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Two new species of the genus *Cyrtonus* from Andalusia, southern Spain (Coleoptera: Chrysomelidae)

José Miguel Vela[1] & Gloria Bastazo[2]
[1]IFAPA, Centro de Churriana, Cortijo de la Cruz, s/n, 29140 Málaga, Spain, e-mail: josem.vela@juntadeandalucia.es
[2]Instituto de Enseñanza Secundaria Diego Gaitán, 29150 Almogía, Málaga, Spain.

Abstract. Two new species, *Cyrtonus cobosi* and *C. charidemi*, from Andalusia, southern Spain, are described. A key for the Andalusian *Cyrtonus* with rounded habitus is presented, and their male genitalia are figured. In conclusion, some host plants and distributional data are provided.

Key words: entomology, taxonomy, new species, Coleoptera, Chrysomelidae, Chrysomelinae, *Cyrtonus*, Spain.

INTRODUCTION

The genus *Cyrtonus* has orophilous preferences, nocturnal habits, a poorly known ecology and many morphological similarities. All these factors, combined with the age and vagueness of most original descriptions, result in that *Cyrtonus* can be said to be one of the leaf beetle genera whose taxonomy is most poorly known (Bastazo & Vela 1985; Warchałowski 2003; Gómez-Zurita et al. 2007). This genus presently includes 44 described species (Gómez-Zurita et al. 2007), although a number of them are now considered to be synonymous (Bastazo & Vela 1985; Warchalowski 2003).

Cobos (1954) recognized two species-groups in this genus. One is characterized by its shortened dorsal aspect and, in side view, by its uniformly curved aedeagus. The other group has an elongated dorsal aspect and, in side view, the aedeagus is straight in its basal ¾ and strongly curved near the apex. Gómez-Zurita et al. (2007) establish a length-width relationship for the form of the body with a threshold of 1.87 (males) and 1.90 (females) to separate both groups.

In the group with shortened habitus, COBOS (1954) recorded eight species in Andalusia (Southern Spain); of them, we currently recognize seven: *C. fairmairei* ROSENHAUER (including *C. conformis* FAIRMAIRE, see BASTAZO & VELA, 1985), *C. contractus* FAIRMAIRE, *C. almeriensis* COBOS, *C. plumbeus* FAIRMAIRE (including *C. plumbeus gadorensis* COBOS), the complex *C. arcasi* FAIRMAIRE (including *C. pardoi* COBOS), *C. cobosi* n. sp. and *C. charidemi* n. sp. Among the species with elongated habitus known from Andalusia are: *C. cylindricus* MARSEU and *C. minor* FAIRMAIRE (COBOS, 1954).

In this paper two new species with shortened habitus are described and a key is provided for the seven species in this group living in Andalusia; new data on host-plant relationships are also given.

TAXONOMY

Cyrtonus cobosi n. sp.

DIAGNOSIS

A *Cyrtonus* belonging to the group of shortened species with aedeagus regularly curved in side view (see COBOS 1954). It can be distinguished from the other Andalusian species of the group by its smaller size and by the form of the apex of the aedeagus in dorsal view (figures 8a, 9a).

DESCRIPTION

Length: males: 5.2-6.3 mm; females: 5.7-6.8 mm.

Coloration: dark green to brown (rarely), at times slightly polished; frequently with a silky aspect. Antennae and legs from dark to light brown. Sometimes first antennomere lighter than the rest. Femora and tibiae with a green or blackish metallic luster.

Body oboval, its length is 1.4-1.6 times its maximum width. Head width is 1.34-1.47 (♂♂, ♀♀) times interocular distance and 1.68-1.89 (♂♂), 1.73-1.90 (♀♀) times interantennal distance. Interocular distance is 1.23-1.31 (♂♂), 1.28-1.32 (♀♀) times interocular distance. Head with primary puncturation sparse and conspicuous, microgranulation moderately strong, giving a matt shine. Supraantennal callus well developed. Postocular furrow reaches the supraantennal callus. Coronal furrow well incised, each distal part divided in two branches which delimitate supraantennal callus. Fronto-clypeal line is straight.

Antennae comparatively longer in males than in females; their length is 0.73-0.89 (♂♂), 0.66-0.75 (♀♀) times the elytral length and 1.58-1.89 (♂♂), 1.45-1.70 (♀♀) times pronotal length. Length ratio of antennomeres is 18-10-13-9-9-9-10-10-11-12-19 (♂♂) and 18-10-13-10-10-9-10-10-11-12-21 (♀♀). Antennomeres VII to XI depressed.

Pronotum with weak puncturation. Near lateral sides there are groups of conspicuous punctures. Laterobasal emarginations composed by three incisions which determinate two teeth. Pronotum all around well margined, except basal emarginations. Pronotal width is 1.65-1.84 (♂♂, ♀♀) times pronotal length, measured along middle line and 1.86-1.96 (♂♂), 1.90-2.01 (♀♀) times cephalic width. Laterally slightly convergent and straight in basal middle; in apical middle they are strongly convergent and curved.

Prosternal keel, elevated between procoxae, has a longitudinal furrow except in its basal third. Puncturation of metasternum and ventral sternites regularly and sparsely marked.

Scutellum as an equilateral triangle, with few or no punctures among a dense micropuncturation.

Elytra 0.99-1.10 (♂♂), 1.06-1.10 (♀♀) times maximum width of body. Principal puncturation not very deep. Puncture rows I to IV and VIII-IX are regular. The rest is formed by punctures absolutely confused. Secondary puncturation composed by smaller punctures regularly spread. Bottom of the surface is covered by micropuncturation.

Protibia length is 1.00-1.15 (♂♂, ♀♀) times length of mesotibia. Besides, it is 1.26-1.46 (♂♂), 1.39-1.53 (♀♀) times length of protarsus. Protarsus length is 2.71-3.58 (♂♂), 2.67-3.00 (♀♀) times length of protarsomere I. This is elongated in females and larger in males; its length is 1.08-1.27 (♂♂), 1.40-1.67 (♀♀) times its width.

♂♂: penis in dorsal view as in figures 8a, 9a; in side view (figures 8b, 9b) it is moderately curved and pointed at apex.

Type series: Holotype (male) and 6 paratypes (2 males, 4 females) labelled: "HISPANIA, Málaga, Ojén, Sierra Blanca, Cerro La Zarina, 980m, 22.10.1989, Bastazo et Vela leg."; 1 paratype (female), labelled: "HISPANIA, Málaga, Alhaurín el Grande, Ardalejos, 400m, 10.05.1997, Bastazo et Vela leg."; 1 paratype (male) labelled: "HISPANIA, Málaga, Nerja, Barranco de Calaílla, 26.03.1994, Bastazo et Vela leg."; 36 paratypes (22 males, 14 females) labelled: "HISPANIA, Málaga, Sierra de Almijara, pista Cómpeta-Frigiliana, Puerto de Páez Blanca, 980m, 1.11.1988, Bastazo et Vela leg."; 2 paratypes (females) labelled: "HISPANIA, Málaga, Cómpeta, Puerto del Collado, 890m, 12.04.1998, Bastazo et Vela leg."; 18 paratypes (10 males, 8 females), labelled: "HISPANIA, Málaga, Cómpeta, Sierra de Almijara, Puerto del Collado, 890m, 12.04.1998, F. Fritzlar leg."**;** 10 paratypes (6 males, 4 females) labelled: "HISPANIA, Granada, Alhama, cara Norte de Sierra Tejeda, 1300m, 2.12.1990, Bastazo et Vela leg."; 12 paratypes (6 males, 6 females) labelled: "HISPANIA, Granada, Salobreña, Tajo de la Virgen, 20.03.1987, Garzón et Hódar leg."; 3 paratypes (2 males, 1 female) labelled: "HISPANIA, Granada, Salobreña, Tajo de la Virgen, 28.11.1987, J. Hódar leg."; 1 paratype (male) labelled: "HISPANIA, Granada, Salobreña, Azud de Vélez, 19.11.1987, J. M. Ávila leg.". Holotype and 3 paratypes are deposited in the National Museum of Natural Sciences (Madrid); the other in collections Beenen, Bezděk, Daccordi, Fritzlar, Kippenberg, Petitpierre, Warchałowski and authors'.

Ecology

All the specimens collected by the authors were found at the base of *Helichrysum serotinum serotinum* (DC.) Boiss. (Asteraceae), growing on disintegrated marble in limestone mountains.

Etymology

After the late Prof. Dr. Antonio Cobos, eminent specialist in Buprestidae, who also was a pioneer student of the genus *Cyrtonus*, as a sincere mark of respect and remembrance.

Cyrtonus charidemi n. sp.

Diagnosis

A *Cyrtonus* belonging to the group of shortened species with aedeagus regularly curved in side view (see Cobos 1954). It can be distinguished by its scutellum with curved sides and by the form of the apex of aedeagus in dorsal view (figs. 6a, 7a).

Description

Length: males: 6,7-7,1 mm; females: 7,2-8,3 mm.

Coloration: copperish green very dark with slight polish. Antennae reddish, slightly darker at apex. Legs reddish-brown, dark, without metallic lustre; tarsi paler.

Body oboval, its length is 1,42-1,55 times its maximum width. Head width is 1,57-1,63 (♂♂, ♀♀) times interocular distance and 1,85-1,98 (♂♂), 1,70-1,96 (♀♀) times interantennal distance. Interocular distance is 1,17-1,23 (♂♂), 1,07-1,25 (♀♀) times interantennal distance. Head densely and strongly punctured, mainly in anterior part of frons. Microgranulation not strong. Supraantennal callus well developed. Coronal furrow well incised, each distal part divided in two branches which delimitate the supraantennal callus; posterior branches joints supraocular furrow. Frontoclypeal line is almost straight.

Antennae comparatively longer in males that in females, it length is 0,67-0,70 (♂♂), 0,58-0,67 (♀♀) times elytral length and 1,29-1,37 (♂♂), 1,22-1,32 (♀♀) times pronotal length. Length ratio of antennomeres is: 20-10-15-10-9-9-10-11-11-12-21 (♂♂) and 20-11-16-10-10-9-11-11-12-13-22 (♀♀). Antennomeres VII to XI somewhat depressed.

Pronotum with very weak puncturation. Near lateral margins there are groupings of conspicuous punctures, strongest apically and basally. Laterobasal emarginations variably composed: they can show only one tooth marking two gaps or two main teeth marking three gaps. Pronotum all around well margined. Pronotal width is 1,56-1,64 (♂♂), 1,53-1,61 (♀♀) times pronotal length, measured along middle line and 1,94-2,04 (♂♀) times cephalic width. Laterally almost straight and curved inwards at apical third in males, and more regularly curved in females.

Prosternal keel, elevated between procoxae, with a broad depression well visible except in basal half. Puncturation of metasternum and abdominal sternites regular and sparsely marked.

Scutellum triangular, frequently curve-sided, sometimes raised, without or with a few punctures over a fine microgranulation.

Elytra 1,04-1,08 (♂♂), 1,03-1,12 (♀♀) times maximum body width. Principal puncturation not very deep. Puncture rows rather irregular, although can be easily detected at base. Secondary puncturation a little bit smaller, dense and regularly spread. Microgranulation is weak or very weak, letting the insect shine. Base of elytra weakly crenulated.

Protibia length is 0,98-1,05 (♂♂, ♀♀) times length of mesotibia. Besides, it is 1,35-1,41 (♂♂), 1,30-1,53 (♀♀) times length of protarsus. Protarsus length is 2,88-3,00

(♂♂), 2,69-3,19 (♀♀) times length of protarsomere I. This is elongated in females and larger in males; its length is 1,15-1,31 (♂♂), 1,33-1,60 (♀♀) times its width.

♂♂: penis in dorsal view as in figure 6a, 7a; in side view (figure 6b, 7b) it is moderately curved and pointed at apex.

Type series

Holotype (male) and 8 paratypes (2 males, 6 females) labelled: "HISPANIA, Almería, Níjar, Faro de Cabo de Gata, 25m, 18.03.1987, Bastazo et Vela leg.", 5 paratypes (females), labelled: "HISPANIA, Almería, Níjar, Los Escullos-Isleta, 5-10m, 28.02.1987, Bastazo et Vela leg.". Holotype and 1 paratype are deposited in the National Museum of Natural Sciences (Madrid); the other in collections Daccordi, Kippenberg, Petitpierre, Warchałowski and authors'.

Ecology

All the specimens were collected at the base of *Launaea lanifera* Pau (Asteraceae), growing next to the sea in volcanic soils, suggesting a possible trophic relation with that plant.

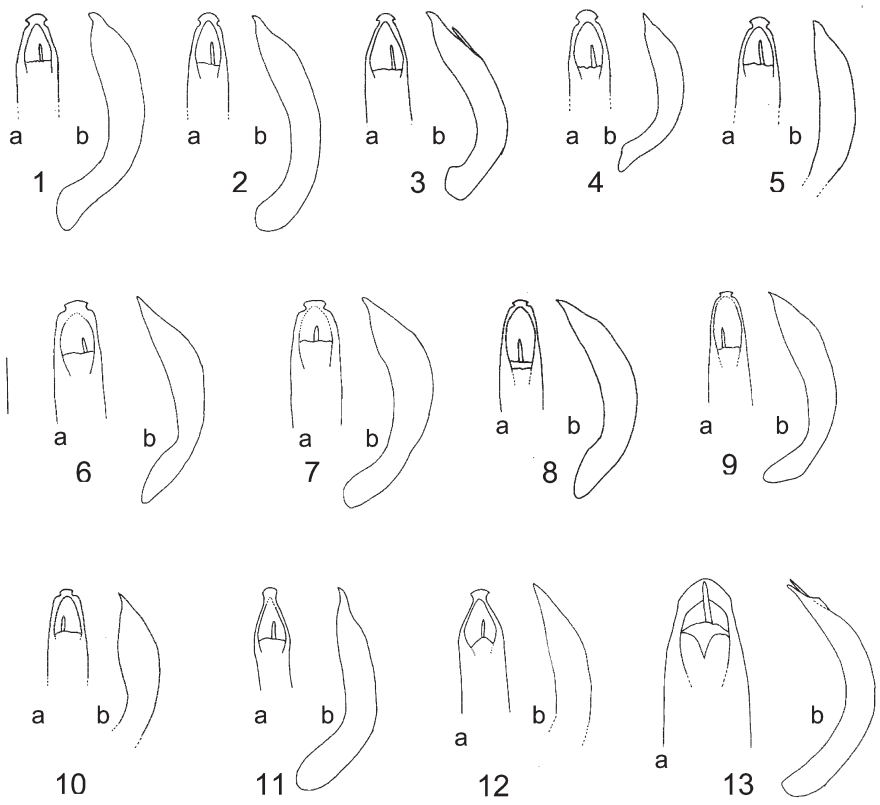
Etymology

After Ptolomeo´s (c. II) name of the "Cabo de Gata" range: *Promontorium Charidemi*, where this species lives.

KEY TO THE SPECIES OF THE *CYRTONUS* WITH "SHORTENED ASPECT" OF ANDALUSIA

1. Very large species: males > 7.5 mm; females > 8.4 mm. Antennomeres VI to X elongated, at least 1.5 times longer than wide. Labrum reddish-brown. Apex of aedeagus in dorsal view (figure 13a) lacking an apical apophysis. Species mainly living in steppes from Almería, Granada, Albacete, Murcia and Alicante ……..... .....……. *C. plumbeus*
–. With other features …… 2.
2. Pronotal and elytral puncturation similar, deep and dense. Elytral rows confused. Antennomeres VI to VIII isodiametric. Protarsomere I in males so long as wide. Species living in mountains from Almería, Jaén, Granada, Murcia and Albacete. Aedeagus as in figures 1 to 5 ……..…….. *C. arcasi - pardoi*
–. With other joint features …….....…… 3.
3. Large species: males > 6.7 mm; females > 7.2 mm. Dorsal color cooperish-green, very dark. Species from southeastern part of Almería: Cabo de Gata surroundings. Aedeagus as in figures 6-7 …….....…….. *C. charidemi* n. sp.
–. Smaller species. Color generally greenish …….....…….. 4.
4. Smaller than 6.3 mm (males) or 6.8 mm (females). Antennomeres VI-VIII longer than wide. Elytral rows I to IV and VIII to IX regular. Species from Málaga mountains and neighborough areas in Southwestern part of Granada province. Aedeagus as in figures 8-9 …….....…… *C. cobosi* n. sp.

–. With other features ……..……. 5.
5. Dorsal coloration rather matt. Pronotal puncturation very weak, hardly visible. Elytral puncturation with rows I-IV regular, the rest confused; secondary puntures not visible. Species living in the western part of the city of Almería. Aedeagus as in figure 10 ……..…. *C. almeriensis*
–. With other features ……..…….. 6.
6. Species from Ronda (Málaga province) mountains (including *C. conformis* Fairmaire, 1883, see Bastazo & Vela 1985). Aedeagus as in figure 12 …..... .....……. *C. fairmairei*
–. Species from Sierra Nevada (Granada). Aedeagus as in figure 11 …..... .....…. *C. contractus*



1-13. Aedeagus of *Cyrtonus* in dorsal (a) and side (b) view. 1 – *C. arcasi* (Sierra de Guillemona, Granada); 2-3 – *C. pardoi* (Sierra de Baza, Granada) ; 4-5 – *C. pardoi* (Sierra de María, Almería, type locality for this species); 6-7 – *C. charidemi* (Cabo de Gata, Almería); 8 – *C. cobosi* (Sierra de Ojén, Málaga); 9 – *C. cobosi* (Sierra Tejeda, Granada); 10 – *C. almeriensis* (El Palmer, Almería, type locality for this species); 11 – *C. contractus* (Trevenque, Sierra Nevada, Granada); 12 – *C. fairmairei* (Sierra de las Nieves, Ronda mountains, Málaga); 13 – *C. plumbeus* (Níjar, Almería). Scale bar = 0.5 mm

REMARKS ON THE HOST PLANTS OF *CYRTONUS*

Little is known about host plants of the genus *Cyrtonus*, but it seems to be linked to Asteraceae (Jolivet 1966; Petitpierre & Garnería 2003; Gómez-Zurita et al. 2007). In France, *C. rotundatus* Herrich-Schaeffer was reared on *Hyoseris radiata* L. (Mulsant et Wachandru, 1849 in Fairmaire, 1850), and *C. punctipennis* Fairmaire was found on *Lappa communis* Coss. et Germ. (Mayet 1904 in Jolivet 1951) and *Hieracium pilosella* L. (Dajoz 1965 in Jolivet 1966). The middle Spanish species *C. montanus* Fairmaire 1850 was reared in Germany by Weise (1906) on *Leontodon taraxacum* and on lettuce (*Lactuca* sativa L.).

In Spain, Petitpierre (1984) points to *Leontodon tuberosum* L. as the probable host plant of the species endemic to Mallorca *C. majoricensis* Breit., 1908; we found *C. elegans* Germar, 1813, spread over middle and South Portugal (Warchalowski 2003), under *Helichrysum* sp. in Sagres region. The known host plant association in Andalusia can be seen in table I. It shows that all the recorded host plant are shrubs of the family Asteraceae. We can confirm the Asteraceae *Santolina canescens* as the host plant of *C. contractus*. The host plant of *C. almeriensis* remains to be confirmed, and that of *C. fairmairei* to be recorded, but the latter fed on *Sonchus* sp. in the laboratory (Bastazo & Vela, personal observation).

Table 1. Distribution and host plants of *Cyrtonus* species with shortened body

Species	Distribution	Host-plant
C. almeriensis	Western part of the city of Almería (Cobos 1953)	At the foot of certain *Artemisia* (Cobos 1954)
C. arcasi - *C. pardoi*	Mountains in the north of Almería province, Jaén, Eastern Granada, Southeastern Albacete and Murcia (Petitpierre, 2004; Vela & Bastazo, unpubl. data).	*Santolina chamaecyparissus* L. (Petitpierre 2004)
C. cobosi n. sp.	Mountains of Málaga and Southwestern Granada (present paper)	*Helichrysum serotinum serotinum* (present paper).
C. charidemi n. sp.	Extreme part of Southeastern Almería province (present paper)	*Launea lanifera* (present paper).
C. contractus	Sierra Nevada range at Granada (Bastazo & Vela 1985)	*Santolina canescens* Lag. (Vela & Bastazo1999; Vela & Bastazo unpubl. data).
C. fairmairei	Ronda mountains in Málaga province (Rosenhauer 1856; Bastazo & Vela 1985).	Unknown
C. plumbeus	Steppes of central and Eastern Almería, Eastern Granada, Southeastern Albacete, Murcia and Alicante (Petitpierre 2004; Vela & Bastazo unpubl. data).	*Artemisia herba-alba* Asso (Petitpierre 1984; present paper).

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