

decision and has indicated that *Anthobosca* still remains the better ant prototype. Brown and Nutting (1950) suggested that an early split in an evolutionary line may have occurred from which the formicids and anthoboscines arose, and that these anthoboscines were ancestral to the present day tiphiids. In 1933 Wheeler recorded that in personal communication, J. C. Bradley had favored the "Anthoboscidae" as being close to the ancestral Formicidae. Reid (1941), in his detailed analysis of the wingless hymenopteran thorax, concluded that a single tiphiid-like wasp was ancestral to the Formicidae "and at least half of Ashmead's Vespoidea." But in classifying the hymenopteran thorax into 3 major types, Reid (1941) also found that the ants were represented in all of these types. The recently discovered Mesozoic ant, *Sphecomyrma freyi*, has been characterized as being truly intermediate between primitive ants and the aculeate wasps (Wilson, Carpenter, and Brown, 1967). In comparing this ant with a number of modern aculeate families, it is closest to the Tiphidae, and in particular to *Methocha*. It is noteworthy that Wheeler (1928) dismissed the possibility that the "Methocidae" (along with the Mutillidae) were ancestrally close to the ants because the females were apterous. *S. freyi* differs significantly in 2 respects from the previously hypothesized formicid archetype. It has short, curved, bidentate mandibles instead of mandibles of medium length with serially arranged multiple teeth, and its petiole is strongly constricted behind instead of being broadly joined to the gaster.

The labra of the tiphiids examined share few characters with those of the ants. Tiphiid labra do not resemble those of ants, and all possess a series of very thick, long setae near or along their distal margins. Although the labra of *Rhagigaster unicolor* (fig. 23) and *Tachynomyia* sp. (fig. 27) are particularly unlike those of ants, the labrum of *Methocha stygia* (fig. 14) is not radically different from ant labra. In fact, it compares fairly well with the labrum of the queen of *Melissotarsus beccarii*, particularly with respect to the setae, although this resemblance is probably superficial. The *M. beccarii* labrum is deeply cleft, but that of *M. stygia* is only slightly emarginate.

If the primitive mandible of the ants is assumed to be like that of the tiphiids, particularly *Methocha* (fig. 16), and of *Sphecomyrma freyi*, it is most often seen in a similar condition in the sexual forms of the subfamily Dorylinae. Wilson *et al.* (1967) indicated that the mandibles of male amblyoponines are also like those of wasps. Consequently the primitive mandible appears to be preserved in some sexual ant forms, while the mandibles of workers must be considered derivative from this type. The worker mandibles of *Dorylus (Dichthadia) laevigatus* (fig. 156) and *D. (Typhlopone) dentifrons* (fig. 187) are somewhat wasplike in appearance, although it is difficult to determine whether these mandibles were derived from more broadly triangular ones or from wasplike types.

In the structure of the labrum, maxillae, and labium of the tiphiids examined, *M. stygia* most closely resembles the ants. This is particularly true