for the only group that is not polymorphic is *Aenictus* and this genus is more diverse in tropical Asia than it is in Africa (Wilson 1964). This suggests that most *Aenictus* species have dispersed from Asia to Africa rather than the reverse.

The gradual size and morphological (allometric) transition in worker-polymorphic dorylines is demonstrable in the worker mandibles and heads. Hollingsworth (1960) illustrated this gradual change in *D. (A.) nigricans* Illiger, and *C. morosus* is a good example as well (Fig. 2). Certainly head shape in *C. morosus,* as evidenced in cephalic index, is correlated with total body length (Fig. 3).

The workers of *Dorylus, Aenictus,* and *Cheliomyrmex* are eyeless, while those of *Eciton, Labidus, Neivamyrmex,* and *Nomamyrmex,* with a few exceptions possess at least a reduced compound eye. Schneirla (1971) noted that the "visual equipment" of workers is best developed in epigaeic (i.e., surface-adapted) species and most poorly developed in hypogaeic or subterranean species. This observation apparently holds true for New World forms; for example, *C. morosus* is strongly hypogaeic and eyeless (Gotwald 1971) and *Labidus,* also hypogaeic, has poorly developed eyes (Werringloer 1932). However, the observation is not so applicable to a number of *Aenictus* and *Anomma* species which, in foraging and emigrating behavior, although eyeless, are relatively epigaeic. Epigaeic habits in blind species are probably secondary or tertiary developments. The compound eye of doryline workers is highly modified and ocellus-like, and even in "blind" forms, such as *Dorylus,* there is an integumental or subdermal light scense (Werringloer 1932). "Eyelessness" has developed convergently in numerous hypogaeic ant species and is of little use in interpreting the relationships of the doryline tribes.

When the pedicel or waist of an ant is uninodal, the segment is called the petiole (abdominal segment II); when the waist is 2-segmented, the segments are referred to as petiole and postpetiole respectively. The pedicel is binodal in the Ecitonini and Aenictini and uninodal in the Dorylini and Cheliomyrmecini. If the Dorylinae are monophyletic, the condition of the waist is much less conservative than it is in such subfamilies as the Myrmicinae (binodal) and Formicinae (uninodal). Pullen (1963) suggested that a binodal waist produces flexibility in such actions as stinging, and Schneirla (1971) added that the binodal condition is an important adaptation for epigaeic species when subduing strong, fast-moving prey. Schneirla (1971) further noted that this flexibility is advantageous in carrying brood and booty and in laying chemical trails.

Although the Cheliomyrmecini are similar to the Dorylini in possessing a uninodal waist, they are clearly dissimilar in thoracic suturing. Reid (1941) found that the doryline worker thorax is bipartite in the Dorylini and suturally undivided in the Cheliomyrmecini and Ecitonini. His conclusions support a polyphyletic origin for the doryline tribes, although he also noted that the thorax of *Aenictus* is similar to that of *Eciton.*

The pharynx of *C. morosus* and all other ants is preceded by the infrabuccal pocket. Janet (1894, 1905) noted that the infrabuccal pocket (poche gnathale) in ants serves as a filter by collecting grooming debris and solid particles from food. This collected debris is periodically ejected as small, discrete pellets (Janet 1894, 1904, Bugnion 1924, 1930, Wheeler and Bailey 1920). Eisner and Happ (1962) suggested that this filtering action was preadaptive to the development of passive crop storage and regurgitative food transmission in dolichoderine and formicine ants. Although the infrabuccal pockets of the *C. morosus* specimens dissected and sectioned did not contain debris, Whelden (1963) found infrabuccal debris in nearly all *E. hamatum* and *burchelli* workers examined. Bailey (1920) also reported infrabuccal pocket debris in *E. burchelli* and, in addition, found animal tissue debris in the infrabuccal pocket of *D. (A.) nigricans.*

The pharynx and esophagus of *C. morosus* are similar to those of *E. hamatum* and *burchelli* (Whelden 1963). Indeed, these portions of the alimentary canal appear to be structurally uniform throughout the Formicidae (e.g., see Walker and Clower 1961, and Forbes 1938). However, Bugnion (1930) described the pharynx of *Dorylus (A.) wilverthi* and *nigricans* as reduced and hypothesized that this reduction is correlated with the absence of trophallaxis in the dorylines. While the crop and midgut are also relatively uniform histologically in all ants, the proventriculus that connects them is not . The proventriculus of *C. morosus* closely resembles that of *E. hamatum,* which Eisner (1957) described as degenerative. Damming of the doryline proventriculus is probably dependent on muscular contraction (Eisner 1957), and crop storage may be of relatively short duration. While trophallaxis is apparently weakly developed or absent in the Dorylinae (Wilson 1971), foraging *Anomma* workers do return to the nest with their crops filled with liquids probably of prey origin (Gotwald 1974). Because the doryline proventriculus is degenerative it is not useful in delineating the tribal relationships.

The presence of columnar digestive cells and smaller regenerative cells in the ventricular wall of *C. morosus* is characteristic also of non-doryline ants (Walker and Clower 1961, Forbes 1938). Although Whelden (1963) noted the columnar digestive cells in *Eciton,* he failed to mention the regenerative cells. However, these latter cells are most likely present in all dorylines.

The Malpighian tubules of *C. morosus* are histologically identical to those of *Eciton,* but variation in terms of tubule and lumen diameter occurs within a single species (Whelden 1963). Ettershank and Brown (1964) suggested that the number of Malpighian tubules might serve as an important meristic character in the taxonomy of ants, and Gotwald (1971) compared the number of tubules in *C. morosus* with 6 species in three genera of New World dorylines. There was considerable overlap in tubule number ranges between the species. The number of tubules present is probably a function of body size in many