentioned that the theorem is true without the restriction on OP. p. 92: A sphere with center N and radius NS inverts the plane σ (tangent in S) into a sphere σ' on NS as diameter [Johnson 1, p. 108].

H. FREUDENTHAL

Neuere Methoden und Ergebnisse der Ergodentheorie. By Konrad Jacobs. Ergebnisse der Mathematik und ihrer Grenzgebiete, neue Folge, Heft 29. Springer Verlag, Berlin, 1960. 6+214 pp. DM 49.80.

This is a concise and elegant introduction to some of the new methods and results of ergodic theory. Its table of contents (translated and annotated) runs as follows.

Introduction. (Motivation, basic definitions, and a bird's eye view of the entire subject; written for the non-expert.) 1, *Functional-analytic ergodic theory.* (Mean ergodic theorem, first for unitary operators on Hilbert space, ultimately for semigroups on Banach spaces; emphasis on almost periodicity; norm convergence for martingales.) 2, *Markov processes.* (The work of Doeblin; heavy use of such modern methods as the Riesz convexity theorem and the Krein-Milman theorem.) 3, *The individual ergodic theorem.* (Birkhoff's theorem, the Dunford-Schwartz generalization; the Hurewicz theorem; the almost everywhere martingale theorem.) 4, *Global properties of flows.* (Recurrence, ergodicity and mixing; decomposition into ergodic parts; flows under a function; the problem of invariant measure, Ornstein's solution.) 5, *Topological flows.* (Considerations involving both measure and topology; typically, the work of Krylov and Bogoliubov.) 6, *Topological investigations in the space of measure-preserving transformations.* (The work of Halmos and Rohlin.) 7, *Non-stationary problems.* (Random ergodic theorem, non-stationary Markov processes.) 8, *Functional-analytic methods.* (Zorn's lemma, topological and metric spaces, topological vector spaces and Banach spaces, semigroups, Banach lattices, Hilbert spaces.) 9, *Measure and integral. Special vector spaces.* (Fields of sets, measures, measurable transformations, integration, L^p spaces, convergence theorems, conditional expectations, product spaces. Chapters 8 and 9 are called an appendix; their purpose is to fill gaps in the reader's prerequisites.) *Bibliography.*