

tracts and cortical regions of nerve cells (figs. 7 and 10). Throughout development the central nervous system is covered by a nucleated membrane, the neurilemma (figs. 10, 12 and 16).

In all larvae the brain is the most prominent internal organ of the head segment, and its size increases throughout development. In the large larvae of the eighth nomadic day, and in larvae of successive nomadic days, the lobes of the brain extend slightly into the prothoracic segment.

The *frontal ganglion* of the stomatogastric nervous system is located dorsal to the pharynx, just below and in front of the brain lobes. This bean-shaped ganglion has a central core composed of tracts which are surrounded by neuroblasts (fig. 12). Fibers extend bilaterally from the anterior limit of this ganglion, while a single, relatively large, posteriorly directed nerve, the *recurrent nerve*, extends from its posterior limit (fig. 10, 12 and 16). This nerve passes dorsal to the foregut, and many of its branches clearly reach the pharynx, the oesophagus and the oesophageal invagination; *i.e.*, the cardiac valve.

D. The secretory system.—1. THE CORPORA ALLATA.—The *corpora allata*, a pair of endocrine glands which from developmental studies of other insects are believed to be associated functionally with the stomatogastric nervous system, are distinctly present in all individuals of the polymorphic series of *burchelli* larvae. In all stages of larval development they are oval, compact lobes of spherical cells, located on either side of the foregut and just posterior to the circumpharyngeal nerve ring (fig. 16). These cells are differentiated into a central core of densely basophilic-staining cells surrounded by a slightly less dense, basophilic-staining peripheral region. The cells of both regions have distinct ovoid nuclei surrounded by granular cytoplasm.

The corpora allata are surrounded by a network of tracheoles and are suspended in the blood sinuses by these tracheoles and nerves of the central and stomatogastric nervous systems. In the materials studied, in larvae of the different polymorphic size groups, the corpora allata were distinguishable only in size, which in all cases seems to be directly proportional to the overall size of the individual larva.

2) THE LABIAL GLANDS.—Throughout the course of larval development in the worker broods of *Eciton burchelli*, a series of significant morphological and histological changes of the labial glands is apparent. These changes evidently result in the two-fold functional activity of this gland; first, as the site of production of the labial secretion, and second, as the site of production and accumulation of the precursor of the spinning silk. Histological signs of the onset of activity of the labial glands, and of their subsequent change in function, are always observed first in the largest polymorphic size larvae, second in the intermediate larvae, and last in the smallest larvae. The 'phase-day' age at which the functional activity of these glands begins evidently is one of the factors underlying differential