

Extension to the known range of the Fawn Hopping-mouse *Notomys cervinus* in New South Wales

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The Fawn Hopping-mouse *Notomys cervinus* has been recorded from the Northern Territory, Queensland, South Australia and New South Wales as a living animal. It has also been recorded in subfossil material from Western Australia (Watts and Aslin 1981). The bulk of the modern records have come from the far north east of South Australia (Watts and Aslin 1981) and south western Queensland (Ingram and Raven 1991). Charles Sturt collected this species in the north west of New South Wales in what is now Sturt National Park during his expedition of the 1840s. These animals formed the basis of Gould's painting of the species (Sturt 1847). However, Sturt's and Gould's descriptions of the animals and their captures could indicate that several species ("varieties" in Gould 1845–63) were involved.

Subfossil bone material from owl pellets has been collected from Mootwingee National Park (Ellis *et al.* 1991). Intact and disintegrating pellets have been found in both the Gap and Byugnano Ranges within the park. Based on the age of similar deposits in the Flinders Ranges of South Australia (Smith 1977), and the presence of bones of the introduced House Mouse *Mus musculus*, these deposits are estimated to date from post-European settlement of the region.

Among these bones is a number of small *Notomys* skulls. Some of these were assigned to the Fawn Hopping-mouse (*N. cervinus*) due to the groove on the front of the incisors. This feature, in combination with the shape of the anterior palatal foramina, is described by Watts and Aslin (1981) as being diagnostic of the species. The only other species with such a groove is the Big-eared Hopping-mouse (*N. macrotis*) known only from the coast of Western Australia. The remaining skulls can not be assigned to a species, with the Spinifex Hopping-mouse *N. alexis*, the Dusky Hopping-mouse *N. fuscus*, and Mitchell's Hopping-mouse *N. mitchelli* being possibilities. Separation of these smaller species by skull characters cannot be done with certainty (Watts and Aslin 1981).

The Fawn Hopping-mouse is poorly known, but is regarded as an animal of clay pans and gibber plains (Watts and Aslin 1981) where it lives in shallow burrows in small groups. The owl pellets were located in quartzite/sandstone ridges surrounded by alluvial deltas. The surrounding plains contain more suitable habitat in the form of gibber-covered plains supporting low chenopod shrublands, interspersed with some claypans. This diversity of landforms within the hunting range of the owls explains the presence of at least three species of *Notomys*, including the Long-tailed Hopping Mouse *N. longicaudatus*, in the deposits. Similar situations with a diversity of landforms and *Notomys* species have been recorded in South Australia and the Northern Territory (Watts and Aslin 1981).

The Mootwingee locality is about 300 km from the Sturt (1847) records, a similar distance from the subfossil remains of *N. cervinus* in the Flinders Ranges (Tunbridge 1991), and about twice that distance from the bulk of the modern records (Fig 1.). The lack of recent records from New South Wales and the Flinders Ranges indicates that this species has undergone a massive range reduction following European settlement of these areas.

Without further subfossil deposits being found and analysed, or new captures being made, it is impossible to say how much further east and south than Mootwingee the species once extended into New South Wales. Wakefield (1966) did not regard *N. cervinus* as a Victorian species and Krefft (1866) did not record it at the junction of the Darling and Murray Rivers during his intensive study of the area. In Krefft's estimation the Bilby *Macrotis lagotis* had become recently extinct in that area by the time of his visit in 1857. The presence of Mitchell's Hopping-mouse in abundance, along with three other small rodent species, in Krefft's survey suggests that a local extinction for *N. cervinus* is unlikely to have occurred by 1857. Thus it seems that *N. cervinus* did not range as far south as the Victorian border. There are no clues to its former eastern limits at present.

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REFERENCES

- ELLIS, M., WILSON, P. AND HAMILTON, S., 1991. The Golden Bandicoot, *Isodon auratus* Ramsay 1887, in western New South Wales during European times. *Aust Zool.* **27**: 36-37.
- GOULD, J., 1845-63. *Gould's Australia*. MacMillan Facsimile Edition in 1977: Sydney.
- INGRAM, G. J. AND RAVEN, R. J., 1991. *An Atlas of Queensland's Frogs, Reptiles, Birds and Mammals*. Queensland Museum: Brisbane.
- KREFFT, G., 1866. On the vertebrated animals of the lower Murray and Darling, their habits, economy and geographical distribution. *Trans. Phil. Soc. NSW* **1862-65**: 1-33.
- SMITH, M. J., 1977. The remains of Mammals, including *Notomys longicaudatus* (Gould) (Rodentia: Muridae), in owl pellets from the Flinders Ranges, SA. *Aust. Wildl. Res.* **4**: 158-70.
- STURT, C., 1847. *Narrative of an Expedition into Central Australia*. Greenwood Press: New York.
- TUNBRIDGE, D., 1991. *The Story of the Flinders Ranges Mammals*. Kangaroo Press: Sydney.
- WAKEFIELD, N. A., 1966. Mammals recorded for the Mallee, Victoria. *Proc. Roy. Soc. Vic.* **79**: 627-36.
- WATTS, C. H. S AND ASLIN, H. J., 1981. *The Rodents of Australia*. Angus and Robertson: Sydney.

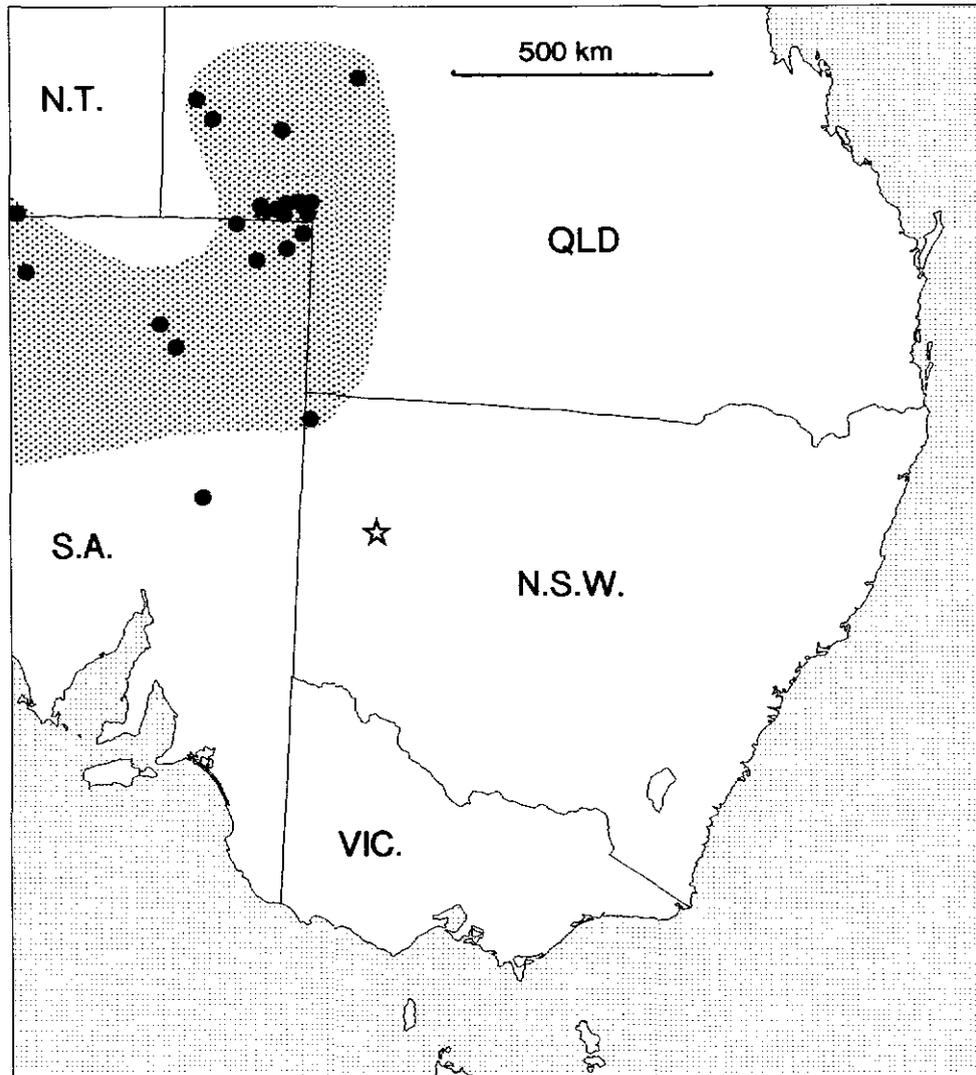


Fig. 1. The published distribution of the Fawn Hopping-mouse *N. cervinus* shown as dots (Watts and Aslin 1981; Ingram and Raven 1991), with the location of the new record shown as a star. The stippling shows the distribution according to Watts and Aslin (1981).