Brief communications

Notes on a single burrow system of the fat mouse *Steatomys pratensis* in the Kruger National Park

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Digging activities and the construction of burrows is a characteristic behaviour pattern of many rodents. A knowledge of the morphology and dimensions of burrows can contribute to a better understanding aspects of a rodent's ecology and social behaviour.

Data on burrowing and related activities for South African rodents are meagre and scattered literature-wise. This paucity of information is partly due to the physical exertion needed to determine the exact configuration of a burrow system. The molerats (Bathyergidae) are inveterate burrowers and distances in excess of 100 metres have been excavated in the Kalahari Gemsbok National Park, in order to determine the burrow structure of the Damara mole-rat, *Cryptomys damarensis*.

In this note, a single burrow system of the fat mouse *Steatomys pratensis*, Peters, 1846, excavated in the Kruger National Park, is briefly described. Genest-Villard (1979, *Mammalia*, 43(3): 275-294) excavated systems of the Central African *Steatomys opimus* Pousargues, 1894, in a savanna enclosed in equatorial forest in the Central African Republic, where it occurs in dense populations. The structures are more complicated than the single tunnel system for *S. pratensis* described here.

The study area is located on a firebreak to the immediate west of the Sithungwane outcrop, some 11 km south-east of Pretoriuskop on the H2-2 road. The area is classified as Landscape 1, as defined by Gertenbach (1983, *Koedoe* 26: 9-121), i.e. Lowveld Sour Bushveld of Pretoriuskop. For detailed information on the geomorphology, climate, soil pattern, vegetation and fauna associated with this landscape, see Gertenbach (*op.cit.*). While trapping for rodents in general (as part of a project to assess the effect of fire on rodent populations in the Kruger National Park), a single fat mouse (male) was observed running towards and bolting down a round hole in the soil, about 30 mm in diameter, at 09:30 on 15 April 1978. This diurnal activity may be a- typical, for the species is described as being nocturnal (Smithers, R.H.N. 1971, The Mammals of Botswana, *Museum Memoir 4*, The Trustees of the National Museums of Rhodesia; De Graaff, G., 1981, *The Rodents of Southern Africa* Butterworth: Durban).

The burrow system was excavated from four entrance holes (three plugged with loosely compacted damp soil, obtained from the burrow walls just below the opening to the surface). The direction of the individual burrows was determined by using a twig pushed down the passage to keep track of its course.

The entire system was excavated and the mouse cornered in the nest chamber (Fig. 1). On handling the animal it feigned death and reacted lethargically. Each descending burrow, averaging about 30 mm in diameter opened into a common vestibule about 200 mm below the surface of the soil. This vestibule led into a slightly larger cavity (measuring 80 x 60 x 40 mm (i.e. about the size of a man's fist), containing remnants of nesting material (predominantly grass).

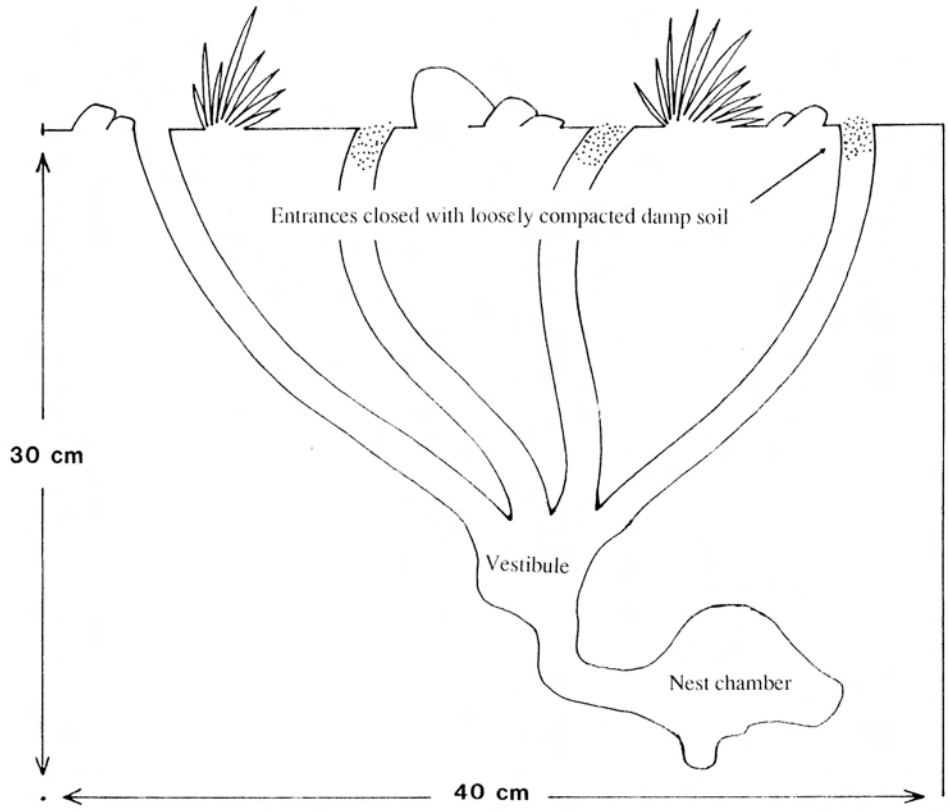

Fig. 1. A burrow system of the fat mouse *Steatomys pratensis* excavated in Lowveld Sour Bushveld of Pretoriuskop (Landscape 1) in the Kruger National Park.

Both Smithers (1971, *op. cit.*) and De Graaff (1981, *op. cit.*) state that this species lives on its own or in pairs. If this burrow belonged to this male fat mouse only, and if it were responsible for its construction, this little creature (mass 21.6 g, n=13, range 22-30 g (De Graaff, 1981, *op. cit.*) had to displace about 6 850 cm^3 of soil (based on the volume of the four burrows and the antechamber and nestchamber, as calculated). Such a burrow system undoubtedly helps this small mammal to overcome and survive the hazards associated with the regular veld-burning regime applied as a management procedure in the ecology of the Kruger National Park. The area had been recently burnt and the plant cover was sparce. According to Kern (1981, *Koedoe* 24: 125-127), *Steatomys pratensis* is one of the six relatively common murid rodents in this landscape, and its continued presence may be construed as a successful adaptation to fires and veld-burning to which an efficient burrow system developed by this species contributes significantly.