Chap. iii considers special Tauberian theorems with particular application to the distribution of the prime numbers, an extremely interesting application of the general theory. Chap. iv treats of the 'spectrum' of a function which measures the 'energy-distribution' in the generalised harmonic analysis of the function. This chapter also contains some original applications to almost periodic functions.

Prof. Wiener's many contributions to this field of research are well known and his lucid exposition will make the book indispensable to all who wish to take a serious interest in this fascinating subject.

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*The Elements of Switchgear Design.* By Dr. Fritz Kesselring. Translated from the German by S. R. Mellonie and J. Solomon. Pp. vii + 182. (London : Sir Isaac Pitman and Sons, Ltd., 1932.) 7s. 6d. net.

THERE is much in Dr. Kesselring's little book to be commended, but the translators would have been well advised to alter his notation and his units so as to make it more easily understood by English readers. They say that they have left the original notation and units untouched so as to make the book "more instructive to the student". We are afraid that it will frighten him from reading the book altogether. When he comes to the formulæ for Coulomb's law and for the capacities of conductors, and finds them $4\pi$ times too much or too little as the case may be, he needs instruction. The translators recognise this, as they give a reference on p. 63 to Hague's treatise. Again, the force ($K$) of attraction between two linear currents is given in Joule/cm. units, and although we are told more than once that a Joule/cm. = $10 \cdot 21$ kgm., it all tends to puzzle the English engineer. Once (p. 69) the force is measured in kgm./$10^3$ amp.$^2$/ degree units.

No proofs are given of the formulæ ; references ought therefore to have been given. The formula for the mutual inductance of two current rings is stated to be very complicated and so graphs, unfortunately on much too small a scale, are given in its place. It would have been better to show that the formula becomes simple in special cases. The discussion of flash-over and puncture is good.

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*The Vitamins in Health and Disease.* By Prof. Barnett Sure. Pp. xiv + 206. (London : Baillière, Tindall and Cox, 1933.) 11s. 6d.

PROF. SURE's book is a simple and readable exposition of the history of vitamin work to date, and of its bearing on practical problems of medicine and nutrition. It takes, implicitly and explicitly, the strictly orthodox view that direct vitamin administration has the object of making good, by prophylaxis or cure, dietary deficiencies. Consequently there is no collation, or critical examination, of the stimulating suggestions, to be found scattered in biochemical literature and in the *obiter dicta* of clinical investigators, that the vitamins may have specific pharmacodynamic actions of much wider clinical potentialities.

In a book meant as a practical guide, it seems unfortunate that there is no mention of international agreement about units, though this question is absolutely fundamental to a useful international exchange of practical experience in vitamin therapy. Yet the agreed report of the Permanent Commission on Biological Standardisation was issued in October 1931, and the United States was well represented on the Committee. Apart from this major fault, and a certain number of minor oversights, little else can be said in criticism of what is a useful addition to the small but growing library of books on vitamins.

A. L. B.

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*Modern Physics : a Second Course in College Physics.* By Prof. G. E. M. Jauncey. Pp. xvii + 568. (London : Chapman and Hall, Ltd., 1933.) 22s. net.

PROF. JAUNCEY's interesting manual for students interprets the term 'modern physics' very liberally—he certainly does not restrict it to 'atomic' physics. His liberality of interpretation leads, on occasion, to some odd results in the matter of balance—for example, one whole page is devoted to an elementary deduction of the expression for the capacity of a parallel plate condenser, and less than two pages to the subject of cosmic rays. A good deal of space is wisely given to the elementary theory of alternating currents, but it seems to be an error of judgment, in a work which embraces so many topics, to devote 28 pages to "useful mathematics".

It is pleasant to note that the volume opens with a short historical sketch. It introduces the reader to a wide range of subjects, and should prove to be a useful handbook for a student of general honours standard.

A. F.

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*The Distribution of Prime Numbers.* By A. E. Ingham. (Cambridge Tracts in Mathematics and Mathematical Physics, No. 30.) Pp. vi + 114. (Cambridge : At the University Press, 1932.) 7s. 6d. net.

THIS interesting "Cambridge Tract" is concerned mainly with the behaviour, for large values of $x$, of the function $\pi(x)$, which denotes the number of primes not exceeding $x$. The first chapter gives some elementary theorems concerning $\pi(x)$, that is to say, theorems which can be proved without the use of the complex variable. In the second chapter the prime number theorem, namely $\pi(x) \sim x/\log x$, is proved with the aid of the Riemann zeta-function. The remaining three chapters deal with more precise relations.

The treatment is complete in itself and the author states that the book is not exclusively for specialists, but aims rather at making the subject accessible to a wider circle of mathematical readers. The attractive style and clarity of exposition fully justify this claim.