but is only an accentuation of the sixth, with perhaps a deeper loss of consciousness. Here the mind is reduced to a single point, attention is sharpened to the finest focus, and this extreme contemplation seems to be an exception to the dictum of Hobbes, that to constantly think the same thing is not to think at all. Such extreme ecstasy is a rare phenomenon: Plotinus is said to have attained it only four times, and Porphyry but once.

The weakening of the attention is seen in an extreme form in mania which presents a general and permanent exalted excitability of the psychic life. The general diffusion of energy is equally apparent in the prodigality of movements, with often an insensibility to fatigue. No co-ordination of the mental energy requiring an effort of the attention is possible. The same is seen in hysteria, in sleepy conditions, in drunkenness, in children. These semi-morbid states well illustrate the motor element in attention. The power of directing the delicate movements that accompany attention is lacking, and with this the attention itself is weakened. One sees in the effects of intoxication the loss of power over the finer muscles, then over the coarser ones, both accompanied by an impossibility to attend to thoughtful ideas, and then to mental impressions of the simplest kind. In sleep there is to a slight degree a direction of the attention, for the sleeper is more easily aroused by one kind of stimulus than by another; but in general the power of attention is nearly lost. If we pass from the cases in which the power of attention has been lost by disease, to those in which it was never developed, we have a difference of degree alone. Idiots, again, are found incapable of directing their finer muscles, and in extreme cases cannot walk; and the most successful mode of approach to the minds of such defectives has been found to be through the muscles.

By way of *résumé*, we may speak of attention as a prevalent attitude of mind. It may be represented by a straight line bifurcating at either end. In the centre we have the average spontaneous attention: as we proceed to the right, the attention increases in intensity, passing into strong spontaneous attention, then into preoccupation, revery, then into a weak insistent idea. Here the line divides, passing into the two extremes, — a fixed idea on the one side, and ecstasy on the other. Beginning again with the normal, and going to the left, we have voluntary attention as an organic mental habit; and as this decreases, it is of only average power, then it becomes weak, and finally passes into the extreme loss of attention, which may be temporary and acquired on the one hand, or permanent and congenital on the other. These are simply various types: in reality, all kinds of intermediate forms abound.

UNCONSCIOUS CEREBRATION.— In the *Popular Science Monthly* for March, Mr. Francis Speir analyzes the returns to a list of questions quite extensively circulated by him, relating to the unconscious activity of the mind. The questions ask, for instance, of the power of recalling a forgotten word or sense-impression while thinking of something else, or perhaps in sleep; of the power of going through a more or less simple logical process under similar conditions; and of the working-out of original ideas (composition of verses, solution of a problem, new modes of regarding a series of facts, and the like), especially of feats of this kind performed during sleep. The answers unmistakably show that the unconscious learns many an art from our conscious selves without the teacher knowing it; and the relative frequency of really respectable performances going on in sleep is larger than one would, *a priori*, expect.

BOOK-REVIEWS.

The American Journal of Psychology. Vol. i. No. 2, February, 1888. Ed. by G. STANLEY HALL. Baltimore, Murray.

THE coincidence by which this publication and the third part of the Proceedings of the American Society for Psychical Research (reviewed in the last number of *Science*) come to hand at the same time suggests a few considerations regarding the growth of the scientific study of mental phenomena in this country. It does not seem at all hazardous to predict that the 'new psychology' has come to stay, and that nowhere does it give more satisfactory evidence of its power to systematize the various interests of students of mind, and to invigorate with a new life all such topics as had relapsed into the blissful slumber of a final settlement, than in this country. The *Journal of Psychology* comes forth as the distinct organ of the strictly technical and controllable study of all such phenomena as from one point of view are of important interest to the psychologist. In so doing it may incur the criticism of those who see in this step the incorporation of psychology in physiology and psychiatry; but apart from the fact that it is at present extremely difficult to foresee what will and should be the boundaries of that science, it is getting more and more generally admitted that a science takes its character quite as much from the point of view from which it regards convenient groups of the facts of nature as from the particular class of phenomena it takes into account. Moreover, by accenting the importance of the 'specialist' study of psychology, as also by emphasizing the value of a broad view of biological facts for the study of human development, it serves to convince of the error of their ways that throng of dilettanti who regard this as the proper field for their lawless rovings, as well as to indicate the difficulty, if not the impossibility, of a single instructor representing the entire field of philosophical thought.

The work of the American Psychic Research Society inevitably suggests comparison with that of the English society, devoted to the same purpose, and bears this test with great credit to itself. Judicious caution, careful reconnoitring of the general field, attention to details, and an appreciation for the extreme 'slipperiness' of interpretation in this kind of research, characterize the work of the American society. Apart from any interest in the final decision of the questions uppermost in the minds of its members, it is gathering facts of value to the psychologist, and appreciates that its field of work is closely related to that of other specialties, and cannot be carried on without a special knowledge of the possibilities of deception, of the mental traits of semi-morbid individuals, and so on. If one considers the wide-spread and intelligent interest in psychology represented by these two publications, it seems very strange that our best educational institutions have made so little provision for the representation of this branch of science upon their several curricula.

The opening article in this second number of the *Journal of Psychology* is by Dr. H. H. Donaldson, and treats of the relation of the recent researches in neurology to psychology. As the anatomical analysis of the nervous system does in some rough manner bring into rational order many of its functions, it is natural to expect that a deeper knowledge will increase the significance of this co-ordination of structure with function. Again: this co-ordination itself is subject to an evolution, and the anatomical homologue of a certain organ in an animal higher in the scale does not necessarily mediate the same functions as in the lower animal. Man has not only more cortex, but exercises a proportionally larger number of functions with his cortex than other animals.

A paper of great interest is that by Dr. Edward Cowles, upon 'Insistent and Fixed Ideas.' Under this head, Dr. Cowles introduces the detailed and systematic study of the operations of a disordered mind as a worthy object of investigation. The logic that draws conclusions at once analogous and yet opposed to those of common sense; the peculiar association of ideas that brings into connection facts and notions normally joined only in the uncontrolled visions of dream-life or the fictitious world of children; the strong tendency for abstract notions usually simply allowed to stroll through the chamber of consciousness, and be gazed at as a curiosity, to lodge themselves there, and acquire a reality that leads to violent and sometimes dangerous action; and the entire process still appreciated as something abnormal, something to be resisted, — all this is most graphically illustrated in the remarkable case described by Dr. Cowles. It is impossible to outline the history of this instance of a 'fixed idea,' as so much of its value depends on the recognition of the gradual evolution of the morbid from insignificant eccentricities.

The final paper in the series is a detailed criticism, by Dr. Joseph Jastrow, of the methods employed in experimentally determining the accuracy of the several senses. The object of the paper is to rescue this kind of experimental work from the various loose and uncritical processes which it has of late employed.

Besides the original contributions, there is a vast number of reviews, abstracts of papers, notes, etc., covering a variety of topics.