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Notas / *Notes*

Contribution to the knowledge of the Iberian distribution of *Acentrus histrio* (Schoenherr, 1837) (Coleoptera, Curculionidae, Acentrusini)

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ABSTRACT

New records of *Acentrus histrio* (Schoenherr, 1837) are given for the Iberian Peninsula, where it has been very scarcely recorded to date. With the new records, its Iberian known distribution area is considerably expanded to the province of La Rioja, whose record is the northernmost. Taxonomic, biological, distributional and conservational data are discussed.

Keywords: Coleoptera; Curculionidae; *Acentrus histrio*; new records; Iberian Peninsula.

RESUMEN

Contribución al conocimiento de la distribución ibérica de *Acentrus histrio* (Schoenherr, 1837) (Coleoptera, Curculionidae, Acentrusini)

Se aportan nuevas citas de *Acentrus histrio* (Schoenherr, 1837) para la Península Ibérica, donde hasta la fecha ha sido muy escasamente registrada. Con las nuevas citas se amplía considerablemente su área de distribución ibérica conocida hasta la provincia de La Rioja, cuya cita es la más septentrional. Se comentan datos taxonómicos, biológicos, de distribución y conservación.

Palabras clave: Coleoptera; Curculionidae; *Acentrus histrio*; nuevas citas; Península Ibérica.

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The genus *Acentrus* Desmarest, 1839 (Curculionidae, Curculioninae, Acentrusini) (Alonso-Zarazaga *et al.*, 2021) is represented by its type species *Acentrus histrio* (Schoenherr, 1837) and two additional species: *A. boroveci* Košťál, 2014 and *A. zarathustra* Košťál, 2014, that were recently described from Uzbekistan and Iran, respectively (Košťál, 2014). *Acentrus histrio* is morphologically distinct and easily differentiable from other European species of Curculionidae (Fig. 1), particularly because it has the entire body (including the legs) densely covered with rounded white, ochre and brown scales, which compose variable patterns (Hoffmann, 1958). *Acentrus histrio* is also clearly differentiable from the other species of the genus based on additional external and internal characters (Košťál, 2014).

The genus was previously included in the tribe Acentrini Seidlitz, 1890, until it was deemed invalid by Alonso-Zarazaga (2005), who described the new tribe Acentrusini Alonso-Zarazaga, 2005, arguing that its type genus, *Acentrus* Schoenherr, 1845, is both homonymous and synonymous with *Acentrus*

Fig. 1.– *Acentrus histrio* specimens preserved in the entomology collection of the MNCN (CSIC, Madrid) (MNCN_Ent 269996 to MNCN_Ent 269999).

Fig. 1.– Ejemplares de *Acentrus histrio* conservados en la colección de entomología del MNCN (CSIC, Madrid) (MNCN_Ent 269996 al MNCN_Ent 269999).

Desmarest, 1839. Alonso-Zarazaga (2005) also suspected that Acentrusini is most closely related to Styphlini Jekel, 1861 although this hypothesis was only partially confirmed by the phylogenetic and multi-dimensional phenetic analysis given in Košťál & Vďačný (2018). The most recent phylogenetic study concluded that the tribe Smicronychini Seidlitz, 1891 is most closely related to the Acentrusini tribe (Košťál & Vd'ačný, 2018).

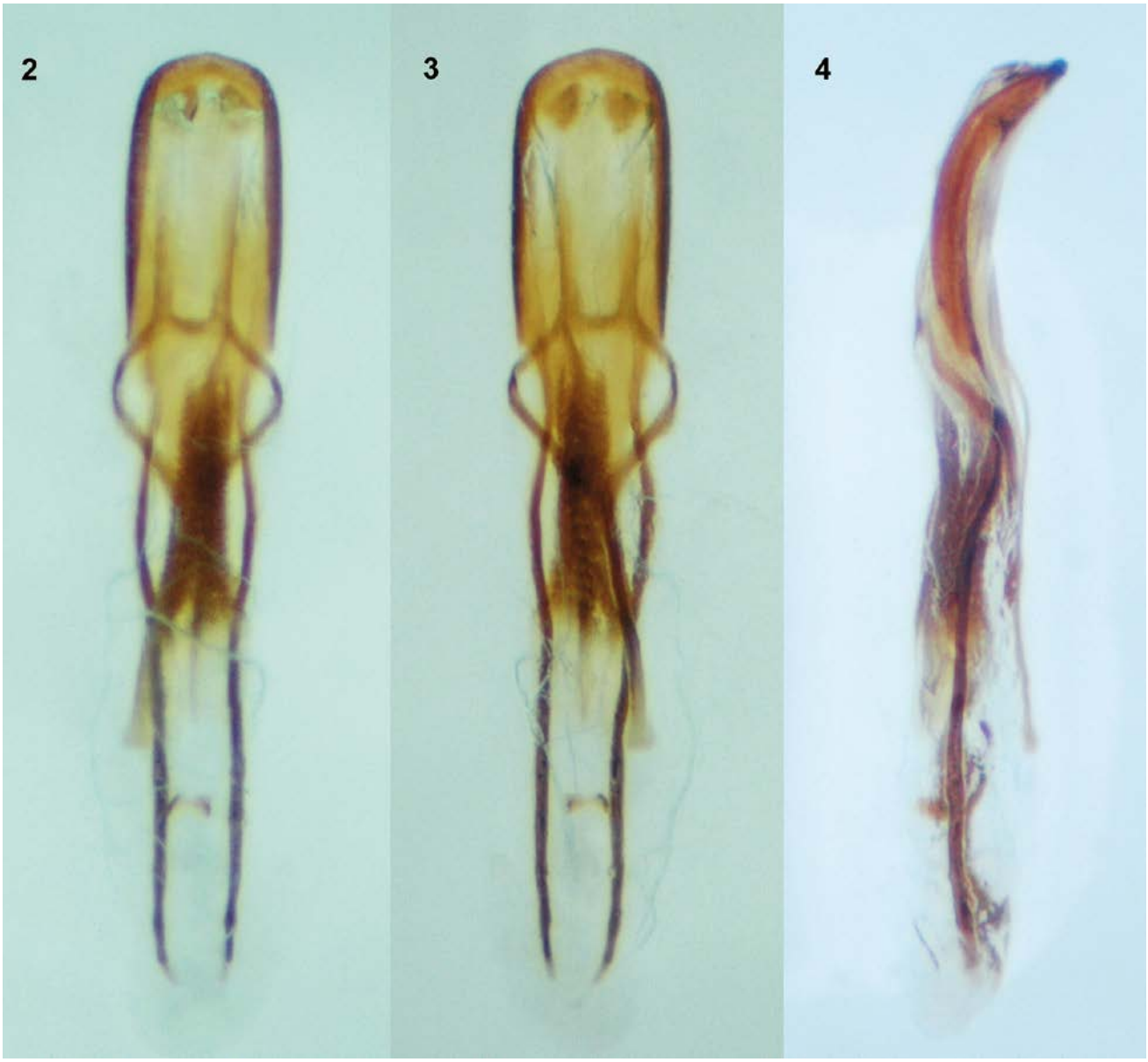
In the framework of the study of the Coleoptera Curculionoidea of the Iberian Peninsula, this species was found by the authors in new locations that are detailed in the following section. All the material available from the general entomology collection and from the Alonso-Zarazaga collection deposited in the National Museum of Natural Sciences (MNCN-CSIC, Madrid) was also studied. The specimens were studied using the keys in Košťál (2014); the penis structure of one specimen of Murillo de Río Leza (La Rioja) is illustrated in Figs. 2-4

MATERIAL STUDIED: [SPAIN]: Almería: 10 exs., Los Genoveses, Cabo de Gata, 29-II-83, M. A. Alonso-Zarazaga leg. ex Col. Alonso-Zarazaga, MNCN_Ent 270008 to 270017; **2 exs.,** El Genovés, Cabo de Gata, 25-IV-1992, Alonso-Z. & Sánchez-R. leg. Proyecto Fauna Ibérica, MNCN_Ent 270004 to 270005. B**arcelona: 1 ex.**, Can Tunis, X-62, J. Ribes. Ex. Col. M. González leg., MNCN_Ent 270022; **2 exs.**, Catalonia, Casa Antunez, 7-59, M. González leg. Ex. Col. M. González leg., MNCN_Ent 270019 to 270020. G**erona: 1 ex.**, Catalonia, San Feliu, 30-5-54, M. González leg. Ex. Col. M. González, MNCN_Ent 270018. **Islas Baleares (Menorca)**: **1 ex.**, Son Bou, 5-X-62, F. Español leg. Ex. Col. M. González, MNCN_Ent 270021; **3 exs.** (on a pin), Menorca, [Lauffer], *Acentrus histrio* [Lauffer manuscript], MNCN_Ent 269996; **8 exs.** (on a pin), Menorca, sin datos. Cardona!, *Ac. histrio* Fald., MNCN_Ent 270003. **La Rioja**: **9 exs.**, Murillo de Rio Leza, N 42º24 'W 02º19', 490-493 m a.s.l., 6-VI-2015, sobre *Glaucium corniculatum* (L.) Curtis, I. Ugarte San Vicente and F. Salgueira Cerezo leg. & Col. M**adrid**: **1 ex.,** Madrid!, Col. of Mr. Pérez Arcas, *Ac. histrio* Fald., MNCN_Ent 269999; **6 exs.** (on a pin), Aranjuez!, Col. of Mr. Pérez Arcas, *Ac histrio* Fald., MNCN_Ent 270002; **1 ex.**, Montarco, 11/5 99, [Lauffer], MNCN_Ent 269998; **1 ex.**, Montarco, Bolivar leg., MNCN_Ent 270000; **1 ex.**, Montarco, Arias leg., MNCN_Ent_270001. M**urcia**: **1 ex.**, Portman, 26-IV-1992, Alonso-Z & Sánchez-R leg. Proyecto Fauna Ibérica, MNCN_Ent 270006. **Zaragoza**: **11 exs**., Los Monegros, N-II cerca de Bujaraloz, N 41º30' O 0º25', 269 m s.n.m., 30-V-2015, sobre *Glaucium corniculatum* (L.) Curtis., I. Ugarte San Vicente y F. Salgueira Cerezo leg. & Col. **Castilla-La Mancha**: **1 ex.,** Castilla La Nueva, V. J. Lauffer, MNCN_Ent 269997.

Biological and ecological data

The species of the genus complete their biological cycle in plants of the family Papaveraceae, recorded presently as monophagous on the genus *Glaucium* Mill. (Hustache, 1930; Hoffmann, 1958), although according to Košťál & Košťálová (2016) they could also develop in other genera of Papaveraceae. *Acentrus histrio* lives in *Glaucium flavum* Crantz, *G. corniculatum* (L.) Curtis (Hustache, 1930; Hoffmann, 1958), *G. grandiflorum* Boiss. & A. Huet, and *G. speciosum* Boiss. & A. Huet (Güçlü & Özbek, 2007; Gültekin *et al.*, 2021); *A. zarathustra* lives in *G. grandiflorum* (Košťál, 2014), and the biology of *A. boroveci* is unknown (Košťál, 2014). The larvae of *Acentrus histrio* develop in the roots and at the end of the stems of *G. flavum* and *G. corniculatum* (Hustache, 1930; Hoffmann, 1958), but the larvae also feed on seeds inside capsules of *G. grandiflorum* (Güçlü & Özbek, 2007; Gültekin *et al.*, 2021), later entering the soil to pupate (for more biological details see Gültekin *et al.*, 2021). In Spain the only existing biological mentions of *Acentrus histrio*, which was reported on *Glaucium luteum* Scop. (= *G. flavum*) and in the flower of the same plant, were given by Cuní y Martorell (1888, 1898).

According to the material studied from Spain, adults can be found throughout most of the year and



Figs 2-4.– *Acentrus histrio* of Murillo de Río Leza (La Rioja), male genitalia. 2. Penis, dorsal view. 3. Penis, ventral view. 4. Penis, lateral view.

Figs 2-4.– *Acentrus histrio* de Murillo de Río Leza (La Rioja), genitalia masculina. 2. Pene, vista dorsal. 3. Pene, vista ventral. 4. Pene, vista lateral.

in all seasons, having been found in the months of January, February, April, May, June, July, August and October. Adults are normally found on *Glaucium flavum* in coastal sandbanks or in boulevards near the coast (more rarely in inland habitats), and on *G. corniculatum* in dry inland Mediterranean habitats, rainfed crops, ruderal environments and steppe habitats. Occasionally it can be found sweeping on other plants as in Retuerta de Pina (Los Monegros). (Velázquez de Castro *et al.*, 2000).

The habitat of *Acentrus histrio* in Murillo de Río Leza (La Rioja) (Fig. 5), which is part of the Mesomediterranean bioclimatic floor, comprises sunny sub-arid hills on clay soils with gravel and boulders. The vegetation includes scrub-grassland with esparto grass (*Lygeum spartum* L.), several species of bushes such as *Artemisia herba-alba* Asso, *Santolina chamaecyparissus* L. subsp. *squarrosa* (DC.) Nyman, *Camphorosma monspeliaca* L., *Teucrium capitatum* L., *Centaurea aspera* L., *Ruta montana* (L.) L., and various ruderal-nitrophilic herbaceous plants such as *Glaucium corniculatum* (L.) Curtis, *Echinops ritro* L., *Carthamus lanatus* L., *Echium asperrimum* Lam., *Anacyclus clavatus* (Desf.) Pers., *Beta maritima* L., *Bituminaria bituminosa* (L.) Stirton, *Pallenis spinosa* (L.) Cass., *Papaver rhoeas* L., *Foeniculum vulgare* Miller, *Sedum sediforme* (Jacq.) Pau, and *Crepis* sp. Fortunately, this population is apparently not

Fig. 5.– Detail of the *Acentrus histrio* habitat in Murillo de Río Leza (La Rioja) with several flowering plants and also with fruits of *Glaucium corniculatum*.

Fig. 5.– Detalle del hábitat de *Acentrus histrio* en Murillo de Río Leza (La Rioja) con varias plantas en flor y frutos de *Glaucium corniculatum*.

endangered, in an isolated area with difficult access and not subject to continuous alterations or changes in land use.

Distribution

Mediterranean and western Asian species distributed in southern and eastern Europe (Bulgaria, Croatia, Spain (Mediterranean), southern France (also in Corsica), Greece, Italy (also in Sardinia and Sicily), Romania, Russia (south European territory), southern Ukraine, northern Africa (Morocco, Tunisia), Caucasus (Armenia) to Western Asia (Iran, Israel, Syria and Turkey) (Alonso-Zarazaga *et al.*, 2021). Recently it has also been cited from Azerbaijan and Georgia (Gültekin *et al.*, 2021).

In the Iberian Peninsula it has been previously cited from the provinces of Barcelona: Pueblo Nuevo, Badalona (Cuní y Martorell, 1888), Calella (Cuní y Martorell, 1898); Madrid: Aranjuez (Iglesias Iglesias, 1922); Zaragoza: Retuerta de Pina, Pina de Ebro (Velázquez de Castro *et al.*, 2000), as well as from the islands of Mallorca: Palma (Moragues, 1889; Tenenbaum, 1915), Inca (Tenenbaum, 1915), Pollensa (Sietti, 1932), and Menorca (Cardona y Órfila, 1875). There are also general records from the Balearic Islands (Estelrich *et al.*, 1885) and Spain (Košťál, 2014). It has also been cited from the province of Huelva, representing the westernmost locality in the Iberian Peninsula: 1 ex. (identified from a photograph), Huelva, 01/04/2011, on a daisy, between a crop field and a cemetery, near a road (5 m), Mario Guinea leg., Antonio J. Velázquez de Castro det. (data from the website www.biodiversidadvirtual.org/insectarium/Acentrus histrio).

Currently it is a rare and localized species in certain areas of the Iberian Peninsula (Fig. 6). The record of Murillo de Río Leza, in the Ebro valley, constitutes the northernmost record in Spain, considerably expanding its known distribution area from the locality of Retuerta de Pina (Velázquez de Castro *et al.*, 2000). On the other hand, it would not be surprising if new surveys revealed the species to be also present in the province of Nafarroa/Navarra, in similar steppe habitats (Bardenas Reales) as those occupied by the species in Los Monegros.

Notes on conservation

Based on its known distribution, *Acentrus histrio* must once have been a frequent and widely distributed species on the Levante coast (from Gerona to Almería) and Andalusia, probably also reaching the Portuguese Algarve coast, although it has never been recorded from Portugal. Its rarity in coastal areas may be associated with the progressive destruction of its habitats (mainly due to urban development) such as beaches, dunes, rubble, boulevards and cliffs where the sea poppy (*Glaucium flavum*) used to live. On the other hand, the species is also rare in the dry Mediterranean habitats of the interior of the peninsula, where its disappearance could also be due to habitat destruction and the continued use of herbicides that would have reduced the populations of *Glaucium corniculatum* on cultivable land (and its margins). Currently, the Iberian populations of the species are vulnerable to the destruction of their habitats by human activities. Therefore, this weevil should be protected in Spain and included in national and regional Red Lists of Invertebrates. Conservation measures should include the protection of the habitats where their host plants live as well as the reintroduction of its host plants in

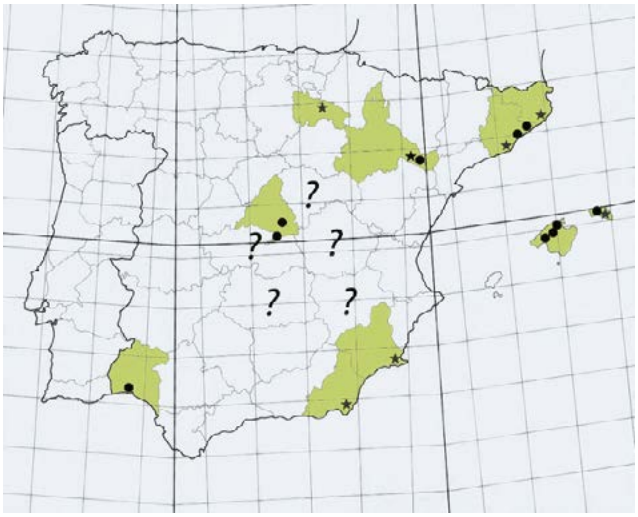


Fig. 6.– Known Iberian distribution of *Acentrus histrio* (circles: bibliographic records; stars: new records; question marks: indicate its presence in Castilla La Mancha (since there is no specific bibliographic locality).

Fig. 6.– Distribución ibérica conocida de *Acentrus histrio* (círculos: citas bibliográficas; estrellas: nuevos registros; interrogaciones: indican su presencia en Castilla La Mancha (por no existir una localidad bibliográfica concreta).

suitable coastal and inland habitats. In fact, there is an initiative of the Spanish Ministry of the Environment and Rural and Marine Affairs to preserve one of their habitats (see Toro *et al.*, 2009), which will undoubtedly benefit *A. histrio*. It is also essential to monitor the current state of conservation of its populations and conduct new surveys to detect additional populations.

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