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granules they are most abundant in the apical processes. No granules have been seen lying free in the ventricle. Some processes are grossly vacuolated, disorganised, and devoid of granules, suggesting that the cells are engaged in secretion into the cerebrospinal fluid.

159. *Intracellular Distribution of Tritium-Labelled Ecdysone in Salivary Glands and Other Tissues of Rhynchosciara sp. and Chironomus tentans Larvae.* G. WEIRICH, Physiologisch-Chemisches Institut, Marburg, Germany.

In order to analyse the mode of action of ecdysone, an autoradiographic study has been made of the distribution of tritiated ecdysone in larva of *Rhynchosciara spec.* and *Chironomus tentans*. Doses of 0.25–1.25 μCi (0.04–0.2 μg) of ecdysone-23,24- ^3H (3 Ci/mmole) were injected into intermolt larvae. Incubation times ranged from 6 min to 20 hours. Samples of salivary glands, intestine, Malpighian tubules, and fat body were prepared by freeze-drying and fixation at -20°C or freeze-substitution at -70 to -80°C in an ethanol-acetic acid mixture (3:1). Autoradiographs were made by exposure to Kodak NTB 3 emulsion for 15 to 90 days. Grain density was either equal or higher over the cytoplasm than over the nuclei. Distribution of label inside the nuclei was not even, but a significant accumulation at any chromosomal locus could not be demonstrated in either *Chironomus* or *Rhynchosciara*. It is concluded that ecdysone reaches the cell nuclei within 6 min or less after *in vivo* application, but is not accumulated there to a higher concentration than in the cytoplasm. The methods used might have been inadequate to show an accumulation at chromosomal loci.

160. *Cytological and Experimental Studies on the Adenohypophysis in the Mink, Mustela vison.* B. WEMAN, Department of Zoology, University of Stockholm, Sweden.

Pituitaries of adult minks, *Mustela vison*, in anestrus, estrus, gestational and lactating phases have been studied. In addition descriptions have been given of the pars distalis after experimental procedures such as the administration of thyroxine, propylthiouracil, cortisoneacetate, Metopirone, estrogen, and reserpine and artificial light treatment. The cells were identified by their structural and staining qualities, making use of several staining techniques, as it was found that distinguishing features were unattainable with a single method. In pars distalis six cell types have been recognized by light microscopy, namely STH-, LTH-, ACTH-, LH-, FSH-, and TSH-cells. The LTH-cells were not easily recognized, but additional ultrastructural analysis made it possible to identify them. The material employed in this study also included embryos and whelps. Two and five, respectively, of the six adult cell types of the adenohypophysis were then identified. In the pars intermedia of adult animals three different cell types occur, two of which possibly represent different functional states of the same cell type. Two types of neuroglandular junctions have been noted.

161. *Investigations on Neurosecretion in the Central and Peripheral Nervous System of the Pulmonate Snail Lymnaea stagnalis.* S. E. WENDELAAR BONGA, Zoological Laboratory, Free University, Amsterdam, The Netherlands.

The paraldehyde-fuchsin (PF) positive cells in the CNS (Lever *et al.*, *Proc. Kon. Ned. Acad. Wet.* **64**, 640, 1961) have been shown to consist of three types with the alcian blue (AB)/alcian yellow (AY) technique (Peute and Van de Kamer, *Z. Zellforsch.* **83**, 441, 1967). AB was applied at pH 0.5, AY at pH 2.5. In addition to the PF-negative cells (Joosse, *Arch. Néerl. Zool.* **16**, 1, 1964), two NS-cell types were found having affinity for AY and phloxin, respectively. The elementary granules in the six cell types are different in appearance and size. Apart from the neurohaemal (NH) areas in the lip nerves and the intercerebral commissure (Joosse, 1964), extensive NH zones were found in the periphery of the nerves and connectives of the visceral and parietal ganglia. Moreover in the connective tissue surrounding the CNS, a network of tiny nerves containing NS materials was observed. With the EM, release phenomena were numerous near bloodvessels and bloodspaces. Accumulations of AY-positive material transported by the visceral nerve were observed in axons which ended nonsynaptically in the kidney. In animals exposed to demineralized water, a significantly increased release of the elementary granules in these axons was determined as compared to tap water exposure. This result suggests a neurohormonal effect of this NS-type on the water balance. (Supported by the Netherlands Organization for the Advancement of Pure Research.)