

The following day, due to an odour coming from the empty cloth sack, it became apparent that the snake had regurgitated the corpses of two small mammal neonates whilst held in the sack. The corpses were somewhat squashed but otherwise intact. They were later identified (by John Buckley of the HCT), using dental morphology, as either *Sorex minutus* (Pygmy shrew) or *Sorex araneus* (Common shrew). They were too young to be identified to species, being blind and hairless, and were clearly predated in the nest. These species of shrew make grass-woven nests below ground; therefore this smooth snake must have entered a shrew's nest and eaten the neonates underground and in darkness.

Smooth snake populations are notoriously difficult to monitor, and Breeds (1973) showed that even in intensively-studied populations, individuals can evade detection for extended periods (up to seven years) before re-appearing. The movement and home range of smooth snakes is also difficult to generalise upon, as some animals are virtually sedentary, whilst others move large distances (Gent, 1988; Gent & Spellerberg, 1993; Phelps, 1978, 2004). Phelps (pers. comm.) has found that males tend to be the most mobile, whilst females are more sedentary and can be detected in the same place for many years. It is known that Smooth snakes spend much of their time underground (Beebee & Griffiths, 2000), which accounts for their relative invisibility when compared to *Natrix natrix* (Grass snake) and Adders. The subterranean feeding habits described here corroborate this picture of a secretive lifestyle, and make it conceivable that some individuals in a study population may never be detected, even when artificial refugia are checked regularly and other individuals are captured repeatedly.

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ZOOTOCA (LACERTA) VIVIPARA (Common or Viviparous lizard): MARKINGS AND COLOURATION. The Common lizard is well known for its variable upper body markings and colouration. Although they are typically brown in background colour, green colouration sometimes occurs (Beebee & Griffiths, 2000; Frazer, 1983; Palmer, 2005; Simms, 1970). Most green Common lizards seem to be a dull dark green, but Bowles (2000) reported turquoise Common lizards, and Frazer (1983) mentioned an olive phase. The dorsal, lateral and dorsolateral markings of Common lizards are highly variable, but do not normally form distinct ocelli (eye-shaped markings) like those in *Lacerta agilis* (Sand lizard). However, occasional very bold markings



Figure 1. *Zootoca vivipara* from Ynyslas dunes, Ceredigion. Photograph by author.



Figure 2. *Zootoca vivipara* from Aberdyfi dunes, Gwynedd. Photograph by author.

can take on a superficial sand lizard-like appearance. Two examples are described here that show unusual variations in colour and markings.

On 1st May 2004, on coastal sand dunes at Ynyslas in Ceredigion, Wales, UK (SN 60 93), a pale olive greenish Common lizard (Figure 1) was seen basking in *Ammophila arenaria* (Marram grass). This was during a survey visit to investigate whether Sand lizards might still be present naturally in west Wales; hence specific identification was crucial. The dorsal patterning of this lizard was only vaguely discernible, and not enough to determine its sex confidently. The overall extent of green colouration, the lack of ocellated markings, and the general shape and build confirm its identification as a common lizard. Twenty-seven Common lizards, no Sand

lizards, and thirteen indeterminate lizards were seen during the visit. According to Beebee & Griffiths (2000), there is a higher incidence of green Common lizards in north Wales than other parts of Britain.

On the same day at Aberdyfi dunes in Gwynedd, Wales, UK (SN 60 95), another Common lizard, of typical brown colouration but strikingly patterned, was photographed in Marram grass (Figure 2). Its lateral markings formed distinct ocelli, and were almost mistakable as those of a Sand lizard. The lack of dorsal ocelli, as well as its size, build and colour, easily identified it as a Common lizard though, but it is conceivable how this might not be such an easy identification with only a fleeting glimpse. Twenty-two Common lizards, no Sand lizards, and nine indeterminate lizards were recorded overall.

There is some scope for confusing green or boldly-marked Common lizards with Sand lizards; hence there is a practical reason for discussing such variation and how misidentification might be avoided. Despite the Sand lizard's larger size (in adults), stockier build, larger head, and narrower habitat preferences (normally only sand dunes and heaths are inhabited by both), misidentified Common lizards result in a number of reported Sand lizard sightings submitted to the Herpetological Conservation Trust every year. Tantalisingly, some of these reported sightings are from parts of the country with suitable 'Sand lizard habitat' and historical records of populations that could conceivably survive today. Such reports are not usually accompanied by photographs, and only follow-up survey visits can confirm or refute them. Some simple rules would therefore be useful if they could help prevent misidentification.

Green colouration in Common lizards is certainly not as vivid as that seen in male Sand lizards. Common lizards are green all over their back and sides, whereas (male) Sand lizards only have green flanks and their ocelli are still distinctly visible. As well as varying degrees of dorsal and lateral 'stripyness', Common lizards generally display irregular flecked and dashed markings, typically consisting of triplets of dark and pale dashes, but these rarely form the pale-centred ocelli that characterise Sand lizards. Sand lizard ocellations take the form of dark irregular blobs with pale centres that are normally enclosed. These form continuous dorsal and lateral strips separated by unmarked greyish dorso-lateral strips. Even juvenile Sand lizards have small but distinct ocelli, whereas Common lizard juveniles quickly develop the dashed and striped markings of adults.

The example in Figure 2 from Aberdyfi is the nearest I have ever seen a Common lizard's markings approach those of a Sand lizard, and it would have been very frustrating if the lizard had not cooperated long enough to observe it and photograph it. I have yet to see a Common lizard whose colouration alone was sufficient to prevent specific identification, but the variability in their markings certainly allows room for error in identification.

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PTYCHADENA MASCARIENSIS (Mascarene ridged frog): PREDATION ON AN ENDEMIC MALAGASY CHAMELEON. *Ptychadena mascariensis* is a medium-sized frog [male SVL 40 mm, female SVL up to 50 mm (Glaw & Vences, 1994)] which can be readily identified by its sharply pointed snout, the presence of six to eight longitudinal rows of granular tubercles running along the dorsum, and its 'typical ranid-like appearance' (Henkel & Schmidt, 2000).

This frog is extremely abundant in Madagascar with a wide distribution ranging from the humid forest of Montagne d' Ambre in the North to the arid spiny forest of Tsiombe in the South (Blommers-Schlösser & Blanc, 1991). However, it is one of only two species (together with *Hoplobatrachus tigerinus*) which are not endemic to Madagascar (Glaw & Vences, 1994) with populations found on the African mainland, the Seychelles and Mascarene islands (Goodman and Benstead, 2003). In contrast to Mascarene and Seychellean populations, molecular evidence suggests that Malagasy populations were not introduced from the African mainland by man and colonized the island naturally (Vences *et al.*, 2004).

Previous studies have focused on the feeding ecology of *P. mascariensis* and have found that this species is typically known to feed on invertebrates