

CLINICAL NOTES ON SOME COMMON AILMENTS.

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INSOMNIA.

In this paper I purpose discussing some of the aspects of the disorder which is known as Insomnia, and which is characterised by a deficiency either in quality or quantity of sleep. Before we come to its derangements we must first clearly understand what sleep itself is, and why we should go to sleep at all.

I have often in previous papers had occasion to use the simile of the large business establishment and its telephone supply, and I am going to refer to it again here. While we are awake, the various actions of the different parts of the body are controlled by a series of telephonic messages from the brain and spinal cord travelling along the nerves to all parts of the body. Some actions, especially those which are essential to the continued life of the individual, are carried out automatically, that is to say they are not under the control of the will, and they do not depend for their continuance on any impressions which the brain receives from without the body. Thus, supposing that we are walking along a road, and we see a motor car out of control coming straight at us, the impression or telephonic message that the brain receives from the eyes enables it to direct our legs to get our body out of the way as quickly as possible, but it does not (except in penny novelettes) make our heart stop beating, or our liver cease from secreting bile. These latter mechanisms are regulated, not by the higher parts (or centres as they are called) of the brain, but lower down, in the part between the brain and the spinal cord, and in the cord itself.

Now the work done by the higher centres—and which includes willing, thinking, and so on—is of a much more exacting nature than the automatic actions, and a period of rest is necessary to enable them to recuperate. It is this rest which we call sleep.

Inasmuch as all voluntary action is suspended during sleep, it follows that not only the nervous centres, but the muscles also are at rest: in fact the ideal state is that in which only the minimum expenditure of energy necessary to keep the body alive is being incurred.

How is sleep produced? We know that all the blood vessels of the body are supplied with nerves (which are under the control of the brain and spinal cord) down which impulses are constantly passing and regulating the supply of blood to any part. If the vessels are

opened, more blood arrives, while if their calibre is narrowed, the parts supplied by that particular set of vessels receive less blood—become anæmic in fact.

Now this is precisely what happens during sleep—the brain is anæmic, and so, the higher centres—for the spinal cord where the lower centres are situated is not affected—are no longer able to be active as they do not receive an adequate supply of blood. Anything that diverts the blood from the brain makes us feel sleepy. Usually this cutting down of the blood supply is done by the brain itself in response to the cry of the wearied muscles, or other parts of the brain, but it may happen whenever a large supply of blood is wanted for any other part, as, for instance, when we eat too hearty a meal in the middle of the day: all the available blood is then wanted for digestion, and we may fall asleep in broad daylight.

For successful sleep it is also essential that all stimuli which would tend to stir the brain to activity should be removed; thus, it is difficult to sleep when a bright light is shining into the room, or in the presence of a loud noise. Similarly, distracting thoughts or emotions are a fruitful cause of sleeplessness, as is a state of ever persistent care or worry. Intense mental work is also productive of sleeplessness, the brain being then, as it were, too tired to turn off the arterial tap for itself.

Apart from the brain, the two main reservoirs of blood in the body are the vessels of the skin, and in the abdomen. As a matter of fact those in the abdomen—the splanchnic area as it is called—can enlarge sufficiently to contain all the blood in the body, and it is possible experimentally to bleed an animal “into its own belly.” Consequently, we find that anything which tends to drive the blood away from either of these areas is a cause of sleeplessness; the blood must go somewhere, and it has then to be diverted to the brain.

Cold acts in this way by constricting the small blood vessels of the skin so that the blood is driven inwards, and hunger has the same effect on the abdominal reservoir.

Tea coffee, and in some cases tobacco may cause sleeplessness by directly stimulating the higher centres so that they do not want to stop work when they should.

The normal amount of sleep required by a healthy man is 8 hours, but individuals vary greatly in this respect: children require more sleep than adults.

Coming now to the question of treatment, it will be obvious that what we have first to discover in any given case is what is preventing the cutting down of the blood supply to the

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