

WORK BEHAVIOUR AND BITING PERFORMANCE IN THE HIGHLY SOCIAL *FUKOMYS MICKLEMI* (BATHYERGIDAE, RODENTIA).

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This study involves an evaluation of the methodology used for recording the social structure in African mole-rat colonies. In addition, the relation between social structure and biting performance in a bathyergid species was investigated. Behavioural observations were carried out on a colony of wild-caught *Fukomys micklemi*, in order to test for the existence of different worker castes. Both the experimental setup (glass tank versus tunnel system) and behavioural parameters (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 show that mole-rat social behaviour is more elaborate when using a tunnel system, which increases the resolution between individual behavioural patterns. 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. 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, at least for this species. Other factors, e.g. dominance structure, should also be taken into account when studying the relation between behaviour and biting performance.
