entation; as an introduction to the modern theory of rings (which will be treated much more exhaustively in a forthcoming book of the author), it should make fascinating reading for any advanced student. Among the topics treated are dimensionality in infinite-dimensional vector spaces, including a determination of the dimension of the dual space; the "finite" topology on spaces of linear transformations, with the notion of total subspaces and of dense rings; the determination of two-sided ideals and of isomorphisms of certain rings of linear transformations; a discussion of dense rings of linear transformations possessing involutorial anti-automorphisms; and finally the author's well known density theorem, with classical applications to irreducible algebras of linear transformations.

The choice of notations and terminology might at times, in the reviewer's opinion, be definitely better. For instance, the author sticks to his habit of writing linear transformations on the right of the variable; there is no objection against this as long as one remains in pure algebra; but linear algebra is now the daily bread of mathematicians from every part of the horizon, and its results should be immediately available to them, without having to use mirrors to restore the operator to what is considered by the majority of analysts as its proper place! It is amusing, by the way, to see how the author himself violates his own convention when it comes to writing linear forms, for instance! The term of "direct product" and the notations $x \times y$ and $E \times F$ for the tensor product are quite unfortunate, since they already have several other meanings; why not adopt the von Neumann symbol $\otimes$, now almost universally used? Writing $\langle x, f\rangle$ or $\langle f, x\rangle$ for $f(x)$ in duality theory would clarify many a formula and emphasize the symmetry of the results. The fundamental notion of characteristic vector of a matrix is relegated to an exercise; so is the relation $\dim (E+F)+\dim (E\cap F)=\dim E+\dim F$, although a whole page is devoted to the "modular" law in the lattice of subspaces, which is never used any more (and is there apparently for the sake of those who still believe lattice theory is an important part of mathematics!).

But these are very minor criticisms of a remarkable book, which has every chance of becoming a classic in its field for many years to come.

J. DIEUDONNÉ

NEW JOURNAL

The Michigan Mathematical Journal. Vol. 1. University of Michigan Press, Ann Arbor, 1952. 197 pp. $2.00 to individuals ordering directly. $4.00 to others.

This volume consists of two numbers, containing a total of 18 papers on very diverse topics, reproduced by photo-offset from typescript. The function of the journal appears to be to provide rapid publication of papers by residents of Ann Arbor and vicinity—so rapid, indeed, that the second number, carrying the date July 1952, and actually issued, as far as I can ascertain, in May 1953, contains papers dated as late as January 1953. This suggests experimental confirmation of the hypothesis (which I accept with reluctance) that the desire for speedy publication does not completely overcome the distaste for seeing one's work appear in a less than maximally attractive format.

R. P. BOAS, JR.

BRIEF MENTION

The collected works of Bernhard Riemann. Ed. by H. Weber, with the assistance of R. Dedekind. With a supplement ed. by M. Noether and W. Wirtinger. A new introduction by Hans Lewy. New York, Dover, 1953. 10+10+558+8+116 pp. \$2.55 paperbound, \$4.95 clothbound.

This is a photographic reprint of the second ed. (1892) of the Gesammelte Mathematische Werke and of the Nachträge (1902); full bibliographical information is included. There is an 8 page introduction by H. Lewy.

Topologie, vol. I. By C. Kuratowski. 3d ed. (Monografie Matematyczne, vol. 20.) Warsaw, Polish Mathematical Society, 1952. 12+450 pp. \$7.50.

This appears to be a photographic reprint of the 2d edition (1948; reviewed in this Bulletin, vol. 58, p. 265) except for the correction of some errors.

Tables of Chebyshev polynomials $S_n(x)$ and $C_n(x)$. (National Bureau of Standards Applied Mathematics Series, no. 9.) Washington, U. S. Government Printing Office, 1952. 30+161 pp. \$1.75.

The particular Chebyshev polynomials tabulated here are $C_n(x) = 2\cos(n\cos^{-1}x/2)$ and $S_{n-1}(x) = 2(4-x^2)^{-1/2}\sin(n\cos^{-1}x/2)$.

Construction and applications of conformal maps. Ed. by E. F. Beckenbach. (National Bureau of Standards Applied Mathematics Series, no. 18.) Washington, U. S. Government Printing Office, 1952. 6+280 pp. \$2.25.

This volume contains 32 papers presented at a symposium in 1949.