

The mouthparts of insects comprise the labrum, the appendages of the gnathal segments, and the hypopharynx. The gnathal appendages are the mandibles, the first maxillae, and the second maxillae. The second maxillae are fused to form a labium (Snodgrass, 1928). A fundamental characteristic of the mouthparts of both larval and adult Hymenoptera is the lateral union of the maxillae with the labium to form a maxillo-labial complex (Matsuda, 1965). The maxillo-labial apparatus of the Tenthredinidae can be considered the basic hymenopteran type, since its structure is retained throughout the order with but "slight modifications" in most adult Hymenoptera (Snodgrass, 1935). Functioning as a single organ, the maxillo-labial complex of the higher Hymenoptera forms a channel along which food is passed to the mouth. In the ants, as in the other higher Hymenoptera, the maxillo-labial complex is suspended from the hypostomal bridge, which is formed from the medial union of the hypostomal lobes (figs. 12, 13). A medial union of the postgenae in the ants forms a much wider postgenal bridge behind and perhaps partially covering the hypostomal bridge. Two major openings are thus formed in the head capsule, the occipital foramen, and the oral foramen.

Labrum

In the ants the labrum is usually a broad, flaplike structure suspended from the lower edge of the clypeus (plates 1, 2). Although it has been characterized as being distinctly bilobed in the ants (Chatin, 1887), there are numerous exceptions to this generalization. A pair of adductor muscles are inserted on the labrum, but abductors are absent (Janet, 1899, 1905). There are no muscles within the labrum.

The labrum functions primarily in protecting the maxillo-labial complex, and together with the stipites it can effectively close off the buccal cavity from the environment (fig. 2). The labrum also often functions in holding food. In the dacetine ants the labrum functions in a locking mechanism which permits the mandibles to be passively held open in a spring-trap arrangement (Brown and Wilson, 1959).

The labrum is generally provided with abundant setae on its exterior face and distal margin, and usually the pattern of placement of the larger setae appears to be consistent within a species. A chaetotaxy of the labrum, however, has not been accomplished. The labral hemocoel is usually distinct in balsam preparations and is relatively constant in shape within species groups (fig. 4). The labrum itself assumes a wide range of shapes, many of which include a median cleft (fig. 4). In some species the labrum has one or more projections on its extensor surface or near its distal margin called *labral tubercles* (figs. 4, 5). They appear in a variety of shapes, from rounded and peglike to sharp and spinelike, and some of them serve to help hold active prey.