even, the book will be welcomed by experimental workers. It will be useful for reference purposes to those concerned with engineering aspects of work at very low temperatures, and it could be used for supplementary reading by students. The book was not intended to be a textbook, and it would be difficult to use as such. There are many well-chosen photographs of cryogenic equipment, and line drawings are used generously and effectively to illustrate the text.

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## Banach Spaces and Algebras

**Spectral Theory**. Edgar Raymond Lorch. Oxford University Press, New York, 1962. xii + 158 pp. $5.50.

This is a valuable addition to the family of books on algebraic analysis. It provides an introduction to the theory of Banach spaces and Banach algebras, for the advanced undergraduate or young graduate student of mathematics and, perhaps, for some students of engineering or physics. Contrasted with recent tomes on the subject, it presents, with careful attention to detail, only the most basic results of the theory, in Lorch's inimitable style, which precludes the boredom common to many brief axiomatic developments.

The material is treated through the spectral theory of linear operators, rather than by the other popular approach in which Banach algebras are made the basic vehicle. This is made clear in the following summary from the preface.

". . . in the chapters on Banach spaces and linear transformation theory one will find the Hahn-Banach theorem, the inverse boundedness theorem, and the uniform boundedness principle; also the standard material on reflexivity, adjoint transformations, projections, reducibility, and even a formulation of the mean-ergodic theorem. The chapter on Hilbert space presents all the classic facts on linear functionals and orthonormal sets as well as the preliminary theory of self-adjoint transformations (bounded or not) and resolutions of the identity.

"Chapter IV is devoted to the Cauchy theory for operators. It contains the central facts of spectral theory: spectrum, resolvent, the fundamental projections, spectral radius, and the operational calculus. This theory is then applied to the problem of determining the structure of an arbitrary self-adjoint transformation in Hilbert space. Finally, in chapter VI, we consider Banach algebras. These are exclusively commutative and have a unit. We find here a discussion of reducibility, normed fields, ideals, residue rings, homomorphisms, and maximal ideals, the radical, the structure space, and the representation theory."

I would like to have seen a more detailed discussion of the examples from which the theory evolved. Also, it would have been nice to have this concise introduction to algebraic analysis include other basic tools of the discipline, such as the Stone-Weierstrass theorem and the Krein-Milman theorem. But, perhaps their inclusion would have sacrificed the brevity that is the book's most valuable asset.

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## Man and Machine

**Modern Technology and Civilization**. An introduction to human problems in the machine age. Charles R. Walker. McGraw-Hill, New York, 1962. xi + 469 pp. Paper, $4.75; cloth, $7.50.

For more than a decade the Technology Project at Yale University, of which Charles R. Walker is director, has studied the impact of technology on social organization and personality and the corresponding social and psychological conditions of productivity and technological performance. Out of this work have come a number of important books—mostly by Walker himself in collaboration with other members of the group [*Steeltown* (1950); *The Man on the Assembly Line* (1952); *Towards the Automatic Factory* (1957)—and a good many articles and monographs. We owe to this work basic theoretical insight into the human and social meaning of technology and into the technological dimension of personality and cultural values. We owe to it also important practical lessons that have found wide application in industry: (i) the concept of "job enlargement" for repetitive, unskilled jobs, with its resultant increase in both job satisfaction and job performance, and (ii) the understanding that automation, especially in clerical work and data processing, is as much a change of social structure, relations, and attitudes as it is a change in methods and instruments. This understanding has helped speed greatly the transition from conventional to electronic data processing in a number of business and government offices. Finally, we owe to Walker's work the understanding that, in selecting workers for a new industrial process, social skill—for example, experience in a mass-production plant—is a more important qualification than kindred technical skill acquired in an alien social environment; this principle has been applied most successfully in staffing a new aluminum operation in a preindustrial country of West Africa.

In the present book Walker has attempted to pull together the major work done on the relationship of technology—especially of modern industrial technology—and personality, social order, and culture. He has chosen an unusual method of doing this: the book is essentially an anthology of writings from a great many sources (mainly American sources, one regrets) connected by a commentary written by Walker and supported by separate (and excellent) bibliographies. This makes for a kaleidoscopic, but unfortunately not for a clear or cohesive, presentation.

There is simply not enough from any one author to produce a readable anthology. In ranging from the history of technology (for example, Mumford and the *History of Technology*) through Frederick W. Taylor, Henry Ford, the modern American "Human Relations" school, and (alas) to the cosmic problems "Whither Technology" and "Whither the Human Race," Walker's book contains far more than any one can digest, and yet only bits and pieces by any one writer. The uninitiated, for whom the book is apparently intended, is likely to be lost, but anyone even slightly familiar with the field will certainly have read most of the authors from whom the excerpts are taken. Yet, some of the scholars whom Walker himself considers most important are left unrepresented. Thus, Georges Friedmann, the distinguished French student of work, is cited in most of Walker's commentary chapters and referred to in most of his bibliographical notes;