

group of species currently classified in *Dorylus* (s.s.). The final stage in this process is represented by phenetic affinities of the queens, where no clear subgeneric boundaries can be distinguished. Significantly, species presently classified in the subgenera *Anomma* and *Dorylus* (s.s.) are never clearly separable along classical subgeneric lines in any of the analyses reviewed here.

It may be hypothesized that the differences in phenetic distinctness of species among the three phenons investigated are a consequence of the specialized features of army ant social organization (Gotwald, 1982). The entire life of a *Dorylus* queen is spent within the protective confinement of the colony. Workers, on the other hand, are involved in direct contact with the environment in foraging, colony maintenance and emigrating, although adherence to the army ant life style is rigid. Males, the only winged phase in the life history, leave the colony entirely and must survive outside its controlled environment. Apparently selective pressures for divergent adaptations are greatest in the males, less urgent for the major workers, and relatively mild in the queens. Males may, in addition (as noted by Barr & Gotwald, 1982), be subject to stronger pressures for divergence because of character displacement resulting from their sexually active role in seeking out queens to inseminate.

When arriving at a final decision on the subgeneric classification of the genus *Dorylus*, we advocate a relatively conservative philosophy. Not only must other factors such as cladistic hypotheses and practicality be considered when erecting a classification, but the results of the three phenetic studies (queens, major workers and males) must be reconciled. We will attempt the latter here.

Phenetic affinities of *Dorylus* males, queens and major workers are relatively consistent with one another (Fig. 8), with differences being attributable to varying degrees of coalescence of the classical subgeneric clusters. Even individual species followed throughout the three analyses occupy corresponding positions in the schematic diagrams. We take the view that the similarities among these three sets of results are more important than the differences. On this basis, it is clear that there is no support

from phenetic studies for continued separate recognition of the subgenera *Anomma* and *Dorylus* (s.s.).

The species currently classified in *Dichthadia* and *Typhlopone* show close affinities, in general, with those of *Dorylus* (s.s.) and *Anomma*, and could probably be combined with them in a single, subgeneric-level taxon. Species of *Rhogmus* and *Alaopone*, on the other hand, maintain distinct clusters throughout most analyses and probably deserve continued ranking at the subgeneric level. The balance of available evidence suggests that these two species groups are no more closely related to each other than they are to the central *Dorylus* (s.s.) – *Anomma* cluster.

In summary, we recommend that at least three discrete species groups be recognized among African army ants currently classified in the genus *Dorylus*. These three groups correspond to species currently classified in the subgenera *Dorylus* (s.s.) (including *Anomma*, *Dichthadia* and *Typhlopone*), *Rhogmus* and *Alaopone*. Whether to recognize these groupings at the generic or subgeneric level must await the broader consideration which will be accorded the group in a complete revision.

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Appendix: Character list

(All lengths measured in millimetres to nearest 0.01 mm. Those characters transformed to ratios of profemur length for the analysis described in detail in the text are marked with an asterisk.) 1. Colour. *2. Length of terminal flagellar segment. *3. Length of second flagellar segment. *4. Scape length (excluding neck). *5. Scape index (SI), $SL \times 100/HW$. *6. Head length. *7. Head width. 8. Cephalic index, $HW \times 100/HL$. *9. Mandible length