

dilatation of the auricles and ventricles of the heart, there is an interval during which the organ is at rest. This amounts to one-fourth the time requisite to make one pulsation and begin another. During six hours of the twenty-four, the heart is therefore in a state of complete repose. If we divide the respiratory act into three equal parts, one will be occupied in inspiration, one in expiration, and the other by a period of quiescence. During eight hours, therefore, of the day the lungs are inactive. And of the voluntary muscles, none, even during our most untiring waking moments, are kept in continued action." As might be expected from this ceaseless activity of the brain, every thought being formed at the expense of nervous tissue—that organ cannot long carry on its healthy function—without having repose. Hence after a certain period, this organ needs rests, and it is this want, that is the exciting cause of natural and periodic sleep; and to such an extent has the brain often been reduced, and so greatly felt the need of rest, that not unfrequently it is beyond the power of the will to evade it. Thus our author says, "I have frequently seen soldiers sleep on horseback during night marches, and have often thus slept myself. Sentinels on posts of danger often cannot resist this influence. To punish a man with death, therefore, for yielding to an inexorable law of his being, is not the least of the barbarous customs which are still in force in civilized armies." As might be anticipated, therefore, no punishment so cruel could be invented, as to sentence a man to death by depriving him of sleep,—yet, that such a punishment has been enforced, the following case clearly proves. Dr. Hammond quotes from Dr. Forbes Winslow, the author of an able treatise on diseases of the brain :—

"A Chinese merchant had been convicted of murdering his wife, and was sentenced to die by being deprived of sleep. This painful mode of death was carried into effect under the following circumstances : The condemned was placed in prison under the care of three of the police guard, who relieved each other every alternate hour, and who prevented the prisoner falling asleep night or day. He thus lived nineteen days without enjoying any sleep. At the commencement of the eighth day his sufferings were so intense that he implored the authorities to grant him the blessed opportunity of being strangled, guillotined, burned to death, drowned, garotted, shot, quartered, blown up with gunpowder, or put to death in any conceivable way their humanity or ferocity could invent. This will give a slight idea of the horrors of death from want of sleep."

The immediate cause of sleep is the question, however, which has given rise to a great amount of discussion, and it is therefore