

NOTA / NOTE

New record of *Calopteryx xanthostoma* (Charpentier, 1825) in Ourense, northwest of Spain (Odonata: Calopterygidae).

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Abstract: A new record of the damselfly *Calopteryx xanthostoma* (Charpentier, 1825) (Odonata: Calopterygidae) in the province of Ourense (Spain) is provided. A photographic record of the species observed at the end of summer is attached.

Key words: Odonata, Calopterygidae, *Calopteryx xanthostoma*, Miño River, Ourense, Galicia, NW Spain.

Resumen: Nueva cita de *Calopteryx xanthostoma* (Charpentier, 1825) en Ourense, noroeste de España (Odonata: Calopterygidae). Se aporta una nueva cita del caballito del diablo *Calopteryx xanthostoma* (Charpentier, 1825) (Odonata: Calopterygidae) en la provincia de Ourense (España). Se acompaña un registro fotográfico de la especie observada al final de verano.

Palabras clave: Odonata, Calopterygidae, *Calopteryx xanthostoma*, río Miño, Ourense, Galicia, NW Spain.

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Introduction

Based on a recent genetic study of the species within the genus *Calopteryx* Leach, 1815 in the Palaearctic fauna, the species *Calopteryx xanthostoma* (Charpentier, 1825) and *Calopteryx splendens* (Harris, 1782) have been separated (Sadeghi *et al.*, 2010). There are only three species of the genus *Calopteryx* known to occur in the Iberian Peninsula (Cordero, 1989): *Calopteryx virgo meridionalis* Sélys, 1873, *Calopteryx haemorrhoidalis* (Vander Linden, 1825) and *Calopteryx xanthostoma* (Charpentier, 1825). The latter is the less abundant of all of them in Galicia (Dijkstra & Lewington, 2006) and prefers less fast-flowing rivers (lower slope) than *C. virgo meridionalis* (Outomuro *et al.*, 2010).

The damselfly *C. xanthostoma* has a more extended distribution northwards of the Iberian Peninsula (Outomuro, 2009) and presents populations abundant in the south of France and northwestern Italy (Dijkstra & Lewington, 2006; Boudot & Kalkman, 2015). *C. xanthostoma* is principally distributed over the Mediterranean region (Outomuro *et al.*, 2010). This species has been recorded in less than 25% of Galicia since 1978 (Azpilicueta Amorín *et al.*, 2007) and sighted more than nine times since 2000 in the province of Ourense (Prunier *et al.*, 2015). Some equivocal evidence exists for a negative relationship between temperature and the degree of wing pigmentation at a population level in *Calopteryx* damselflies (Outomuro & Ocharan, 2011). Further studies showed that there is a geographical pattern in wing pigmentation that would suggest variation in thermoregulatory potential across the range, but pigmentation does not vary consistently with latitude (Hassall, 2014).

Material and methods

Three samplers searched only for adult dragonflies above the bank vegetation of the Miño River and the surroundings of the Muíño da Veiga Thermal Baths. Odonata were surveyed in the afternoons from 20 to 25 August 2018. Calopterygidae can be easily determined based on wing pigmentation without need being caught. Photographs of *Calopteryx xanthostoma* were made on the Miño River next to Muíño da Veiga Thermal Baths, five natural pools located practically in the bed of the river and frequented by bathers at any time of the year. The water emerges at 60°C, at an altitude of 89 m a.s.l. (Araujo Nespereira *et al.*, 2007).

Material examined: 1 male (Fig. 1), Miño River, Ourense, Spain. 42°21'5"N 7°54'40"W. 20 August 2018, 16:30 h.

Results and discussion

It was visited just a sampling location with timely appearance of a single species of Odonata on the banks of the Miño River. In Galicia, the number of species observed in the province of Ourense has been increased considerably at present, especially in the Macizo Central, where *Calopteryx xanthostoma* has also been detected (Cordero, 1996; Romeo *et al.*, 2015). This species inhabits running watercourses, such as streams and rivers, usually in open or somewhat shady areas (Dijkstra & Lewington, 2006). In Hassall (2014) it's stated that "*stream temperatures measured in situ would provide a far closer approximation of the thermal environment within which the animals develop, and there is the potential that Calopteryx sp. may specifically select water bodies with particular thermal regimes*". Hence, while latitude and temperature are strongly correlated, small scale variations in water temperature may be operating and possibly influencing the territorial selection by males of *Calopteryx sp.* This note documents the presence of an isolated male of *C. xanthostoma* in the cold waters of the Miño River, apparently not territorial, very close to the confluence with a hot water spring in a location of the province of Ourense.

Bibliography

- Araujo Nespereira, P.A.; Cid Fernández, J.A.; Delgado Outeiriño, I. & Gúezmes Barriuso, A.L. 2007. Inventario y caracterización del yacimiento termal de Ourense ciudad (Galicia, España). 13 pp.
 Fecha de la última consulta: 30/09/2018. Documento disponible online en:
<http://www.xeoquis.com/admin/docs/070501%20YACIMIENTO%20GEOTERMICO%20OURENSE-CIUDAD.pdf>
- Azpilicueta Amorín, M.; Rey Rañó, C.; Docampo Barrueco, F.; Rey Muñiz, X.L. & Cordero Rivera, A. 2007. A preliminary study of biodiversity hotspots for odonates in Galicia, NW Spain. *Odonatologica*, **36**: 1-12.
- Boudot, J.-P. & Kalkman, V.J. (eds). 2015. *Atlas of the European dragonflies and damselflies*. KNNV Publishing. Utrecht, 381 pp.
- Cordero [Rivera], A. 1989. Estructura de tres comunidades de *Calopteryx* (Odonata: Calopterygidae) con diferente composición específica. *Limnética*, **5**: 83-91.
- Cordero [Rivera], A. 1996. A preliminary checklist of the Odonata of Galicia, NW Spain. *Advances in Odonatology*, Supplement 1: 13-25.
- Dijkstra, K.-D.B. & Lewington, R. 2006. *Field guide to the dragonflies of Britain and Europe*. British Wildlife Publishing. Gillingham, 320 pp.

Hassall, C. 2014. Continental variation in wing pigmentation in *Calopteryx* damselflies is related to the presence of heterospecifics. *PeerJ* 2: e438, 15 pp.

Outomuro, D. 2009. Patrones morfológicos latitudinales en poblaciones ibéricas de *Calopteryx* Leach, 1815 (Odonata, Calopterygidae): posibles causas ambientales y evolutivas. *Boletín de la Asociación española de Entomología*, **33**: 299-319.

Outomuro, D. & Ocharan, F.J. 2011. Wing pigmentation in *Calopteryx* damselflies: a role in thermoregulation? *Biological Journal of the Linnean Society*, **103**: 36-44.

Outomuro, D.; Torralba-Burrial, A. & Ocharan, F.J. 2010. Distribution of the Iberian *Calopteryx* damselflies and its relation with bioclimatic belts: Evolutionary and biogeographic implications. *Journal of Insect Science*, **10**(61): 1-16.

Prunier, F.; Brotóns, M.; Cabana, M.; Campos, F.; Casanueva, P.; Chelmick, D.; Cordero Rivera, A.; Díaz Martínez, C.; Evangelio, J.M.; Gainzarain, J.A.; García-Moreno, J.; Lockwood, M.; De los Reyes, L.; Mañani, J.; Mezquita-Aranburu, I.; Muddeman, J.; Ocharan, F.J.; Otero Pérez, F.; Prieto-Lillo, E.; Requena, C.; Ripoll, J.; Rodríguez Luque, F.; Rodríguez, P.; Romeo, A.; Salcedo, J.; Salvador Vilariño, V.; Sánchez Balibrea, J.; Tamajón Gómez, R.; Torralba Burrial, A.; Tovar, C.; Winter, P. & Zaldívar, R. 2015. Actualización del inventario provincial de Odonatos de España peninsular e Islas Baleares. *Boletín ROLA*, **6**: 59-84.

Romeo, A.; Cabana, M. & Cordero Rivera, A. 2015. *Odonatos de las Sierras Orientales de Galicia*. Libro de Resúmenes SIO (+ póster), Córdoba. AEA El Bosque Animado, p. 61.

Sadeghi, S.; Kyndt, T. & Dumont, H.J. 2010. Genetic diversity, population structure and taxonomy of *Calopteryx splendens* (Odonata: Calopterygidae): an AFLP analysis. *European Journal of Entomology*, **107**: 137-146.



Fig. 1. - *Calopteryx xanthostoma* (Charpentier, 1825) perched on the vegetation of the Miño River right bank.