

as it proves, a difference in body length between two randomly selected larvae can be due to a difference in polymorphic status, in developmental stage (i.e., age), or in both of these. For example, when larvae are preserved from the same brood at different stages, a major-type larva arrested at an early stage of development may have the same body length as a minor-type larva arrested at a later stage of development (see Plate III, fig. 9, and Plate IV, fig. 10). Only when the developmental stage is known can the significance of body length be evaluated correctly in *Eciton* larvae.

The problem required working out a reliable means of allocating single larval specimens or small samples of larvae from broods of unknown status to their respective growth stages. The problem thus stated would be insoluble if body length were relied upon as our exclusive criterion, for in body length the larvae presents a smooth series or regular transition from the smallest to the largest forms, as does the adult population. However, to anticipate, in our examination of external morphology in a series of large brood samples of known status, detailed structural differences have emerged which prove diagnostic for developmental stages. The size and developmental range of these samples have made possible a scheme for classifying *Eciton* larvae as to developmental stage. These studies of the external morphology paved the way for a differential study of the internal changes, to be reported in a further paper.

MATERIAL AND METHODS

The observations in this paper were obtained chiefly from Bouin-fixed larvae of the colony H-1, 1947, collected on Barro Colorado Island, Canal Zone, during November 1947 (Schneirla and Brown, 1950). Specimens from other colonies HB, 1946 (Schneirla, 1949a) and H-11, 1948 (Schneirla and Brown, 1950) were also studied for purposes of comparison.

The material collected in the field represents samples taken from a particular brood of a colony at regular intervals from early larval development to larval maturity. An attempt was made to get representative samples, i.e., to include all the polymorphic forms, and care was exercised to limit the size of successive samples so as not to interfere with the general brood con-