

In the Spotlight
Nephrurus deleani
(Harvey 1983)

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The Australian endemic, terrestrial, nocturnal, gecko genus *Nephrurus* now contains nine described species plus several subspecies. All of the species are found in arid to semi-arid regions of central to northern Australia. The distinctive characteristic of the genus is the presence of a knob on the tip of the tail. They all have relatively large heads, large eyes and moderately long spindly legs. The dorsal and ventral scalation consists of small juxtaposed scales with conical dorsal and caudal tubercles of various morphologies. *N. deleani* is the rarest taxon of the genus with a distribution apparently limited to the *Acacia*-dominated red sand dune environs of Pernatty Lagoon in central South Australia. The systematics are covered by Bauer (1990 and 1994).

The dorsum is somewhat variable in pattern but it is usually dark reddish brown with blackish mottlings and pale spots. The tail is intermediate in size between the moderately large, fat-storing tail of *N. levis* and the extremely small tails of the *N. asper* group, unlike the latter species however it is able to shed its tail (at a single autotomy plane at the constricted tail base). It seems that very little fat is stored in the rather thin tail which is covered in enlarged tubercles forming 15-17 caudal annuli. As might be expected in a species with a multifunctional tail it seems the tail loss rate is low (no breakages seen in 14 specimens observed). Although the function of the tail knob is uncertain it appears to be used in a variety of ways. Observations show that the tail is used in different ways with distinct courtship, mating, feeding, display and alarm behaviors. One method of use suggests it may even have a pheromonal function (in prep.). Under the microscope it shows many sensory



Nephrurus deleani, adult female from Pernatty Lagoon, South Australia. Photo by Terry Annable.

mechanoreceptors. As in all other members of the genus conical dorsal tubercles are present, these are arranged in 9-10 rows but they are much less pronounced than in the *N. asper* group.

The husbandry of the species is similar to that for *N. asper* (Annable 1992) except that the species is probably better maintained on red dune sand. The females, as in all other species in the genus, grow larger than the males, maximum about 120mm total length for females (n=9) compared to about 91mm (n=4) for males. Sexual differentiation is noticeable after about six to nine months of age when the males develop the hemipenal bulges and enlarged cloacal spurs. The escutcheon of enlarged ventral scales found in several related species is barely discernible if at all in both males and females. The female lays two eggs per clutch and probably several clutches per season under favourable conditions (as for other members of the genus). The leathery shelled eggs which are only partially calcified measure 20.7-25.4mm × 11.4-13.4mm (n=8) when first laid. The female digs a deep burrow and apparently rolls the sticky eggs in the fine red dune sand (as indicated by the sand distribution on the eggs). The eggs weigh 2.0-2.5g each at laying, giving a relative clutch mass of 35% to nearly 50% of the female's weight after laying. This compares to approximately 25% for *N. amylae*, Bedford and Christian (1993) (described under the name *N. asper*) and personal observation. In a moist environment the eggs grow by water absorption, increasing about 20% in weight during incubation. The firmly attached sand particles significantly reduce the rate of water loss by the egg during incubation. The young hatch in 85 days when incubated at 25°C or 55-56 days at 29-30.5° according to Delean and Harvey (1984). The hatchlings measure about 51mm total length (36+15)mm, weigh 1.7-1.9g and have two egg teeth used to slash open the eggshell by side to side movements of the head. The species drinks only rarely from free standing water. In the wild they feed largely on scorpions, grasshoppers and centipedes and in captivity they feed on a wide variety of arthropods.

The distinctiveness of this species was first recognised in 1981 but is still little known (mainly due to the remote distribution). Because of its very limited distribution in a privately owned, non-conservation zone it is at risk due to rabbit, sheep and cattle grazing, compaction and erosion. Its position is listed as vulnerable by Cogger, Cameron, Sadler and Egger, (1993) who record a total of only 9 specimens in Australian museums. The planning of further research on the species is under way although funding is very restricted.

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