

larvae of the last statary and early nomadic days. Soon afterward, the intermediate and smallest larvae of successive nomadic days have functional labial glands, and by the seventh or eighth nomadic day all larvae of the different polymorphic size groups have functioning labial glands producing salivary secretion. Although the significance of this labial (or salivary) secretion for trophic and stimulative relations between brood and colony remains to be worked out, it is of interest to note that the time at which labial gland function rises to a high level coincides with the beginning of a peak of raiding activity indicated for this species at the eighth or ninth nomadic day. Furthermore, it is significant that the change in function of this gland from its primary secretory function to the production and accumulation of the precursor of the spinning material begins in the largest larvae on the tenth nomadic day, and in the intermediate and smallest larvae on subsequent nomadic days. This coincides with the time at which these respective polymorphic forms are observed to drop off in their feeding activities, although the stimulative effect of the larval brood on the adult population remains at a high point until the major part of the brood is enclosed. These results regarding larval feeding activities were obtained from field observations and laboratory studies of *E. burchelli* by SCHNEIRLA (1949).

The significance of these developmental changes in the functional activity of the labial glands of *E. burchelli* therefore cannot be overlooked as a probable major factor underlying changes in the level of colony excitation and raiding activity during the late statary and entire nomadic phases. Depending upon the extent of raiding activity of the adult workers in *E. burchelli* colonies, there is a decided variance in the amount of food available at the onset and during the development of an all-worker brood. On the basis of SCHNEIRLA'S (1938, 1957) theoretical conclusions that the stimulative effect of the larval brood plays a major part in the continuation of the nomadic phase (once this phase is initiated through callow-brood stimulative effect) to its completion, these glands play an important part in the process. It is probable that the time at which they begin to secrete in the larvae has much to do with the onset and increase of feeding (brought about by an increased amount of raiding activity and an abundance of food) admitting an acceleration in growth which further increases the brood stimulative effect. Relative differences in their function may be considered a factor in the differential growth rate of the larvae and more specifically of larval structures such as the leg discs, as influenced by characteristic differences in the capacity of the larvae for feeding.

The first appearance of the imaginal leg discs corresponds significantly with the time at which the labial glands evidently become functional in larvae of the respective different size groups, as reported in terms of the 'phase-day' age. This is evidently a relatively strict correspondence, beginning with the first appearance of leg-disc development in the largest larvae of the series on the last statary day, when only these larvae have