

the medullary sheath of nerve fibres; and by virtue of this Flechsig was able to trace the various nerve tracts in the brain and spinal cord of the incompletely developed young animal. Of course in nerve degeneration when the myelin of the nerve fibres has disappeared, the degenerated region is marked out simply by absence of staining.

In like manner by the Marchi method the medullary sheath of degenerated nerve fibres is demarcated by a black staining, by the use of osmic acid, after the tissue has been first fixed in bichromate of potash. Of course such a method is inapplicable after degeneration is so complete that the myelin has been wholly absorbed. The Marchi method has proved of great value in marking out nerve tracts as in the nature of things degeneration must follow the lines of physiologically related neurones.

All the methods thus far referred to possess the great advantage over staining with ordinary dyes, that the processes of the nerve cells are to an infinitely greater extent brought into view. Nevertheless in all cases the minute structure of the body of the cell is more perfectly delineated by staining with anilin and other dyes.

One method which has proved of great practical importance is that of Nissl, which is a form of methylene blue staining, and a modification of which, useful for certain purposes, has been devised by Held. By the Nissl method certain constituents of the cell body are precipitated or fixed in more or less definite forms known as Nissl's bodies, or tigroid masses.

It will be seen from the above brief account that each method has its own special excellencies and limitations, and it is only by the use of all these and other methods of less importance, that justice can be done by means of the technique of the present day. It will be my object this evening to show, in necessarily a very imperfect manner considering the brief time at my disposal, some of the fruits of these most modern methods. In other words, I propose to outline the meaning of the expression "Neurone Concept," and to indicate its significance for Anatomy, Physiology, Pathology and Psychology, by a few illustrations; an attempt which, at the best, must be a mere sketch, but sufficient, I hope, to warrant the belief that the neurone concept had done for neurology what the doctrine of evolution has accomplished for biology.

It is now twelve years since Waldeyer, the great Berlin anatomist, presented a clear statement of what was implied by this doctrine. He held that the latest researches justified the opinion that the nerve units throughout the nerve centres were anatomically independent though physiologically related. It was believed that one nerve unit, nerve cell, or neurone, came in contact with another through its processes, but that these did not actually unite anatomically. In other words he set forth the doctrine of *contact* as opposed to the doctrine of *concreescence*.