hinted in preceding analyses, that there is almost a continuum between the species of the *Dorylus* (s.s.) subgroup and those of *Anomma*, with the 3 *Anomma* species of the *emeryi* group (20, 21, and 24) in a clearly intermediate position. The MDS ordination of distances calculated from raw data showed the same basic features as illustrated in Fig. 4 and 5, but the species-group clusters are considerably more distinct and compact, with only individual species 11 and 22 bridging the gap between the *Dorylus* (s.s.) cluster and the *Anomma* group.

Discussion

The underlying taxonomic structure inherent in phenetic data from major workers of 24 *Dorylus* species is similar to several features of the current subgeneric classification. Results of the different analyses have shown considerable consistency, indicating reality of the underlying structure, and have pointed out certain features of the data responsible for variation in the affinities of particular species or species groups.

Several pieces of information led us to the conclusion that overall size was a feature of the data causing serious distortion of analytic results. Most species of the subgenus *Anomma*, for instance, are distinctively larger than other *Dorylus* species, and *Anomma* species number 22 is the smallest of its subgenus. *Dichthadia* and *Typhlopone* species number 4 are also relatively large members of the genus *Dorylus*, as is *Dorylus* (s.s.) species number 11, which is distinctively larger than the rest of the species in that subgenus. It is precisely these species, which differ from their relatives in the existing classification primarily on the basis of size, that have shown the most variable behavior in the various procedures of this study. This fact, and the heavy loading of metric characters on the 1st principal component axis coupled with the importance of this axis in separating species groups, led us to identify size as a major confounding factor throughout the study. The impression was further strengthened by the analysis of the size-weighted, 33-character data set which simply increased the anomalies described above, exactly as would be expected if species placement was being influenced primarily by size rather than some other constellation of characters.

The analyses on the transformed data set are most free of bias introduced by overall size and show a good balance of the influence of characters expressive of shape, morphology of the head and mouthparts, and general body sculpturing. Opinions both critical (Atchley et al. 1976) and supportive (Hills 1978) of the use of ratios as characters in quantitative studies have been published. Our results, however, show that in practice, the use of ratios can eliminate a good portion of obvious size-related effects. Thus Fig. 2, 3, 4, and 5 represent the least biased and least distorted picture of basic taxonomic structure.

Based upon the studies reported here, it is possible to make a number of generalizations about the phenetic affinities of the *Dorylus* species included in this study. The 2 *Alaopone* species are consistently most closely related to one another and are never split up or transferred to other species groups. The closest affinities of the group are about equally with *Dorylus* (s.s.) and *Rhogmus*. The 4 species classified currently in the subgenus *Rhogmus* also show a high degree of interspecific affinity throughout this study, and their affinities too are more or less equally with *Dorylus* (s.s.) and *Alaopone*.

The single species of *Dichthadia* is always shown with closest affinity to one or more of the *Typhlopone* species, but this group of 4 species shows a very close relationship to the species of *Dorylus* (s.s.) and in some analyses breaks down, the individual *Typhlopone* species 2 and 3 becoming intermixed with species in the *Dorylus* (s.s.) group. There is a general distinction between a nodus of species currently assigned to *Dorylus* (s.s.) and a separate center of species currently assigned to *Anomma*, but it appears from the relationships between these 2 groups and the diffuse nature of the *Anomma* cluster that they represent opposite ends of a continuum rather than clearly distinct taxa. Thus, the dichotomy shown in the phenograms is an artificial classificatory device typical of clustering methods. Of particular interest is the *emeryi* group of species (20, 21, and 24) of the subgenus *Anomma*, which previous classical taxonomic analysis has identified as being rather *Dorylus*-like representatives of their subgenus. They would appear to lie in the A-space of the MDS diagram (and this is supported by most PCA analyses as well), in a position intermediate between the *Anomma* and *Dorylus* (s.s.) ends of the continuum.

Conclusions

It would be premature at this time to propose a revision of the taxonomic structure of the genus *Dorylus* based only on our studies of major workers. We intend in the future to include similar phenetic analyses of characters from the males and other characters of the genus, and final decisions on intrageneric classification must be reserved until that time. However, our preliminary study indicates several potentially unsatisfactory features of the current classification and suggests features of the taxonomic structure to be watched for in future analyses.

In particular it would seem that the subgenera *Rhogmus* and *Alaopone* are deserving of continued individual status, although the status of the subgenera *Dichthadia* and *Typhlopone* is much less clear. There would also seem to be considerable support for regarding the species currently assigned to *Dorylus* (s.s.) and *Anomma* as members of a diverse but continuous taxon encompassing the entire range of variation of the two original subgenera. The species of the *emeryi* group neatly fill the gap between the two extremes.

Thus the phenetic relationships among major workers of *Dorylus* suggest that one of the options available for the future would be to recognize only 4 integral species clusters among the species previously classified in the genus: *Rhogmus*, *Alaopone*, *Typhlopone*, and *Dorylus* (s.s.). Whether to regard these 4 groups at the generic or subgeneric level can only be determined by extension of the study to additional phena within the genus *Dorylus* and to other genera of the Dorylinae and Ecitoninae.

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