

(p. 27), which (except that it interprets the short and long haul clause to mean that a question of fact is thereby substituted for a question of law; and, inferentially, that to determine if the testimony of every individual in the employment of the railway must be taken by the court) *does not in the slightest degree* change the habitude and method of running a railway; does not introduce a single innovation, or modify a single rule of railway operation: in other words, Congress has enacted a statute which a commission chartered to enforce it declares *enacts that things shall remain as they are*, and that, if the statute is ever suspected of interfering with things as they are already, the subjects of the statute must interpret it blindly and at their own peril!

It would seem, therefore, that the commission itself has decided that the railways of this Republic have been, up to the date of its own appointment, properly managed: certainly there is no disapproval of any particular acts, and only in the sixth ruling does it condemn certain possible acts and differentiations which it is not alleged that any railways have been guilty of, and which certainly, therefore, is mere *obiter*, or the expression of a general opinion upon a very interesting but entirely gratuitous conundrum of supposititious railway policy. But is not a disturbance of constitutional limitations a rather high price to pay, even for so valuable a boon as is a governmental approval of American railway management? Once broken, who can say what will pass these barriers? Perhaps there may yet be established at Washington an interstate theatrical commission which shall review and absorb the early functions of Master of the Revels, stage censor, and Lord Chamberlain! And, indeed, for such a bill, congress need not again borrow its policy from an Empire of Blood and Iron. It can get its suggestion this time from a Republic — from Mexico — where theatres are not only under the espionage of government, but even the migratory Yankee circus is officially coerced into living up to its posters.

APPLETON MORGAN.

#### MENTAL SCIENCE.

##### Morbid States of the Attention.<sup>1</sup>

THE absence of attention is usually termed 'distraction,' but there are really two kinds of lack of attention. In the first there is a constant flitting of the mind from one idea to another, a constant dissipation of the energies in all directions, for which the word 'distraction' may be retained; and there is the lack of attention to the impressions going on about us, due to the fact that the attention is really absorbed in something else, — this is absent-mindedness, which is thus an extreme 'present-mindedness' to a different train of thought, and may be termed 'abstraction.' It is with the exaggeration of one or other of these two conditions that morbid states of the attention are allied. If we take as a convenient definition of normal attention, 'a temporary predominance of a mental state with a natural or artificial adaptation of the subject,' then we can distinguish two groups of morbid deviations: (1) an *absolute* predominance of such a state that becomes fixed and cannot be dislodged from consciousness; and (2) a state in which no idea can get an audience, and the attention is too weak to hold an impression steadily in the mind. To this may be added a third group, in which, through congenital defect, the power of attention never develops, as in idiots and the weak-minded.

There are all degrees of transition, from a normal concentration of the attention to the most imperative forms of fixed ideas. We have all been haunted by an aria which we cannot stop humming; have been anxious about a sick friend, so that in spite of ourselves we could think of nothing else. This is a mild form of possession by an idea, that is more persistent than any other, keeps itself in consciousness, and by imperceptible steps passes beyond the control of the will. The profound absorptions of many great men in their work are so much beyond their own control that one cannot but recognize an element of the morbid in them. When the object of reflection is a less worthy one, and the devotion to it, far from coinciding with the intentions of the individual, seems to him as an imposed task, we speak of an insistent idea (*zwangsvorstellung* of the Germans). M. Ribot distinguishes three kinds of such, accord-

ing as the purely intellectual, the emotional (usually a fear, as the long list of phobias indicates), or the voluntary (usually a morbid impulse to an absurd or criminal act, kleptomania, etc.) predominates. The first class is the most important in this connection. The insistent idea takes many shapes, and in most of these we can trace analogies to our own every-day experiences. There is an arithmetical form of it, that sets the patient to ask, Why are men just so and so high? Why have houses this particular height? and so on. Again: it may be a mania for counting every thing, — the number of pavements on a street, the number of streets in a city. The sight of a bag of grain irresistibly led one patient to estimate how many grains there are in the bag, how many in the country, etc. Another must count all the trains leaving the railroad-station, and keep account of their destinations. In these cases the patients often recognize the morbid nature of their thoughts: they fight against them, know that they are wasting time; but the ideas fill their minds completely, and demand attention with a tyrant's power. A feeling of intense discomfort, of an impending evil if they fail to count the trains, etc., is sometimes associated with the state. There is, too, a metaphysical mania, in which the mind busies itself with unanswerable questions as to the constitution of matter, the final ends of nature, and so on. Persons thus affected are usually of more than average culture; for the concentration of attention implies mental power. Nor are the objects of their thoughts entirely different from ours: the main difference is in the time and the control of these states. We think of such problems for a while, and then pass on to something else: to them that is impossible. In other respects such patients are often perfectly sound, and show great ingenuity in concealing a knowledge of their weakness from their associates. In general, it can be said that a large proportion of persons thus afflicted are the offspring of neuropathic parents, and not infrequently show other and physical symptoms of a degenerate stock. But the environment, education, must be called into account to explain others of them; and each case, especially as regards the particular form that the idea takes, must be studied by itself. The state differs from the normal, then, in degree rather than in kind. It is persistent, it is intense, it allows no relapse to a diffuse condition of the attention, and, as a mark of nervous disorder, it carries with it a weakness of the will that cannot drive out the unwelcome and officious visitor.

A more intense and acute concentration of the attention is to be found in the trance state, or ecstasy. This is allied to contemplation, to absorption in intellectual work, and brings with it an insensibility to outward impressions. When the state is very profound, such impressions can be intense and yet pass unnoticed. Archimedes, during the taking of Syracuse, remains absorbed in his contemplations. Soldiers often do not know they are wounded until the fight is over. Here, again, there is a high degree of mental power necessary, though it is often exhibited by fanatics otherwise mentally inert. But M. Ribot properly distinguishes between the cases in which the object of the contemplation is a sensory one and those in which it is purely ideal, and adds that the fanatics usually display the former kind of extreme attention. As a type of the more spiritual kind of ecstasy, the remarkable confessions of St. Theresa (a Spanish religionist of the sixteenth century) is cited. She describes no less than seven stages of ecstasy which are in a rough way capable of a psychological interpretation. The first is a state of 'vocal prayer'; that is, the praying in a loud voice draws the attention away from the outside world. The second stage is termed 'mental prayer.' The sensory impressions are no longer necessary, the mind being held by the ideas that fill it. The 'prayer of meditation' marks the third stage, which is perhaps only a more intense form of the previous state. The fourth degree is characterized by the 'prayer of passivity.' Here the soul no longer produces, but receives, has truth directly impressed upon it without the need of a logical demonstration. The fifth stage, the 'prayer of union,' marks the beginning of the ecstasy, but it is as yet an unstable state, and the possession is not profound. Finally, in the sixth stage, the 'prayer of rapture,' the body becomes cold, speech and respiration are checked, the eyes are closed, the slightest movements require great effort, and in rare cases consciousness is lost. The seventh degree of ecstasy is very mystically described,

<sup>1</sup> Abstract of an article by Th. Ribot (*Revue Philosophique*, February, 1888). See *Science*, Dec. 2 and 16, 1887.

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 pre-occupation, reverie, 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 roving, 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.