Methocha stygia the following characters probably should be regarded as primitive:

1. Mandibles slender, short and falcate; possibly bidentate.
2. Labrum simple, distal margin rounded, not cleft or deeply emarginate.
3. Maxillary palpus of 6 segments.
4. Stipes broad and without distinctive sculpture; lateral shoulder poorly developed.
5. Cardo elongated, articulatory surface of distal end broadened and translucent.
6. Galea without a well developed crown and without many setae; maxillary comb present.
7. Lacinia without a well developed comb.
8. Labial palpus of 4 segments.

Based on these criteria, the Myrmeciinae, Dolichoderinae, and Formicinae would be most primitive, Pseudomyrmecinae would be intermediate (closer to the primitive), and the Myrmicinae, Ponerinae, Cerapachyinae, and Dorylinae most derivative. The Leptanillinae combine characters in such a way as to make classification difficult. It should be remembered that these observations are based primarily on worker mouthparts, and that a comparative investigation of males and females might yield considerably more information.

Because of the possibility of convergent morphological development, evaluating similarity between groups is hazardous, but certain trends should be noted. Based on the presence of paraglossae, the Ponerinae and Myrmicinae appear related; but the ponerines, cerapachyines, and dorylines also share enough characters to appear as a related group. It is certainly possible that the ponerines, cerapachyines, and dorylines arose from a protoponeroid stock and that the myrmicines arose from the ponerines some time later. The Dolichoderinae and Formicinae are obviously similar (possibly convergently so), but the Leptanillinae, Myrmeciinae and Pseudomyrmecinae are difficult to relate to other groups. The Myrmeciinae do resemble, to some extent, the dolichoderines and formicines. As has previously been pointed out, the dorylines are tripartite, with differences among the 3 included groups greater than those separating the dolichoderines and formicines. Whether this indicates that these 3 doryline groups have been separated from a common stock very early in their history or that they arose separately from different lines is not known. It is suggested, however, that polyphyly should be seriously considered.

An examination of the gastral sclerites has yielded little information. The cerapachyines can be separated readily from the ponerines on this basis (second gastral segment unfused in the cerapachyines). The dolichoderines and formicines are seen to have maintained unfused first and second gastral segments to maximize crop storage efficiency. The Ponerines, in contrast (remembering that in all 3 of these subfamilies the first and