widely spread for a convenient statistical treatment. When an analysis of a single brood series can be made for *burchelli*, it is to be expected that much the same condition will be found for that species as for *hamatum*.

The developmental changes in the labial glands of *Eciton burchelli* larvae herein described are not unique to this species and closely parallel those described by VALENTINI (1951) for *Componotus silvaticus*, also a cocoon-spinning form. VALENTINI investigated the morphological variations of different species of ant larvae in collection with species adaptions to arid, normal or humid environments. According to him, the various morphological modifications and functional properties of the labial glands during larval development are related to the type of life situation characteristic of the species, whether the pupa is open or closed, or more specifically, whether the species is a cocoon-spinning form or not. VALENTINI concluded that apparent changes in activity of the labial glands were not directly related to the environmental conditions, but rather to the phylogenetic position of the particular species being studied. However, these may not prove to be real alternatives.

The importance of the labial glands in the social insects has long been recognized. To then W. M. WHEELER (1910) and others have attributed an important role in the trophic processes of the social insects. The times at which these glands first become functional in *burchelli* larvae, and their two-fold production of first a fine, basophilic-staining secretion and secondly, the precursor of the spinning material, suggest that the function of these glands is involved to an important extent in the brood-stimulative effects found by SCHNEIRLA (1938, 1952) to be critical for major changes in the colony behavior cycle.

Behavioral studies of *Eciton hamatum* and *Eciton burchelli* by SCHNEIRLA (1938, 1957) revealed that a distincly increased level of colony excitation, manifested by the onset of adult predatory raids and greatly augmented 'trophallactic' relations between brood and adults, begins at the end of the statary phase, continues into the nomadic phase, and reaches its peak at larval maturity, a day or so before cocoon spinning occurs. The stimulative effect of the brood on the colony then drops away very sharply, and after the first few days of the next statary phase reaches a minimum with a limited rise near the end of the statary phase (SCHNEIRLA, 1952). At the end of this phase, emergence of the callows occurs, and once again a sharp increase in colony stimulation occurs, with colony nomadism as its main effect.

The nomadic phase in *E. hamatum* has a mode of 16 days while that of *E. burchelli* is three to four days shorter and more variable. It has also been established that the peak of raiding activity resulting in an over-abundant food supply begins at an earlier 'phase-day' age in *burchelli* colonies, that is, at approximately the eighth or ninth nomadic day. In *hamatum* this peak in raiding activity begins at approximately the twelfth or thirteenth nomadic day.

In *E. burchelli* the labial glands first become functional in the largest