have included it in one volume with another technique which occupies four-fifths of the space. Because of this restriction, the author has been unable to give the subject the thorough treatment that is such a notable feature of the first section. For example, little is mentioned about pathological sera, although the widest application of paper electrophoresis is in the clinical field, and, because of presentation, the beginner may have difficulty in finding guidance. However, Durrum has dealt adequately with the theoretical side and has been able, from his experience as a pioneer in this technique, to provide valuable information concerning many practical details. The whole volume is attractively produced and includes a very full bibliography.   R. CONSDEN

The Archæology of Sussex
By E. Cecil Curwen. Second edition, revised. Pp. xx + 330 + 32 plates. (London : Methuen and Co., Ltd., 1954.) 25s. net.

DR. E. CECIL CURWEN is a well-known pre-historian, and he therefore writes from first-hand knowledge. The second edition of his work on the archæology of Sussex has been entirely brought up to date and gives an excellent general picture of the remote past in that county. The book is not intended for the specialist, but rather for the instructed amateur interested in archæology who is studying the ancient story of one of the more interesting parts of Britain. Dr. Curwen first sets the stage and then proceeds to deal with Sussex during the Stone Ages, the Bronze and Iron Ages and the Roman period. All accounts of Saxon times in the county have been omitted.

The only criticism that can be made is of the deliberate omission of any kind of gazetteer of sites. Here I cannot agree with Dr. Curwen that such things are only useful to specialists. Anyone visiting the county and wishing to explore the countryside would have welcomed such a list of sites with their ages and references to any relevant literature concerning them. For the specialist, of course, such a gazetteer would have been invaluable. One rather fears that the publishers probably felt they could not face the extra expense involved. All the same, this second, revised edition is an excellent work and should be on the shelves of everyone interested in the remote past of that part of England. The illustrations are well chosen, both the line-blocks and the half-tones ; and there are a welcome number of the latter.   MILES BURKITT

Transistors
Theory and Applications. By Abraham Coblenz and Harry L. Owens. Pp. xv + 313. (London : McGraw-Hill Publishing Company, Ltd., 1955.) 42s. 6d.

THREE years ago the authors gave lectures on the transistor at laboratories of the United States Signal Corps, shortly afterwards converting them into eleven articles for the journal *Electronics*, and now into a book. They have thereby attempted the formidable task of describing semiconductor physics, the metallurgy of germanium and silicon, techniques for manufacturing transistors and the equivalent circuits and applications of transistors, in language suited, as they say, to the practical technician.

The background physics given in early chapters is, however, disjointed and not always helpful or accurate. The uncertainty principle, for example, might well have been omitted. Davisson and Germer

did not, in confirming de Broglie, pass electrons through a nickel slab to obtain clear, circular diffraction patterns on a photographic plate. Mobility, lifetime of minority carriers and the Hall effect are surprisingly left until much later in the book. The chapters describing the electronics, elementary circuits, small-signal applications and cascading of transistors—the centre third of the book—are, on the other hand, very satisfactory and should be of wide use. A chapter on large-signal applications is too confined to early work.

Manufacture is interestingly described, but diffusion is said to be the mechanism responsible for the p-n junction formed by that extensively used process of alloying indium to n-type germanium. The fact is that, during the furnace operation, the indium dissolves some germanium, much of which, contaminated with indium, is precipitated during cooling on to the undisturbed germanium, at first continuing the monocrystalline structure ; diffusion is unimportant. Very little information is given on the design of transistors. The presentation maintains the high standards of the publishers.   J. R. T.

An Introduction to the Theory of Numbers
By G. H. Hardy and E. M. Wright. Third edition. Pp. xvi + 419. (Oxford : Clarendon Press ; London : Oxford University Press, 1954.) 42s. net.

THIS text, widely recognized as probably the best general introduction to number theory, now appears in a third edition ; G. H. Hardy died shortly after the publication of the second edition of 1945, and the revisions have been made by Prof. E. M. Wright, utilizing recent work. For example, the 1945 statement that there is no easy proof of the irrationality of π has been replaced by a concise and elegant proof due to Niven. But the major change is the insertion of an 'elementary' proof of the Prime Number Theorem, that the number of primes less than x is asymptotically equivalent to $x/(\log x)$. This proof, obtained by Selberg and Erdös and here given with improvements due to Wright, is by no means easy, but is technically elementary since it makes no use of complex function theory, and its discovery was the mathematical sensation of 1949.

Organic Syntheses
An Annual Publication of Satisfactory Methods for the Preparation of Organic Chemicals. Edited by William S. Johnson. Vol. 34, 1954. Pp. vi + 121. (New York : John Wiley and Sons, Inc. ; London : Chapman and Hall, Ltd., 1954.) 28s. net.

AMONG the thirty-four preparative methods described in this volume are two for cycloheptanone, each starting from cyclohexanone : the first method, using nitromethane and Raney nickel, gives a yield of 40–42 per cent ; the second, in which p-tolylsulphonylmethylnitrosamide is used as a source of diazomethane, gives 33–36 per cent. The great variety of organic compounds contained in this latest issue may be indicated by mentioning azelanitrile, cetylmalonic ester, dimethylfurazan, diphenylacetylene, hemimellitene, 3-methylthiophen, o-phthaldehyde and tetralin hydroperoxide. The editors invite chemists to submit accurate details for the preparation of other compounds which might find a place in future issues, either by reason of their general interest or because they illustrate useful synthetic methods.
                JOHN READ