

appropriate nerves, for instance those of the kidneys by diuretics, those of the intestines by purgatives, etc.

That the character of the circulation is improved by removing the inhibitory influence of the cerebro-spinal nerves, and not by stimulating vaso-constrictor fibres, is made probable by the fact that medicines which increase arterial tension are those which diminish the activity of cerebro-spinal nerves. A curious instance of this is the effect of physostigma in relieving to some extent and checking the progress of paralysis from myelitis, although this drug is one of the most powerful of the nervous sedatives. The effect of heat upon the circulation depends upon the degree to which it is applied. Thus, when a moderate degree of heat is applied to the skin the superficial vessels dilate, because the sensory nerves are stimulated; but if heat is applied to a much greater extent the surface becomes blanched, partly because the sensory nerves have become paralysed from over-stimulation, and partly because the heat has penetrated to the local ganglia, and by stimulating them has caused the vessels to contract.

Cold on the other hand lessens the irritability of the sensory nerves, and thereby removes their inhibitory influence from the ganglia. When, however, it is applied to such an extent as to influence the local ganglia of the vessels its sedative influence upon them may allow the vessels to dilate. Experiments have shown also that impulses will not pass along sympathetic fibres—the temperature of which is even moderately reduced.

To sum up :

1. Arterial pressure is maintained by nervous impulses which arise spontaneously in the sympathetic ganglia and act upon the muscular coats of the minute arteries.

2. There is no satisfactory evidence that cerebro-spinal nerves carry impulses to the muscular coats of the arteries.

3. Sympathetic ganglia, being incapable

of reflex action, cannot send out impulses in response to impressions received by sensory nerves, although it is quite evident that the action of these ganglia may be inhibited by means of cerebro-spinal nerves.

4. The connection between the sympathetic ganglia and the ganglia on the posterior roots of the spinal nerves clearly indicates the way by which sensory impulses reach the sympathetic ganglia.

5. It is well known that when the vessels of an area become dilated all the remaining vessels become unusually contracted; and although this is probably due, to some extent, to the withdrawal of blood from the latter, yet it may be assisted by the nervous energy which is withdrawn from the dilated vessels; that, in fact, the ganglionic system may be compared to a number of galvanic batteries, connected with each other, and from which numberless wires proceed in every direction, and when some of the wires are disconnected, the strength of the currents carried by the remainder becomes increased.

MALARIA.

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(Abstract of a paper read before the Sanitary Convention at London, Ont., Nov. 17th, 1883.)

I have chosen for this paper the subject of malaria, for two reasons:—Firstly, because it is the source of most of the sickness in Chatham and vicinity; and secondly, because it is a matter that should be brought prominently before the people and the Government, for the purpose, if possible, that some means may be devised to reduce the supply and check its spread. There are three things necessary for the production of malaria, viz.:—Heat, moisture and vegetable decomposition; and just in proportion as these exist will the character of the miasmatic poison be, and the influence it exerts on the system manifested. Unless these three causes combine, we can have no malaria. We may have vegetable de-