This has led to some of the most important results in number theory.

While many of the proofs are clearly expounded, two criticisms might be made. The treatment is now and then condensed and calculations are sometimes omitted. It is also occasionally assumed that the reader is familiar with results which he reasonably might not know. Thus in the proof of the formula for $\pi_2(n)$, in Chapter 5, reference is made without explanation to "the method of stopping at an even term," and this really means that one assumes that

$$1 - k + \frac{k \cdot k - 1}{2!} + \cdots + \frac{k \cdot k - 1 \cdots k - n + 1}{n!} > 0$$

if n is even. So in Chapter 12, on transcendental numbers, reference is made to a theorem of Polya without any statement of the theorem, which however is given in Vol. 2 of Pólya and Szegö's *Aufgaben und Lehrsätze*, Problem 75, Chapter V.

The other criticism refers to results in which formidable calculations play an important part. They are sometimes set out in such a manner that it is not easy to follow the sequence of operations, and to see how they are changing from line to line.

The details given in this review show that very large cross sections of results in number theory are contained in this book and that diverse methods and proofs are given. The chapters can be read independently of each other and so the reader may browse among them. He is sure to find much of interest to him whatever his tastes are. How fortunate he is in having this opportunity of becoming acquainted with so many exciting aspects of number theory, and this without preliminary study. The authors have done a great service to all interested in number theory, and readers will be very grateful to them.

L. J. MORDELL

Electrodynamics and classical theory of fields and particles. By A. O. Barut. The Macmillan Company, New York, 1964.

Many mathematicians are not aware that recent work in theoretical physics has taken a strongly mathematical turn and has posed problems that would be of professional interest to a wide variety of mathematicians. This book is an excellent place to begin to sample this work: It is an exposition by a physicist of those parts of prequantum field theory that are most important for understanding quantum field theory, and has a clear, geometric-Lie group flavor that the reviewer finds very attractive.