striking similarities and differences between rhipidiines and mengeids are arrayed in tabular form (Table 1). This table could be extended to other similarities and differences by going into finer and finer points, and probably by studying features of internal anatomy, cytology, physiology, ecology, and behavior that are not now known. This could be done for the similar first-instar "triungulin" larvae, for example, although I have indicated in the table only the probable difference in presence vs. absence of larval trochanters. Another difference lies in the apparent absence of true antennae in the mengeid larva. So far as external character analysis goes, however, there seem to be as many points of similarity as there are of difference between rhipiphorid and mengeid triungulins.

Taking all the characters together, we can make a reasonably strong case for the relationship of Rhipidiinae and Mengeidae. In most of the few known character differences, we see that the mengeid character represents a reduction from the state of the rhipidiine character, so that one might be inclined (as some past authors have been) to derive the stylopoid line from the rhipiphorid stock. There is at least one character, however, that gives taxonomists pause: The tarsi of male mengeids are all 5-segmented. This means that the mengeid male has one more tarsal segment in each hind leg than do the rhipidiines. Furthermore, may it be noted that the Rhipiphoridae and their putative mordellid ancestors belong to a large division of the Coleoptera, the Heteromera, in which the hind tarsus never has more than 4 segments. If the numerical taxonomists will not grant us more phyletic *weight* for this little tarsal segment, at least they will have to admit that it is a trait of more than routine interest to the phylogenist.

Character Weighting

The numerical taxonomists have found common cause with a scattering of recent anti-phylogenetic, and often even anti-evolutionary, writers. Some members of this uneasy alliance will accept indication of phylogenetic relationships as a *result* of systematic study, but none will condone the use of phyletic reasoning in constructing a classification. I should at this point strongly affirm my belief in phyletic data and logic both as *conclusions* of systematic investigations and as *contributory necessities* toward raising classifications in the first place. This is not to say that we should construct a complete phylogeny first, and then our classification. But judicious observation will show us, as it has shown many taxonomists in the past, that some *characters* tend to evolve in definite directions with high probability. This is why we must give these characters a greater weight in phylogenetic reasoning.

We have already seen, in the case of the tarsal segmentation of the Coleoptera (Rhipiphoridae and Stylopoidea), that phylogenetic weighting is a real component of systematic judgment. But how, exactly, does weighting work?

The answer to this question calls for an assessment of standard phylogenetic thinking—a difficult task considering that much of this thought is implicit and obscure. The taxonomist often has a feeling for the primitive or derivative aspects of the taxa he studies, but most taxonomists are hard put to set this intuition to logic, and they tend to resort to the circular reasoning about which numerical taxonomists rightly complain. It seems to me that there exist certain regularities in evolution above the species level that are the basis of all good phylogenetic reasoning, whether implicit or explicit. Perhaps the tarsal count of the beetles gives us an important clue that we can use as an opening toward a modern study of this question.

It seems that the main reason why most authors have refused to derive the stylopoids from the rhipiphorids is their feeling that the addition of a tarsal segment, to make up the five of the hind tarsus of primitive stylopoids from the four of Rhipiphoridae (and related Heteromera), is an evolutionary event of such low probability that it has received no significant consideration. But why is the simple addition of one small