Nota

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Aggregative behaviour in the fossorial lizard *Amphisbaena darwinii* (Squamata, Amphisbaenidae)

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Amphisbaena is a species-rich genus widely distributed in the Neotropics, from Middle America to central-eastern Argentina and Uruguay (Gans, 2005). The natural history of these fossorial Squamata has been scarcely studied, although several species are common in varied biomes. One of these poorly known forms is *Amphisbaena darwinii* Duméril & Bibron 1839 although being widely distributed in southern and central Uruguay (Gans, 1966). This species is a common inhabitant of urban and suburban areas in this country, including gardens and backyards where it can be easily found under rocks, rotten logs, and a varied kind of human-made refuges (pers. obs.). We present herein observations on *A. darwinii* made from 2008 to 2011 as part of herpetofaunal inventories in southern Uruguay. Specimens of *Amphisbaena darwinii* were found under stones or abandoned pieces of concrete and metallic sheets in some natural and urban areas, see Table 1. Refuges under stone or concrete cover and those under metallic materials were of approximately 0.15 to 0.20 m^2 and 0.50 m^2 respectively. We found apparently solitary individuals in most observations (9/16). However, in approximately 40% of the encounters (6/16) we detected more than one individual together in the same refuge, being adults, juveniles, or both. On one occasion we observed a group of seven individuals composed by an adult male, two adult females and four juveniles. Other combinations found were two juveniles, an adult male and a juvenile, and an adult male plus two adult females; see also Table 1. We never recorded more than one adult male at the same refuge. In these associations, specimens were very close to each other, sometimes with their bodies side by side or one above the other/s (Fig. 1).

An interesting point of our observations is the tolerance of adults to the presence of young. Total lengths of four juveniles found in April 2010 that are shown in Figure 1 ranged from 95 to 121 mm (measurements made on digital photographs using ImageJ 1.45 software, freely available at http://rsb.

Table 1. Field observational data on *Amphisbaena darwinii* in southern Uruguay. Abbreviations: a, adult; f, female; j, juvenile; m, male.

Site	Date	Specimens	Cover material of refuge
Cabo Polonio, Rocha (34°24'S, 53°46'W)	August 11, 2011	1 j, 1 m	stone
	August 11, 2011	1 j	stone
	August 11, 2011	1 a	stone
Facultad de Agronomía, Montevideo (34°50'S, 56°13'W)	November 9, 2009	1 j, 1 m	stone
	November 19, 2009 (same refuge as previous record)	1 j	metallic sheet
	November 19, 2009	1 f, 2 m	metallic sheet
	April 8, 2010	2 j	metallic sheet
	April 13, 2010	2 f, 1 m	metallic sheet
	June 6, 2010	2 f, 4 j, 1 m	concrete
	June 6, 2010	1 f	metallic sheet
	June 6, 2010	1 f	metallic sheet
	June 6, 2010	1 m	metallic sheet
Facultad de Veterinaria, Montevideo (34°53'S, 56°08'W)	March 21, 2010	1 f	stone
	March 21, 2010	1 m	stone
	March 21, 2010	1 m	concrete
Villa del Cerro, Montevideo (34°53'S, 56°15'W)	May 16, 2008	2 a	metallic sheet

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Figure 1. Group of *Amphisbaena darwinii* from Facultad de Agronomía, Montevideo, Uruguay (June 6, 2010); photograph taken immediately after exposing the refuge.

info.nih.gov/ij/). Similarly, the juvenile observed along with an adult male at Cabo Polonio in August 2011, measured 110 mm. These juveniles are slightly larger than the January newborns reported by Carreira and Baletta (2006; 68-85 mm, n = 3), which is compatible with a normal growth for a few months after birth. We do not know whether adult-juvenile associations in *A. darwinii* are of parent-offspring nature, neither if they correspond to parental care behaviour.

The occurrence of parental care in amphisbaenians was previously suggested by Berg (1898). He found two adult females of *A. heterozonata* underground, each one along with fertile eggs containing embryos in advanced stages of development and hypothesized that these females were nest guarding. Gallardo (1977) also reported in this species adults of unspecified sex being close to eggs and hatchlings. He also observed an adult male and female of *A. heterozonata* very close to each other but speculated with an association to mating season. The present note is to our knowledge, the first report of aggregative behaviour in amphisbaenians of the New World. The few observations we made preclude us from further analysis. Previously, Martín *et al.* (2011) found that the species *Trogonophis wiegmanni* (Amphisbaenia, Trogonophiidae) of the Chafarinas Islands in northern Africa exhibit social aggregations. Based on a large sample of observations they concluded that aggregations of this amphisbaenian are not random, and thus correspond to social behaviour. They only observed pairs of individuals of this fossorial species under stones, either a male and a female, juveniles or a juvenile with a male or a female but not adults of the same sex. On the contrary, we found adult females being together. The available data on the aggregative behaviour of amphisbaenids although scarce, is suggestive of a rich field for the study of social interactions in these interesting and secretive lizards. Particularly, the occurrence of communal nesting and parental care in *Amphisbaena* deserve further investigation.

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