Pseudoptics: The Science of Optical Illusions. A series of psychological experiments for the classroom and home. Milton Bradley Co., Springfield, Mass. $5.00.

This series of charts and apparatus for experiments on visual illusions is especially intended to interest the general public in mental phenomena. For this purpose it is most valuable, and should be sold in many editions. The series will also be of much interest to teachers of psychology in schools, colleges and universities. We must all spend—I might say waste—a great deal of time in preparing illustrative material which it ought to be possible to buy. Much time and energy might be saved if the simpler instruments, devices and illustrative material devised by each could be used by all. It would not be amiss for the American Psychological Association to appoint a committee instructed to draw up a list of such material and the place where it could be secured. In such a list these *Pseudoptics* would stand at or near the head.

The material is placed in three boxes, each containing several portfolios. The first box illustrates illusions of length, direction, form, size and movement, including 25 experiments in all. The charts are perhaps on the average 20 cm. square, sufficiently large for demonstration in a lecture, and the illusions in most cases appear better than in the illustrations given in text-books and articles. In nearly all cases the parts are movable, and simple devices are given for rotation, etc. We have thus not only illustrations, but a series of experiments which the student can himself carry out. The second box illustrates after-images, color-mixture, contrast, indirect vision and the blind-spot—the term illusion being used in a sense wide enough to include all cases where, through the functions of the eye, nervous system or mind, we see things otherwise than as they 'really are.' The third box illustrates especially perspective and binocular vision.

The series is accompanied by an introduction explaining the objects and advantages of the experiments; the method for making each experiment is described in sufficient detail, and there are given explanations of the phenomena. These latter are of necessity brief, and in some cases may prove misleading, as they may cause the student to imagine that the phenomena are more simple and better understood than is in fact the case. The classification adopted may also in several cases prove misleading. Thus, for example, under 'multiple vision' are included phenomena so diverse as are binocular double vision and the doubling of the image in Schreiner's experiment. The apparent similarity and real diversity in such cases may easily confuse the student.

The author of *Pseudoptics* wished originally that his name might not be associated with it. But it has been announced by a firm of instrument makers, and there is now no reason why we should not give honor where honor is due, and thank Professor Münsterberg for his valuable service to education and to psychology.

J. McKeen Cattell.

Ueber die Bedeutung der Convergenz- und Accomodationsbewegungen für die Tiefenwahrnehmung. Maximilian Arrer. Philos. Studien, XIII. 1. 116–161. 2. 222–304.

The author investigates the problem of the perception of depth from the standpoint of the part played in such perception by the sensations of convergence and accommodation. In a dozen pages he reviews in concise statements the experiments and discussions on the subject in the past in so far as they involve these sensations. Chapter I. communicates the author's experiments on the perception of differences in depth by comparison of successive stimuli. It is believed that this problem, which was long ago investigated by Wundt, will bear a fresh investigation now, because of the objections which have been raised to Wundt on the grounds that his experiments are not numerous enough (this is admitted by Wundt); that the subject upon whom his experiments were carried out did not possess average capacity in the perception of depth owing to a defect in the mechanism of the eye, and that the theoretic constructions which Wundt gives to his results are not warranted. Chapter II. is an attempt at an explanation of the monocular and binocular experiments of chapter I. Chapter III. further attempts a negative confirmation of the theory of the former chapter.

The apparatus used in the first set of experiments, viz., in those on the monocular and binocular perception of differences of depth, was as follows: the subject looks through an inwardly blackened tube, which passes through a screen of black cardboard, upon a gray field. In the interval between the tube and the gray background two black threads are kept stretched perpendicularly by weights. The distances between the threads are varied by moving one of them nearer to or farther away from the other, which in turn remains unmoved during each series of experiments. After showing one thread until the subject has a clear image of its absolute distance from him, a screen is placed before the tube, the one thread is lifted up, the other is left to hang in its place in the field of vision, and the screen is re-