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The Art of Retouching Photographic Negatives: and Practical Directions how to finish and colour Photographic Enlargements, etc. By Robert Johnson. Twelfth edition, revised and rewritten by T. S. Bruce and Alfred Braithwaite. Revised and enlarged by Arthur Hammond. Pp. x + 154 + 16 plates. (London: Chapman and Hall, Ltd., 1930.) 12s. 6d. net.

THAT a twelfth edition of Robert Johnson's handbook on the art of retouching has been published is testimony to its excellence and to the fact that progress is constantly being made in the methods and appliances for working up and finishing photographs. The leading professional photographers of the world have so developed their art and their lighting systems that their finished results owe but little to the skill of the retoucher, and their clients are learning to accept the straightforward untouched portrait as a better thing than the old over-retouched ones that former generations demanded. There is, however, still a great majority that demands that their likenesses shall be smoothed out of all semblance of their natural selves, whilst the technical equipment of many photographers is unequal to providing what is required without extensive use of the retoucher's skill. There is also a legitimate demand for skilled retouching in commercial and industrial photography. For these purposes this handbook gives full but concise instructions in the difficult art, but, as the writers confess, success depends rather upon intelligent practice than upon following any printed directions. It is mainly a matter of manual skill wisely directed.

The latest revision of the book is by Arthur Hammond, an associate of the Royal Photographic Society. A comprehensive and painstaking account is given of the materials and methods to be used, of the modelling of each feature of the face, of the working up of backgrounds, etc., of the retouching of landscape, architecture, and animals with pencil, brush, and airbrush. Finally, a series of chapters is devoted to the colouring of photographs by all suitable methods. The whole forms a complete text-book of the retoucher's art based on modern practice. J. DUDLEY JOHNSTON.

Sexual Life in Ancient India: a Study in the Comparative History of Indian Culture. By Johann Jakob Meyer. (The Broadway Oriental Library.) Vol. 1. Pp. xi + 275. Vol. 2. Pp. ix + 277-591. (London: George Routledge and Sons, Ltd., 1930.) 36s. net.

THE "Broadway Oriental Library", of which this work is one of the initial issue, will meet a very real need if it follows the line suggested in the general introduction. It is primarily intended for those who are interested generally in the results of Oriental studies rather than in their technical and highly specialised details. Oriental studies are at present not well served in this respect, especially as regards India. Much material of the highest value to the student of culture is rendered difficult of access because of the form in which it is cast.

"Sexual Life in India" is an attempt to give an account of the life of women in ancient India based upon the two great epics, the Mahabharata and the Ramayana. It covers the religious and social, as well as the sexual, sides of that life. From this material the author has extracted the most intimate details as to the relation of the sexes. The importance of such matters in the life of the East, and particularly of India, is difficult to over-estimate. It gives an orientation to the mind of the East which the West finds difficult to grasp. Prof. Meyer's study is comprehensive within limitations: it deals with the position of the daughter in the family; preparation for marriage; the duties and position of the wife; motherhood; the widow; sexual relations, both regular and irregular, and so forth. But it does not tell the whole story. The material is necessarily, in view of its source, somewhat idealised, and certain sides of sexual life do not come within its purview. This, however, does not detract from the value of the book as a social document. It depicts the theory, if not in all respects the practice, of a certain section of Indian society. For the purposes of this translation, the author has revised the text and added to the notes, to which one of the translators has made further additions.

The Zeta-Function of Riemann. By Prof. E. C. Titchmarsh. (Cambridge Tracts in Mathematics and Mathematical Physics, No. 26.) Pp. vi + 104. (Cambridge: At the University Press, 1930.) 6s. 6d. net.

THE function now known as Riemann's zeta-function may be defined as the sum of the s^{th} powers of the reciprocals of all the positive integers from unity to infinity. This definition only holds for a certain range of values of s , but it may be generalised, in the usual way, by contour integration. So far back as 1737, Euler had noticed the relation between this function and an infinite product involving primes. No further progress seems to have been made until 1859, when Riemann, in a short paper of only ten pages, indicated a number of ideas which have proved extraordinarily fruitful, and from which many modern researches have developed.

It will surprise those who look upon mathematics as a cut-and-dried science, leaving no scope for imagination and intuition, that an important part of Riemann's work consisted in six theorems which he believed to be true but could not prove. Hadamard at last succeeded with three of these in 1893, while von Mangoldt dealt with two others in 1895 and 1905. The sixth, the famous hypothesis that all the complex zeros have a real part $\frac{1}{2}$, is still unproved.

Prof. Titchmarsh's tract is chiefly devoted to researches produced since Landau's extensive work (1909), but he gives also a brief sketch of earlier work. Some use has been made of an unpublished manuscript by Profs. Littlewood and H. Bohr. The application to the theory of numbers is being dealt with in a companion volume by Mr. A. E. Ingham. H. T. H. P.