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Two new species of *Chrysina* Kirby (Coleoptera: Scarabaeidae: Rutelinae) from Mexico

José Monzón Sierra

Universidad del Valle de Guatemala, jmonzon@uvg.edu.gt

Leccinum Jesús García Morales

Instituto Tecnológico de Ciudad Victoria, México, lexgarcia@yahoo.com

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Two new species of *Chrysina* Kirby (Coleoptera: Scarabaeidae:
Rutelinae) from Mexico

José Monzón Sierra

Laboratorio de Entomología Sistemática
Universidad del Valle de Guatemala
Apartado Postal 82. 01901, Guatemala
Guatemala, C.A.
jmonzon@uvg.edu.gt

Leccinum Jesús García Morales

Colección Entomológica
Instituto Tecnológico de Ciudad Victoria
Blvd. Emilio Portes Gil 1301 Pte., A.P. 175,
C.P. 87010, Ciudad Victoria, Tamaulipas, México
lexgarcia@yahoo.com

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J. Monzón Sierra and L. J. García Morales
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Two new species of *Chrysina* Kirby (Coleoptera: Scarabaeidae: Rutelinae) from Mexico

José Monzón Sierra

Laboratorio de Entomología Sistemática
Universidad del Valle de Guatemala
Apartado Postal 82. 01901, Guatemala
Guatemala, C.A.
jmonzon@uvg.edu.gt

Leccinum Jesús García Morales

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Instituto Tecnológico de Ciudad Victoria
Blvd. Emilio Portes Gil 1301 Pte., A.P. 175,
C.P. 87010, Ciudad Victoria, Tamaulipas, México
lexgarcia@yahoo.com

Abstract. Two **new species** of *Chrysina* Kirby (Coleoptera: Scarabaeidae: Rutelinae) are described: *Chrysina blackalleri* from the State of Oaxaca and *Chrysina donthomasi* from the state of Nuevo León in Mexico.

Resumen. Se describen dos **especies nuevas** de *Chrysina* Kirby (Coleoptera: Scarabaeidae: Rutelinae): *C. blackalleri* del estado de Oaxaca y *C. donthomasi* del estado de Nuevo León en México.

Introduction

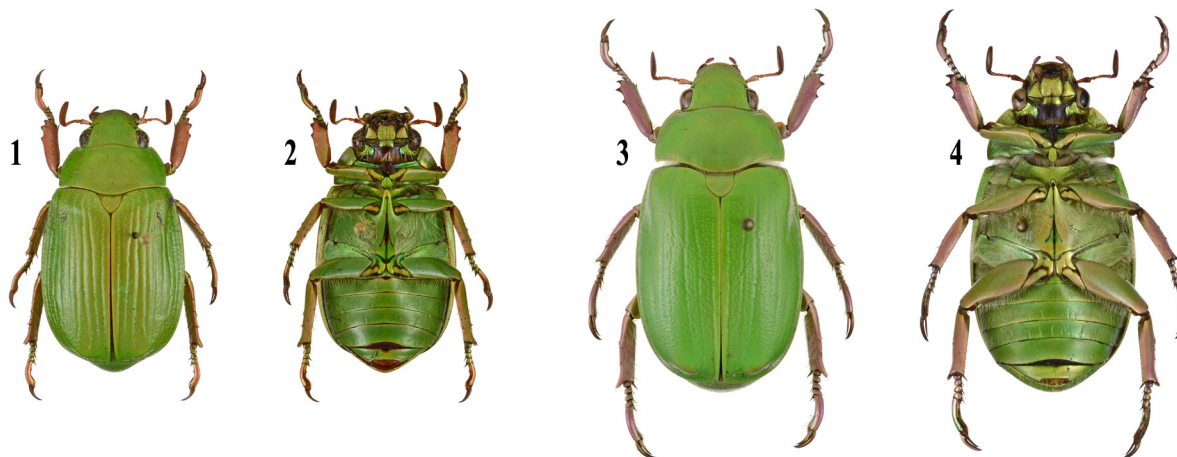
Currently the genus *Chrysina* Kirby (Coleoptera: Scarabaeidae: Rutelinae) is composed of 103 described species (Monzón 2010). The genus is distributed from the southern United States of America (Arizona, New Mexico, and Texas) through Mexico, Central America to Colombia and Ecuador (Morón 1990). The greatest number of species in the genus occurs in Mexico (56 species) followed by Guatemala (24 species) and Costa Rica (21 species). Mexico with its extensive mountain systems has the potential for many new species of beetles in many groups. The genus *Chrysina* has several known but undescribed species. The two species described here belong to the Peruviana group (*sensu* Hawks 2001). With these two new species the group contains 18 species which are restricted to Mexico, except for *C. beyeri* (Skinner) which also occurs in the United States and *C. giesberti* Monzón which also occurs in Guatemala (Monzón 2010).

Chrysina blackalleri Monzón and García, new species

(Figures 1, 2, 5, 7, 15, 21, 25, 31, 37, 43)

Type material. Holotype male and allotype female (Universidad Nacional Autónoma de México (UNAM)) labeled "MEXICO: Oaxaca, Sierra de Juarez, La Esperanza, Bosque Mesófilo, A la luz, Alt. 1600 msnm. 1-2/VI/1995, J. Blackaller, A. Pérez y A. Soria cols.". Paratypes (14 males and 1 female) labeled as holotype. Paratypes deposited in the Universidad del Valle de Guatemala Collection of Arthropods (UVGC), Florida State Collection of Arthropods (FSCA) and the private collections of Julian Blackaller (Veracruz, Mexico), Leonardo Delgado (Veracruz, Mexico) and José Monzón (Guatemala).

Description. Holotype male. Length 23.5 mm; width at elytral humeri 11.0 mm; maximum width (middle of elytra) 12.5 mm. Color of dorsum yellowish green; ocular canthi reddish golden green, antennal segments brown with scape dorsum with a pink shine; elytra with internal and external margins yellowish green, apical umbone pinkish yellowish green; scutellum with lateral margins yellowish green with slight pink reflections; pygidium yellowish green with lateral margins golden. Color of venter dull yellowish green with golden and reddish reflections. Legs with trochanter reddish yellowish green,



Figures 1-4. Dorsal and ventral habitus of adult *Chrysina* specimens (1.5x). **1-2)** *C. blackalleri* male holotype from La Esperanza, Oaxaca, Mexico. **3-4)** *C. donthomasi* male holotype from Laguna de Sánchez, Nuevo León, Mexico.

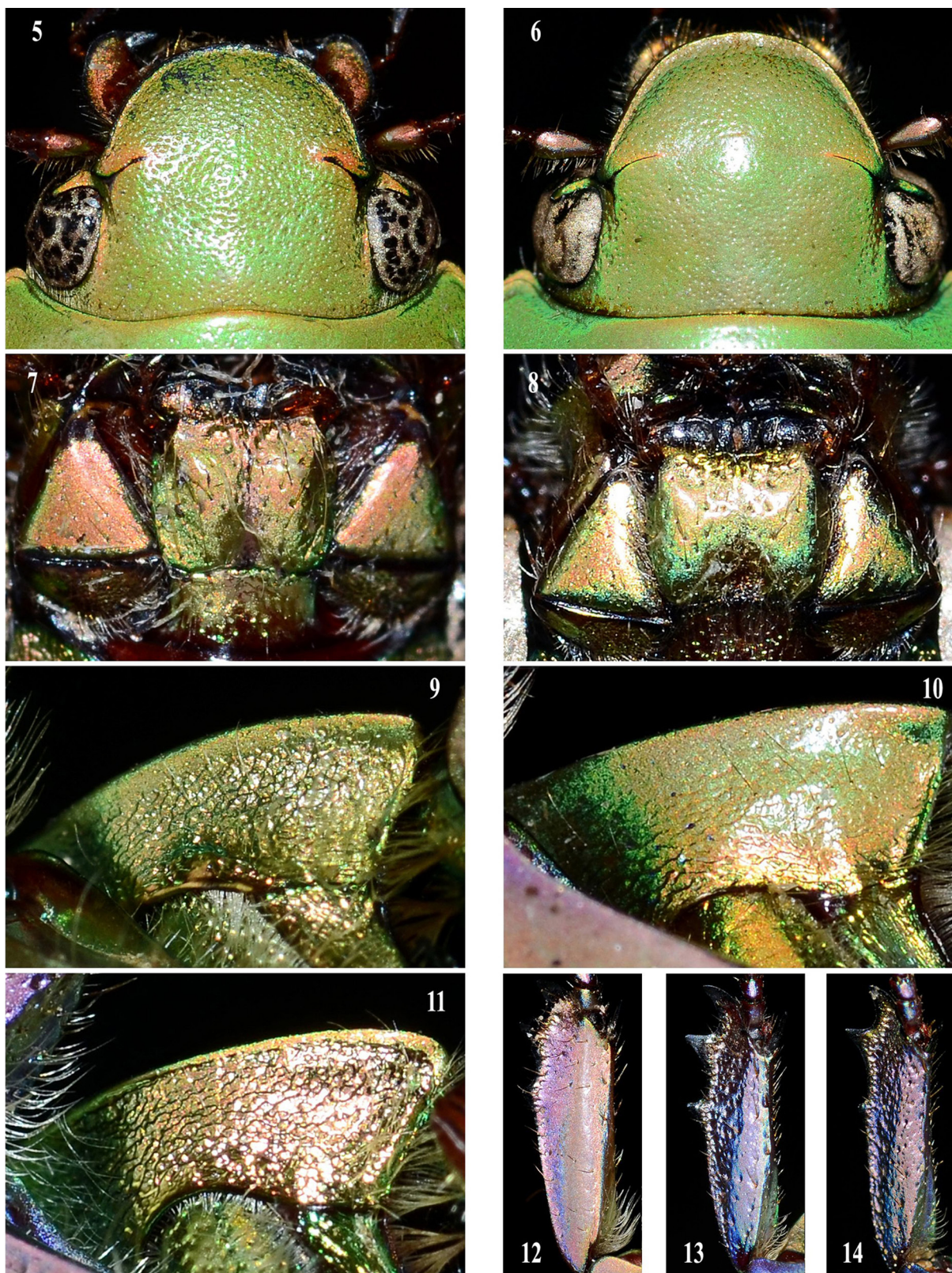
femora iridescent yellowish green, tibiae pinkish iridescent yellowish green and tarsi pinkish golden green. Head dorsal surface slightly convex with punctures small and dense. Clypeus (Fig. 5) free margins subcircular in dorsal view, surface slightly depressed, margins weakly reflexed; interocular distance 1.6 times wider than antennal club length. Mentum (Fig. 7) subquadrate; anterior depression irregular with deep wide punctures; lateral depressions deep and wide, almost all length; posterior rounded; surface setigerously punctate, punctures moderate and sparse. Pronotum at base 2.4 times as wide as interocular distance; surface similar to frons except punctures sparser. Lateral margin completely beaded except effaced on basal margin in front of scutellum and anterior margin between inner border of eyes. Elytra punctate striate; striae deep, well marked with golden punctures; interstriae moderately convex. Elytron 15.5mm long and 3.1 times as long as pronotum; lateral margin with complete bead. Pygidium completely rugose; apical margin with few and scattered pale setae; surface moderately convex and prominent before apex (Fig. 21). Venter with mesometasternal protrusion long, wider before apex than at base, apex rounded in ventral view (Fig. 15). Metasternum sides densely setigerously punctate; setae dense, fine, long and pale. Legs with protibia clearly tridentate, teeth truncate; dorsal and ventral area of protibia with few large rugose punctures. Genitalia distinct, parameres asymmetrical and fused almost completely; ventral plates long, medially swollen and triangular towards apex; length of genital capsule 8.5 mm (Fig. 25, 31, 37).

Allotype female. Similar to male except as follows: length 24.0 mm; width at elytral humeri 10.0 mm; maximum width (middle of elytra) 13.0 mm; clypeal apex parabolic; interocular distance two times wider than antennal club length; pronotum at base 2.3 times as wide as interocular distance; dorsal surface more convex; tarsi less robust; epipleural border wide; last sternite without apical depression. Inferior genital plates subsymmetrical and moderately convex with sparse long thin pale setae (Fig. 43).

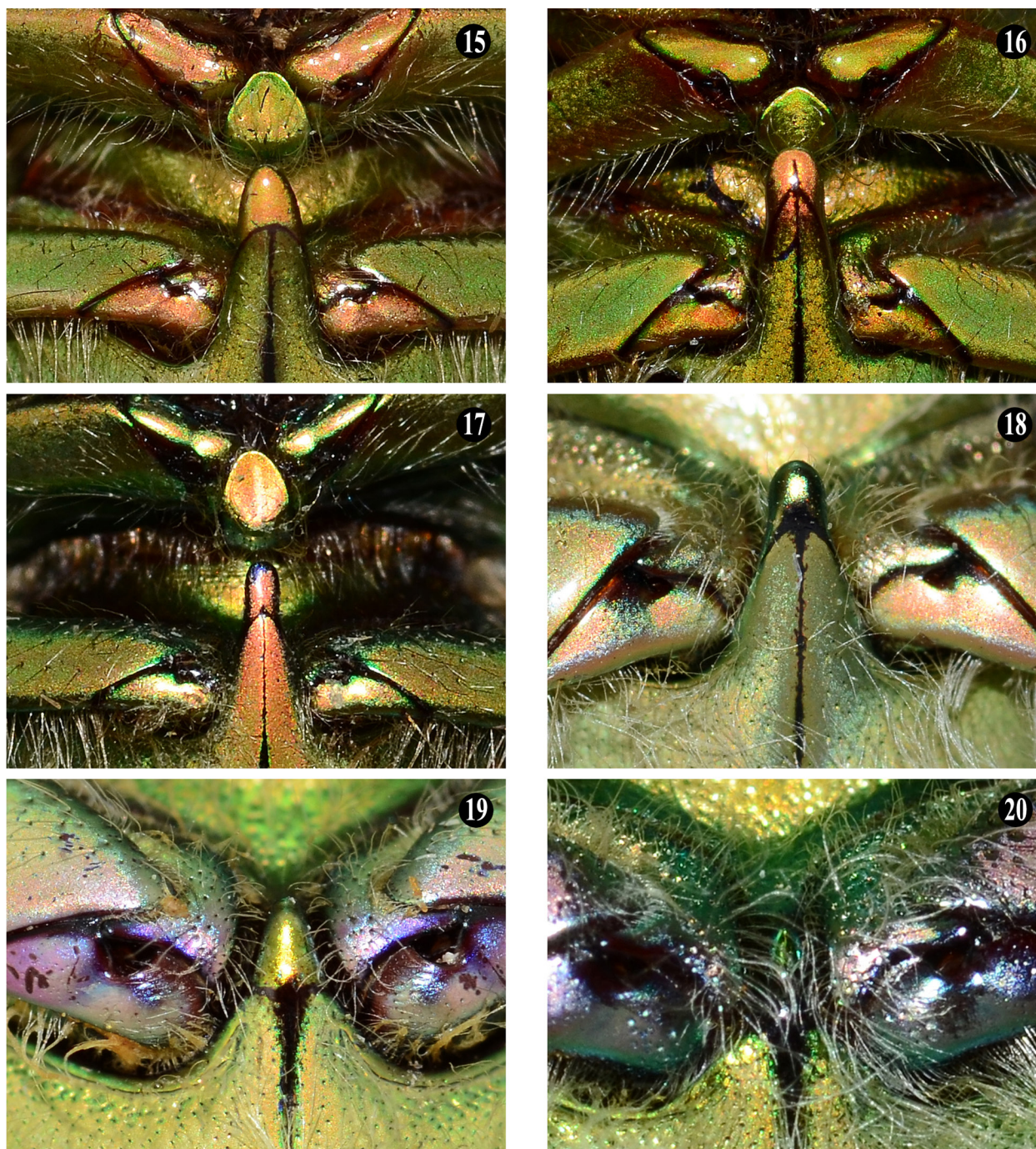
Variation. Males length 21.8 to 25.0 mm; width at elytral humeri 10.0 to 11.0 mm; maximum width (middle of elytra) 12.0 to 13.5 mm. Female length 20.0 mm; width at elytral humeri 10.5 mm; maximum width (middle of elytra) 13.5 mm. Except for size and elytral punctuation, all the specimens form a uniform series.

Etymology. It is a great honor to name this species for our friend Julian Blackaller Bages a great insect collector, who has done a great job exploring many of the mountains in Mexico.

Diagnosis. *Chrysina blackalleri* is a small green *Chrysina* in the Peruviana group (*sensu* Hawks 2001). Externally it is similar to *C. diana* (Ratcliffe and Taylor) and *C. taylori* (Morón) but can be easily differentiated by the male genitalia (Fig. 25, 26, 27, 31, 32, 33, 37, 38, 39). The mesometasternal protrusion



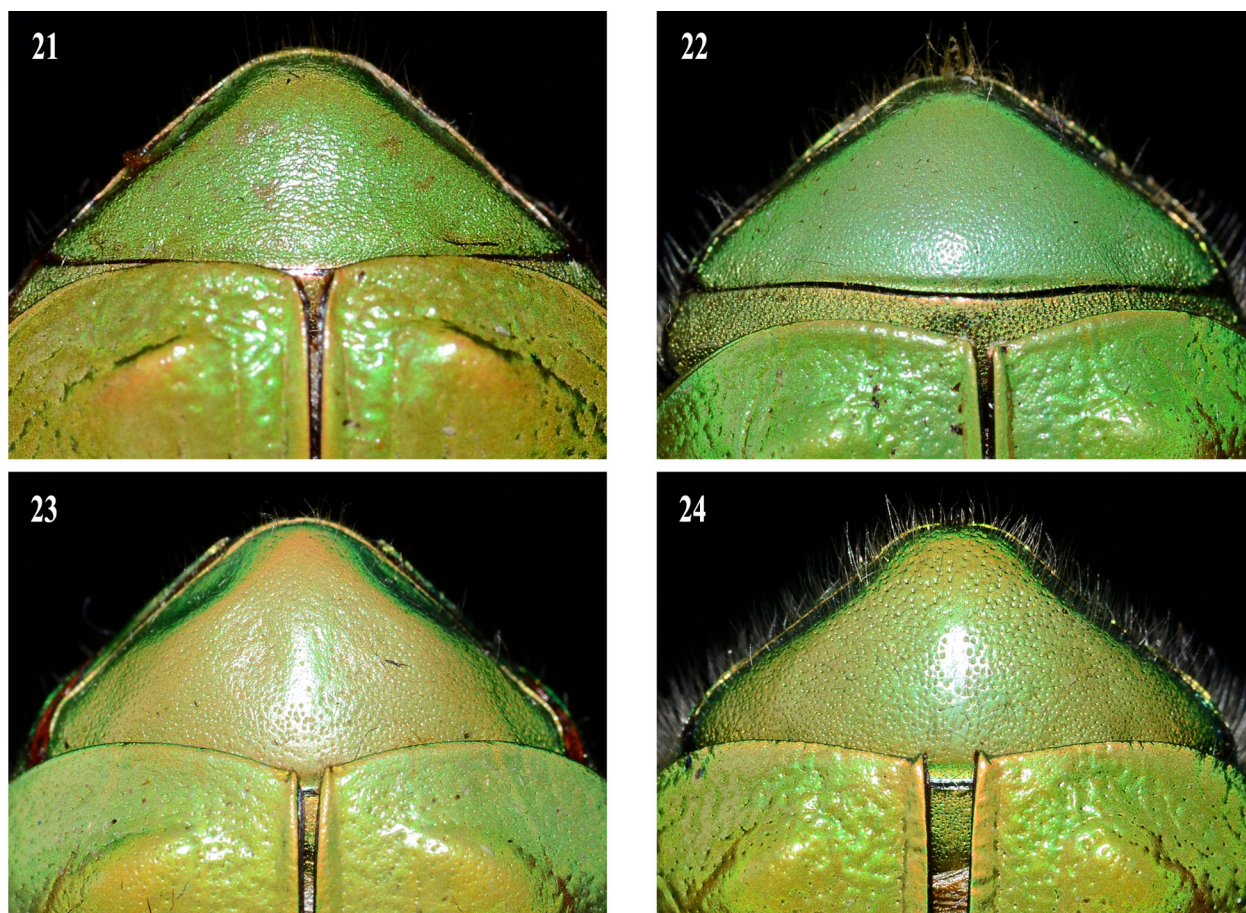
Figures 5-14. *Chrysina* spp. structures. 5-6) Clypeus of male. 5) *C. blackalleri*. 6) *C. donthomasi*. 7-8) Mentum of male. 7) *C. blackalleri*. 8) *C. donthomasi*. 9-14) Propleura and underside of male foretibiae. 9) *C. donthomasi*. 10) *C. beyeri*. 11) *C. nogueirai*. 12) *C. donthomasi*. 13) *C. beyeri*. 14) *C. nogueirai*.



Figures 15-20. Ventral view of mesometasternal protrusion of male *Chrysina* spp. **15)** *C. blackalleri*. **16)** *C. diana*. **17)** *C. taylori*. **18)** *C. donthomasi*. **19)** *C. beyeri*. **20)** *C. nogueirai*.

is rounded in *C. diana* (Fig. 16). It is also externally similar to *C. alfredolaui* (Hawks) and *C. badeni* (Boucard) which are members of the *Badeni* group (*sensu* Hawks 2001) which have the general male genitalia structure and externally pinkish lateral pronotal bands that makes them easy to separate.

Distribution. This interesting species is known to occur only near the town of La Esperanza, in the Sierra de Juárez, Oaxaca.



Figures 21-24. Pygidium of male *Chrysina* spp. 21) *C. blackalleri*. 22) *C. donthomasi*. 23) *C. beyeri*. 24) *C. nogueirai*.

***Chrysina donthomasi* Monzón and García, new species**

(Figures 3, 4, 6, 8, 9, 12, 18, 22, 28, 34, 40, 44)

Type material. Holotype male (Universidad Nacional Autónoma de México (UNAM)) labeled “MEXICO, Nuevo León, 6 Km NW Laguna de Sánchez, N 25°21.28’ W100°20.32’, El. 1927m; 4 September 2006, D. C. Robacker & M. J. Massa”. Allotype female (UNAM) labeled as holotype except “30 July 2005, D. Thomas & J. Blackaller”. Paratypes (22 males and 14 females) with data as follows: Same data as holotype (9 males and 5 females); same data except “6 August 2005, D. Thomas & D. Robacker” (9 males and 6 females); same data except “9 July 2005, D. C. Robacker” (1 male); same data except “8 June 2005” (1 female); same data except “22 July 2006” (1 male and 1 female); same data except “13-22 July 2007, D. C. Robacker” (1 male); same data except “22 July 2008” (2 females); same data except “Sierra potrero de Abrego, 2km W de El Cilantrillo, (8km SW de Laguna de Sánchez). Bosque de pino-nogal y encino. Luz hg, 30-31/07/2005. 1922 msnm. EPE 5 mts, CG N25°21.279’ W100°20.321’ D. Thomas, B. Warfield, D. Robacker & J. Blackaller cols, Colección J. Blackaller” (4 males and 4 females). Paratypes deposited in the Universidad del Valle de Guatemala Collection of Arthropods (UVGC), Florida State Collection of Arthropods (FSCA), Instituto Tecnológico de Ciudad Victoria (Tamaulipas, Mexico) and the private collections of Donald Thomas (Texas, U.S.A.), David Robacker (Texas, U.S.A.), Julian Blackaller (Veracruz, Mexico), Thierry Porion (France) and José Monzón (Guatemala).

Description. Holotype male. Length 30.0 mm; width at elytral humeri 13.0 mm; maximum width (middle of elytra) 15.0 mm. Color of dorsum yellowish green; ocular canthi golden green, antennal segments brown with scape, first and last segments and scape darker, dorsum of scape with pink and



Figures 25-42. Male genital capsule of *Chrysina* spp. 25-30) Dorsal habitus. 25) *C. blackalleri*. 26) *C. diana*. 27) *C. taylori*. 28) *C. donthomasi*. 29) *C. beyeri*. 30) *C. nogueirai*. 31-36) Ventral habitus. 31) *C. blackalleri*. 32) *C. diana*. 33) *C. taylori*. 34) *C. donthomasi*. 35) *C. beyeri*. 36) *C. nogueirai*. 37-42) Lateral habitus. 37) *C. blackalleri*. 38) *C. diana*. 39) *C. taylori*. 40) *C. donthomasi*. 41) *C. beyeri*. 42) *C. nogueirai*.



Figures 43-46. Female inferior genital plates of *Chrysina* spp. 43) *C. blackalleri*. 44) *C. donthomasi*. 45) *C. beyeri*. 46) *C. nogueirai*.

green iridescence; elytra with internal and external margins green with faint yellowish tint; scutellum with lateral margins yellowish green; pygidium yellowish green with margins golden. Color of venter dull yellowish green with golden reflections. Legs with femora and trochanter pinkish iridescent green, tibiae iridescent pink and tarsi golden pink. Head dorsal surface slightly convex with punctures small and moderately dense, sparser and smaller towards anterior margin. Clypeus (Fig. 6) free margins semiparabolic in dorsal view, surface slightly depressed, margins weakly reflexed; interocular distance 2.0 times wider than antennal club length. Mentum (Fig. 8) subquadrate; anterior depression wide; lateral depressions absent; posterior depression wide; surface setigerously punctate, punctures sparse. Pronotum at base 2.3 times as wide as interocular distance; surface similar to frons except punctures deeper and wider towards lateral margins. Lateral margin completely beaded except effaced on basal margin in front of scutellum and anterior margin between inner border of eyes. Elytra punctate striate; striae well marked with deep punctures; interstriae weakly convex with abundant deep punctures. Elytron 19.5 mm long and three times as long as pronotum; lateral margin with complete bead. Pygidium punctate; apical margin with scattered pale setae and metallic shine; surface moderately convex and prominent before apex (Fig. 22). Penultimate sternite widely sinuated; apical sternite indented. Venter with mesometasternal protrusion short, apex rounded and slightly depressed (Fig. 18). Metepisterna and metasternum laterally setigerously punctate, setae fine and white. Legs with protibia clearly tridentate; dorsal and ventral surface with scattered setigerous punctures, setae stout and sharp (Fig. 12). Genitalia with parameres fused, apically asymmetrical and deeply and widely notched; ventral plates gradually narrowing towards fine and sharp apex; length of genital capsule 9.0 mm (Fig. 28, 34, 40).

Allotype female. Similar to male except as follows: width at elytral humeri 12.5 mm; maximum width (middle of elytra) 16.5 mm; interocular distance 2.5 times wider than antennal club length; pronotum at base 2.4 times as wide as interocular distance; dorsal surface more convex; tarsi less robust; epipleural border wide; last sternite without apical depression. Inferior genital plates subsymmetrical, moderately convex with very sparse short pale setae (Fig. 44).

Variation. Males length 26.0 to 33.0 mm; width at elytral humeri 12.0 to 15.0 mm; maximum width (middle of elytra) 15.0 to 18.0 mm. Females length 28.5 to 35.0 mm; width at elytral humeri 12.5 mm to 15.0 mm; maximum width (middle of elytra) 15.5 to 18.5 mm. Except for size, venter metallic sheen and elytral punctuation, all the specimens form a uniform series.

Etymology. It is a great honor to name this species for Donald Thomas who has been of invaluable help to the study of the fauna of Mexico.

Diagnosis. This species is a medium sized green *Chrysina* in the Peruviana group (*sensu* Hawks 2001). It is most similar to *C. beyeri* and *C. nogueirai* (Morón 1992) from which it can be separated by the following combination of characters in the males: Genitalia with parameres short (Fig. 40) compared to *C. beyeri* and *C. nogueirai* (Fig. 41, 42) and slanted towards the left significantly in dorsal view (Fig. 28) compared to being subsymmetrical in *C. beyeri* and *C. nogueirai* (Fig. 29, 30), ventral plates drop shaped without internal margins produced into saddle (Fig. 34, 35, 36); propleura (Fig. 9) with rugose

punctures and metallic shine compared to *C. beyeri* (Fig. 10) but not as rough or saturated as in *C. nogueirai* (Fig. 11); ventral side of protibiae smooth with scattered large punctures (Fig. 12) compared to having dense rough punctures in *C. beyeri* (Fig. 13) and *C. nogueirai* (Fig. 14); mesometasternal protrusion with apex (Fig. 18) parallel sided with rounded tip, in *C. beyeri* (Fig. 19) and *C. nogueirai* (Fig. 20) triangular and reduced; pygidium external margins straight not concave (Fig. 22, 23, 24). Elytral sculpture intermediate between the rougher and more densely punctured *C. nogueirai* and the smoother *C. beyeri*. Female inferior genital plates simply rounded with slight serration (Fig. 44), setae short and sparse compared to widely serrated with long setae in *C. beyeri* (Fig. 45) and shouldered with wide serration and long setae in *C. nogueirai* (Fig. 46).

Distribution and remarks. *Chrysina donthomasi* is currently known from the Sierra Potrero de Abrego in the highlands of the Sierra Madre Oriental of Nuevo León state, northeastern Mexico (approximately 35 air kilometers south of Monterrey) around the town known as “El Cilantrillo”. According to Don Thomas and Dave Robacker, this species seems to be more abundant in areas where walnut trees occur with oak and pine.

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Literature Cited

- Hawks, D. 2001.** Taxonomic and nomenclatural changes in *Chrysina* and a synonymic checklist of species (Scarabaeidae: Rutelinae). Occasional Papers of the Consortium Coleopterorum 4: 1-8.
- Monzón, J. 2010.** Three new species of *Chrysina* Kirby (Coleoptera: Scarabaeidae; Rutelinae) from Guatemala and Mexico. Insecta Mundi 0143:1-12.
- Morón, M. A. 1990.** The beetles of the world. Vol. 10: Rutelini 1. Sciences Nat; Venette, France. 145 p., 32 pl.

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