

absence among the parents of the individual studied. The results of this inquiry are tabulated. To illustrate what he means by characteristics, the author cites three famous men whose lives are well known, and mentions their dominant traits, — Louis XVI. (fifteen characteristics), Napoléon Bonaparte (thirty-seven characteristics), and Charles Darwin (twenty-nine characteristics). All this part of his essay is full of interest.

His conclusions are these : —

1. Heredity is a general law which admits but few exceptions.
2. The interruption of heredity through one or more generations (atavism) is rare, perhaps five or ten times in a hundred.
3. The more remarkable a person is for good or ill, the more numerous and pronounced are his characteristics.
4. Women show fewer distinctive characteristics than men.
5. All groups of characteristics are more likely to be transmitted by fathers than by mothers.
6. It is difficult to determine whether characteristics which have been acquired by education and other external circumstances are transmitted by heredity.
7. The most marked characteristics in an individual are generally those received from both parents, especially those received both from parents and other progenitors.

The main portion of the volume, in the second as in the first edition, is a study of what might be called the origin and distribution of scientific men during the last two centuries. The author's views are based upon the selection of foreign members by three great academies, — in London, 1750–1869; Paris, 1666–1883; and Berlin, 1750–1869. As a rule, these associations bestow the honor of foreign membership, from time to time, upon men of all countries, and of all departments of study, who have exerted most influence upon the progress of science by their publications. Such elections may be regarded as indications of impartial judgment respecting merit; and, although there may be errors or prejudices, he believes that the aggregate lists include the names of those most worthy to be honored for their scientific investigations. From the facts thus collected he points out the proportion of mathematicians and naturalists at different epochs; the increasing devotion to a single subject; the rarity of feminine contributions to the progress of science; the social classes from which *savants* come; special influences which affect the number, the studies, and the

successes of scientific men; national distribution of scientific leaders. Many valuable comments follow on the outlook of modern science, and the favorable and unfavorable influences which are at work. Toward the close of the volume, there is given an investigation (which was only approached in the first edition) respecting the academic recognition of men devoted to the moral and social sciences.

“The secret workings of nature which bring it to pass that an Aeschylus, a Lionardo, a Faraday, a Kant, or a Spinoza is born upon the earth, are as obscure now as they were a thousand years ago.” These are the words with which Pollok introduces his life of Spinoza, and they have occurred to us after a perusal of the book we have described. The origin of genius or of talent is as fascinating an inquiry as the origin of species. But there is something in the intellectual or spiritual nature of man which eludes analysis, and hides itself from the most penetrating researches of the psychologist and the physiologist. Nevertheless, a volume so full of learning, so sparkling with bright ideas, so controlled by scientific habits, is a thought-inspiring book, for which every one must be grateful, even if it serves only as an introduction to an unexplored continent.

DR. HACK TUKE ON HYPNOTISM.

DR. HACK TUKE can hardly be said to have written a book on sleep-walking and hypnotism: it is a collection of papers which are full of repetition, and which are written in a style that is decidedly undress. But hypnotism is at present such an interesting subject, that any exact information about it is very welcome. The author's main object is to point out the resemblance between natural and induced somnambulism, which latter term he uses as another name for hypnotism, and to call attention especially to the former mode of aberrant mental action as an important aid to the study of mind. His own article on natural somnambulism, based on answers to a circular sent out six years ago, contains little that was not known before; but his examination into the mental condition of the hypnotic subject is of greater interest. He finds that consciousness may persist, or that it may pass rapidly or slowly into complete unconsciousness; the manifestations are not dependent upon its presence or absence. One subject, Mr. North,

Sleep-walking and hypnotism. By D. HACK TUKE, M.D., LL.D. London, Churchill, 1884. 6 + 119 p. 8°.

lecturer on physiology at Westminster hospital, says of himself at first, "I was not unconscious, but I seemed to exist in duplicate; my inner self appeared to be thoroughly alive to all that was going on, but made up its mind not to control or interfere with the acts of the outer self;" and later, "I knew perfectly well that I was playing the fool, i.e., that my outer self was doing so, the inner self looking on, too idle to interfere;" and later still, "Here I appear to have been absolutely unconscious for some moments." Another subject says, "Mr. Hansen told me that my hair was on fire. I touched my head, and saw that he was wrong. He then told me to put my head into cold water, directing me at the same time to a gas-burner. I felt it was not water: I felt the heat, but yet I could not refuse putting down my head and trying to wash it." Voluntary control over thought and action is suspended; reflex action of the cerebral cortex, in response to suggestions from without, comes into play; and, so long as consciousness is retained, the perception of this automatic cerebral action conveys the impression of a dual existence. Dr. Tuke's theory of the hypnotic state does not differ from that of Haidenhain: he holds that part of the cerebral cortex is exhausted by prolonged and monotonous excitation of certain sensory nerves, and that other parts, unexhausted, respond all the more acutely to stimulation. Whether hypnotism is injurious to the subject, or whether it has any therapeutic action, are questions that remain undecided. Mr. North found, after the third and last experiment tried upon him, that any exercise of close attention tended to bring on the same sensations as those which ushered in the hypnotic sleep.

From observations made upon patients at the Salpêtrière who were subject to hysteria major, Charcot and Richer were led to distinguish three distinct forms of hypnotism, — the cataleptic, the lethargic, and the somnambulistic. The last is the form which bears the closest resemblance to the ordinary mesmeric trance. In the cataleptic state, the limbs of the patient remain for a long time, and without effort, in any position in which they may be placed; in the lethargic the muscles are relaxed, but they contract strongly and definitely under gentle mechanical stimulation (*hyperexcitabilité neuromusculaire des hypnotiques*, first observed by Mr. Charcot in 1878). The lethargic subject may be made cataleptic by simply pulling open the eyelids and exposing the eyes to a bright light: closing the eyes is sufficient to put him back into the condition of

lethargy. But, what is most remarkable, if one eye is kept open and the other shut, the singular phenomenon is witnessed of an individual divided into two parts by the median plane. One half of the body, that which corresponds to the closed eye, presents the muscular susceptibility characteristic of the lethargic state: the other, corresponding to the open eye, is in a condition of catalepsy. Mr. Charcot very properly says, that to suppose that an ignorant person, exposed for the first time to this experiment, should be able to invent such an extraordinary phenomenon as this, would be 'truly childish.' But, besides this presumption, he has an infallible method of detecting simulation. A very vigorous person, not hypnotized, can keep his arm extended as long as the cataleptic; but it is useless for him to try to pretend that it does not fatigue him. The operator has only to attach a pneumograph to his chest. The tracing which registers his respirations soon discloses great irregularity in their rhythm and their volume, and in this way his own muscles are forced to write down the evidence of his attempted deception.

The experiments of Charcot and Richer (*Archives de neurologie*) are conducted with a carefulness and ingenuity which should recommend them as models to the American society for psychical research.

INHERITANCE AMONG THE ANCIENT ARABS.

IN the study of Roman law the institution of agnation is discovered. By it descent and inheritance are in the male line. Among most of the tribes of North America, Morgan has shown that uterine descent and inheritance are established by law. In the study of these forms of descent among various peoples of the earth, Morgan came to the conclusion that uterine descent is everywhere the characteristic of primitive society; that it is primordial in savagery; and he attempted to account for the change from female to male descent.

There is yet another institution set forth in Roman law, called cognation, which is descent and inheritance in the male and female lines, and which is found more fully developed in the institutions of modern civilization.

Since Morgan's writings were published, the universality of uterine descent, or mother-right (*mutterrecht*), in primitive society, has been affirmed and denied by various writers; but

Das matriarchat (das mutterrecht) bei den alten Arabern.
VON G. A. WILKEN. Leipzig, Schultze, 1884. 72 p. 8°.