

motion? The only muscular structures which receive nerves from the sympathetic and none from the cerebro-spinal system are the muscular coats of the arteries, the radiating fibres of the iris, and the muscular coat of the intestines. It would be almost though not absolutely correct to include in this list the bladder and the uterus. Any nervous stimulation received by these must therefore be sent from the great sympathetic, and that these structures are influenced by some nervous system is certain, as we shall see farther on. We may therefore say positively that the great sympathetic does act as a nerve of motion. You will notice, however, that all these structures are made up of unstriated muscular fibre; I infer from this that the great sympathetic is a nerve of motion to unstriated muscle. In the case of the heart whose muscular fibres are striated, though they are not precisely similar to ordinary striated muscles which are supplied by the cerebro-spinal system and are under the control of the will, there seems to me no room to doubt that its movements are influenced by the great sympathetic, and this we must take as a partial exception to what I believe to be the law, namely: that the movements of striated muscle are controlled by the cerebro-spinal nervous system, and the movements of unstriated muscle by the great sympathetic. The only other exception to this law that I am aware of is the case of the circular fibres of the iris which being unstriated muscle are supplied by the third cranial nerve.

(2) If we apply the same reasoning to the solution of the question—Is the great sympathetic a sensory nerve?—we do not get a very clear answer: parts supplied only by the great sympathetic as the liver, kidneys, pancreas, suprarenal-capsules, and ovaries, are probably scarcely if at all sensitive. Arguments as to the sensitiveness of these organs drawn from their pathological conditions I do not think of much value, for such pathological states usually involve the investing membrane of these organs, either by congestion of it, stretching of it, or in some other way, and we know that this investing membrane, the peritoneum, is supplied by cerebro-spinal nerves and is very sensitive. On the other hand pathological conditions of these organs which do not interfere with their investing membrane, as cancer of the liver in cases where all the cancerous nodules are buried in the substance of the organ and do not encroach upon the peritoneum and many diseases both of the liver and kidneys leading to fatal disintegration of tissue are quite painless. The organs which I have mentioned as being supplied solely by great sympathetic nerves are by their position well protected on the being surrounded by sensitive tissues and organs, and by being invested by a highly sensitive membrane, they do not therefore require for their protection that they themselves should be sensitive, and I do not believe that they are so. Another fact which bears out this view remains to be mentioned. When organs analogous to those of which we have been speaking—other glands, as the mammary, salivary, testes, &c.—are placed in exposed situations they are then supplied with cerebro-spinal nerves as well as with those from the sympathetic—the sympathetic fibres being undoubtedly intended to control their functions, and the cerebro-spinal fibres to make them sensitive and so protect them from injury. For if, on the one hand, the great sympathetic fibres were endowed with sensibility there would be no occasion for a supply of cerebro-spinal nerves to these organs; or if, on the other hand, the cerebro-spinal nerves are not sent to them to furnish them with sensibility but to control (as some physiologists maintain) their secreting functions, then there would be no apparent reason why they should be supplied by great sympathetic nerves. All things considered therefore I am inclined to answer this question in the negative. I do not believe that the great sympathetic is endowed with sensation.

(3) The third question is: Does the great sympathetic exercise a controlling influence over the functions of the secreting glands? I think there need be no hesitation about answering this question in the affirmative. The ordinary function of these glands might be supposed to be carried on independently of nervous influence altogether, though I do not think it all likely that it is, for as