

is not separated from the main liver mass by an appreciable fissure; Figure 12 (J) shows this condition in its most reduced state. In seventeen of the specimens, the left border of the liver is entire from the left anterior lobe to the posterior extremity of the organ, but three of these have a definite fissure, as in Figure 12 (J), extending from the border toward the midventral hepatic vein; and, in one, extending all the way to the hepatic vein. All three of the specimens showing this fissure are from the same collection (Ohio Univ. Vertebrate Coll., group 1772, A-1109), having been collected 1 February 1941, in Trimble Twp., Athens Co., Ohio. The other of the four specimens from this lot has the left border of the liver entire.

Five specimens of *D. f. fuscus* have a moderately definite constriction at the junction of the esophagus and stomach, but the rest have no external indication of this point of union. The ileum shows great variation in the number and position of its loops, but no consistent pattern or patterns of looping could be found. Variations with regard to relative lengths of the parts of the digestive tube in this species are summarized in Table IV.

TABLE IV. Variation in relative lengths in *Desmognathus f. fuscus*.

ORGAN	ESOPHAGUS	STOMACH	DUODENUM	SMALL INTES- TINE (DUODENUM and ILEUM)	LARGE INTESTINE
Maximum relative length found	0.211	0.394	0.155	1.136	0.244
Minimum relative length found	0.143	0.244	0.067	0.482	0.135
Per cent of variation	32.2%	38.1%	56.8%	57.6%	44.7%

#### THE PIGMENTATION OF THE LIVER.

During dissection it was noted that some livers are heavily pigmented and dark in color, whereas others are less pigmented and lighter in color; and that in some species the lighter shade was more common in the autumn and the darker more common in spring. This observation agrees with the findings of Berg (1914), and of Weber, Eberth, and Leonard (in frogs) as reported by Holmes (1924). According to Berg (1914) the liver of salamanders after a period of hibernation is, after fixation, normally dark gray and heavily pigmented, but after a period of feeding in the spring the pigment content of the liver begins to decrease, and the color of the liver becomes lighter - mostly yellow in the fixed state. He found further that the lighter color occurs only when the animal has been taking an appreciable amount of food. Individuals which do not take food, or are artificially starved during the summer, retain the dark gray color of the liver.

#### ABBREVIATIONS USED IN FIGURES 1-11

clo -- cloaca	l.v.h.v. -- left ventral hepatic vein
cy.d. -- cystic duct	li -- liver
duo -- duodenum	mv.h.v. -- midventral hepatic vein
es -- esophagus	p.t. -- pancreatic tissue
f.lig. -- falciform ligament	pc.l. -- postcaval lobe
gl.b. -- gall bladder	pc.v. -- postcaval vein
il -- ileum	py -- pylorus
l.i. -- large intestine	r.v.h.v. -- right ventral hepatic vein
l.p.l. -- left posterior lobe	s.i. -- small intestine
	st -- stomach

*the horizontal black bar in figures 1-12 is equal in length to one centimeter*