NOTES ON THE CAPTIVE REPRODUCTION OF THE AUSTRALIAN SKINK, *TILIQUA NIGROLUTEA*

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Tiliqua nigrolutea is a resident of the comparatively cool, higher elevations of southeastern Australia (Cogger, 1975; Jenkins and Bardell, 1980). While two color phases of the lizard are generally recognised (the larger and more brilliantly coloured of which is considered to be truly an Alpine creature), they have persistently resisted subspecific designations.

The smaller morph of *nigrolutea* is clad in more muted colours and is a resident of the less lofty altitudes. It was this form that was chosen for our breeding programs in southwestern Florida. It was thought that being of lower, hence warmer, ranges that they would be more tolerant of our uncomfortably hot, humid summer conditions than would the alpine form.

Nigrolutea, which is quite appropriately commonly known as the "blotched blue-tongued skink", displays the darkest dorsal ground colour of any of the members of the genus. This may run from chocolate-brown through olive-black to black. Dorsally there is a series of roughly outlined, usually paired, russet to orange blotches. The dorsal surface of the head is lighter, the lips gray to russet. Colours pale laterally and take on a rather vague pattern of vermiculations. The throat is from off-white to gray and the venter is pale gray, the centre of each scale being slightly darker, hence forming a series of ill-defined stripes.

The blotched blue-tongue, while large, nearing or occasionally exceeding 25cm snout-vent length, and robust, gives the impression of being more serpentine than its more commonly seen relative, *Tiliqua s. scincoides,* the eastern blue-tongue, for its legs are proportionately shorter.

In fact, when frightened it relies little upon its limbs to effect its escape, resorting instead to a series of stiff lateral undulations.

Its tail is short, being barely 50% of the svl.

Our colony, which consists of 3.2 individuals, was obtained as half-growns.

Our geographic location makes it possible to maintain numerous species of reptiles and amphibians out-of-doors year round. The facilities offered our various scincids consist of uncovered pens some 3m in diameter, formed by sinking sheet aluminium of 92cm height 32cm into the ground. Horizontal plastic piping is offered as sub-surface refugia, the entrances sloping gently from ground level. Additional areas of seclusion in the form of piles of coral-rock are available also. Into these the lizards retire during extremes of heat or cold or during periods of rain. Neither photoperiod nor heating are augmented.

Food is offered daily except during periods of winter cold which render the animals temporarily dormant. Mixtures of grated apple, grated pear, ripe banana, ripe melons of several varieties and numerous kinds and flavours of canned catfood are consumed eagerly. To this is added liberal quantities of such vitamin-mineral supplements as "Vionate", "Osteoform Improved" and powdered calcium lactate. Live crickets, young mice and an occasional garden slug or snail periodically augment the diet of prepared foods.

Nigrolutea has so far proven to be an easily cared for, interesting lizard. Quite unlike two of their congeners with which we also work, i.e. *T. s. scincoides* and *T. gigas,* the *nigrolutea* have displayed no periods of excessive hostility towards cagemates, even during the breeding season.

Entirely diurnal during the colder months, breeding activity on warm February and March days has prolonged the activity period until darkness. Copulation has never been observed during the hours of daylight but rather is accomplished during the diminishing light at day's end.

Frequently more than one male is in attendance of a given female, trailing the one behind the other as the female leads the way about the pen. Copulation is usually, but not invariably, accomplished by the male immediately behind the female. Slowly overtaking the female he begins courtship by nudging the female on her posterior sides and groin, all the while flicking the area with his tongue. Slowly he advances along her length, eventually grasping her nape or shoulder area in his jaws. Receptive females then cease moving. Continuing to grasp her the male then forms a crescent with his body bringing his tail down and under that of the female's until their cloacal openings are juxtaposed. At that time a hemi-penis is inserted after which gentle periodic convulsive movements become noticeable. This position is maintained from 5 to 30 minutes.

Because of the several weeks long breeding period it has been impossible to ascertain gestation, but it was obvious that the females were gravid by late May.

The first of the two females gave birth on 15 June, parturition beginning at 1600 hrs with the birth of a dead, slightly undersized baby. This measured 116mm tl, 84mm svl and 20mm hl (head length). The second, slightly larger and living baby was produced at 1700 hrs. Measurements were not taken of this neonate. The third and final baby, also alive, was born at 1730 hrs. Larger than either of its siblings it measured 128mm tl, 93mm svl, and 22mm hl.

Immediately after being born the neonates consumed the attached placenta and sought refuge among the profusion of plants. The young were removed, placed in a separate enclosure, and offered live crickets which were immediately consumed. The day following their birth they were offered small portions of our prepared "skink mixture" most of which was consumed during the day.

The second female gave birth to two healthy babies on 22 June.

The "lowland" morph of *T. nigrolutea* has proven compatible with the vagaries of Florida's weather. As surmized in literature, they are active at temperatures far lower than those which activate their congeners. They have left their refugia to thermoregulate on even our coldest winter day, the single criterion seeming to be ample sunshine in which to bask. Conversely, on hot summer days they return to cover long before their congeners in adjacent pens with similar conditions.

While not actually crepuscular, during the heat of summer they do display peak activity periods in early morning and late afternoon. They remain active throughout the day in cooler weather.

While no cloacal temperatures have been taken it seems likely that the dark dorsal colouration of *nigrolutea* makes them more efficient baskers than their lighter coloured relatives. Certainly they become "warm" to our touch while congeners basking for similar duration under identical conditions remain "cool".

The clutch size, averaging 2.5 young per female, is significantly smaller than those of the other three *Tiliqua* species which we have succeeded in breeding. As a comparison, *T. s. scincoides* averages 15.5, *T. gerrardi* 18 and *T. gigas* 7. We hypothesize that *nigrolutea* produces larger clutches with increasing age. This has proven so with the allied *Egernia cunninghami kreffti,* most of which have produced 2 young in their first brood and up to 7 in those subsequent.

REFERENCES

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