

The relation between behaviour and biting performance in a chisel-tooth digger (*Fukomys micklei*, Bathyergidae, Rodentia)

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African mole-rats are obligatory subterranean rodents which dig tunnels using their incisors. Digging large tunnel systems requires an efficient jaw apparatus. For the highly social mole-rats of the genus *Fukomys* a caste system has been described based on the amount of work that is being performed. Using bite force as a proxy for biting performance, morphological evolution can be studied at the colony level. It can be hypothesized that variation in biting performance is related to variation in work behaviour. During an explorative study behavioural observations were carried out on a colony of wild-caught *Fukomys micklei*, in order to test for the existence of different worker castes. Maximal bite force was measured and related to morphology and work behaviour. Although considerable interindividual variation in the amount of work was apparent within the colony, no clear worker castes could be defined. Also, differences in biting performance were strongly correlated with morphological parameters, but no relation between work and biting performance 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, as reported earlier for *Fukomys damarensis*. Since the jaw apparatus also plays an important role in social interactions, it can be hypothesized that bite force is linked to dominance. Further research will integrate work behaviour and dominance with biting performance. Individual digging efficiency will be tested and related to bite force and cranial morphology.

Key words: adaptation, *Cryptomys*, sociality

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