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Presence of *Gymnetron melanarium* (Germar, 1821) in the Iberian Peninsula (Coleoptera: Curculionidae)

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Abstract

Gymnetron melanarium (Germar, 1821) (Curculionidae: Curculioninae: Mecinini) is recorded for the first time from the Iberian Peninsula, from a locality in the province of Gipuzkoa/Guipúzcoa (Basque Country) which represents the westernmost record of the species known in Europe. Data on taxonomy, distribution and biology are discussed.

Key words: Coleoptera, Curculionidae, *Gymnetron melanarium*, first record, Iberian Peninsula.

Resumen

***Presencia de* Gymnetron melanarium (*Germar, 1821*) *en la Península Ibérica* (*Coleoptera: Curculionidae*)**

Gymnetron melanarium (Germar, 1821) (Curculionidae: Curculioninae: Mecinini) se registra por primera vez para la Península Ibérica, de una localidad de la provincia de Gipuzkoa/Guipúzcoa (País Vasco), lo cual representa la cita más occidental conocida de esta especie en Europa. Se comentan datos taxonómicos, de distribución y biológicos.

Palabras clave: Coleoptera, Curculionidae, *Gymnetron melanarium*, primer registro, Península Ibérica.

Laburpena

Gymnetron melanarium (*Germar, 1821*) *Iberiar Penintsulan* (*Coleoptera: Curculionidae*)

Gymnetron melanarium (Germar, 1821) (Curculionidae: Curculioninae: Mecinini) lehenengo aldiz aipatzen da Iberiar Penintsulan, Gipuzkoa/Guipúzcoa (Euskal Herria) lurraldeko lokalitate batekoa. Hauxe da Europan ezaguna den aipurik mendebaldekoena espezie honentzat. Taxonomia, banaketa eta biologiari buruzko datu batzuk komentatzen dira.

Gako-hitzak: Coleoptera, Curculionidae, *Gymnetron melanarium*, aipu berria, Iberiar Penintsula.

Introduction

Belonging to the tribe Mecinini (Curculionidae: Curculioninae), the genus *Gymnetron* Schoenherr, 1825 is very similar to the genera *Rhinusa* Stephens, 1829 and *Mecinus* Germar, 1821, but is clearly separated from both by several characters of external morphology and genitalia (Caldara, 2001). Biogeographically the genus is distributed through the Palaearctic and Afrotropical Regions (Caldara, 2001, 2003, 2011). The Palaearctic species can be found throughout Europe, North Africa, Caucasus, Siberia, western and central Asia, India, China and Japan (Alonso-Zarazaga *et al.*, 2017).

Recently the Palaearctic species of the genus *Gymnetron* were reviewed (Caldara, 2008), recognizing 32 species aggregated into nine groups. In the most recent Cooperative Catalogue of Palaearctic Coleoptera Curculionoidea (Alonso-Zarazaga *et al.*, 2017) as well as in its latest work version (2.6) (Alonso-

Zarazaga *et al.*, 2021) the same composition is reported. In the Iberian Peninsula the following 8 species have been hitherto recorded (Alonso-Zarazaga, 2018): *G. aper* Desbrochers des Loges, 1892, *G. beccabungae* (Linnaeus, 1760), *G. melinum* Reitter, 1872, *G. rostellum* (Herbst, 1795), *G. stimulosum* (Germar, 1821), *G. veronicae* (Germar, 1821), *G. villosulum* Gyllenhal, 1838 and *G. vittipenne* Marseul, 1876.

Results and discussion

Iberian record of Gymnetron melanarium

In the framework of the entomological inventory projects developed by the second author (SPC) in Gipuzkoa/Guipúzcoa, a single specimen of *Gymnetron melanarium* (Germar, 1821) was collected, with the following data:

Material studied: BASQUE COUNTRY: 1 ♀, Gipuzkoa/Guipúzcoa province, Alkiza, Txurro mendia, 30TWN7380, 370-435 m, 18-07-2020, meadow sweeping, S. Pagola-Carte *leg.*, I. Ugarte San Vicente *det.*

The study of this specimen by the first author (IUSV) was facilitated by its comparison with another specimen, as follows:

Other material studied: CZECH REPUBLIC: 1 ej., Most, Lužice enviroments, 28-05-1998, O. Odvárka *leg.* & *det.*, I. Ugarte San Vicente *conf.* (Fig. 2).

Both specimens are deposited in the private collection of I. Ugarte San Vicente and F. Salgueira Cerezo (Agurain/Salvatierra). The pictures which illustrate this paper have been taken using a stereoscopic microscope Kyowa Optical SDZ-TR-P and a microscope Zeiss KF2. In the following discussion, the scientific names of the plants are written according to the nomenclature used by Aizpuru *et al.* (1999).

Remarks on morphology and taxonomy

Gymnetron melanarium is distinguished from other species present in the Iberian Peninsula (see Caldara, 2008) mainly by the sides of the pronotum and mesothoracic epimera covered only with narrow scales, the metathoracic epimera sparsely covered with greyish scales arranged in a row, the rostrum in lateral view more or less angulate along the dorsal margin at the level of the antennal insertion (moderately narrowed from the antennal insertion to the rostral apex) and the legs with the femora and tibiae blackish. *G. melanarium* can also show a certain degree of morphological variability, with specimens bearing partially suberect scales which vary a little in thickness and with the rostrum and pronotum also exhibiting some variability (Caldara, 2008). Morphologically, the closest Iberian species are *G. stimulosum* and *G. rostellum*, but it clearly differs from both by the smaller size (1.3–1.7 mm), the integument of the body (pronotum and elytra) black and the scales of the elitral interstriae recumbent (or slightly erected) and white. In contrast, *G. stimulosum* and *G. rostellum* are larger (1.6–2.2 mm) and, despite their body integument mainly black, their apical half is reddish brown or dark brown and the scales of the elitral interstriae are erect and white to greyish brown. *G. aper* is another species occurring in the Iberian Peninsula but it also differs clearly from *G. melanarium* by its rostrum in lateral view not angulate along dorsal margin at antennal insertion, slightly narrowed from base to apex, and for having erect scales (partly curved forwards) in the elitral interestriae. *G. stimulosum* and *G. rostellum* have also been reported on plants of the family Plantaginaceae, genera *Veronica* and *Plantago* (see later the biology of *G. melanarium*), but also on Asteraceae, genera *Matricaria* and *Anthemis* (Hoffmann, 1958; Péricart, 1989; Koch, 1992; Sprick, 1997); *G. aper* lives on *Veronica officinalis* L. according to Hoffmann (1958).

The female specimen collected in Alkiza (Fig. 1a-b) has a body length (pronotum + elytra) of 1.7 mm and it shows the typical appearance of the species as described by Caldara (2008). The elitral interstriae have piliform scales that are recumbent to slightly erect (Fig. 1c), in agreement with the variability described for the species by that author. Specifically, he noted that the examined specimens from Greece and Bulgaria had this type of scales. The spermatheca (Fig. 1d) is also similar to that illustrated by Caldara (2008) (Fig. 1e). The ventral spicule and the ovipositor showing the styles are illustrated in Fig. 1f.

Due to the similarity among the species of *Gymnetron*, *G. melanarium* was redescribed by other authors as *G. intaminatum* Stephens, 1831, *G. perparvulum* Boheman, 1845 and *G. melanarium* ab. *rubromelanarium* Roubal, 1917, which have been considered as synonyms by Caldara (2008). In Switzerland the species was initially mistaken for *G. rotundicolle* Gyllenhal, 1838 (Germann *et al.*, 2013), even though marked distinguishing characters exist between both species (see Caldara, 2008).

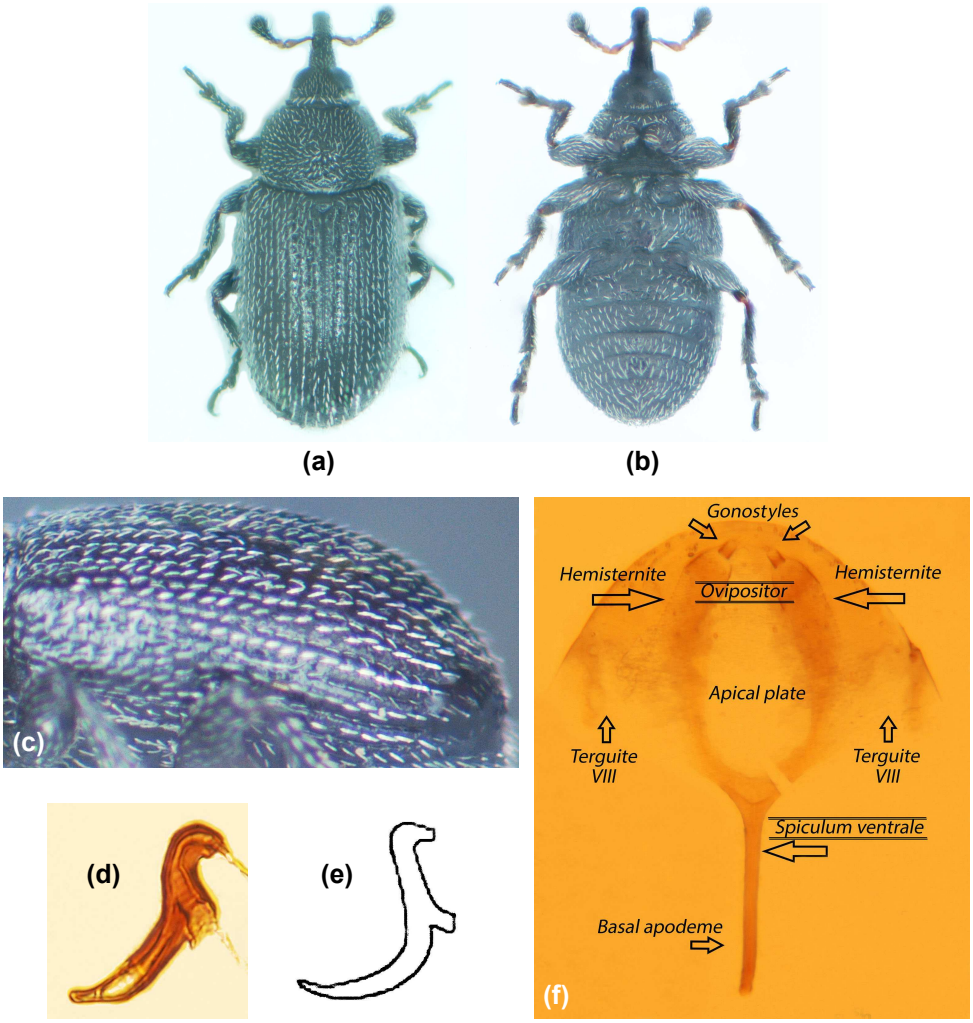

FIGURE 1. *Gymnetron melanarium* (Germar, 1821) from Alkiza, Txurro mendia (Gipuzkoa/Guipúzcoa, Basque Country): (a) Adult in dorsal view; (b) Adult in ventral view; (c) Detail of elitral piliform scales in lateral view; (d) Spermatheca; (e) Spermatheca (extracted from Caldara, 2008); (f) Spiculum ventrale (indicating its apical plate and basal apodeme) and ovipositor (indicating its hemisternites and gonostyles), both inside the terguite VIII.

Remarks on distribution and biology

Gymnetron melanarium is widely distributed throughout central and northern Europe and to Turkey and western Siberia (Alonso-Zarazaga *et al.*, 2017). Specifically, it has been recorded from the following countries: Albania, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Great Britain, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Moldova, Norway, Poland, Russia (Central and South European territory and Eastern and Western Siberia), Serbia, Slovakia, Sweden, Switzerland, Turkey and Ukraine (Alonso-Zarazaga *et al.*, 2017, 2021). The new record from Alkiza is the westernmost European record for the species (Fig. 3). Its presence in the northeastern quadrant of the Iberian Peninsula was not unexpected, given that it is known to occur in nearby regions of France, for example Landes (Hoffmann, 1958), and it is also found

FIGURE 2. *Gymnetron melanarium* from Most, Lužice enviroments (Czech Republic).

throughout France except the Mediterranean Region (Tronquet, 2014).

According to Hoffmann (1958), the biological cycle of *G. melanarium* is completed on *Veronica serpyllifolia* L. (Plantaginaceae), where the larvae develop in a gall produced by the plant on the stem (Hoffmann, 1958; Caldara, 2008). However, the species has also been collected on other *Veronica* species, specifically on *V. agrestis* L., *V. austriaca* L., *V. chamaedrys* L., *V. officinalis* L. and *V. teucrium* L. (Hustache, 1931; Hoffmann, 1958; Koch, 1992; Sprick, 1997). The adult overwinters in the soil and appears from spring to autumn (Hoffmann, 1958). In the British Isles, this weevil is most usually observed on *V. chamaedrys* (Morris, 2012). There, it is an infrequent species, being classified as «Notable B» by their conservation red books.

The specimen from Alkiza was collected by net sweeping of the herbaceous plants in an open area of the hill Txurro. Surrounded by a mosaic-like landscape with several types of meadows, the collecting place can be considered as a ruderal meadow with abundant growing of nitrophilous plants by zones, including thistles (*Cirsium* spp.) and nettles (*Urtica dioica* L.), as well as some other Asteraceae (for example *Centaurea debeauxii* Gren. & Godron), Apiaceae (*Eryngium campestre* L.) or Fabaceae (mostly *Trifolium pratense* L.) as structuring species. Among them, a number of smaller herbaceous plants intersperse with Poaceae, one of them being *Veronica chamaedrys* L. subsp. *chamaedrys*. We firmly believe that this is the host plant from which the collected specimen of *G. melanarium* was collected by sweeping.

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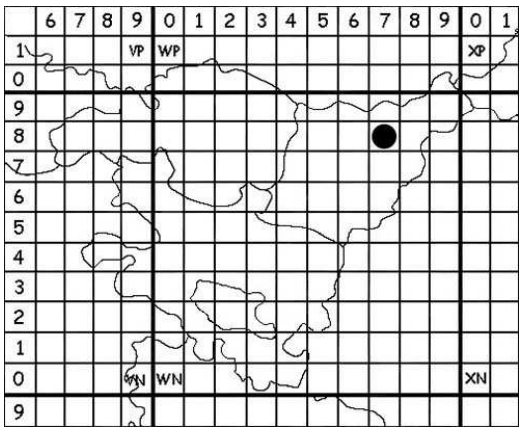

FIGURE 3. *Gymnetron melanarium* (Germar, 1821). Map with the new location in Gipuzkoa/Guipúzcoa (Basque Country), northern Iberian Peninsula.

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