17. V. V. Peller, *Hankel operators of the class γ_p and their applications*, Mat. Sb. (N.S.) **113 (155)** (1980), 538–581.

18. S. C. Power, *The essential spectrum of a Hankel operator with piecewise continuous symbol*, Michigan Math. J. **25** (1978), 117–121.

19. ______, *C*-algebra generated by Hankel operators and Toeplitz operators*, J. Functional Analysis **31** (1979), 52–68.

20. ______, *Hankel operators with PQC symbol and singular integral operators*, Proc. London Math. Soc. **40** (1980), 45–65.

21. C. R. Putnam, *Commutators and absolutely continuous operators*, Trans. Amer. Math. Soc. **87** (1958), 513–525.

22. M. Rosenblum, *On the Hilbert matrix*. I, II, Proc. Amer. Math. Soc. **9** (1958), 137–140; **9** (1958), 581–585.

23. ______, *The absolute continuity of Toeplitz's matrices*, Pacific J. Math. **10** (1960), 987–996.

24. T. Takagi, *On an algebraic problem related to an analytic theorem of Carathéodory and Fejér and on an allied theorem of Landau*, Japanese J. Math. **1** (1924), 83–93.

25. A. L. Volberg, *Two remarks concerning the theorem of S. Axler, S.-Y. A. Chang and D. Sarason*, J. Operator Theory **7** (1982), 209–218.

DOUGLAS N. CLARK

BULLETIN (New Series) OF THE
AMERICAN MATHEMATICAL SOCIETY
Volume 9, Number 1, July 1983

0273-0979/83 $1.00 + $.25 per page

Basic concepts of enriched category theory, by G. M. Kelly, London Mathematical Society Lecture Note Series, No. 64, Cambridge Univ. Press, New York, 1982, 245 pp., $24.95. ISBN 0-5212-8702-2

What has been going on in category theory for the last 15 years? Originally category theory appeared to be an outgrowth of homological algebra which itself developed as an aspect of algebraic topology. The historical accident of its birth has little to do, however, with the current perception of category theory as an alternative to set theory in the foundations and formulations of mathematics. What originally distinguished category theory from homological algebra was its retreat from groups to sets; i.e., its elimination of the requirement that maps between the same two objects could always be added. This ruled out exact sequences and hence derived functors so that for a while category theory not only bore little relation to homological algebra, but also had little to talk about. Fortunately adjoint functors were discovered (remembered? recognized?) and they became the main topic of study in the 1960's, which mostly centered around the notions of triples (monads), algebras for a triple, algebraic categories and equational categories. The names of Barr, Beck, Lawvere, and Linton are associated with this development, which had its culmination in the books by Gabriel-Ulmer [**6**] and Manes [**21**]. (See these for references to the original papers.) However, during the 60's there were other developments that could be characterized as "moving away from the safe shores of set theory". (Thanks to F. E. J. Linton for this image.) This movement took place in three interrelated ways.

1. Closed categories. Being able to add maps between the same two objects is clearly an important property of a category. This can be expressed in a more abstract form by requiring that for any two objects A and B in the category $\mathbf{C}$, the set $\mathbf{C}(A, B)$ of maps from A to B in $\mathbf{C}$ should carry the structure of an