In the present study most of the species for which both spring and autumn specimens were obtained show some tendency toward more pigmentation of the liver in the spring than in the fall. *Notophthalmus v. viridescens* is the most consistent in this feature.

THE PIGMENT CELLS OF THE PERITONEUM.

The frequency of pigment cells (chromatophores) in the peritoneum of the body cavity shows considerable variation among the genera of salamanders studied, but most of the species within each genus are very similar in this respect (see Table V). All of the species studied show a remarkable constancy in the frequency of their pigment cells, intraspecific variation being negligible. In several species pigment cells are sufficiently abundant in the peritoneum of the dorsal body wall to give the membrane a distinct coloration, as indicated in the table.

DISCUSSION AND CONCLUSIONS.

It is evident that basic differences in the anatomy of the digestive system do occur among groups of salamanders; e.g., there is a radical difference between the external form of the liver of *N. maculosus* and that of *S. lacertina* (Figures 2 and 3). Whether or not such differences are always related to the degree of phylogenetic relationship is not yet known, but within the scope of this study, the representatives of every family show distinctive characteristics of the digestive system which distinguish them from the other families. The distinguishing characteristics of the liver among the families can be observed in Table III. Also, the presence or absence of a definite pyloric constriction, and the relative length of the esophagus, help to indicate the distinction between families. In Cryptobranchidae, Proteidae, Sirenidae, and Amphiumidae, a definite pyloric constriction is always present, but in all other families none is observable. In the Cryptobranchidae and Ambystomat-

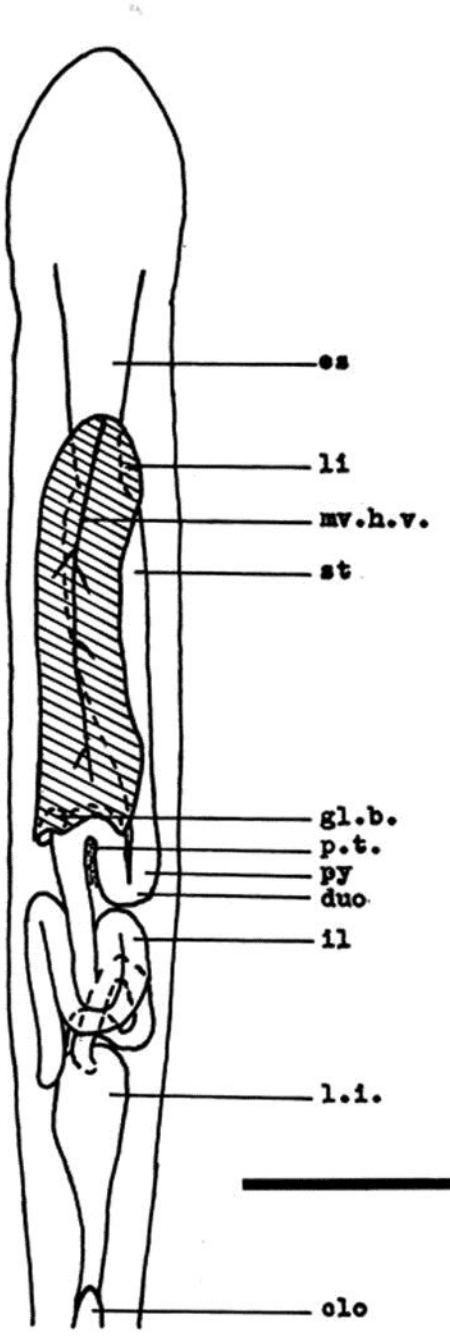

FIGURE 11. *Eurycea longicauda longicauda.* Digestive tract; ventral view (convex surface).