

ON REGENERATION OF NERVE FIBRES IN THE CENTRAL NERVOUS SYSTEM,¹

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Dr. Worcester read a paper on this subject and exhibited photographs and specimens. The literature contained but few observations countenancing the belief that such regeneration takes place. Brown-Séquard and Eichhorst and Naunyn had reported regeneration with partial restoration of function in experimental sections. Stroebe had reported growth of nerve fibres from the posterior roots into the cicatrix, and also what appeared to be newly formed fibres in the anterior and lateral columns after division of the spinal cord in rabbits. Borst, in a case of fracture of the vertebral column, after three years found medullated fibres, which he compared to amputation neuromata, and which appeared to be outgrowths from the anterior and posterior nerve roots.

The case upon which the paper was founded was that of a woman, presenting paresis and partial anæsthesia of the left side, in whom, at the autopsy, the right corpora quadrigemina were found to be in a cicatricial condition, probably resulting from thrombosis. In the middle of the cicatrix a group of greatly contorted bundles of medullated fibres was found, entirely different from anything normally seen in that situation. The only connection with sound tissue that could be discovered was by a number of small bundles of fibres from the tegmentum, in the neighborhood of the red nucleus. The general appearance was very similar to that of an amputation neuroma, to which the author believed it to be analogous, in view of its dissimilarity to any normal structure, and the improbability

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of its being exempt from the destruction of the surrounding nervous substance in that situation.

DISCUSSION.

Dr. Joseph Collins said that, as he understood the condition described by Dr. Worcester, there was a bundle of nerve fibres in the degenerated area, which Dr. Worcester was not able to trace to any particular destination. He would like to ask if serial sections were made and, consequently, at different axial planes. If they had all been made on the same plane, and the author had been able to trace the fibres for a long distance, then the interpretation he had put upon the condition would be justifiable, but, if they had not been so made, a bundle of undegenerated fibres, coming from an origin cephalad to the lesion, and unimplicated by it, might have been encountered in certain sections cut in different planes from other sections.

Dr. Worcester, in reply to Dr. Collins, said the sections were all made at the same time, in an uninterrupted series, extending about three mm.; the abnormal group of fibres was largest in the centre, and grew gradually smaller at both ends. The speaker thought it absolutely certain that the condition found did not represent a normal tract of fibres. He had never seen anything like it in the normal corpora quadrigemina. It was either an abnormal growth existing previously to the lesion, or a new formation developed subsequently. On the former hypothesis, we must assume that this abnormal bundle of fibres possessed greater vitality than the surrounding normal tissues.