Hilbert space concepts is required for Part 2. Before embarking on a detailed study of this excellent work, the uninitiated may wish to examine first the more elementary treatment of optimum filtering given in the book by Y. W. Lee, "Statistical Theory of Communication" (Wiley).

H. Kaufman, McGill University

Kinematik, Sammlung Göschen 584/584a, by Hans R. Müller. Walter de Gruyter, Berlin, 1963. 171 pages. DM 5.80.

This is a brief survey of some of the classical theory of the motion of a plane over a fixed plane. Topics discussed are centroids, centres of curvature, inflection circles, the Euler-Savary formula, the Bobillier construction, loci and envelopes. These are applied to linkage mechanisms, toothed gearing, and rotors in epitrochoidal stators (including the contemporary Wankel motor as an example). Analytic geometry, vector methods and complex variables are used in the development.

There is a brief introduction to the three-dimensional kinematics of rolling surfaces of which spiral beval gears are examples.

The bibliography lists 16 modern treatises.

Michael Goldberg, Washington, D.C.

Machine-Independent Computer Programming, by Maurice H. Halstead. Spartan Books, Washington, D.C., 1962. xiii + 269 pages. $6.50.

While the definitive text on compiler building has yet to be written, this book, one of the first, is a welcome step in that direction. It describes the Neliac language, a programming language with the essential property that it can be used to describe itself. The book is a careful description of a basic Neliac compiler, with each section of the compiler explained statement by statement. The second half contains complete listings of Neliac C for the Remington Rand Univac M-460 Countess, the Neliac 704, the Neliac 1640 and the interesting decompiler D-Neliac C for the Countess. Compiler builders cannot ignore this volume.

J.E.L. Peck, University of Alberta, Calgary