

Jules Liégeois, who has studied most carefully the legal aspects of hypnotism, suggested to a lady subject that she take a pistol and shoot a certain Mr. O. She acted out the suggestion perfectly, not knowing that the load was a blank cartridge. When again hypnotized, she admitted the crime and defended her action. Another gentleman now gave her the suggestions (1) that when the instigator of the crime enters the room she should go to sleep for two minutes; (2) on awakening, she should fix her eyes upon the man constantly until allowed to desist; (3) she should then stand in front of him and attempt to conceal him. When M. Liégeois entered the room, she fell asleep, and did all that was asked of her, thus revealing the instigator, though told by him not to do so. Professor Bernheim induced a subject to steal, and forbade him to mention that he had been told to do it. The patient said he stole because the idea occurred to him, but, when told to go up to the true criminal and say, "Please sing me the Marseillaise," he did so. It seems, then, that the subject will do nothing that he has been categorically forbidden to do, but that he will succumb to an indirect mode of revealing the true instigator of the crime. This certainly aids the courts; but it is a question how far it will be of service when the true criminal is not present, and whether additional suggestions in the first instance will not considerably interfere with the reliability of later testimony. Its further development will be watched with great interest by all students of the scientific aspects of mental phenomena.

PSYCHIC EFFECTS OF HASHEESH. — Mr. A. M. Fielde has recently recounted his experiences under the influence of hasheesh. He smoked the hasheesh until he felt a profound sense of well-being, and then put the pipe aside. After a few minutes he seemed to become two persons: he was conscious of his real self reclining on a lounge, and of why he was there; his double was in a vast building made of gold and marbles, splendidly brilliant, and beautiful beyond all description. He felt an extreme gratification, and believed himself in heaven. This double personality suddenly vanished, but re-appeared in a few minutes. His real self was undergoing rhythmical spasms throughout his body: the double was a marvellous instrument, producing sounds of exquisite sweetness and perfect rhythm. Then sleep ensued, and all ended. Upon another occasion sleep and waking came and went so rapidly that they seemed to be confused. His double seemed to be a sea, bright, and tossing as the wind blew; then a continent. Again he smoked a double dose, and sat at his table, pencil in hand, to record the effects. This time he lost all conception of time. He arose to open a door: this seemed to take a million years. He went to pacify an angry dog, and endless ages seemed to have gone on his return. Conceptions of space retained their normal character. He felt an unusual fulness of mental impressions, — enough to fill volumes. He understood clairvoyance, hypnotism, and all else. He was not one man or two, but several men living at the same time in different places, with different occupations. He could not write one word without hurrying to the next, his thoughts flowing with enormous rapidity. The few words he did write meant nothing. This experience admirably illustrates the close relationship between states of real insanity and transitory affections induced by psychic poisons.

#### BOOK-REVIEWS.

*Elementary Political Economy.* By EDWIN CANNAN. London, Henry Frowde. 16°. (New York, Macmillan, 25 cents.)

THIS little book is designed to set forth the rudimentary truths of political economy, and in some respects it is quite successful. Though containing only a hundred and fifty pages, it touches most of the fundamental facts and doctrines of the science, and explains some of them as clearly as could be expected in so small a compass. It is divided into three parts: the first treating of production; the second, of exchange and distribution; and the third, of the economic functions of the State. Mr. Cannan, however, seldom uses the familiar terms 'production' and 'distribution,' but employs roundabout expressions instead, — a practice that seems to us the reverse of commendable. He also avoids the term 'wealth,' using the phrase 'useful material objects' instead, and this phrase is re-

peated through his pages almost *ad nauseam*. Another fault in a work meant for beginners is the obscurity of the style in certain parts, as, for instance, in the sections on profits and wages; though in other parts the style is quite clear. Some important topics, too, such as the law of agricultural rent, are overlooked. The book seems to have been rather hastily prepared, and, in spite of some excellent qualities, is not what an elementary treatise on economics ought to be.

*Report of the Geological Survey of Ohio.* Vol. VI. Economic Geology. Columbus, State. 8°.

THE sixth annual report of the State Geological Survey of Ohio appeared early in the present year. The material for publication was partially ready in 1885, entirely so in 1886, and should have been published in 1887. This furnishes another illustration of the many difficulties with which science has to contend in bringing the results of its work before the public, when dependent upon legislative action.

Valuable matter accumulates, and remains in the hands of the publisher for long periods, which, if presented to the public at once, would be of great assistance to workers in other fields, and oftentimes prevent time and money being spent on questions which had already been solved.

The present volume is devoted entirely to economic geology, and principally to the subjects of oil and natural gas, nearly six hundred pages out of about eight hundred being taken up with descriptions of their modes of occurrence, their geological relations, and the methods of obtaining and handling them. Much of the matter has already been made public in a preliminary abstract by the State geologist and various papers in scientific journals.

The whole work teems with facts which are not only of interest to the scientist, but of great advantage to the practical workers in coal and gas as well.

After a general review of the geology of the State, in which its formations are shown to extend from the Trenton limestone as a base to the Upper Barren Coal-Measures, the more prominent theories of the origin of gas and oil are discussed, and compared with the phenomena observed in the Ohio fields. Discarding entirely the theory of chemical origin, it is maintained that petroleum is derived from organic matter, more largely vegetable than animal, but both; that it is derived from both shales and limestones; and that in the Ohio fields it has been produced at normal rock temperatures, and not by distillation. "The stock of petroleum in the rocks is already practically complete," is the reply to the question, so often asked, "Is the supply inexhaustible?"

Till 1884 the Trenton limestone was not considered a productive oil-bearing horizon. The discoveries of that year, however, in western Ohio, at once gave it a high rank. Beginning with the Findlay field, where the discovery was first made, and where, out of eighteen wells complete to April, 1886, but one had proved non-productive, the work extended through other portions of the State, the areas next in order of importance being the Lima and Bowling Green fields. The quality of the gas compares more than favorably with that of Pennsylvania; it furnishes a very valuable fuel; and its discovery has greatly increased the development of manufacturing interests in that section, while the growth of population has been correspondingly rapid.

In the eastern portion of the State, the oil-producing rock is the Berea grit, a subdivision of the sub-carboniferous. Its structural features, however, are not such as to favor the accumulation of paying quantities of gas or petroleum; and, although a very large number of wells have been sunk, with few exceptions they are entire failures.

In the central counties and those bordering Lake Erie to the north-east, the Ohio shale furnishes a small but very persistent flow of gas, which has become of considerable economic importance. But while this shale is also rich in oil, it is not obtainable in sufficient quantities to make it valuable.

A separate chapter is devoted to a description of the Macksburg oil-field, one of the earliest to be worked, and still very productive. The productive area is confined to a small anticlinal in the Berea grit, outside of which all wells have been complete failures.

Of the methods of drilling, and the care of the wells during