Only a small percentage of the ants in the collections at my disposal consist of both obverse and reverse. This is rather unfortunate, since the reverse is never the mirror image of the obverse. If, for example, a specimen is preserved in a dorso-lateral position, one half shows the structures as seen from above (eyes, clypeus, etc.) and the counterpart, only those visible from beneath (maxillae, etc.). This condition is well illustrated by the holotype of *Archiponera wheeleri*, sp. nov., of which the obverse is shown on Plate **1** and the reverse on Plate **2**, fig. 1. When, however, the ant has been excessively crushed, as has frequently happened, the structures on the dorsal surface of the body may be faintly impressed on the ventral half. Of course, there are no structural differences in the halves of a fossil showing a lateral view of the ant, since the latter is bilaterally symmetrical.

Although the classification of living ants is based largely on workers, the poor representation of this caste among the fossils prevents us from following the same procedure in this study. As a consequence, I have substituted wherever possible the female for the worker as the important form of the species. The nature of the preservation of the ants has also required the selection of taxonomic characters somewhat different from those usually employed in the study of recent ants. The venation of the forewing is nearly indispensable for classification of the fossils, and inasmuch as the commonest castes are males and females, most of the specimens are winged. It is very essential, however, that venational characters be used with considerable caution, for in the ants as a whole the nature of the venation seems to be of little phylogenic value. The arrangement of the veins in some of the highly specialized myrmicines, for example, is identical with that of certain primitive ponerines, yet the venation of two species within the same genus may be utterly different. Many ants, as *Lasius umbratus* (Adolf, 1880), have an exceedingly variable venation, and only a very few species, if any, have the shape of the cubital and discoidal cells exactly constant. It is not practical, therefore, to base a species on the micromeasurements of the sides of a cell, as Cockerell has done in his description of three ants from Florissant and a number of others from European deposits. There are some genera, however, which have the arrangement of the veins fairly constant and many of these are made distinctive by certain peculiarities which prove a great help in recognizing the genus — e.g., in *Myrmica* the apical half of the first intercubitus is always lacking. As far as the Florissant ants are concerned, the venation affords the best means of distinguishing the dolichoderines from the formicines, for the character ordinarily used to separate these