



Least Water-Snipeflies, *Atrichops crassipes* (Insecta: Diptera: Athericidae), Biting an Iberian Painted Frog (*Discoglossus galganoi*) (Amphibia: Anura: Alytidae)

César Ayres¹ and Miguel Carles-Tolrá²

¹AHE-Galicia, Barcelona 86 6C 36211, Vigo (Pontevedra), Spain (galicia@herpetologica.org [corresponding author])

²Avenida Riera de Cassoles 30, ático 1, E-08012 Barcelona, Spain (diptera@outlook.com)

The Iberian Painted Frog (*Discoglossus galganoi*) occupies grasslands and other open areas of the Iberian Peninsula (Martínez-Solano 2014). These frogs usually occur in swampy areas with high humidity and close to the water in which they breed. During the breeding season, females lay eggs in shallow water (Ayres 2016).

At about 1200 h on 12 June 2013, we encountered a male *D. galganoi* on the shore of an old clay pit in Orbenlle, O Porriño, Pontevedra, Spain (29TNG36; ETRS89; elev. 11 m asl). Five dipteran flies appeared to be biting the head and hindlimbs of the frog (Fig. 1). The flies were identified as female Least Water-Snipeflies, *Atrichops crassipes* (Meigen 1820) (Athericidae). The females of these flies specialize in sucking the blood of frogs, which seems necessary for the development of eggs (Majer 1988; Rozkošný and Nagatomi 1997; Stuckenberg 2000; Chandler 2010). In Europe, these flies have been reported feeding on Pool Frogs (*Pelophylax lessonae* [formerly *Rana esculenta*]) (Stuckenberg 2000) and in the Iberian Peninsula on Iberian Waterfrogs (*Pelophylax perezi*) and semiaquatic Red-eyed Grass Snakes (*Natrix astreptophora*) (Antúnez 2017), but we have not found any previous records of parasitism by *A. crassipes* on *D. galganoi*. The only ectoparasites that have been reported feeding on *D. galganoi* were leeches in the genus *Batrachobdella* (García-Paris 1985).

Dipterans could act as vectors for the transmission of pathogens like the amphibian chytrid fungus (Gould et al. 2019) or blood parasites (Ferguson and Smith 2012; Snyman 2020) but they also could help identify elusive species of frogs (Cutajar and Rowley 2020).

Literature Cited

Antúnez, J. 2017. Records. *Atrichops crassipes* (Meigen, 1820). *Biodiversidade*. <https://biodiversidade.eu/avistamento/atrichops-crassipes-meigen-1820/>.

Ayres, C. 2016. *Discoglossus galganoi* tadpoles: egg and carcass cannibalism. *Boletín de la Asociación Herpetológica Española* 27(2): 26–27.

Chandler, P.J. (ed.). 2010. *A Dipterist's Handbook*. 2nd ed. The Amateur Entomologist, Volume 15. The Amateur Entomologists' Society, Orpington, United Kingdom.

Cutajar, T.P. and J.J. Rowley. 2020. Surveying frogs from the bellies of their parasites: Invertebrate-derived DNA as a novel survey method for frogs. *Global Ecology and Conservation* 22: e00978. DOI: 10.1016/j.gecco.2020.e00978.

Ferguson, L.V. and T.G. Smith. 2012. Reciprocal trophic interactions and transmission of blood parasites between mosquitoes and frogs. *Insects* 3 (2): 410–423. DOI: 10.3390/insects3020410.

García-París, M. 1985. *Los Anfibios de España*. Ministerio de Agricultura, Pesca y Alimentación, Madrid, Spain.

Gould, J., J.W. Valdez, M.P. Stockwell, S. Clulow, and M.J. Mahony. 2019. Mosquitoes as a potential vector for the transmission of the amphibian chytrid fungus. *Zoology and Ecology* 29: 39–44. DOI: 10.35513/21658005.2019.1.5.

Majer, J.M. 1988. Family Athericidae, pp. 11–13. In: Á. Soós and L. Papp (eds.), *Catalogue of Palaearctic Diptera. Volume 5. Athericidae-Asilidae*. Elsevier Science Publishers, Amsterdam, The Netherlands.

Martínez-Solano, I. 2014. Sapillo pintojo ibérico - *Discoglossus galganoi*. In: A. Salvador and I. Martínez-Solano (eds.), *Enciclopedia Virtual de los Vertebrados Españoles*. Museo Nacional de Ciencias Naturales, Madrid, Spain. <http://www.vertebradosibericos.org/anfibios/disgal.html>.



Fig. 1. An Iberian Painted Frog (*Discoglossus galganoi*) from Orbenlle, O Porriño, Pontevedra, Spain, being bitten on the head and hindlimbs by female Least Water-Snipeflies (*Atrichops crassipes*). Photograph by César Ayres.

- Rozkošný, R. and A. Nagatomi. 1997. Family Athericidae, pp. 439–446. In: L. Papp and B. Darvas (eds.), *Contributions to a Manual of Palaearctic Diptera (with special reference to flies of economic importance). Volume 2. Nematocera and Lower Brachycera*. Science Herald, Budapest, Hungary.
- Snyman, L.P. 2020. Review of mosquitoes (Diptera: Culicidae) from the Afrotropical region using herpetofauna as hosts: conservation and epidemiological consequences of knowing little about many species. *Austral Entomology* 60: 163–171.
- Stuckenberg, B.R. 2000. A new genus and species of Athericidae (Diptera: Tabanoidea) from Cape York Peninsula. *Records of the Australian Museum* 52: 151–159.