surrounded by many pericardial cells, fat tissue cells and muscles. In its forward extension from its open posterior end, it first lies above the rectum in the region of the twelfth or thirteenth segment, extending to its anterior aortic region in the prothoracic segment. Here the heart bifurcates to form two anteriorly directed branches which extend ventrally into the head segment, where, after flanking the walls of the esophagus, each terminates on the side of the esophagus just dorsad to the corpora allata. These branches of the heart seem to terminate in a sinus, the fluid contents of which presumably bathe the corpora allata, the brain and other head structures.

In this species, the ostia of the dorsal vessel are found in each segment, dorsolaterally arranged, and appear to form valve-like septa. As each intersegmental region of the heart apparently is enlarged in its diameter, the heart takes on a chambered appearance.

Histologically, the heart is composed of a single layer of extremely flattened, endothelial-like cells, and its walls are surrounded by numerous minute muscles and nerves. This organ is much the same in all stages of larval development and in larvae of all the different polymorphic size groups. However, in the larvae studied, different states of contraction of the heart are evident which may be assumed to reflect its physiological condition at the time of fixation.

G. **Ovaries.**—The undeveloped ovaries of *burchelli* larvae are discernible as paired, elongated, strap-like bodies located in the middorsal region of the ninth or tenth larval segment lying between the heart and midgut. These primordia of the evidently non-functional reproductive system of the adult worker are present in larvae of all polymorphic size groups throughout development. They are extremely minute in larvae of the early developmental stages, but as development continues, mitotic divisions are evident in the ovaries and they enlarge. Two distinct regions become discernible; a central core of basophilic-staining cells, and a periphery of acidophilic-staining cells (fig. 25). The cells of both regions have distinct ovoid-shaped nuclei. The ovaries are surrounded by a fibrous network, but no oviducts or genital openings were apparent in any of the material studied.

H. **Fat tissue.**—Numerous fat cells are present in *burchelli* larvae throughout development, and a general judgment was made of the relative amount of fat present within larvae of the different polymorphic forms at different stages of development. The results of these observations indicate that the largest larvae at each successive developmental stage have relatively greater amounts of fat tissue than do either the intermediate or the smallest larvae of that same developmental stage, or the intermediate or smallest larvae of comparable body length at other developmental stages.

Apart from differences in the relative amounts of fat tissue in larvae of the different polymorphic size groups, changes were noted in the