Birkhoff-Kellogg as its point of departure. Orthogonal series, mean convergence, Vitali's closure theorem, and Hilbert spaces are discussed briefly in the complement to Chapter 4. The last chapter ends with a two page historical survey of differential geometry in higher dimensions and projective differential geometry.

There are undoubtedly readers who will claim that the authors would have given more, had they given less. To me the point of view is refreshing and the multitude of facts make the book a treasure house. The cover and the press work do credit to printer and publisher alike.

EINAR HILLE

Proceedings of a Second Symposium on Large-Scale Digital Calculating Machinery. (Annals of the Computation Laboratory of Harvard University, Vol. 26.) Cambridge, Harvard University Press, 1951. 38+393 pp. $8.00.

The first of the Harvard Symposia on this topic was held early in 1947, at the dedication of the Mark II Calculator. The Second Symposium was held at the dedication of the Mark III Calculator, at present in operation at the Navy Proving Ground in Dahlgren. Sessions were devoted to engineering developments (which will not be covered in this review), to numerical methods and computational problems in various sciences. There is, in this volume, a reasonably comprehensive survey of the field, both in the United States and in Europe, as it was in 1949.

The most significant mathematical contribution in the present volume is due to C. Lanczos, who, in his picturesque way, presents a method of minimized iterations for the solution of characteristic value problems. W. E. Milne examines various finite difference approximations to the two-dimensional Laplacian operator.

The problem of semi-automatic instruction is discussed by H. D. Huskey and a beginning of a unified theory of computing machines is presented by G. W. Patterson.

Most interesting are the papers describing some of the problems which await solution. Those who are interested in handling differential equations will find enough problems in the papers by H. Feshbach on nuclear physics and by R. D. O'Neal, E. T. Welmers, and H. W. Emmons on aeronautics and aerodynamics. On the other hand, the papers by F. Mosteller, W. W. Leontief, L. R. Tucker, and H. Chernoff on various topics in the economic and social sciences provide ample material for those interested in the manipulation of matrices.

It is interesting to compare the changes in the consumer demand which have taken place in the time between the two Symposia. As an instance, Leontief considered in 1947 a static model of inter-industry relationships, in 1949 he proposed a dynamic model (and, at the present time, plans are being made for actual computation on such a model): progress is at the rate of 1 dimension in two years!

Readers of these two Symposia volumes will look forward to more. They will hope that in succeeding volumes there will be more con-tributions to modern numerical analysis and to the problems of organization of a high speed digital computing center, and accounts rendered of major computational problems, such as the paper on a problem in physical chemistry in the present volume by H. A. Scheraga, J. T. Edsall, J. Orten Gadd, Jr., a problem which occupied two weeks computing time on the Mark I Calculator.

JOHN TODD

BRIEF MENTION

Proceedings of the International Congress of Mathematicians, Cam-bridge, Massachusetts, U.S.A., August 30–September 6, 1950. Providence, American Mathematical Society, 1952. Vol. 1, 8+769 pp. Vol. 2, 2+461 pp. $15.00

These volumes contain the list of officers and members, the report of the Secretary, and the text of the addresses and communications to the Congress; the proceedings of the Conference on Algebraic Tendencies in Analysis, however, are scheduled to appear separately as a volume in the series of Mathematical Surveys.

Fourier Series. By G. H. Hardy and W. W. Rogosinski. Cambridge University Press, 1950. 12+100 pp. 10s 6d.

Except for the correction of a few minor mistakes, this is the same as the first edition of 1944, reviewed in Bull. Amer. Math. Soc. vol. 51 (1945) pp. 212–214.