A Practical Treatise on Electro-Diagnosis in Diseases of the Nervous System. By HUGHES BENNETT. H. K. Lewis, 1882.

During the last few years electricity has assumed a vast importance in every relationship of life, and it seems as if we were passing from an age of steam into an age of electricity. Medical men generally find it hard to keep abreast with the special developments of science, even in their practical relationships with medicine. They therefore feel sincerely grateful to anyone who, with sufficient knowledge, has also enough patience and power of application to sum up for them the facts and principles by which their treatment should be guided.

One can with confidence recommend to the attention of the profession this small book, written by Dr. Hughes Bennett. It is simple and yet trustworthy. It takes nothing for granted. It gives a complete summary of the relations of electricity to the human body in health and in disease.

The book begins with some very well arranged plates, exhibiting the motor points and other noteworthy indicators which must be studied and observed by any one wishing to make use of electricity.. This work points out how the electric batteries may and should be properly used—not as they have been hitherto, mere toys, to amuse both doctor and patient—or to be used by the former very much as the shower-bath has been, as a means of terrorising, or, as the doctor would probably say, of "rousing" his patient from a state of lethargy into one of greater nervous energy.

A short practical introduction follows, pointing out the uses of electricity as a physical agent in the diseases of the nervous system. Then a description of the necessary apparatus is given, with information regarding the best general accessories, such as the galvanometer and the combined electrodes. In Chapter III there is a *résumé* of the anatomical knowledge necessary for electrical diagnosis, followed by a description of the methods of applying electricity in diagnosis; and after this are described electrical reactions in health. Experimental researches follow, and descriptions are given of the anatomical changes resulting from injury to nervous tissues, and the effects of such injuries upon the electrical reactions. In describing all such injuries, and also in examining generally into the condition of the nervous system, Dr. Bennett proceeds from a general to a

particular investigation, so that the spinal cord and its reactions are examined first, then the motor nerve, and later, the voluntary muscles. These may be tried respectively by Faradism or galvanism, and useful tables in parallel columns are given, pointing out the reactions before and after injuries. Thus, on page 62, a table is given showing the relation which exists between the anatomical changes in nerve and muscle, and the electrical reactions, in the case of serious injury to a nerve. The electrical reactions which occur generally in types of paralysis are given, so that we have a description of the normal reactions in paralysis, and an investigation of the quantitative changes, such as simple increase as seen at one time, or simple diminution at another. The effects of interrupting the currents in forms of paralysis are also pointed out.

After the practical investigation, the theory of electrical reactions in disease is discussed. With chapter VIII we come to electrical reactions in special paralyses, as illustrated by cases; and here we have paralysis from disease of the brain well exemplified, cases of hemiplegia, probably hæmorrhagic, paralysis, probably embolic, pointing to normal reactions in some, quantitative increase in others, and quantitative decrease in others. In the same way, reactions which occur in paralysis from diseases of the spinal cord, are considered—locomotor ataxy, spastic paralysis, multiple sclerosis, paralysis agitans, and the like. Progressive muscular atrophy provides a good number of illustrative cases; in fact, it is hard to find any variety of paralysis that is not fully and carefully discussed in its electrical relations. Probably, in time, investigation of this kind will be made more generally, and already one has heard of some extremely important diagnoses which have been made by means of the electric current. Dr. Hughes Bennett not only discusses the reactions as they occur in real disease, *i.e.*, in what are more commonly called coarse (?) nervous disease, but also the modes of testing in hysterical cases and in malingerers.

In Chapter IX we have the conclusion, and a brief statement of the practical utility of electro-diagnosis. As Dr. Bennett properly says, "like all other methods of physical diagnosis, electricity must not be depended on alone as the sole means by which we are to arrive at a just conclusion in investigating the nature of disease. It is only one of the aids which we employ, but one which, in conjunction with other facts and observations, is a powerful auxiliary."

Those who wish to make use of this powerful auxiliary cannot do better than to get Dr. Hughes Bennett's handy little volume.

On the Causation of Sleep. By Dr. CAPPIE. 2nd Edit. Re-written. James Thin, Edinburgh, 1882. 8vo.

In this book we are presented with a somewhat startling view of the causation of sleep, based, as the author himself states, solely on analogy, and conclusions deduced from one solitary fact of scientific experiment. The author's peculiar method of investigating an interesting and complex physiological phenomenon, such as sleep, leads him not only to neglect the ordinary precautions which the experimental method demands, but also to omit all notice of the progress which has been made in the physiology of the circulation during the last fifty years. It must be confessed that the resuscitation of the idea of the capillary circulation, after having been laid to rest by Majendie and Poiseuille ("Müller's Archiv.," 1834, p. 365), is the last thing we should have expected to find in a modern physiological treatise; yet this is what our author would have us believe to be the prime agent in the causation of sleep. In brief, his theory may be summed up as resting on two props, the first being this chimæra of the capillary circulation, and the second being the well-established fact that increase of the intracranial pressure produces unconsciousness.

The superstructure raised upon this untrustworthy foundation is as follows:—The degree of cerebral activity is supposed to determine changes of force in the capillary circulation of the brain; consequently, supposing the cerebral processes to become enfeebled, the capillary circulation grows weaker. Under these circumstances, the vis a tergo being diminished, the author believes that the veins of the pia mater become distended from the back flow of blood caused by the atmospheric pressure on the large veins in the neck, and it is the compression (!) exerted on the cortex of the brain by these distended veins that produces sleep.

We need not trouble to notice the share which the author supposes the capillary circulation to take in the production of sleep, but the second point, viz., the relationship of unconsciousness to sleep, is one of wide and important interest.