

Insomnia and other Disorders of Sleep. By M. LYMAN, A.M., M.D., Professor of Physiology, and of Diseases of the Nervous System in Rush Medical College, Chicago.

The author of this book travels over the ground belonging to the phenomena of sleep, its nature, and cause; insomnia, its causes, and remedies, and its treatment in particular diseases. A chapter is devoted to dreams, and the concluding chapters are devoted to somnambulism, spontaneous and artificial. Dr. Lyman adopts the hypothesis of Pflüger, that wakefulness is maintained by the activity of the cerebral cortex, this being renewed by the materials carried to it by the blood, oxygen being thus stored up in combinations which form "explosive compounds." When the supply is insufficient and the cortex is not sufficiently renewed after mental action, the "sensitive portions of the brain are no longer fitted to manifest the highest forms of intelligent activity" (p. 21). When impressions from without affect the brain, unstable compounds of protoplasm are reduced to simpler forms. Such "explosions" liberate motion which is projected into consciousness and we come into conscious relation with the outside world. But this, like all attempts to bridge over the river which separates matter and mind, is at best an ingenious hypothesis and admits neither of proof nor refutation. They carry us little, if at all, beyond the knowledge of some of the conditions which are essential to conscious life. Then comes the attempt to explain the transition into the unconscious condition of sleep. Here our author accepts the theory of Preyer and Obersteiner and finds it easy to explain sleep by supposing an accumulation of fatigue, producing products of intramolecular oxidation, when it comes on gradually, although this does not account for the rapid change into a state of profound sleep. It is supposed that when mental activity sufficiently long-continued produces the accumulation of acid refuse which damps the explosive material of the brain, sensory impressions fail to excite in the cortex vibrations sufficient in length to sustain consciousness. When the sailor falls asleep he has exhausted the supply of oxygenated protoplasm stored up in his brain for a certain period of activity. Many fall asleep directly after the external stimuli of brain action are removed. The observations of Masso are laid under contribution. In his cases, the skull having been partially removed, the pulsation of the

vessels could be observed, and by the aid of delicate instruments it was found that the actions of the emotions or intellect increased the blood supply to the brain, while when sleep occurred the heart's pulsations as well as the number of respirations were reduced, as also the volume of the brain. When consciousness returned the intracranial circulation was increased. As the change in the circulation was secondary to the excitement of the brain, sleep is regarded as the cause rather than the result of the anæmic state of that organ in repose. The fall, or depression in circulation is the accompaniment of mental inactivity. When external stimuli act upon the brain through the senses, the movement induced excites the vaso-dilator nerves of the vessels of the brain, and the vaso-constructor nerves of other portions of the vascular system. In short, sleep is occasioned, according to this view, by the condition of the grey matter of the brain rather than changes in the vascular supply. As the writer puts it, "sleep is self-generated by the instrument of thought" (p. 29). On the other hand, the sleep caused by narcotics is due to substances from without interfering with the processes of oxygenation, in the same way as the natural refuse of the cerebral cells.

The remarks on somnambulism do not call for any special observation. An interesting case is related by Professor Allen, Dr. Lyman's colleague at the Rush College, the subject being a medical student residing in the professor's house. One of his exploits during sleep-walking was to visit a patient during the night*, a feat resembling one recently recorded of the superintendent of an asylum.† It appears that upon the previous evening he had informed the family that if he did not find his patient better on the next visit he should entirely change the medicine. In the morning, on going to the stable for his horse he was somewhat puzzled on observing various articles misplaced, but did not suspect the cause. He visited the patient and found him improved, and he was then told that the improvement took place after the administration of the powders in the night. "The truth flashed upon him at once, but concealing his emotion, he inquired, with as careless an air as he could assume, 'About what time was it when I was here?' They replied, 'Between two and three o'clock.' This proved to have been the case, as he was afterwards told by the family

* After he had ceased to live at Dr. Allen's house.

† "Sleep-Walking and Hypnotism," by D. Hack Tuke, p. 35.

where he boarded. He had been giving the patient some fluid medicine, which he ordered to be discontinued, and he had then put up several powders, such as he had concluded upon the previous night, combining them as usual, and administering the first one himself" (p. 190).

The book is creditable to the Rush Medical College professor. We are informed that this is one of the best Colleges in the United States. Bearing as it does so honoured a name, it would be an especial matter of regret were it otherwise.

The Applied Anatomy of the Nervous System. By AMBROSE L. RANNEY, A.M., M.D. London, H. K. Lewis, 1888.

Is there room for another work on the nervous system? It is true the author's work is not a treatise on diseases of the nervous system, but an application of the facts of anatomy and physiology to disease. Useful as is such application, we do not think that there is need of it in this country. There is Ross' work on "The Diseases of the Nervous System," in which anatomy and physiology are very completely dealt with—in our opinion too completely. There is, further, Gower's most admirable treatise on diseases of the nervous system, in which, as a rather special feature, we find anatomy and physiology applied to the elucidation of the facts of disease, and in excess of these facts, *i.e.*, details anatomico-physiological are recorded only in so far as they can be applied. Dr. Ranney's book is richly illustrated by drawings, both *ad naturam* and schematic. It must be well understood that our objection is simply that the book is not required. The section, for instance, on the spinal nerves is anatomical, almost purely. Drawings from Sappey and from Flower with diagrams of the motor points—all these are to be found in standard works. What is the use of multiplying these descriptions? And wherein is the practical (applied) value of the long table of the distribution of nerves with which the section abounds? In the section which deals with cerebral localization we find no insertion of the representation of trunk movements on the mesial aspect of the hemisphere as described by Horsley and Schäfer—an important omission.
