

Axon-glia relationships in crab nerves

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The nerves of the walking legs in the crab *Lebidoclea grammania* were studied by electron microscopy. Particular attention was directed to the structure of the connective tissue, its arrangement within the axon sheaths and its association with the glial cells. The connective tissue of the neural lamella of the giant axons and the fascicles is formed by collagen fibrils and bands of mucopolysaccharides. Prolongations of the neural lamella divide the fascicles into bundles of contiguous axons, groups of loosely sheathed axons and nerve fibres wrapped by layers of glial cell processes alternating with layers of connective tissue. The glial cell processes close to the axons contained numerous microtubules whereas glycogen granules predominated in the more peripheral processes. These observations suggest that the connective tissue and glial cell processes forming the envelopes of the axons together participate in the maintenance of the microenvironment around axons. © 1975 Chapman and Hall L