

## DESCRIPTION OF *RHINUSA CHAENORHINI* SP. NOV. (CURCULIONIDAE, CURCULIONINAE) FROM SPAIN

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### ABSTRACT

*Rhinusa chaenorhini* sp. nov. is described from Spain from various localities distributed from north to south of the eastern half of the territory. The new species is clearly separable from all the other species of the genus mainly by the unusual shape of the rostrum, which is abruptly constricted from the antennal insertion to the apex, and the shape of the aedeagus.

**Keywords:** Coleoptera; Curculionidae; *Rhinusa*; new species; Spain.

### RESUMEN

#### Descripción de *Rhinusa chaenorhini* sp. nov. (Curculionidae, Curculioninae) de España

Se describe *Rhinusa chaenorhini* sp. nov. de varias localidades de España distribuidas de norte a sur de la mitad oriental del territorio. La nueva especie es claramente diferenciable de todas las especies del género principalmente por la inusual forma del rostro, el cual esta abruptamente constreñido desde la inserción antenal hasta el ápice, y por la forma del edeago.

**Palabras clave:** Coleoptera; Curculionidae; *Rhinusa*; nueva especie; España.

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### Introduction

During recent field collections in Spain, several specimens of the weevil genus *Rhinusa* Stephens, 1829 (Curculioninae, Meciniini) – which includes about 50 Palaeartic species (Caldara *et al.* 2010; Alonso-Zarazaga *et al.* 2023) – were collected on plants of the genus *Chaenorhinum* (DC.) Rchb. (Plantaginaceae). After a careful study we realised that they belong to a new species, which is described herein.

### Material and methods

Measurements of the specimens were taken as follows: body length, from the apex of head to the apex of elytra; rostrum length (Rl), from its base to its apex excluding mandibles; pronotal length (Pl), from its anterior to its posterior margins; pronotal width (Pw), at its widest point; elytral length (El), from the basal margin of the scutellum to the elytral apex; elytral width (Ew), at its widest point.

Pictures of adults were taken using a stereoscopic microscope Kyowa Optical SDZ-TR-P.

The locality data are given using the original spelling, as written on labels. The name of the provinces are reported in alphabetical order.

Abbreviations of the type depositories: IUPC: Iñigo Ugarte San Vicente, private collection, Agurain/Salvatierra, Spain; JKPC: Jiří Krátký private collection, Hradec Králové, Czech Republic; JSPC: Jiří Skuhrovec private collection, Prague, Czech Republic; MNCN: Museo Nacional de Ciencias Naturales (CSIC), Madrid, Spain; RCPC: Roberto Caldara private collection, Milan, Italy.

## Results

### *Rhinusa chaenorhini* sp. nov.

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Figs. 1–18

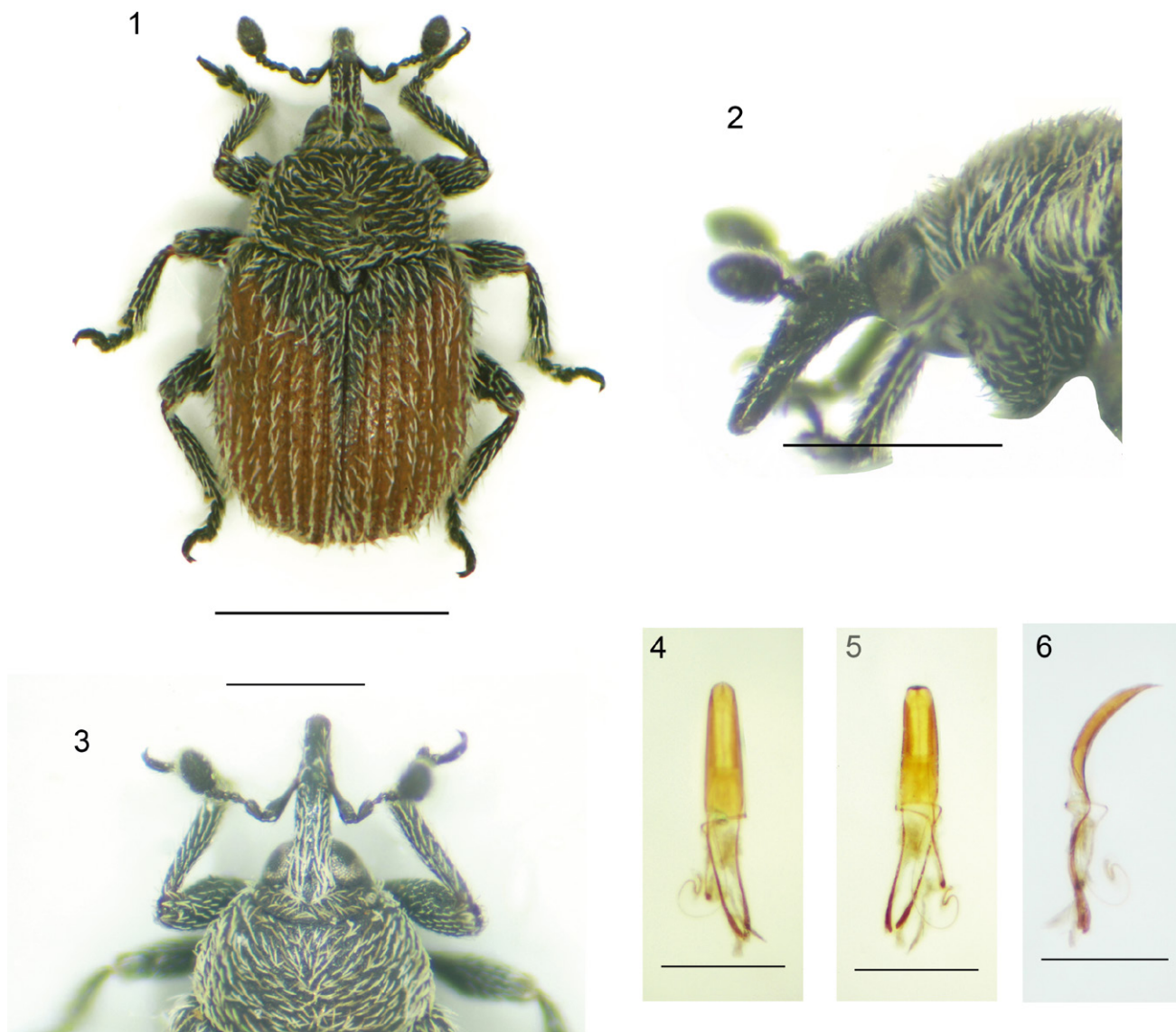
**TYPE MATERIAL.** **Holotype:** ♂, ESPAÑA: Comunidad Valenciana, Valencia, Xàtiva/Játiva, castillo, 2-V-2012, N 38°59'03", W 00°31'09", 302 m s.n.m., 2-V-2012, en flores de *Chaenorhinum origanifolium* (L.) Kostel. subsp. *crassifolium* (Cav.) Rivas Goday & Borja en paredes del castillo, I. Ugarte y F. Salgueira leg. (MNCN\_Ent 363005).

**Paratypes:** 13 ♂♂ and 10 ♀♀, same data as holotype (MNCN\_Ent 363006 to MNCN\_Ent 363010; IUPC, RCPC). – **ESPAÑA:** **Álava/Araba (País Vasco):** 3 ♀♀, Onraitia, Montes de Iturrieta, Monte Atxuri, N 42°48'14", W 02°22'22", 1059 m s.n.m., 28-V-2015, pasto petrano calcícola, en flores de *Chaenorhinum origanifolium* (L.) Kostel., I. Ugarte San Vicente leg. (IUPC). – 2 ♂♂, Kontrasta (Valle de Arana), N 42°46'13", W 02°17'45", 823 m s.n.m., 11-VI-2016, en flores de *Chaenorhinum origanifolium* (L.) Kostel. en pared caliza, I. Ugarte San Vicente leg. (RCPC). – 2 ♂♂, Kontrasta, same data, 27-VI-2018, I. Ugarte San Vicente leg. (IUPC). – 2 ♀♀, Kontrasta, 20-VI-2021, same data, I. Ugarte San Vicente leg. (IUPC). – **Albacete (Castilla-La Mancha):** 2 ♀♀, Prov. Castilla La Mancha [sic!], Albacete - 1.5 km S of Nerpio, N 38°07'58", W 2°18'34", 1. vi.2011, J. Skuhrovec & Š. Skuhrovcová (9) (JSPC). – **Granada (Andalucía):** 1 ♀, E-Andalucía, Granada, Sierra Nevada, 1956 M [sic!], N 37°06'41.4", W 03°25'48.9", 10.6.2012, J. Krátký leg., (JKPC). – 1 ♂, E-Andalucía, Sierra Chaparral, 1098 m s.n.m., N 36°51'13.7", W 3°42'16.82", 8.6.2012, J. Krátký leg., (JKPC). – **Jaén (Andalucía):** 1 ♀, Hornos de Segura, alrededores del castillo, N 38°12'58", W 02°43'06", 867 m s.n.m., 13-V-2011, en flores de *Chaenorhinum villosum* (L.) Lange en pared de casa, I. Ugarte y F. Salgueira leg. (IUPC). – **Soria (Castilla y León):** 1 ♂, Muriel de la Fuente, La Fuentona, 30TWM5146, 1025 m s.n.m., 26-V-2011, en *Chaenorhinum origanifolium* (L.) Kostel. en roquedos calizos, I. Ugarte y F. Salgueira leg. (IUPC). – 1 ♀, Berlanga de Duero, castillo, N 41°27'56", W 02°51'20", 966 m s.n.m., 25-VI-2011, I. Ugarte y F. Salgueira leg., en flores de *Chaenorhinum origanifolium* (L.) Kostel. en paredes calizas del castillo (IUPC). – 2 ♂♂, 3 ♀♀, Gormaz, castillo-fortaleza califal, N 41°29'36", W 03°00'28", 1025 m s.n.m., 2-VI-2019, sobre flores de *Chaenorhinum origanifolium* (L.) Kostel. fisurícolas en paredes del castillo, I. Ugarte y F. Salgueira leg. (IUPC, RCPC). – 2 ♀♀, El Burgo de Osma, castillo de Osma, N 41°34'43", W 03°04'48", 948 m s.n.m., 3-VI-2021, sobre flores de *Chaenorhinum*

*origanifolium* (L.) Kostel. fisurícola en paredes calizas del castillo, I. Ugarte y F. Salgueira leg. (IUPC).

## DESCRIPTION

**Male (holotype).** **Length:** 1.82 mm rostrum excluded. **Body:** oval, stout (Fig. 1). **Rostrum:** black, almost as long as pronotum (Rl/Pl 0.98); in lateral view almost straight, of same width from base to antennal insertion then abruptly constricted and distinctly narrow to apex (Fig. 2); in dorsal view with weakly divergent sides from base to antennal insertion, further subparallel-sided but distinctly narrow from antennal insertion to apex, with well visible scrobes, striate-punctate from base to antennal insertion then smooth and shining to apex, with broader median sulcus, in basal half with rather dense recumbent, moderately long, whitish scales (Fig. 3). **Head:** between eyes slightly wider than rostrum at base, with distinct fovea. Eyes moderately convex. Antennae dark brown, inserted at middle of rostrum; scape 4.0× longer than wide, funicle slightly longer than scape, with segment 1 1.5× longer than wide, stouter and 1.4× longer than segment 2, which is 1.3× longer than wide, segments 3-5 weakly transverse; club oval, with all segments densely pubescent. **Pronotum:** black, with dense and regular punctures, poorly visible between moderately dense, recumbent to subrecumbent, seta-like, whitish scales; distinctly transverse (Pw/Pl 1.66), with rounded sides, moderately constricted at apex, widest in basal third, slightly convex. Scutellum subtriangular, pubescent with whitish hair-like scales. **Elytra:** reddish except base and anterior half of first interstria blackish; subrectangular, short (El/Ew 1.19); at base slightly concave, 1.30× as wide as pronotum, flattened on disc; interstriae visible between moderately dense, subrecumbent to suberect, seta-like, whitish scales, 1.20-1.50× as long as width of interstria and arranged in 2–3 irregular rows; striae well visible, half as wide as interstriae, with a row of whitish scales shorter and narrower than those on interstriae. **Legs:** with sparse recumbent to suberect greyish scales shorter than width of tibia; femora black, with small sharp tooth; tibiae black, with small unci all similar in size; tarsi dark brown, with tarsomere 1 twice longer than wide, tarsomere 2 1.3× longer than wide, tarsomere 3 bilobed and distinctly wider than tarsomere 2, onychium slightly shorter than tarsomeres 1–3 taken together; claws dark brown, equal in length. Abdomen black, with dense and regular punctures, rather visible between moderately dense recumbent to subrecumbent seta-like whitish scales; ratio in length ventrites 1+2/3+4 2.18, first ventrite markedly depressed in the middle. **Penis:** body of penis long (l/w 3.38), distinctly narrowing from base to apex, with acute tip, with a narrow more sclerotized longitudinal median ventral carina, apodemes slightly shorter than body and in lateral view on same ideal plane joining base and apex of median lobe (Figs. 4-6).



Figs 1–6.– *Rhinusa chaenorhini* sp. nov., holotype, ♂ (Xátiva/Játiva, castillo). Scale bar: 1 mm. **1.** Habitus. **2.** Rostrum in lateral view. **3.** Rostrum in dorsal view. **4.** Penis in dorsal view. **5.** Penis in ventral view. **6.** Penis in lateral view. Scale bars: 1 = 1 mm; 2-6 = 0.5 mm.

Figs 1–6.– *Rhinusa chaenorhini* sp. nov., holotype, ♂ (Xátiva/Játiva, castillo). **1.** Habitus. **2.** Rostro en vista lateral. **3.** Rostro en vista dorsal. **4.** Pene en vista dorsal. **5.** Pene en vista ventral. **6.** Pene en vista lateral. Escalas: 1 = 1 mm; 2-6 = 0.5 mm.

*Female* (Fig. 7). Rostrum distinctly longer (Rl/Pl 2.06-2.44), more abruptly constricted at antennal insertion (Figs. 8, 9), unci especially of metatibiae smaller. **Spiculum ventrale:** arms distinctly spaced each other, apodeme as long as arms (Figs. 10, 11). **Spermatheca:** ramus and nodulus well-developed, ramus shorter than collum (Figs. 12, 13). First ventrite convex, not markedly depressed in the middle as in the male (Fig. 14).

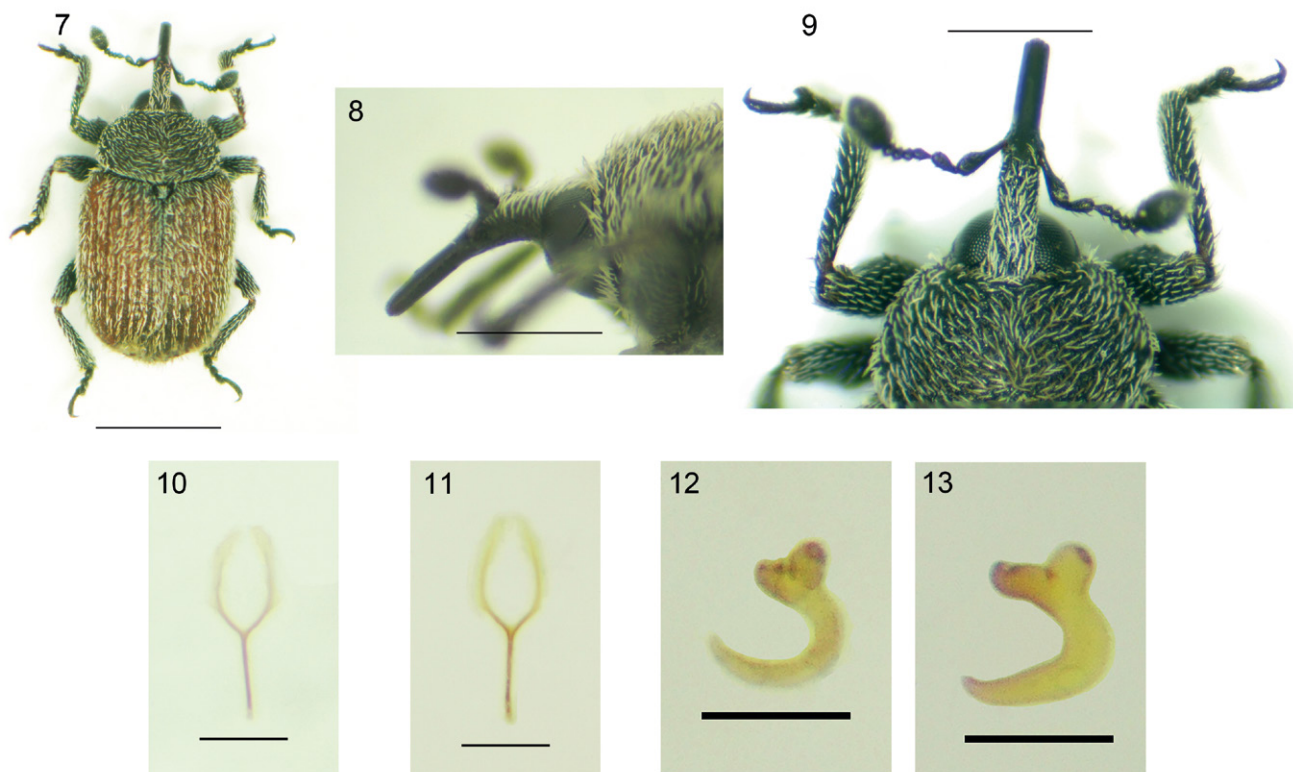
**VARIABILITY.** Body length 1.50-1.95 mm (male), 1.55-2.20 mm (female). Rostrum length 0.42-0.51 mm (male), 0.44-0.64 mm (female). Apart from the body length the variability of the paratypes is poor also between populations collected in distant localities. Sometimes the elytral sides are weakly convergent

from base to apex and weakly rounded. The penis is also similar in the other populations (Figs. 15-17).

**ETYMOLOGY.** The name is a Latin genitive, invariable, which refers to the genus of the host plant, i.e., *Chaenorhinum*.

**REMARKS.** This taxon can be clearly separable from all the other species of the genus by the unusual shape of the rostrum, which is abruptly constricted at the antennal insertion and further subtle, smooth and shining to the apex, especially in the female, and by the elongate body of the penis distinctly narrowing from base to apex. These two characters are the most important for distinguishing *R. chaenorhini* from *R. melas*, which is similar in the shape of the body and sometimes in the reddish color of the elytra (known to be variable in *R. melas* from





Figs. 7–13.– *Rhinusa chaenorhini* sp. nov. **7–9.** Paratype, ♀ (Gormaz, castillo). **7.** Habitus. **8.** Rostrum in lateral view. **9.** Rostrum in dorsal view. **10, 12.** Paratype, ♀ (Xátiva/Játiva, castillo). **11, 13.** Paratype, ♀ (El Burgo de Osma, castillo). **10–11.** Spiculum ventrale. **12–13.** Spermatheca. Scale bars: 7 = 1 mm; 8–9 = 0.5. mm; 10–11 = 0.2 mm; 12–13 = 0.11 mm.

Figs. 7–13.– *Rhinusa chaenorhini* sp. nov. **7–9.** Paratipo, ♀ (Gormaz, castillo). **7.** Habitus. **8.** Rostro en vista lateral. **9.** Rostro en vista dorsal. **10, 12.** Paratipo, ♀ (Xátiva/Játiva, castillo). **11, 13.** Paratipo, ♀ (El Burgo de Osma, castillo). **10–11.** Espículo ventral. **12–13.** Espermateca. Escalas: 7 = 1 mm; 8–9 = 0.5. mm; 10–11 = 0.2 mm; 12–13 = 0.11 mm.



Figs. 14–17.– *Rhinusa chaenorhini* sp. nov., paratype, ♂ (Xátiva/Játiva, castillo). **14.** Ventral side. **15–17.** Paratype, ♂ (Gormaz, castillo), penis. **15.** Dorsal view. **16.** Ventral view. **17.** Lateral view, Scale bars = 1 mm.

Figs. 14–17.– *Rhinusa chaenorhini* sp. nov., paratipo, ♂ (Xátiva/Játiva, castillo). **14.** Zona ventral. **15–17.** Paratipo, ♂ (Gormaz, castillo), pene. **15.** Vista dorsal. **16.** Vista ventral. **17.** Vista lateral. Escalas = 1 mm.

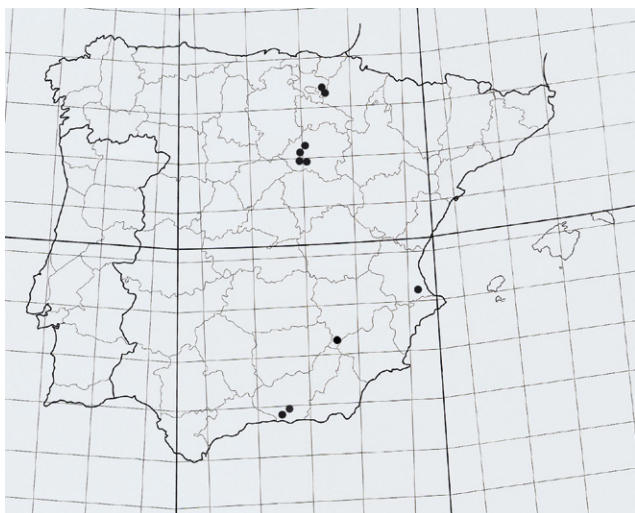


Fig. 18.– Known distribution of *Rhinusa chaenorhini* sp. nov. in Spain.

Fig. 18.– Distribución conocida de *Rhinusa chaenorhini* sp. nov. en España.

reddish to black) and which is the unique other species of *Rhinusa* living on *Chaenorhinum*, usually *C. minus* (L.) Lange (Caldara & Toševski, 2019).

However, a preliminary molecular study (Toševski, pers com. 2021) has shown that *R. chaenorhini* seems to form a new group more closely related to the *R. vestita* and *R. neta* groups than to the *R. melas* group as intended by Caldara *et al.* (2010) and Caldara & Toševski (2019).

**BIOLOGICAL NOTES.** The new species develops on *Chaenorhinum organifolium* (L.) Kostel., *Ch. organifolium* (L.) Kostel subsp. *crassifolium* (Cav.) Rivas Goday & Borja and *Ch. villosum* (L.) Lange where larvae probably feed inside capsules. Adults are normally found on flowers or hidden inside them. The species appears from April to beginning of June.

**DISTRIBUTION.** The new species is widely distributed in Spain (Fig. 18) in mountain areas, from the subcantabrian regions of the Northeast zone (Araba/Álava), passing through the Duero Valley (Soria), eastern mediterranean area (Valencia) to the south reaching Castilla-La Mancha (Albacete), Andalusian Betic mountains (Jaén, Granada), but very probably is also present in other zones of the Cantabrian zone, Pyrenean area or Iberian System where its host plants live.

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