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NEUROHUMORS: NOVEL AGENTS IN THE ACTION OF THE NERVOUS SYSTEM[1]

By Professor GEORGE HOWARD PARKER

BIOLOGICAL LABORATORIES, HARVARD UNIVERSITY

THE enunciation of the neurone theory by Waldeyer in 1891 was a fitting culmination of the neurological work of the nineteenth century. By means of it many detailed questions on the structure and the function of the nervous elements found satisfactory and final answers, but as a result of it there also arose a host of new and perplexing problems, many of which are still unsolved. Prominent among these is that concerning the relations of nerve-cells or neurones not only among themselves but also between them and the cells of receptor and effector organs.

Embryonic nerve-cells or neuroblasts are at the outset reasonably separate and independent entities without special functional interdependence. As they grow and differentiate they come to form systems of conducting pathways by which one remote part of the body is brought into nervous connection with another. How neurones are related in such conducting systems has been a matter of dispute. Some histologists have claimed that the processes of one neurone fuse with those of the next and thus establish possibilities of nervous conduction; others have declared that such processes are only in contact one with another. The importance of this question disappeared, however, when it was found that degenerative changes started in one neurone never pass over the assumed boundary into the next neurone and that nerve impulses, which may course in either direction up or down a neurone, are limited to one direction in passing from neurone to neurone. Thus, whether neurone tips are fused with each other or are merely in contact, their region of joining, the so-called synapse, must be a differentiated area polarized as to its direction of transmis-

[1] An address given at the annual meeting of the Worcester Chapter of the Sigma Xi, on November 5, 1934.

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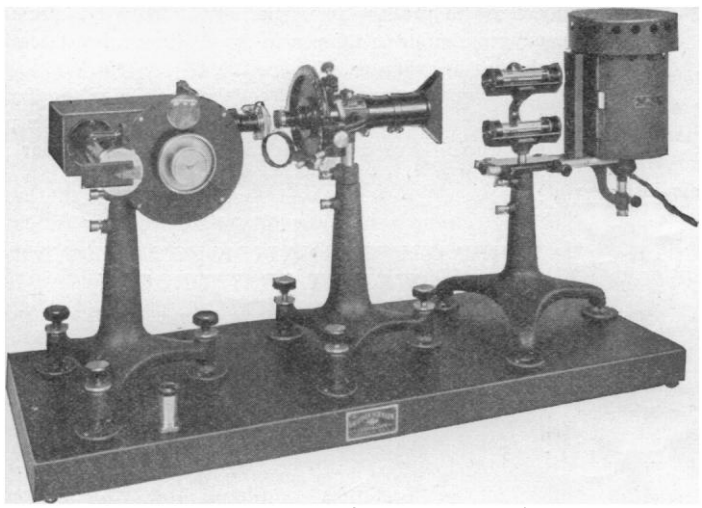

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