BOOK REVIEWS

History of functional analysis, by Jean Dieudonné, Notas de Matemática, no. 77, North-Holland Mathematics Studies, no. 49, North-Holland Publishing Company, Amsterdam, 1981, vi + 312 pp., $29.50.

> *The infinite*! *No other question has ever moved so profoundly the spirit of man.*—David Hilbert (1921)

In the last decade or two there has been renewed interest among mathematicians regarding the history of their subject. Books and papers focusing on the history of various topics within comtemporary mathematics are now commonplace. Many mathematical journals actively solicit and promote high quality survey articles which offer historical perspective. After many years of explosive development, there is now a growing awareness of the importance of interpreting and reflecting on how mathematics arrived at its present state. Although most mathematicians know that many problems have their origins in *classical* problems, few of us (it appears safe to say) have had the time, inclination, interest, patience (or ability?) to unravel the precise sequence of events connecting these problems. The point of view of present-day historians of mathematics is that it is worthwhile to know about these ties with classical problems and the subsequent evolution stimulated by them. The admirable book under review, written by an eminently qualified mathematician, makes a notable contribution to the understanding of the historical process that has shaped what is known today as functional analysis.

What is functional analysis? Perhaps it is surprising that this term is ordinarily not defined even by those who write on the subject. One reason for this appears to stem from the fact that, to date, functional analysis has not completely crystallized as a single discipline but rather suggests a grouping of subjects which, in certain respects, have more in common regarding method then content. It is the essence of functional analysis that concepts and methods of classical analysis and related branches of mathematics be extended to more general objects. Such generalization makes it possible to approach, from a unified point of view, questions which earlier appeared isolated or to have little in common. Furthermore, the very general nature of the techniques of functional analysis often reveal deep insights and new results that otherwise would escape detection.

Let us return to the opening question of the previous paragraph: What is functional analysis? To achieve some degree of focus and simultaneously to