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Linear operators. Part II. *Spectral theory*, by Nelson Dunford and Jacob T. Schwartz, with the assistance of William G. Bade and Robert G. Bartle, Interscience, New York, 1963, pp. 859–1923, $35.00

If a mathematical visitor from another century were to visit these shores and inquire about the present state of mathematical analysis, he would not miss much if he limited himself to leafing through the pages of this book. With the long awaited appearance of the second volume, we now see before our eyes a panoramic view, rich in colorful detail, of the whole output of a school of mathematical analysis that started with the work of Volterra and Fréchet near the turn of the century, and reached its peak in Poland, Hungary and the Soviet Union as well as at Chicago and Yale in the thirties and forties.

It is impossible to do justice to this volume by merely listing the contents, as has become customary in a review; we shall instead highlight some of the most valuable and typical parts, referring to Halmos's detailed review of the first volume for a description of the techniques of presentation of the material.

The guiding idea of the entire work is the spectral theory of a single linear operator, and its varied applications.

. . .

In these days of extreme fragmentation of fields, when some mathematicians take pride in not knowing the applications of their own work, the authors' constant concern with the "Zusammenhang" between theory and application, and between distinct branches of mathematics, accounts for the unusual length of this treatise.

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Whoever has followed this book since its beginning, and has derived from it much of his mathematical education and inspiration, as the reviewer has and as a whole generation of analysts will, cannot forget the immense amount of human effort and loving care that went into its composition. As one reads through these pages, the entire world of present-day mathematical analysis springs to life. Since Picard and Goursat, there has not been a textbook on such a gigantic scale. The authors have successfully accomplished a task that many would have regarded as impossible.

To have a nearly complete view of an entire field, that of functional analysis, available in a coherent exposition (which, we hope, will eventually reach several thousand pages with the publication of the remaining $n-2$ volumes), is a benefit that few mathematical disciplines have ever enjoyed—one thinks of Fricke-Klein or Russell-Whitehead as feeble precedents; inevitably it will have a decisive influence upon the future development of all analysis, as well as of much theoretical physics and other neighboring disciplines.

Reprinted from Bull. Amer. Math. Soc. **71** (1965), 705–708.

No serious student of analysis can afford to ignore this treatise. More than our thanks, the authors deserve to be read by anyone who is interested in learning the results of a whole age of mathematics.

Gian-Carlo Rota