Lectures on Elementary Physiology, in relation to Medical Nursing.

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Lecture V.—The Nervous System.

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When discussing the constitution and circulation of the blood, we found that, if any part of the body ceased to be supplied with healthy blood, it died. So, in like manner, if the nerve which maintains the activity of any given muscle becomes so injured that it loses its energy, the muscle also loses power and gradually becomes contracted and shrivelled from disuse. And we shall shortly see that, in cases of paralysis, for example, in which disease of the brain substance prevents the action of the nerves supplying the muscles say, of the arm, this is followed, first of all, by the paralysis or loss of power of motion in the limb, and, then, by a process of shrinking of the tissues until these at last appear to be wasted to skin and bone.

Then, again, if there be an accident to the recording instrument at any Post Office, which renders it unable to send or receive messages, it is evident that the telegraph wires connected with that office are rendered useless, because messages cannot be translated even if they are transmitted over them. So we shall find that, in cases of disease of the spinal cord, its messages or nerve impulses are checked in their transmission. If we take the simile a step further, and imagine that all the instruments in a General Post Office were suddenly put out of order, it is evident that all the telegraphic work of the town would be immediately thrown out of gear, and would perhaps for a time be suspended. So, in cases of disease or injury to the brain, the nerves which pass from the diseased or injured area are unable to fulfil their proper functions of transmitting sensory or motor impressions, because those messages are neither properly understood, nor can any reply message be sent back. This example will illustrate to you the consequences which follow the formation of a clot of blood in one of the large arteries of the brain, or the softening and destruction of any part of the cerebrum from which important nerves arise. In cases, for instance, of an embolism in the left middle cerebral artery, the patient has what is commonly called an attack of Apoplexy; he will suddenly lose consciousness, to a greater or less extent, and when he recovers from this condition, after a longer or shorter interval, as the case may be, it is found that he is paralysed on the right side of the body, that he cannot lift his right arm or leg, and probably, also, that he is unable to speak. This is due to the fact that the nerve centre, or seat of the faculty, of articulate language, is situated in the second and third left frontal convolutions of the brain; or, in other words, in the area supplied with nourishment by the cerebral artery in question, and through which the circulation of the blood has been stopped by the clot.

When the disease of the blood vessel occurs on the right side of the brain, the left side of the body is paralysed, but, as a general rule, there is then little or no loss of the power of speech. And this illustrates a very important part of the work of Nurses who may be placed in charge of nerve cases, and supplies an excellent explanation of the need why Nurses should know something of physiology in order that they should be able to give an intelligent report of their patient's progress and symptoms between the visits of the doctor. The observations made by a Nurse concerning a patient suffering from nerve disease, may, and probably will, be useless, unless she knows not only how to observe, but also what to observe. It may, for instance, seem, to a Nurse ignorant of physiology, to be a matter of but small importance that a patient should complain of numbness and tingling at some particular part, or that certain facial muscles should be affected with attacks of twitching. But the Nurse who has some knowledge of the subject will understand that muscular tremors mean some irritation of the nerves supplying those muscles with energy, and that in fact purposeless messages are being telegraphed along the nerves in question; and that the numbness and tingling represent some definite interference with the healthy condition of the nerves of the part affected.

It is often by the careful record and knowledge of such apparently trifling symptoms from hour to hour, or from day to day, that the medical man is enabled to trace these consequences to their cause, and so to locate the exact position of the disease in the nerve or in the spinal cord, or in the brain.

(To be continued.)

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