

crevices, exposing them into predation risk due to their soft-shell, which cannot afford physical protection from ferocious mammal and raptor predators. Understanding of vegetation characteristic may be important to unveil how the species minimizes predation risks. Study was therefore conducted during the wet season in April 1998 to find out herbaceous composition of the rocky terrain pancake tortoise microhabitat and physical characteristics of the paths taken by the species when moving between crevices separated by different rock outcrops. Vegetation sampling was performed using quadrants of 1m x 1m in 30m x 30m blocks. All herbaceous plants were identified and counted in order to determine their diversity. The spool-and-line was used to track the species path taken when moving out of the crevices. The Boundary hill study site comprised of seventy different species of herbaceous plant distributed into twenty-six families. The Poaceae (22 species = 31%) had the highest species representation followed by Papilionoideae (9 species = 12%) and Compositae (5 species = 8%). Although the herbaceous layer looked dense at the top, the ground level had enough of spaces to allow pancake tortoise to freely move through. These vegetations, apart from providing food and shelter they also seem to provide safe on-transit hideouts from aerial predators, away from the safety of rock crevices. It is therefore plausible to suggest that habitat destruction, in the form of removal of this vegetation layer, as might be the case outside core-protected areas, may be one of the threat dimensions to the species survival.

The African Colubroid radiation

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We compared nuclear and mitochondrial DNA sequences from many African and Eurasian Colubroidea. A monophyletic group could be identified which contains the following taxa: Elapidae, Atractaspidinae, Aparallactinae, Lamprophiinae, Psammophiinae, Pseudoxyrhopiinae, and the enigmatic genus *Prosymna*. These taxa are predominantly Ethiopian biogeographically, and it is suggested that they represent an old African radiation. During the Tertiary elapids and psammophiines spread from Africa to Asia, while colubrids and natricines moved in opposite direction. *Grayia*, an African genus conventionally assigned to Natricines, turned out to represent a separate clade. *Pseudoxyrhopiines* and *psammophiines* colonized Madagascar by rafting. It is of great evolutionary interest that venomous glands and fangs (both opisthoglyphous and proteroglyphous) evolved multiple times. A revision of the classification of snake families is suggested.

Barking up the right tree - the use of dogs for locating cryptic reptiles

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Difficulties in locating cryptic species of reptiles can be due to a number of factors such as very low densities, aversion to traps, activity in highly restricted habitats or just elusive behaviour. There are a number of threatened cryptic lizard species in New Zealand for which true status has been difficult to assess due to a lack of appropriate survey techniques. In order to determine the status and management needs of such species, and to monitor the effects of any management, innovative detection and capture methods are urgently required. For over 30 years tracker dogs have been routinely used in New Zealand for conservation management of secretive and critically endangered bird species. During 2004 two young border terrier dogs were trained as conservation dogs targeting endemic skinks and geckos. Training involved teaching the dogs to passively indicate the presence of either a skink or gecko, whilst ignoring the presence of non-target species such as ground-dwelling birds and introduced mammals. Certification required the dogs to locate at least 75% of lizards that had been hidden in a forested area. The effectiveness of this technique was assessed by testing the encounter rate by "lizard dogs" against traditional manual search and capture techniques for a range of cryptic taxa.

TSD in *Tuatara*: nesting ecology and global warming

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Tuatara (Order Sphenodontia) are medium sized reptiles with the rare type 1b (female-male) pattern of sex determination. The two extant species, *Sphenodon punctatus* and *S. guntheri* are restricted to offshore islands of New Zealand, many of which are <10 ha in area. The disjunct nature of the distribution, pattern of sex determination where males are produced from warmer incubation temperatures, and generally small population sizes leave tuatara vulnerable to stochastic events. In addition, female tuatara lay eggs every 2-5 years, and the only extant population of *S. guntheri* comprises 60% males. We investigate whether sex ratios of tuatara populations are likely to become male-biased due to global warming by estimating hatchling sex ratios from nest temperature data and monitoring plasticity of female nesting behaviour with respect to environmental cues. We present nest characteristics and estimated hatchling sex ratios in the context of weather data from three seasons of nesting on Stephens Island (*S. punctatus*). In general, female tuatara build nests with similar characteristics in