

given last year by Prof. Maclaurin in the American Museum of Natural History. The subject undertaken was a difficult one, namely, to treat from a non-mathematical point of view, and in such a way as to be understood by non-physicists, the more advanced portions of the optical theory. Prof. Maclaurin has, however, successfully done this. The lectures are extremely clear and full of information. Among the subjects dealt with are colour vision and colour photography, dispersion and absorption, polarisation, interference and diffraction, and the connections between light and electricity, such as the Zeeman effect. The lectures make very good reading, and would be appreciated even by those for whom the exclusion of mathematics is unnecessary.

FUNCTIONAL PSYCHOLOGY.

- (1) *Genetic Psychology. An Introduction to an Objective and Genetic View of Intelligence.* By E. A. Kirkpatrick. Pp. xv+373. (New York: The Macmillan Company, 1909.) Price 5s. net.
- (2) *The Psychology of Thinking.* By Dr. J. E. Miller. Pp. xxv+303. (New York: The Macmillan Company, 1909.) Price 5s. net.

(1) **T**HERE seems to be an ever-increasing tendency among psychologists at the present day to assimilate not only their methods of procedure, but also the schemes of description and explanation underlying their science to those employed by biology. In place of, or, more accurately, in supplementation of, the older "introspective" psychology—including "introspection under test conditions"—we now find a "functional" psychology which treats of the individual mind from the point of view, primarily, of its usefulness in adapting the individual to his environment. Both the books under consideration are written from this point of view. They are, both of them, excellent examples of the use of the biological method. Mr. Kirkpatrick tells us in his preface that all psychology must be founded on genetic principles, and studied in close relation to the facts and theories of the other sciences of life phenomena. He himself therefore commences his book with a clearly written and somewhat full account of the forms of behaviour of the lower animals, together with their structural bases, selecting types at different stages of evolution for detailed description. Not until the middle of the book does he reach the subject of consciousness "as such," and even here he deals first with its objective aspect, viz. its external effects and criteria, as exemplified by human adult consciousness. The account is excellent, and conducive to clear thinking on a difficult subject. Following this, there are chapters on "specific conscious states," "types of adaptive activity or intelligence," "types of learning activity," and "racial and individual development."

The book should prove of very considerable value to students, since it sums up a great deal of recent monograph work in most clear and interesting form.

- (2) Dr. Miller's book is inspired throughout by

what he aptly calls a clinical interest in the thinking process as it occurs in the child's mind, in concrete form, at the various stages of its education. The earlier chapters are devoted to a general explanation and justification of the biological point of view, and form an excellent propædeutic to the predominantly pedagogical account of thinking which follows. By those educationists—and they must surely be many—who have become dissatisfied with the quasi-logical, almost scholastic, account of the thinking process given by the older school of psychologists, the author's treatment of his subject will be found both stimulating and refreshing. Thinking is kept throughout in its correct and natural close relationship with other forms of mental activity and general organic behaviour. Not abstract schemes, but actual concrete bits of thinking, are to be found skilfully analysed and classified on every page. The continuity between the empirical thinking of animals and children and the reasoning of the trained adult mind is well brought out, together with their specific differences, and throughout the entire account the author never loses sight of the fundamental characteristic of the life process as expressed in terms of the satisfaction of needs, which is the central and controlling idea of his psychological system. The book breaks new ground in its treatment of a hitherto neglected department of psychology, and will undoubtedly be welcomed by psychologists and educationists alike. W. B.

OUR BOOK SHELF.

Das Kaninchen. Zugleich eine Einführung in die Organisation der Säugetiere. Monographien einheimischer Tiere. Vol. ii. Pp. vi+307. (Leipzig: Dr. Werner Klinkhardt, 1909.) Price 6 marks.

FOLLOWING upon an industriously compiled volume devoted to the frog, this series, edited by Prof. Ziegler, is now represented by a work on the rabbit, which we may confess at once is a disappointing one. It is little more than a new edition of Krause's well-known work, with a few additional illustrations. Indeed, though more elaborate in detail, the treatment is hardly so good as that of any of the elementary treatises in which this familiar animal has been described. There are no practical directions for actual dissection, and the figures are singularly devoid of explanatory lettering, an omission which becomes ludicrous in the case of complicated musculature. The editor has not exercised sufficient control in that important respect, nor in the treatment of the various sections, bones and muscles being allowed far too large a share in a purely descriptive work.

The book begins well, and, in fact, the introduction is its saving grace. The author treats in this opening section of the relation of the rabbit to its congeners, the differences between rabbits and hares, the various races, their habits, and history. Then follows a section upon diseases and parasites, but without any figures of the latter and without any mention of the two commonest cestodes, *Cysticercus pisiformis* and *Coenurus serialis*. Then follows an account of how to kill the creature, and, having done so, the author treats it for the whole of the rest of the work as dead. The book is a study in necrology. We are not told how the rabbit breathes or digests, or how it does anything. Are there sweat-glands? The