The relation between behaviour, biting performance and morphology in *Fukomys* mole-rats (Bathyergidae, Rodentia)

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African mole-rats (Bathyergidae) dig tunnels using their incisors; this requires specific adaptations in the jaw apparatus. Representatives of the genus *Fukomys* live in social groups which show interindividual variation in work behaviour. The aim of this study was to investigate intraspecific variation in work behaviour in relation to biting performance and morphology in a colony of *Fukomys micklemi*. Furthermore, the methodology used for recording the social structure of these subterranean animals was evaluated. One colony of was observed to test for the existence of different worker castes. Both the experimental setup (glass tank versus tunnel system) and behavioural variables (duration versus frequency of work behaviour) were compared. Daily activity patterns were determined using a 24-hour observation routine. Maximal bite force was measured and related to morphology and work behaviour. Results regarding the methodology firstly show that the use of a tunnel system creates higher levels of activity and work behaviour, allowing for more efficient observations. Secondly, to avoid any temporal bias as a result of interindividual variation in activity patterns, observations should be carried out over a 24-hour period. Finally, scoring frequencies is a valuable alternative to the labour-intensive scoring of durations. Although considerable interindividual variation in the amount of work was apparent within the colony, no clear worker castes could be defined. Whereas biting performance was strongly correlated with morphological variables, no relation between biting performance and work behaviour was found. These results suggest that a subdivision of the worker caste into frequent and infrequent workers does not reflect the pattern of continuous variation in work behaviour at least in *F. micklemi*. Future studies should take other factors, e.g. dominance structure, into account when trying to explain intraspecific variation in biting performance.

Key words: adaptation, *Cryptomys*, *Fukomys micklemi*, sociality