

DOI: 10.1111/j.1365-3113.2011.00457.x

**GALLOTIA CAESARIS (Caesar's Lizard). NECTARIVORY.** Plant-lizard mutualistic interactions (pollination and seed dispersal) have been considered a phenomenon more frequently detected on islands due to the high densities commonly seen in insular lizards (Olesen and Valido 2003. *Trends Ecol. Evol.* 18:177–181). Lizards experience stronger intraspecific competition, favored by a lower predation risk and arthropod food supply compared to mainland taxa, expanding their diet to incorporate novel food resources (e.g., fruit pulp and floral rewards; Olesen and Valido, *op. cit.*). This appears to be the case observed in endemic Canarian lizards, *Gallotia* spp., which include a significant amount of plant matter in their diets, whereas their closest continental relatives are mainly insectivorous (Carretero et al. 2006. *Rev. Esp. Herpetol.* 20:105–117; Martín et al. 2005. *Zoology* 108:121–130; Valido and Nogales 2003. *Amphibia-Reptilia* 24:331–344; Van Damme 1999. *J. Herpetol.* 33:663–674). The role of *Gallotia* spp. as seed dispersers of Canarian flora has been well established, with fleshy fruit as the most significant component of their

PHOTO BY PEDRO FELIPE



FIG. 1. *Gallotia caesaris* visiting *Echium hierrense* (Boraginaceae) inflorescences from El Hierro, Canary Islands. The tail seems to play an important role as a prehensile appendix as the lizard climbs to higher flowers.

diet year round (e.g., *G. galloti*; Valido and Nogales 1994. Oikos 70:403–411). However, their role as pollinators has received less attention despite nectar-feeding field observations on native and exotic flora (Font and Ferrer 1995. Herpetol. Rev. 26:35–36; Valido et al. 2002. Acta Oecol. 23:413–419; Valido et al. 2004. J. Biogeogr. 31:1945–1953). Most of these observations refer to the Canary Lizard (*G. galloti*) from Tenerife, with the unique exception of *G. caesaris* from El Hierro observed visiting *Euphorbia lamarckii* flowers (Speer 1994. Salamandra 30:48–54). Here, we report a new account of nectarivory and presumptive pollinating behavior by *G. c. caesaris* on flowers of *Echium hierrense* (Boraginaceae); both are endemic taxa from El Hierro (27.733333°N, 18.05°W), the smallest and the westernmost island of the Canarian archipelago. Observations were made in the south of the island, at a xeric scrubland area known as El Lajjal (255 m elev.).

From 20 to 22 April 2007, we performed daily 2-h monitoring (approximately 1000–1200 h), during which we observed *G. caesaris* visiting flowers of *E. hierrense*. In each of these periods, one male individual climbed the same plant three to four times, visiting different flowers from the same inflorescence (Fig. 1). Occasionally, we also saw the aforementioned lizard accompanied by a conspecific crawling up other inflorescences of the same plant. In both cases, lizards visited flowers legitimately (i.e., the snout brushed against the anthers and stigma of the flowers as they clearly licked nectar from them). We never detected agonistic interactions between lizards, nor did we observe lizards trying to capture pollinating insects (mainly Hymenoptera) while in the inflorescences.

Lizards are not the only flower visitor of *E. hierrense*. In the Canary Islands, *Echium* species are considered to be mainly bee-pollinated (Dupont and Skov 2004. Int. J. Plant Sci. 165:377–386). However, the endemic *E. wildpretii*, distributed in the arid high-altitude sub-alpine vegetation zone, is also visited by *Gallotia* lizards (Valido et al. 2002, *op. cit.*). Our observations suggest the possibility of more *Gallotia-Echium* interactions in the Canarian archipelago. This raises the question of what intrinsic (e.g., floral rewards) and extrinsic (e.g., water scarcity) plant factors promote interactions and how these interactions impact *Echium* reproductive success.

The observations described here were made as part of work for a documentary film series (Canarias, reductos de biodiversidad) on Canarian biodiversity conducted by Alas Cinematografía S.L. We thank Pedro Felipe and José J. Hernández for their invaluable help in the field, as well as Alfredo Valido, Rubén

Barone, and Kimberly Holbrook for reviewing an early draft of the manuscript.

**FELIPE SIVERIO** (e-mail: felipe.siverio@telefonica.net), Alas Cinematografía S.L., Los Afligidos 43, 38410 Los Realejos, Tenerife, Canary Islands, Spain; **MARÍA C. RODRÍGUEZ-RODRÍGUEZ**, Integrative Ecology Group, Estación Biológica de Doñana (CSIC), Avda. Américo Vespucio s/n, 41013 Sevilla, Spain.