concerning numbers which are representable as a sum of two squares. Selberg **[14]** has shed further light on the relationship between the large sieve and the Selberg sieve. Diamond and Jurkat (unpublished) have extended the analysis of the iterated Selberg sieve to dimension $\kappa \neq 1$ (see also Porter **[11]**). Bombieri **[2]**, **[3]** has had some innovative ideas concerning weighted sieves. Vaughan **[15]** has given a simple proof of a sharp form of Bombieri's mean value theorem.

For years to come, *Sieve methods* will be vital to those seeking to work in the subject, and also to those seeking to make applications. The heavy notation in the book seems to be essential in formulating such general methods. Some parts of the book are much more difficult to read than others, but generally the text is lively and conversational. In concept and execution this is an excellent, long-needed work.

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Fourier series with respect to general orthogonal systems, by A. M. Olevskiĭ (translated by B. P. Marshall and H. J. Christoffers), Ergebnisse der Mathematik und ihrer Grenzgebiete, Band 86, Springer-Verlag, Berlin, Heidelberg, New York, 1975, viii + 136 pp., $33.60.

Fourier series–the original Fourier series, that is, the ones using trigonometric functions–were the first series of orthogonal functions. They are either