

tional reform, child labour, the delinquent child, the neglected child. The author insists on the importance of securing the cooperation of women, but he omits to point out that until they possess the power and status of citizenship their power of helping will be crippled. The volume can be warmly recommended as a wise and human study of immensely difficult and important questions. Its value is enhanced by a full biography and an index. The type is clear and the printing good.

*Der Begriff des Instinktes einst und jetzt. Eine Studie über die Geschichte und die Grundlagen der Tierpsychologie.* By Prof. Heinrich Ernst Ziegler. Second revised and enlarged edition. Pp. vi+112+2 plates. (Jena: Gustav Fischer, 1910.) Price 3 marks.

This is a revised and enlarged edition of a luminous essay which Prof. Ziegler contributed to the Weismann Festschrift in 1904. It deserves to be widely known as a terse and interesting introduction to comparative psychology. The treatment is in the main historical, and the author makes a point of showing how the conception of instinct has mirrored the progress of science.

From the views of the Greek philosophers, the Church, and the old Vitalists, the author passes to Darwin and the Lamarckians, and thence to modern comparative psychology, as represented by workers like Lloyd Morgan, Groos, and Zur Strassen. Ziegler himself, following Weismann, interprets instincts as the outcome of the selection of germinal variations; they are now part of the inheritance and are objectively represented by pre-established nerve-paths. In his discussion he insists upon keeping to an objective consideration, for it is impossible to discover how far the lower animals are conscious.

In contrast to instinctive behaviour, we may speak of intelligent behaviour when it is worked out by the individual's experiments, when it requires to be learnt, when it is individually adjusted to particular circumstances. But when we reflect how little we know, for instance, in regard to the distribution of feelings of pleasure and pain among animals, we see the advisability of trying to define the grades of behaviour as objectively as possible. The author is, therefore, resolute in leaving consciousness and feeling and perception of purpose entirely out of account in his conception of instinct. At the close of the volume—which is all too short—there is an interesting appendix showing how the brains of workers, queens, and males among ants and bees differ from one another, as their instincts do.

*Licht und Farbe.* By Robert Geigel. (Pp. 199. (Leipzig: Philipp Reclam, junr., n.d.) Price 60 pfennig.

This little book belongs to a collection of volumes on "natural science" published in the series known as the "Universal Bibliothek," which is so familiar to students of German literature in this country, and which, in Germany, by providing, at the lowest possible cost, translations of the masterpieces of foreign literature, has helped to make the best books in many languages known to all classes of readers. The price of the usual small volume or "unit" of about a hundred pages is 20 pf. : a number of such units may make one book; thus the "Nibelungenlied" extends to four "units," and may be bought for about tenpence. Three units go to make the present volume, which is illustrated by seventy-five drawings in the text, and, in addition, four coloured plates—as well as a photograph of the author—all well printed.

The aim of this volume is to give a simple, popular account of the properties of light, and especially of

phenomena connected with variation in wave-lengths, or colour. From this point of view the ground covered is sufficiently extended: spectrum analysis, fluorescence, interference, polarisation, colour photography, meteorological optics, are all dealt with, in addition to the theory of instruments and photometry.

It would be idle to discuss such a book in any detail. In the nature of the case a work in German intended to give some popular account of elementary scientific ideas can have but little interest for English readers. Clerk Maxwell's "Matter and Motion" is a classic: this volume can pretend to no such distinction. We have not found it inspiring, and in lucidity it might be improved. There is a tendency to regard the general reader too much as a child, and in one instance at least the treatment is directly unscientific in giving as consequences of a law the facts which that law was invented to resume. On the whole, however, the book gives a tolerably readable elementary account of the branches of optics with which it is concerned, and no doubt will enable many a German to take an intelligent interest in matters in which he is not a specialist.

*Catalogue of the Lepidoptera Phalaenae in the British Museum.* Vol. x., Noctuidæ. (London: Printed by order of the Trustees, British Museum (Nat. Hist.). Price 20s.

THE tenth volume of this important work contains more pages than any which has yet been published, vol. vii., the largest of the preceding volumes, containing only 709 pages; and vol. ix. only 522, as against 829 pages in vol. x. The series of plates relating to vol. x. will include plates 148-173, and will be published early in 1911.

Vol. x. is devoted to the Erastrianæ, the thirteenth out of the fifteen subfamilies recognised by the author in the Noctuidæ, and contains descriptions of 1222 species (numbered from 4987 to 6197) belonging to 136 genera, a considerable number, both of genera and species, being described as new. There now remain only the subfamilies Hypeninae and Hyblæinae to complete the great group of Noctuidæ which, according to the provisional arrangement of families of Lepidoptera in the first volume of the present work, is only the fourth of fifty-two families, and is placed between the Agaristidæ and the Pterothysanidæ.

The Erastrianæ are moths of comparatively small size, and are very varied in their colour and markings, but the so-called "Noctud-pattern" is rarely present. "The subfamily is to a large extent confined to the tropical and warmer temperate regions, especially the more arid districts, and it has few species in the colder zones, and none in the Arctic and Alpine zones." A few species are British, but though some are abundant in special localities, they are not generally common.

The rapid progress which it has been found possible to make with so bulky and extensive a work is most remarkable, this being the second volume issued in 1910; and a volume appeared in each of the two preceding years.

*Photography in Colours: A Text-book for Amateurs, with a Chapter on Kinematography in the Colours of Nature.* By Dr. Geo. L. Johnson. Pp. viii+143. (London: Ward and Co., 1910.) Price 3s. 6d. net.

THE author has rewritten and enlarged the last section of his "Photographic Optics and Colour Photography," and in this volume issues it separately. Being "for amateurs," only those processes that are practically suitable for this class of workers are included, excepting the final chapter on kinematography. Indeed, the subject has been narrowed still further, for the only method treated of with any