additional piquancy would have been added if he had progressed slightly further; in particular, some explicit examples of the work of Swinnerton-Dyer and Serre on congruences might have been included.

Postscript: The reviewer was flattered to find himself included in the preface as a member of a quartet who kept the flag of modular function theory flying during the lean years before the recent explosion of interest in the subject. The author is incorrect, however, in assuming that H. Petersson was the only one of the four who did not contribute to the 1956 Bombay Colloquium on zeta-functions; all four were present there and contributed papers.

R. A. RANKIN

KALLENBERG, OLAV (editor), *Random Measures* (Akademie-Verlag and Academic Press, 1977), 104 pp., £6.

The mathematical foundations of point process theory have been developed rapidly in recent years; a monograph was urgently needed to collate the profusion of results. One such volume is the inaccessible German work of Kerstan, Matthes and Mecke. Kallenberg has provided a concise formal treatise incorporating many of his own improvements. One regret is that both works date essentially from 1974 and so do not include the continuing improvements and new concepts such as Papangelou's conditional intensity measures.

Kallenberg considers random measures on locally compact second countable Hausdorff spaces. The generalisation to random measures is mathematically natural and has technical applications, but most readers will find the point process case more intuitive. Few concessions are made to the novice who may well wonder why a point process is defined to be an integer-valued random measure, or what a Palm probability "means". The survey by Daley and Vere-Jones (in "Stochastic Point Processes" edited by P. A. W. Lewis, Wiley, 1972) is useful collateral reading.

"Random Measures" will remain for some years an invaluable reference work.

B. D. RIPLEY

KUSSMAUL, A. U., *Stochastic Integration and Generalized Martingales* (Pitman, 1977), xi+163 pp., £7·00.

The author states his aim "to imbed the theory of stochastic integration into a functional analytic framework". For right-continuous stochastic processes X and Z, $Z \to \int_0^\infty Z_t dX_t$ is a "measure" with values in L^p, the space of p-th power integrable random variables. Kussmaul defines this measure by extension theorems for vector-valued measures. Under localisation he finds the necessary and sufficient condition on X for its existence to be that X is a *quasimartingale*, i.e. the difference of two non-negative supermartingales.

I could not decide on the intended audience. A strong background in Banach spaces is needed, and uniform integrability is taken for granted, yet half the volume is devoted to well-known properties of martingales. I imagine very few readers will not be familiar with this material, so I recommend starting at Section 8.

I was irritated by the use of "modification" and "semimartingale" in new senses; at one point even a "finite set" has a new meaning! This is a photographically produced "Research note in mathematics"; commendably it has a (short) index and a list of symbols but the proofreading has been inadequate.

This treatise can only be recommended to experts in the field.

B. D. RIPLEY

CURTAIN, RUTH F. and PRITCHARD, A. J., *Functional Analysis in Modern Applied Mathematics* (Academic Press, London, 1977), ix+339 pp., £10·80.

Functional analysis has become a major tool in applied mathematics. Nevertheless, the authors point out in the Introduction, for an applied mathematician a "working knowledge of functional analysis . . . is not readily obtained by reading a standard text on functional analysis". Also, in spite of excellent books on applications in specific areas the authors felt "that there was a need for a book