

DESCRIPTION OF THE FEMALE OF *CERASPIS JALISCOENSIS* DELGADO AND NAVARRETE-HEREDIA, AND A KEY TO THE MEXICAN AND CENTRAL AMERICAN SPECIES OF *CERASPIS* LEPELETIER AND SERVILLE (COLEOPTERA: SCARABAEIDAE: MELOLONTHINAE: MACRODACTYLINI)

EDER F. MORA-AGUILAR
Instituto de Biotecnología y Ecología Aplicada
Universidad Veracruzana. Apartado Postal 250
91090 Xalapa, Veracruz, MEXICO
edmora@uv.mx

AND

LEONARDO DELGADO
Instituto de Ecología
A. C., Apartado Postal 63
91000 Xalapa, Veracruz, MEXICO
leonardo.delgado@inecol.edu.mx

ABSTRACT

The female of *Ceraspis jaliscoensis* Delgado and Navarrete-Heredia is described and illustrated for the first time. A key to the Mexican and Central American species of *Ceraspis* LePeletier and Serville is presented.

Key Words: morphology, scarab beetle, key to species, biology

RESUMEN

Se describe e ilustra por primera vez la hembra de *Ceraspis jaliscoensis* Delgado and Navarrete-Heredia. Se presenta una clave para identificar las especies mexicanas y centroamericanas del género.

Ceraspis LePeletier and Serville, 1828 is a Neotropical genus with 102 described species. Its distribution extends from Argentina to Mexico, and most species (92) are endemic to a single country. Ninety-one species occur in South America, mostly (67) in Brazil. Eight species are found in Central America and six in Mexico (Frey 1962; Delgado *et al.* 1987; Evans 2003; Delgado and Navarrete-Heredia 2004; Katovich 2008; Evans and Smith 2009).

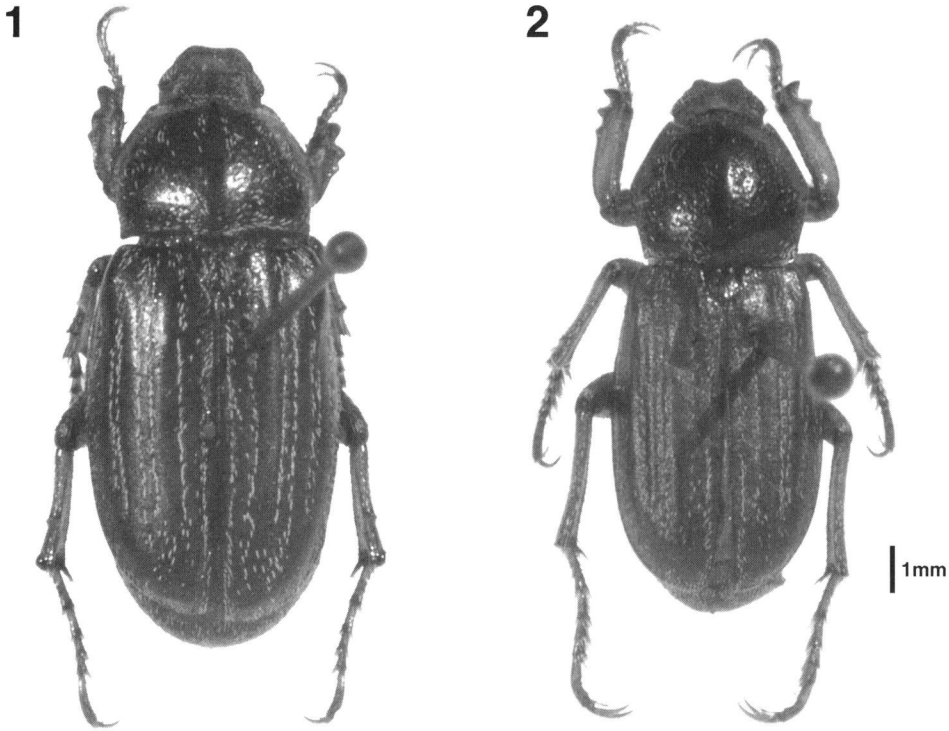
Among the six Mexican species, three are shared with Central America and three are endemic to Mexico: *Ceraspis velutina* (Bates) from Guerrero, *Ceraspis oaxacaensis* Delgado from Oaxaca, and *Ceraspis jaliscoensis* Delgado and Navarrete-Heredia from Jalisco (Delgado *et al.* 1987; Delgado 2001; Delgado and Navarrete-Heredia 2004). *Ceraspis jaliscoensis* was described in 2004 based on four male specimens collected near Mascota, Jalisco. Recently, two specimens were collected at Los Sauces, Talpa de Allende, Jalisco, near the type locality. Herein we describe the previously un-

known female of *C. jaliscoensis* and include a new key to the Mexican and Central American species.

***Ceraspis jaliscoensis* Delgado and Navarrete-Heredia, 2004**
(Figs. 1–3)

Material Examined. “MEXICO: Jalisco, Mpio. Talpa de Allende, Loc. Los Sauces; Julio 2006; 20°28'38"N, 104°45'23"; bosque de pino-encino, Alt. 1476 m, trampa de luz, H. Jimeno y E. Sevilla Col” (1 male, 1 female). Both specimens deposited in the collection of E. Mora-Aguilar (Xalapa, Veracruz, Mexico).

Description. Female (Fig. 1). Total length 12.5 mm; maximum width (at middle of elytra) 6.1 mm. Similar to male except in the following respects (mouthparts are here described for the first time): Body more robust; color dull reddish brown on head, pronotum, elytra, and abdomen. Clypeus and frons with sparser punctures. Clypeus slightly emarginate. Labrum wide, medially concave, and



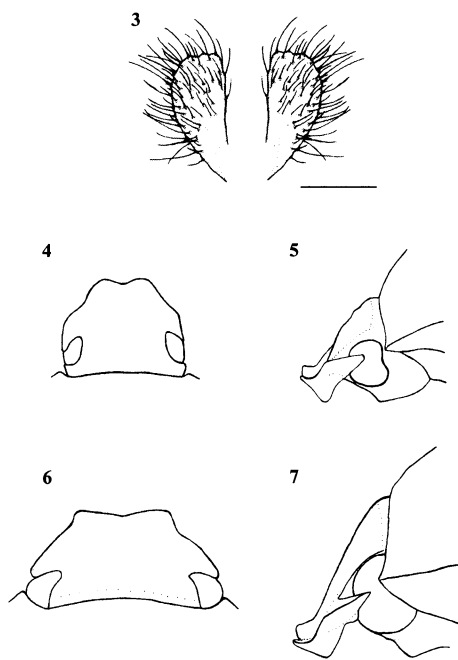
Figs. 1–2. Dorsal habitus of *Ceraspis jaliscoensis*. 1) Female; 2) Male. Scale = 1 mm.

coarsely punctate; labium with prementum quadrate, ventral surface with a longitudinal, broad groove, with apex sinuate; maxilla with 5 teeth, one of them trifid, lacinia setose with an apical minute tooth; mandible with 2 blunt apical teeth, scissorial area setose, molar area large. Pronotum less convex. Abdomen almost flat in lateral view, sides of abdominal sternites with scale-like setae and glabrous medially; first visible abdominal sternite flat, abdominal sternites 2–4 somewhat longer at sides than at middle, sternite 5 with same length from side to side, last abdominal sternite not produced at apex, entirely setiferous, with apical margin smooth and without membranous border. Pygidium nearly as wide as long, less convex, surface glabrous toward the disc. Femora and tibiae shorter; protibiae with internal preapical spur not exceeding the base of first tarsomere. Tarsi longer and slender. Upper genital plates semirectangular, longer than wide, with moderately dense punctures, and long, golden setae (Fig. 3).

Remarks. The morphological structures shown by the female of *C. jaliscoensis* do not alter the

diagnostic characters of this species, *i. e.* clypeus flat, bilobed or slightly emarginate, pronotum and elytra with appressed scales arranged in a longitudinal pattern, elytra microreticulate, and dull reddish brown. Also, as in many species of this genus, the sexual dimorphism displayed by *C. jaliscoensis* is seen mainly on the clypeus (bilobed or distinctly emarginate in males or slightly emarginate in females), pronotum (strongly swollen in males, less convex in females), elytra (longer and less wide in males), abdomen (concave, with sternites longer, and pygidium longer and convex in males; almost flat, with sternites shorter, and pygidium shorter and less convex in females), and legs (males with femora and tibiae longer, protibiae without internal spur, tarsi shorter and thickened; females with femora and tibiae shorter, protibiae with internal spur, tarsi longer and slender) (Figs. 1, 2).

Distribution. *Ceraspis jaliscoensis* is known only from the state of Jalisco in four nearly adjacent localities situated in the municipalities of Mascota and Talpa de Allende. This species inhabits cloud forest and oak-pine forest (*Quercus*



Figs. 3–7. Characters of *Ceraspis* spp. 3) Genital plates of *C. jaliscoensis*; 4) Dorsal view of clypeus of *C. centralis*; 5) Lateral view of clypeus of *C. centralis*; 6) Dorsal view of clypeus of *C. oaxacaensis*; 7) Lateral view of clypeus of *C. oaxacaensis*. Scales: Fig. 3 = 0.5 mm, Figs. 4–7 = 1 mm.

excelsa Liebm. [Fagaceae], *Pinus jaliscana* Pérez de la Rosa, *Pinus maximinoii* Moore, and *Pinus oocarpa* Schiede [Pinaceae]) located between 1,400–1,476 m elevation.

Biological Notes. Adults of this species have been collected on grass, under moss, in a carrion trap baited with squid (probably accidental), and attracted to light traps in June and July. Adults of this genus seem to feed on flowers, while the larvae feed on roots in pastures and, to a lesser degree, in crops (Capistrán and Aquino 1992; Pardo-Lorcano *et al.* 2005).

Frey (1962) grouped the species of this genus into three species-groups differing mainly in the type of vestiture (setae, scale-like setae, or scales). Delgado (2001) and Delgado and Navarrete-Heredia (2004) used this same character to construct a key to separate the Mexican species. However, there are problems in distinguishing the types of vestiture, because the thickness, width, and length of the setae and scales show a gradual variation. For these reasons, we present a new key based on other characters to separate the Mexican and Central American species of this genus.

KEY TO THE ADULTS OF MEXICAN AND CENTRAL AMERICAN SPECIES OF *CERASPIS*

1. Elytra dark brown with two yellowish red spots on base and middle *C. elegans* Nonfried
- 1'. Elytra variously colored, but without spots 2
2. Elytral surface evenly convex 3
- 2'. Elytra with costae raised, feebly convex, or sometimes flat and smooth 5
3. Elytral setae arranged in parallel stripes *C. imitatrix* Nonfried
- 3'. Elytral setae irregularly distributed 4
4. Pronotum shiny black; elytra testaceous *C. brunneipennis* (Bates)
- 4'. Pronotum yellowish red; elytra brown with coppery reflections *C. hispida* (Bates)
5. Pronotum and elytra without scales, with sparse setae only *C. ocellata* Frey
- 5'. Pronotum and elytra with scales 6
6. Pronotum almost entirely covered with recumbent scales (reclining on the surface), not forming a longitudinal pattern *C. velutina* (Bates)
- 6'. Pronotum with appressed scales (closely applied to the surface) forming longitudinal vittae 7
7. Elytra microreticulate, dull *C. jaliscoensis* Delgado and Navarrete-Heredia
- 7'. Elytra smooth, shiny 8
8. Femora and tibiae dark reddish brown *C. mexicana* Harold
- 8'. Femora and tibiae yellow to light red 9
9. Pronotum and elytra light red *C. pilatei* Harold
- 9'. Pronotum and elytra dark reddish brown to black 10
10. Clypeus bilobed and deeply concave (Figs. 4, 5) *C. centralis* (Sharp)
- 10'. Clypeus broadly emarginated (males) (Fig. 6) or straight (females) and flat or slightly concave (Fig. 7) *C. oaxacaensis* Delgado

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