his derivation of the general form of the characteristic function of an indefinitely divisible distribution law. He then goes on to consider stable distribution laws and related topics. Chapter VIII extends various results (Liapounoff theorem, law of iterated logarithm, and so on) known for sets of mutually independent chance variables, replacing the condition of independence by certain more general conditions. In Chapter, IX Lévy discusses measure properties of developments in continued fractions, using the suggestive terminology of probability.

Lévy's book can be recommended only to advanced students of probability who already have some familiarity with the topics treated. Other readers will merely be exasperated by his confidence that they have his own unsurpassed intuitive grasp of the subject. The student preparing himself to do research in probability, however, will find here the latest results in an important field, derived in a way which stresses methods rather than details.

J. L. Doob

Les Lois des Grands Nombres du Calcul des Probabilités. By L. Bachelier. Paris, Gauther-Villars, 1937. 7+36 pp.

Bachelier believes that many of the results in his books and papers have been unnoticed by later writers. In this book he restates many of these results (without proofs). He first considers the Bernoulli case: independent trials, each having only two possible results, having probability p and $1-p$. He then generalizes in various directions, letting p vary from trial to trial, and so on. The formulas are of asymptotic character, approximations which improve as the number of trials increases. As an example of their general character, we give one result. Bachelier finds that (in the Bernoulli case) if μ_1 trials are made, and if we consider the difference between the number of times the event with probability p has occurred and its expected value, then the probability that this difference will return to 0 before μ further trials are made is $(2/\pi)$ arc tan $(\mu/\mu_1)^{1/2}$.

J. L. Doob

Theorie der Orthogonalreihen. By Stefan Kaczmarz and Hugo Steinhaus. (Monografje Matematyczne, vol. VI.) Warsaw, 1935. vi+298 pp.

The present volume of the excellent Polish Series is devoted to the theory of general orthogonal functions of a single real variable. Desiring not to increase the size of the volume without proportionally increasing its usefulness, the authors omitted almost completely the theory and applications of special orthogonal functions including that of orthogonal polynomials, and concentrated their attention on general orthogonal functions as a tool in pure mathematics. Even in this restricted field no claim is made for "encyclopaedic completeness." Despite these somewhat severe restrictions the authors succeeded in presenting a very interesting material widely scattered in the literature, including also some new contributions of their own.

The book consists of eight chapters followed by a bibliography containing 129 items. Chapter 1 (pp. 1–30) gives a brief exposition of general notions of abstract spaces, and linear operations and functionals which serve as a most important tool in the subsequent developments. Chapter 2 (pp. 37–60) introduces the fundamental concepts of orthogonality, completeness, closure, and best approximation. Chapter 3 (pp. 61–102) discusses general orthogonal series in L^2 including theorems of Müntz and of Riesz-Fischer, and Parseval's identity. Chapter 4 (pp. 103–148) treats of various examples, with particular attention given to orthogonal systems of Haar and