

this Journal ("The Data of Alienism," &c.) will be expanded and published as a supplementary volume to the one under review. As these papers explicitly applied the doctrines of evolution to the subject of insanity, such a volume is a necessary corollary to the present one, and the more interesting because Mr. Spencer has never attempted to make this application.

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Animal Magnetism. By ALFRED BINET, and CHARLES FÉRÉ, Assistant Physician at the Salpêtrière, London. Kegan Paul, Trench, and Co., 1887. The International Scientific Series.

We have already commented favourably upon this work and now proceed to give an analysis of its contents. After giving a useful sketch of so-called Animal Magnetism from its early history to the present day, when the distinguished physician of the Salpêtrière has done so much to work out the subject clinically and on the lines of the famous Manchester surgeon, who, unfortunately, did not live to see the recognition of his doctrines by the medical profession, the authors of the work before us describe the modes of producing hypnosis and the symptoms of its various stages. The experience of Heidenhain, Grützner, and Berger in producing *unilateral hypnosis*, displayed by excessive muscular excitability, by means of slight and prolonged friction on one side of the head, is referred to. Pitres has maintained that there are in some subjects hypnogenic zones, and that the irritation of these localities may cause hypnosis. This observer may have tested a sufficient number of subjects to avoid fallacies, but it requires an immense amount of care to escape that source of fallacy which arises from a chance association of ideas and expectancy with special localities. The same remark applies to the statements by our authors that sleep can be induced by opposition of a magnet to a hypnogenic zone. Some suspicion of the presence of the above source of error is aroused by the fact that "each subject may display different hypnotic zones, not only as to their site, but as to their action." MM. Binet and Féré assert that the fact of the influence of the magnet on hypnosis, first pointed out by Landouzy in 1879, and verified by Chambard, has been confirmed by themselves. In opposition to the opinion that imagination is indis-

pensible to the success of hypnotism, the authors hold that sleep can be induced not only without the subject's imaginations, but against his will and without his knowledge. As a proof that all sensorial excitement, which causes sleep, does so by exhaustion of cerebral power, the exaggeration of motor-phenomena which follows, is adduced. If a dynamograph is placed in the hand of the subject, without exerting pressure upon it, and he is then hypnotized, the fingers press strongly on the instrument and, in fact, many other muscles are affected. Suggestion alone, however, produces sleep, and how, it is asked, can exhaustion be the cause? The answer is given that this suggestion of sleep takes effect by inducing the recollection of certain impressions of fatigue which involved exhaustion in the same way as a physical excitement (p. 97). This is analogous to the interesting fact observed by Ballet that the suggestion of an electric lamp made to a subject, either in her waking state or in a previous sleep, produced a cataleptic attack when she was told on becoming wide awake to look in the corner where the imaginary lamp was placed. Here the suggestion of the electric ray produced the same effect as it had already done in reality when directed to her face. The bearing of this upon the influence of insane hallucinations is obvious. The several means of arousing patients from the induced sleep are enumerated. Such are, breathing lightly on the eyes or forehead; the wind from a pair of bellows; sprinkling water on the face; raising the patient and breathing strongly on the cornea; and, with some hysterical patients, pressure over the ovaries. It is alleged that if only one half of the forehead is breathed upon, the other half being screened, half of the body only is awakened. Again, the subject may be awakened by being repeatedly ordered to awake, just as he is sent to sleep at command. Tracings are reproduced from Charcot, showing the oscillations of the arm when extended, as also of the respiration, in (1) hypnotic catalepsy, and (2) a man who attempted to maintain the cataleptic attitude. The difference is most marked. The cataleptic limb of the former does not tremble but drops slowly and gently, while the respiration is marked by calm and normal action throughout. The arm of the man who is not hypnotized soon shows fatigue, his hand trembles and presents an absolute contrast in the tracing, while the breathing soon becomes hurried and irregular. Efforts to conceal fatigue cause abrupt oscillations. There

is a false catalepsy when the limb of a patient who is in a state of somnambulism is held up for a few moments and remains in that position. Here the muscles have been excited by the process, and are "contractured" but not cataleptic. Relaxation is easily brought about by friction. The fact that resistance is offered to an attempt to move the limb is opposed to its being true catalepsy.

Under the head "Disturbance of the Breathing and of the Circulation" the authors cite Tamburini and Seppili's tracings when a subject is hypnotized. They have been found to agree exactly with those made at the Salpêtrière.

During the state of lethargy the respiratory curve is fairly regular; its movements are usually slow and deep; in short, the respiration does not essentially differ from what it is in the normal state. The same may be said of the state of somnambulism. The only characteristic peculiar to hypnotism appears to be a certain disconnection, or even a true antagonism, between the thoracic and abdominal respiration. In catalepsy, however, there is considerable modification in the mode of breathing. The movements are infrequent, superficial, and extremely slow, and separated by a longer or shorter interval of complete immobility. In the tracing the widely different curves in catalepsy and lethargy may be compared. It has been observed that the application of a magnet to the subject's epigastrium produced profound modification on the respiratory curve of lethargy. In catalepsy, on the contrary, the curve was scarcely affected by a magnet. The subject is placed in the state of lethargy; after a few regular respirations the approach of the magnet induces a strong movement of expiration, then of inspiration; catalepsy is then produced by opening the subject's eyes, and the shallow breathing peculiar to this state is at once displayed. Soon afterwards the eyes are again closed, and lethargy is produced; another deep expiration, followed by a deep inspiration, takes place owing to the unchanged position of the magnet; and if this is removed the curve of lethargy reverts to its normal type.

The researches made by Tamburini and Seppili on the circulation are no less interesting. By means of Mosso's plethysmograph and the air-sphygmograph, they ascertained that in the state of lethargy the graphic tracing shows a constant tendency to rise, and that when catalepsy is produced it again descends gradually. In other words, lethargy increases the volume of the fore-arm, that is, causes the vessels to dilate; catalepsy, on the other hand, diminishes the volume of the fore-arm, or causes the vessels to contract. Tamburini and Seppili's experiments were repeated by one of the present writers, and although the results obtained were not absolutely corroborative, yet they showed that modifications took place in the peripheral

circulation, which appeared to be wholly independent of the subject's will (p. 133).

The following signs are, therefore, guarantees against simulation:—The precise localization of the lethargic contraction in the muscles supplied by the branches of the nerve which has been excited; the maintenance of the cataleptic attitude without trembling or fatigue; the effects of a continuous traction on the contractures of lethargy and somnambulism; the limitation of each of these phenomena to one half of the body; and, lastly, their mode of appearance and disappearance.

However well satisfied the experimenter may be with the *bona-fides* of the subject, it is of the greatest importance that he should resort to these objective tests, not primarily for his own satisfaction, but for that of others who may reasonably decline to take on trust the good faith of the person alleged to be hypnotized. An illustration of double consciousness, as also of the acuteness of memory, is given on the authority of Richet:—"After hypnotizing V., I recited some verses to her, and then awoke her. She was unable to remember them. I hypnotized her again and she remembered the lines perfectly; when I awoke her she had again forgotten them" (p. 186).

As in spontaneous somnambulism, so in hypnosis, intellectual feats may be accomplished, of which the subject is incapable in his ordinary waking state. Thus the authors have seen hypnotized persons who could read printing in an inverted position more rapidly than when they were awake, and who could even supply the omitted letters of a double acrostic.

MM. Binet and Féré do not consider that the mental state which characterizes hypnosis can be termed with accuracy "automatism."

The *rapport* which may exist between the experimenter and the subject warrants the adoption of the term "elective somnambulism," but it is, in fact, only the exaggeration of a normal fact, the intensification of the sympathy which is so often observed between two persons.

Suggestion has, no doubt, much to do with the production of elective sensibility. Certain it is that the contractures, induced through hypnotism, can be removed by the experimenter when a third person totally fails, although care may be taken to prevent the fact being known. The remark-

able acuteness of the sense of touch allows of the recognition of the difference between the operator and a stranger. The authors have observed that when two experimenters "divide the subject's sympathy in half, the hallucination by the one *en rapport* with the right side only affects the right eye; it is unilateral, and the subject sees nothing with his left eye" (p. 151).

It may be observed that the medical observers at Nancy and those in Paris differ somewhat in their results. The former hold the view that suggestion explains everything in hypnotism. The authors consider that these differences are not due to the subject, but to the experimenters. "They come from the mode of culture, and still more from process of study. . . . If suggestion is employed as the sole process, only the effects of suggestion will be obtained, and thus it was at Nancy. But if we apply ourselves to the study of physical characteristics, they may sometimes be observed at the outset, and they may also be gradually developed in some other subject" (p. 170). The rôle of suggestions is by no means neglected in this work, and the chapter on this aspect of hypnotism is very full. The ease with which a subject can simulate a hallucination is pointed out.

We pass on to the psychical phenomena induced by suggestion. It is pointed out that one kind of suggestion produces inactive or impulsive phenomena, (*e.g.*, pain, hallucination, an act); the other some phenomenon of paralysis (*e.g.*, flaccidity of a limb, loss of memory, anæsthesia of the senses). "The one undoes what is done by the other." First, there is an impression made on the subject. Thus a verbal suggestion arouses a second impression in the brain, as, for example, a suggested image or hallucination. How does the first impression excite the second, which is from within? It is due to the association of ideas. An association in the mind already exists, and the suggestion of the experimenter sets it in action. The example given is that of a subject commanded to look at a bird on her apron. It is not only seen, but even felt by her; nay, more, it may seem to her to sing. This is nothing more than an illustration of the law that when there has been a frequent conjunction of two images, the presentation of one calls up the other more or less vividly. In some cases, no doubt, there is an assimilation of the suggested idea. Thus, when the subject is told to commit a theft, after he awakes, there is in the execution of the act something more than an image

associated with an act. It is very difficult to explain the *modus operandi* of the familiar experiment of telling the hypnotized person that when he awakes he will be unable to perceive or hear. Our authors confess their inability to do more than to accept the fact. All that can be said is that such a suggestion does establish in the brain an anaesthesia corresponding to the objects selected. Association of ideas fails to explain the problem. The same remark applies to motor paralysis by suggestion. It is little more than a statement of the fact in physiological language to say that the operator causes a mental impression which has an inhibitory effect on one of the sensorial or motor functions. To those unacquainted with hypnotism it is hardly credible that a hallucination may remain in force after the subject is awake. He does not recollect how he came by it. It seems to him to be spontaneous. One might have expected that he would have remembered the suggestion having been made. It is at this point that the bearing of hypnotism upon insane hallucinations is intensely interesting.

(To be continued.)

The Life of Percy Bysshe Shelley. By EDWARD DOWDEN, LL.D. Two Vols. Kegan Paul, Trench, and Co., London. 1887.

(Continued from Vol. xxxiii., p. 310.)

As to Shelley's relations with Harriet at this period we are told that they presented at times a "friendly appearance," although they "could hardly be sound or happy at heart." In his dire need of cash he was not above applying to Harriet, who managed to spare him twenty pounds out of her scant allowance. We cannot be surprised that "the reproaches of an injured wife" accompanied the gift. In the diary kept by Jane Clairmont, her behaviour at this time is designated as "strange." Dr. Dowden records the fact, without any sympathetic comment of his own, that "Harriet took it as cruel that one who had loved long and tenderly should leave her for another at a time when she looked forward to the birth of a second child" (p. 464). Mary Godwin's journal, early in October, contains the entry, "Letter from Harriet; very civil." But by January, 1815, Harriet, finding it impossible to make ends meet, sent on some