

Notas / Notes

Presence of *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 in the Iberian Peninsula (Coleoptera: Curculionidae: Entiminae)

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ABSTRACT

The weevil *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 is recorded for the first time for the Iberian Peninsula based on 35 specimens that were found in the North of La Rioja Autonomous Community (Spain), being the westernmost record in Europe. Aspects of the habitat, biology, and distribution of the species are discussed.

Keywords. Coleoptera; Curculionidae; *Polydrusus sparsus*; first record; Iberian Peninsula.

RESUMEN

Presencia de *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 en la Península Ibérica (Coleoptera: Curculionidae: Entiminae)

El curculiónido *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 se registra por primera vez en la Península Ibérica sobre la base de 35 ejemplares hallados en una localidad del Norte de la Comunidad Autónoma de La Rioja (Spain), siendo la cita más occidental de Europa. Se comentan aspectos sobre su hábitat, biología y distribución.

Palabras clave. Coleoptera; Curculionidae; *Polydrusus sparsus*; primer registro; Península Ibérica.

Recibido/Received: 3/04/2025; **Aceptado/Accepted:** 30/10/2025; **Publicado en línea/Published online:** 24/11/2025

Cómo citar este artículo/Citation: Ugarte San Vicente, I. & Salgueira Cerezo, F. 2025. Presence of *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 in the Iberian Peninsula (Coleoptera: Curculionidae: Entiminae). *Graellsia*, 81 (2): e799. <https://doi.org/10.3989/graeellsia.2025.v81.799>

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The genus *Polydrusus* Germar, 1817 is represented in the Iberian Peninsula by 39 species and 2 subspecies belonging to 10 subgenera (Alonso-Zarazaga, 2018; Alonso-Zarazaga *et al.*, 2023). Of these, 18 species and 2 subspecies are endemic to the Iberian Peninsula, most of them in subgenus *Eurodrusus* Korotyaev & Meleshko, 1997: *Polydrusus (Chlorodrosus) castilianus* Daniel & Daniel, 1898, *P. (Eurodrusus) alveolus* Desbrochers des Loges, 1869, *P. (E.) andalusicus* Solari, 1954, *P. (E.) bohemani* Kiesenwetter, 1852, *P. (E.) chrysomela* (Olivier, 1807), *P. (E.) dilutus* Motschulsky, *P. (E.) falsosus* Hoffmann, 1963, *P. (E.) fuscroseus* Desbrochers des Loges, 1872, *P. (E.) ibericus* Stierlin, 1884, *P. (E.) pilosulus* Chevrolat, 1865, *P. (E.) pulchellus baeticus* Roudier, 1963, *P. (E.) pulchellus roudieranus* Yunakov, 2017, *P. (E.) smaragdulus* Desbrochers des Loges, 1870, *P. (E.) subglaber* Desbrochers des Loges, 1870, *P. (E.) tinauti* Alonso-Zarazaga, 2013, *P. (Eustolus)*

interstitialis Perris, 1864, *P. (Leucodrusus) clermonti* Pic, 1919, *P. (L.) senex* Chevrolat, 1866, *P. (Metallites) lusitanicus* (Chevrolat, 1880), and *P. (Rhinocoetus) desbrochersi* (Stierlin, 1884) (Alonso-Zarazaga *et al.*, 2023). Regarding their geographical distribution within the Iberian peninsula, most of the endemic *Polydrusus* species are restricted to specific geographical areas. The beetles feed on the leaves, shoots and flowers of various trees, shrubs, and herbaceous plants, being polyphagous, oligophagous, or even monophagous (Hoffmann, 1950; Dieckmann, 1980).

Polydrusus (Polydrusus) sparsus is a small species with a body length of 3.2–4.3 mm (Fig. 1) and is easily distinguishable from other *Polydrusus* by its general appearance and the characteristic scales covering the elytra (see Hoffmann, 1950; Dieckmann, 1980). In addition, the structure of the penis of a specimen from the locality of Casalarreina is illustrated in Fig. 2 to aid identification.

In the framework of the study of the Coleoptera Curculionoidea of the Iberian Peninsula, this interesting species was recently found by the authors on the banks of the Oja River as it passes through the village of Casalarreina (Fig. 3), which is located in the Oja River valley in the northwest of the Autonomous Community of La Rioja (Spain). All 35 specimens studied are deposited in the authors' collection (Agurain/Salvatierra) and in the entomology collection of the Museo Nacional de Ciencias Naturales (MNCN-CSIC, Madrid). Specimens have been determined using the keys in Hoffmann (1950) and Dieckmann (1980).

MATERIAL STUDIED: SPAIN: La Rioja Autonomous Community: 5 exs., Casalarreina, río Oja, 42°33'10" N, 2°54'43" W, 498 m a.s.l., 2-X-2023, on leaves of *Alnus glutinosa* (L.) Gaertn. in a Mediterranean alder-willow grove-mixed riparian forest, I. Ugarte San Vicente and F. Salgueira Cerezo leg. and col.; 10 exs., ditto, 3-X-2023, I. Ugarte San Vicente and F. Salgueira Cerezo leg. and col.; 6 exs., ditto, MNCN_Ent 432804 to MNCN_Ent 432809; 14 exs., ditto, 23-V-2024, I. Ugarte San Vicente and F. Salgueira Cerezo leg. and col.; 6 exs., ditto, MNCN_Ent 432798 to MNCN_Ent 432803. (Note: the specimens belong to both sexes).



Fig. 1. Habitus of *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 (♂) from Casalarreina, Oja River (La Rioja). Scale bar: 1 mm.



Fig. 2. Penis of *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 (♂) from Casalarreina, Oja River (La Rioja). Scale bar: 0.5 mm.

Fig. 1. Habitus de *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 (♂) de Casalarreina, río Oja (La Rioja). Escala: 1 mm.

Fig. 2. Pene de *Polydrusus (Polydrusus) sparsus* Gyllenhal, 1834 (♂) de Casalarreina, río Oja (La Rioja). Barra de escala: 0,5 mm.

HABITAT OF *POLYDRUSUS* (*P.*) *SPARSUS* IN CASALARREINA

The habitat of *Polydrusus* (*Polydrusus*) *sparsus* in Casalarreina (La Rioja) is a relatively well-preserved mixed riparian gallery hygrophilous forest (Fig. 4), characterized by mature riparian Mediterranean alder-willow forest with numerous large alders (*Alnus glutinosa*), accompanied by various species of willows (*Salix fragilis* L., *S. eleagnos* Scop., *S. atrocinerea* Brot., *S. alba* L.) and other tree species such as poplars (*Populus nigra* L., *P. x canadensis* Moench), ash (*Fraxinus excelsior* L.), hazel (*Corylus avellana* L.), maples (*Acer campestre* L.), elms (*Ulmus minor* Miller), elderberries (*Sambucus nigra* L.), brambles (*Rubus ulmifolius* Schott), among others. In the herbaceous stratum of the undergrowth, various ruderal-nitrophilous herbaceous plants such as *Urtica dioica* L., *Geranium pyrenaicum* Burm. fil., *G. robertianum* L. subsp. *robertianum*, *Silene latifolia* subsp. *alba* (Miller) Greuter & Burdet, *Angelica sylvestris* L., *Arun italicum* Miller, *Rumex crispus* L., *Chelidonium majus* L., *Plantago lanceolata* L., *Stellaria media* (L.) Vill., *Veronica persica* Poiret, were found. In addition, hops (*Humulus lupulus* L.) and ivy (*Hedera helix* L.) grow perched on various trees. The surroundings of the riparian forest include plantations of poplars (*Populus x canadensis*).

The good conservation status of the riparian forest and as well as its alder-willow grove along a good stretch of the Oja River may explain the presence of this interesting species. Its discovery in this village in the north of La Rioja suggests that the species could also be found in other similar riparian forests with well-preserved alder groves in the northern third of the Iberian Peninsula, for example, in the Basque Country and Navarre. However, the lack of additional data precludes finer assessment of the distribution and status of this weevil in Spain. On the other hand, many alder riparian forests in the province of Araba/Álava (Basque Country) were massively altered or destroyed years ago, by cleaning and widening of riverbeds (Aseginolaza *et al.*, 1985). These activities may have contributed to the apparent extinction of this weevil from other heavily altered alder riparian forests in the north of the Iberian Peninsula. Similarly, in La Rioja the poplar-alder-willow riparian forests in areas influenced by human activities have also suffered a drastic transformation, and currently only fragments remain scattered

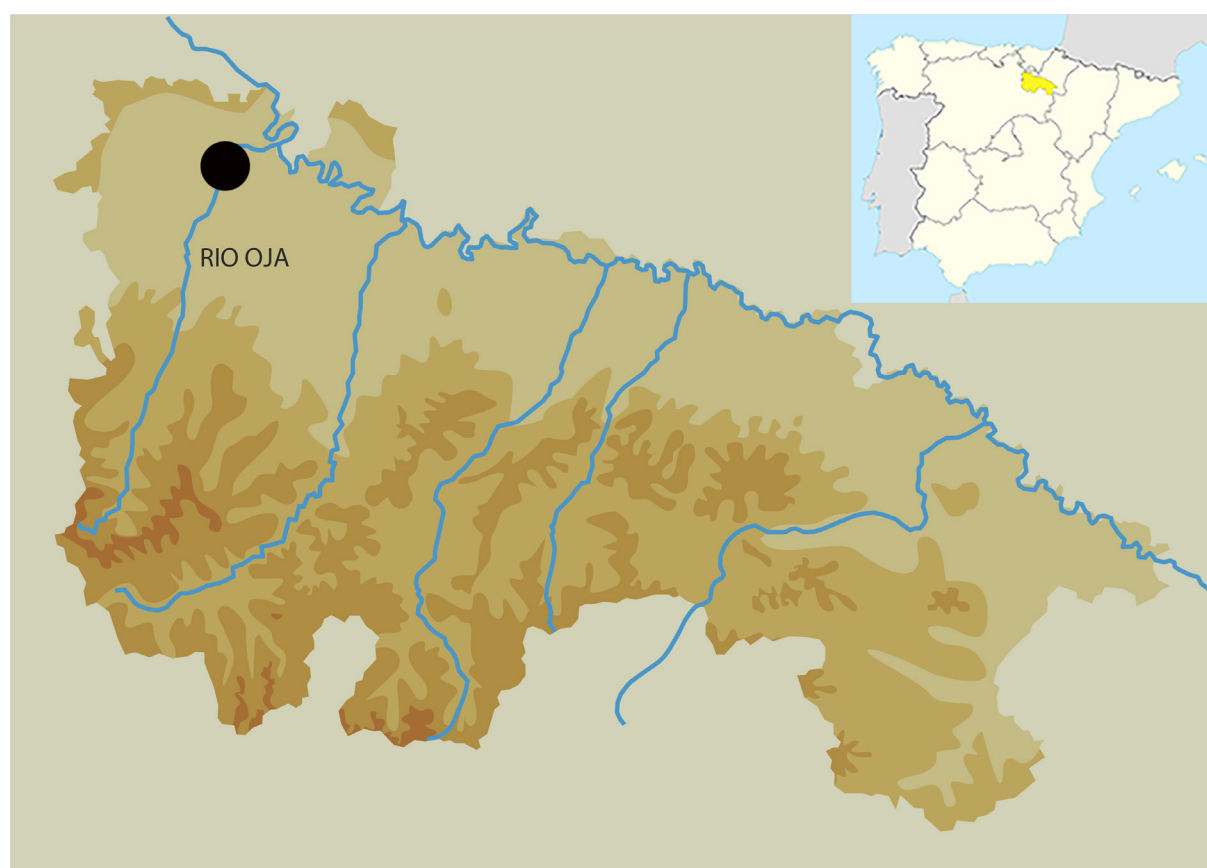


Fig. 3. Geographic location of habitat of *Polydrusus* (*Polydrusus*) *sparsus* in Casalarreina (La Rioja) and the province of La Rioja in the Iberian Peninsula.

Fig. 3. Localización geográfica del hábitat de *Polydrusus* (*Polydrusus*) *sparsus* en Casalarreina (La Rioja) y la provincia de La Rioja en la Península Ibérica.

throughout the hydrographic network of La Rioja. Therefore, *Polydrusus (P.) sparsus* could be considered as a relict species that once was more widely distributed in the virgin alder riparian forests of the Iberian Peninsula.

BIOLOGICAL AND ECOLOGICAL DATA

Polydrusus (P.) sparsus is a phytophagous defoliating species that is closely associated with alder (*Alnus glutinosa*), but has also been found in various willow species (*Salix fragilis*, *S. viminalis* L.) and even in Rosaceae (Hoffmann, 1950; Dieckmann, 1980; Abbazzi & Maggini, 2009), although the latter host plants are not seriously considered as food plants (Germann & Chittaro, 2019). Adults appear from April to November and overwinter in the adult state under mosses (Hoffmann, 1950), or according to Dieckmann (1980), are active from May to September (data taken from Schilsky, 1910). The larvae, like the rest of Entiminae, most likely feed on plant roots. Ecologically, the species is therefore associated with humid and cool environments, such as riverbanks, wetlands, marshes (Dieckmann, 1980; Abbazzi & Maggini 2009; Tronquet, 2014), or even peat bogs (Germann & Chittaro, 2019).

DISTRIBUTION

Polydrusus (P.) sparsus is a European species distributed in Germany, Austria, Bosnia Herzegovina, Bulgaria, Croatia, France, Greece, Hungary, Italy, Macedonia, Romania, Switzerland, and Turkey (Alonso-Zarazaga *et al.*, 2023). In some of these countries, it is considered a rare or very scarce species, with few records. For example, in Belgium it is only known from one record (Palm, 1996), and in Germany from an old record from Hesse (Heyden, 1904) and from the south of the Palatinate (Benisch, 2010; Rheinheimer & Hassler, 2010). In Switzerland *Polydrusus (P.) sparsus* was recently documented at a single locality in the canton of Ticino (Germann & Chittaro, 2019). This study compiles several old records as well, most of them from the same canton of Ticino, except for an isolated record from the canton of Geneva (Germann & Chittaro, 2019). In France, on the other hand, Hoffmann (1950) indicated that the species is found in almost the entire country, although it is rarer in the north. In Italy *Polydrusus (P.) sparsus* is distributed throughout all regions (Abbazzi &



Fig. 4. Habitat of *Polydrusus (Polydrusus) sparsus* in Casalarreina (La Rioja) with the mixed riparian gallery forest characterized by mediterranean alder-willow riparian forest with large alders on the banks (*Alnus glutinosa*).

Fig. 4. Hábitat de *Polydrusus (Polydrusus) sparsus* en Casalarreina (La Rioja) con el bosque de galería ribereño mixto caracterizado por bosque ribereño mediterráneo de aliso y sauce con grandes alisos en las riberas (*Alnus glutinosa*).

Maggini, 2009). The discovery of this species in the Iberian Peninsula constitutes the westernmost European record so far.

CONSERVATION

The riparian forest and the alder-willow riparian hygrophilous forest of the Oja River valley stretch as it passes through the village of Casalarreina should be strictly conserved to preserve the rich faunal diversity it contains, as evidenced by the discovery of this interesting weevil and the presence of other equally interesting species of insects. Any management action in this area should be supervised by the competent authorities, protecting these ancient and valuable alder-willow riparian forests.

Declaration of competing interest

The authors of this article declare that they have no financial, professional or personal conflicts of interest that could have inappropriately influenced this work.

Authorship contribution statement

Iñigo Ugarte San Vicente: Conceptualization, Data curation, Investigation, Methodology, Project administration, Writing - original draft - review & editing.

Fernando Salgueira Cerezo: Data curation, Investigation, Methodology, Writing - original draft - review & editing.

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