

the skin vessels. The immediate cause of normal awaking, on the contrary, is found in the augmented flow of blood to the brain that follows upon the gradual constriction of the skin vessels as the vasomotor centre recovers its tone. The periodicity of sleep is therefore directly connected with a rhythmic loss and resumption of tone in the vasomotor centre, etc.

“ Throughout the waking period the vasomotor centre is under continual stimulation, and is therefore in continual activity. Sensory impulses, especially from the skin and the cutaneous sense organs, are at all times falling into the central nervous system in greater or less quantities, and through a reflex pressor action on the vasomotor centre these sensory impulses keep up a constant activity of the centre, particularly of that part controlling the skin vessels, as is indicated by the striking effect of such stimuli upon the volume of a limb when measured plethysmographically. Mental activity in all its forms is accompanied by a similar pressor effect upon the vasomotor centre, which is likewise known to affect the skin circulation. During the waking hours, therefore, the vasomotor centre is in uninterrupted activity, and the result must be the production of a condition of fatigue in this centre proportionate to the amount of stimulation. If this fatigue is sufficiently pronounced, the centre will relax and sleep ensue in spite of even strong sensory or mental stimuli.” If the fatigue is less marked, as is normally the case at the end of a waking period, adequate relaxation takes place only after the withdrawal of sensory and mental stimuli, and our voluntary preparations for sleep consist essentially in devices to minimise these stimuli. That the vasomotor centre is susceptible to fatigue the author has shown to his own satisfaction by experiments consisting in the continuous stimulation of sensory nerves (sciatic) in curarised and narcotised animals. The great rise of blood pressure that results from such stimulation soon passes off more or less completely, and that this result is owing to fatigue of the centre rather than to fatigue of the muscles in the walls of the blood vessels is indicated by the fact that the blood vessels in the ear of a rabbit may be kept in a condition of strong contraction for a long period (over an hour at least) by constant tetanic stimulation of the peripheral end of the cervical sympathetic nerve.”

Whatever the exact cause of sleep is, at all events it seems to be proved beyond doubt by Mosso and others, that during normal sleep there is cerebral anæmia with corresponding vascular dilatation of the skin, and in directing our treatment in many of the forms of insomnia we should take cognizance of the fact, and whether we agree with Bayliss and Hill, that the brain vessels themselves possess no