Defensive behavior in *Dipsas articulata* (COPE, 1868)

Snakes evolved a plethora of diverse antipredator mechanisms (Lancini 1986; Greene 1988). Typically, most snakes escape from threats fleeing. This behavior can be affected by body temperature, sex, reproductive condition, body size, ecdysis, resting posture as well as the intensity of stimuli (Gibbons & Dorcas 2002; Glaudas et al. 2005). Some snakes do retract, coil, hiss and/or strike at threats when cornered, although many species are “cowards first, bluffers second and warriors last” (Pope 1958). A number of species adopted elusive defensive behaviors such as cryptic and aposematic coloration to avoid detection (La Marca & Soriano 2004; Lancini 1986; Lotzkat 2007). Some colubrid snakes adopt a defensive posture by inflating the anterior part of their bodies or opening their mouths in a threatening posture (Godley 1982; La Marca & Soriano 2004; Lotzkat 2007; Nateramumaw et al. 2008). In arboreal snakes the body is sometimes laterally compressed and made rigid (Greene 1979; Marques 1999). Some snakes also exhibit more unusual defence protocols such as musking from the vent or death feigning (immobilization reflex) to detract a predator’s attention (Ushakov 2007; Mendoza 2009). A less documented defence behavior is ‘balling’, where a snake conceals its head among coils of its body from threat. The behavior is best known from the Royal or Ball Python *Python regius* (Shaw, 1802), from West Africa (Barker & Baker 2006). Balling behavior has also been reported for Boidae, Colubridae and Elapidae (Bustard 1969; Mitchell 1978; Arnold & Bennett 1984; Madsen & Uvarii 2004). Even dangerous venomous species will resort to using balling rather than biting (Madsen & Uvarii 2004).

In December 2004 we encountered an adult American Snail-eater *Dipsas articulata* (COPE, 1868) in an area of *Manicaria* palm swamp forest (Myers 1990; Savage 2002) at Cano Palma Biological Station near the Tortuguero National Park, Costa Rica (Fig. 1). Upon capture to verify identification, the snake promptly but casually retracted into a ball, concealing its head (Fig. 2). It remained in this state motionless for several minutes. After placement in a vivarium the snake resumed a normal posture but continued to ball and also flattened its head and created neck coils when handled. To the best of our knowledge this is the first recorded case of balling defence behavior by *D. articulata*.

Defensive behavior has been recorded for *Dipsas albifrons* (Sauvage, 1884), *D. catesbyi* (Sentzen, 1796), *D. indica* Lau-renti, 1768, *D. nicholsi* (Dunn, 1933), *D. oreas* (COPE, 1868), *D. pavo* (Schlegel, 1837), *D. temporalis* (Werner, 1909) and *D. viguieri* (Bocourt, 1884) (Peters 1960; Cadle & Myers 2003; Cadle 2005). Only *D. nicholsi* has previously been reported to exhibit body coiling as a defensive trait. This differs from ‘balling’ as the coils are more uniform in shape (see Myers & Cadle 2003). Snakes of the genus *Dipsas* are known for their docile response to threat and capture. *Dipsas oreas* exhibits a defensive posture which is common among the Dipsadini (Cadle & Myers 2003). It includes head triangulation, raising the anterior part of the body and bringing the head and neck back into an S-shaped loop. The posturing and head triangulation defences of *D. oreas*, and herein by *D. articulata*, resemble the defensive behaviors of some vipers (Greene 1988) and thus are potentially a form of behavioral mimicry.

Fig. 1: *Dipsas articulata* (Cope, 1868).

Fig. 2: *Dipsas articulata* (Cope, 1868) in ‘balling’ defence posture.
Liolaemus somuncurae
CEI & SCOLARO, 1981 new to the Province of Chubut, Patagonia, Argentina

The genus Liolaemus contains more than 210 species, 58 of which occur in a variety of habitats in Patagonia (Argentina) (MORANDO et al. 2006; SCOLARO 2005).

Liolaemus somuncurae was described from “Meseta de Somuncura, near Lago Raimundo” and belongs to the kingii group (CEI & SCOLARO 1981). Last year AVILA et al. (2007) found this lizard at a new site in the western Rio Negro province and during a recent field trip to the central north Chubut Province, the authors collected eight individuals which were morphologically similar to specimens described as L. somuncurae.

The lizards were collected by hand, euthanized with pericardic injection of Tiopental Sódico (Abbot®), fixed with 20% formalin, and transferred to 70% ethanol after 3-4 days. Latitude, longitude, and elevation were determined with a Garmin™ GPS 12 global position device. Voucher specimens were deposited in the field collection Luciano Javier Avila Mariana Morando (LIJAMM 10981-10988), of the Centro Nacional Patagónico-CONICET, Puerto Madryn (Chubut), Argentina.

The position of the new collection site is depicted in Fig. 1, along with the previously known geographic distribution of the species. The specimens collected constitute the first records of L. somuncurae in the Province of Chubut and now represent the southernmost known records. This extends the species’ known range area about 110 km to the southwest of the type locality, and 120 km southeastward from the westernmost vouchedered locality, both in the province of Rio Negro. New locality: Chubut Province, Telsen Department. Provincial road 67, 11.2 km S of the Rio Negro – Chubut border (47°04’S, 68°09’W; 1407 m a.s.l.). 24 October 2008. M. F. BREITMAN, N. FRUTOS, M. L. KOZYKARISKI coll.: LIJAMM 10981-10988.

The landscape was dominated by Patagonian steppe vegetation which is constituted predominantly by shrubs (Mulinum spinosum, Adesmia campestris and Senecio bracteolatus), and several grass species of...