probably meant is that the "double" integral $\int f(x, y)d\nu(x, y)$, where ν is the product measure of, say, λ and μ, is alternatively denoted by $\int\int f(x, y)d\lambda(x)d\mu(y)$; the corresponding iterated integrals are denoted by symbols such as $\int d\lambda(x)\int f(x, y)d\mu(y)$. The threat to use two integral signs with only one differential is never actually carried out. Aside from this triviality, I noticed no errors in the book, trivial or otherwise. I caught only three minor misprints; the only one that might worry a student for a few seconds is on p. 121, line 9: f_n should be $\tilde{f}_n$.

The topics centering around the names of Fubini (decomposition of measures), Radon and Nikodym (absolute continuity), and Haar (group invariance), are not discussed in this volume; according to the introduction, they will be treated in the subsequent chapters.[3] The introduction indicates also that the authors are planning eventually to apply their theory (probability) and to generalize it (distributions).

My conclusion on the evidence so far at hand is that the authors have performed a tremendous *tour de force*; I am inclined to doubt whether their point of view will have a lasting influence.

PAUL R. HALMOS

Introduction to modern prime number theory. By T. Estermann. Cambridge University Press, 1952. 10+75 pp. $2.50.

The main purpose of this tract is "to enable those mathematicians who are not specialists in the theory of numbers to learn some of its non-elementary results and methods without too great an effort." Actually, the book is devoted to the limited object of proving the Vinogradov-Goldbach theorem that every sufficiently large odd number is the sum of three primes; in the course of proving this result, the author supplies the necessary results on characters and primes in arithmetic progressions. Only a few elementary number-theoretic results are assumed, these being quoted from Hardy and Wright's book *An introduction to the theory of numbers*; Cauchy's residue theorem is also assumed.

The book is a very carefully thought out exposition which lays bare the whole nature of the proof and unremittingly avoids all things not needed in the final proof. This leads to a work which is somewhat austere although not so formal as Landau's *Vorlesungen über Zahlentheorie*; in common with Landau's book, Estermann's tract gives few references to the literature. Nevertheless, the author admirably succeeds in his aim. The proofs are clear and remarkably

[3] In Chapter III, the sole assertion resembling Fubini's theorem is stated for continuous functions with compact support only.