

interesting to notice the theory advanced and supported by our author. Perhaps the most generally received opinion is that the brain is in a state of approaching congestion. Drs. Carpenter, Dickson, and Sir Henry Holland, as well as others, assert that "a degree of pressure is essential to perfect and uniform sleep." Dr. Hammond, however, objects very strongly to this theory, and attempts to prove by experiments, that natural sleep proceeds from a cause, the exactly opposite of that held by the well known names mentioned above.

"That stupor may be produced by pressure upon the brain admits of no doubt. It is familiarly known to physicians, surgeons, and physiologists; the two former meet with instances due to pathological causes every day, and the latter bring it on at will in their laboratories. But this form of coma and sleep are by no means identical. On the contrary, the only point of resemblance between the two consists in the fact that both are accompanied by a loss of volition. It is true, we may often arrive at a correct idea of a physiological process from determining the causes and phenomena of its pathological variations, but such a course is always liable to lead to great errors, and should be conducted with every possible precaution. In the matter under consideration it is especially of doubtful propriety, for the reason stated, that coma is not to be regarded as a modification of sleep, but as a distinct morbid condition. Sir T. C. Morgan, in alluding to the fact that sleep has been ascribed to a congested state of the brain, for the reason that in apoplectic stupor the blood-vessels of that organ are abnormally distended, objects to the theory, on the ground that it assimilates a dangerous malady to a natural and beneficial process. He states (what was true at the time he wrote) that the condition of the circulation through the brain, during sleep, is wholly unknown.

"It is important to understand clearly the difference between stupor and sleep, and it is very certain that the distinction is not always made by physicians; yet the causes of the two conditions have almost nothing in common, and the phenomena of each are even more distinct.

"1. In the first place, stupor never occurs in the healthy individual, while sleep is a necessity of life.

"2. It is easy to awaken a person from sleep, while it is often impossible to arouse him from stupor.

"3. In sleep the mind is active, in stupor it is as it were dead."

"4. Pressure upon the brain, intense congestion of its vessels, the circulation of poisoned blood through its substance cause stupor, but do not induce sleep. For the production of the latter condition a diminished supply of blood to the brain, as will be fully shown hereafter, is necessary.