we referred, we shall simply add that Vivanti did not follow
Klein and Fricke in a slavish manner. On the contrary, the
work before us gives a masterly independent presentation of
some of the most fundamental parts of the theory of linear
groups and their geometric interpretation. Many American
readers will doubtless welcome this translation into a language
with which they are more familiar than that with of the
original work.

G. A. MILLER.

Wahrscheinlichkeitsrechnung. Von A. A. MARKOFF. Nach
der zweiten Auflage des russischen Werkes übersetzt von
H. LIEBMANN. Leipzig and Berlin, B. G. Teubner, 1912.
viii+318 pp.

Le Calcul des Probabilités et ses Applications. Par E. CAR-
VALLO. Paris, Gauthier-Villars, 1912. x+170 pp.

The Elements of Statistical Method. By WILFORD I. KING.
New York, Macmillan, 1912. xvi+250 pp., price $1.50 net.

THE translation of Markoff's Wahrscheinlichkeitsrechnung
will be a welcome companion to that of the same author's
Differenzenrechnung. Its motive, as frankly stated in the
preface, is to treat the theory simply as a deductive mathe-
matical doctrine, aiming at precision in the analytic formula-
tions, rigor in the proofs, and the determination of superior
limits of error where approximate formulas are used. Axioms,
definitions, and theorems are formulated explicitly as such,
though not always with euclidean austerity of arrangement.
The philosophy of the subject is disregarded, and the few
special applications admitted receive a relative emphasis deter-
mined more by their availability as examples than by their
intrinsic interest.

The first four chapters, half of the book, deal with discrete
probabilities, elementary and cumulative, their representation
by rational numbers, and the classical asymptotic expressions
resulting from Stirling's formula. The examples here are
entirely from games of chance. Especially noteworthy is the
discussion of mathematical expectation.

The rest of the volume contains a short account of the
occurrence of irrational numbers as limiting values, together
with the notions of probability as applied to continuous sets,
with a few of the standard geometric examples; a few pages