

**Lectures on Elementary Physiology,
in relation to Medical Nursing.**

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LECTURE V.—THE NERVOUS SYSTEM.

(Continued from page 391.)

IT is chiefly by being able to locate the precise position of the disease that its exact nature can be learnt; or, in other words, that the proper remedies for its treatment can be prescribed, or that an accurate prediction as to the future progress of the patient can be made.

The first point, then, to which attention must be paid is that, just as it is essential in the working of the telegraph system that the recording instruments at the Post Offices and the telegraph wires connecting them, shall all be in working order—a break in the wire, or a defect in the machines being equally destructive of the efficiency of the transmission—so it is essential for the proper working of the nervous system that the brain and spinal cord, and the nerves throughout their length, should all be absolutely healthy and undisturbed by external influences.

To show the importance of this latter point, it is only necessary for one to rest the inner side of the elbow upon a table or other hard surface for a few minutes, by means of which direct pressure upon the ulnar nerve is made as it passes round the bend of the joint. Then, one finds that the inner side of the forearm and hand, and the little finger, will become numb, and what is popularly called "dead;" and on lifting the arm one experiences the sensation of tingling, popularly described as the feeling of "pins and needles." The nerve tissue has been temporarily deadened by the pressure upon it, and the loss of feeling or the altered sensation in the hand and forearm are simply consequent upon that disturbance of its activity. So, in the case of such a symptom occurring in other nerve-areas, medical men look at once for some evidence of pressure above the affected parts, and in many such instances it is found that by the growth of a tumour, or by the enlargement of an organ, or by some other cause, the injurious compression of the nerve tissue has been brought about, which set up the symptom in question. Once more, therefore, the

complete understanding of the action of the nervous system in disease depends to a very large extent upon the observation of apparently trivial and unimportant symptoms, and by such observations, it is not too much to say that the discovery, and perhaps the cure at an early stage of disease is effected, which if overlooked or neglected, might prove to be dangerous, or even fatal.

The course of the nerves and their point of origin in the brain or spinal cord, as the case may be, are known anatomically, and, therefore, when the part supplied by any nerve loses sensation or power of movement, it is obvious that the interruption in the nerve current occurs at some spot along the course of that nerve or in the nerve centre in which it arises. It is then possible for the medical man to trace back the result which he sees, to the cause and the locality from which it has arisen; just as the engineer can trace back to a particular wire and to a particular section of it, any defect which is found to exist in the passage of the electric current, from point to point in the telegraphic system.

Then again, a definite change in the nerve produces a certain definite result. As we have just seen pressure on the nerve causes numbness or loss of sensation, and loss of muscular movement. So in like manner, irritation of a nerve causes its special symptoms. A telegraphic instrument, which is out of order, will transmit messages so imperfectly that the greatest expert may be unable to understand their meaning, and so we find that in cases of brain or spinal cord irritability where the nerve centres, are irritated rather than injured, the nerves radiating from that centre are in a condition of abnormal activity and ferment. Messages, therefore, are perpetually passing along those nerves, to the muscles which they energise, and frequent and irregular contractions or twitchings or tremors of those muscles are the consequence. To the rule that such muscular twitchings mean some definite nerve irritation, there appears to be one important exception. In some cases of great bodily weakness and extreme nerve exhaustion, the controlling powers of the brain over the nervous system seems to be suspended, and in such cases it is by no means uncommon to find that muscular tremors are a characteristic symptom.

(To be continued.)

[previous page](#)

[next page](#)