

**A New Species of the Genus *Diploaxis* Kirby, 1837 (Coleoptera: Scarabaeidae: Melolonthinae: Diplo-taxini) from Northeastern Mexico**

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Source: Coleopterists Bulletin, 65(2):189-191. 2011.

Published By: The Coleopterists Society

DOI: 10.1649/072.065.0221

URL: <http://www.bioone.org/doi/full/10.1649/072.065.0221>

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**A NEW SPECIES OF THE GENUS *DIPLOTAXIS* KIRBY, 1837 (COLEOPTERA:  
SCARABAEIDAE: MELOLONTHINAE: DIPLOTAXINI)  
FROM NORTHEASTERN MEXICO**

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**ABSTRACT**

*Diplotaxis riusi* Delgado, **new species**, collected in Nuevo León, Mexico, is described, and the male genitalia are illustrated. The key to the species in the *Diplotaxis brevicollis-haydenii* species-group is modified to include this new species.

Key Words: taxonomy, key, scarab beetle, *Diplotaxis brevicollis-haydenii* species-group

**RESUMEN**

Se describe a *Diplotaxis riusi* Delgado, **especie nueva**, colectada en el estado de Nuevo León, México, ilustrando también su genitalia masculino. Se modifica la clave del grupo de especies *Diplotaxis brevicollis-haydenii* para incluir a la nueva especie.

The New World genus *Diplotaxis* Kirby, 1837 is the third most speciose of the subfamily Melolonthinae in the New World, and the second most diverse of the tribe Diplotaxini worldwide (Bezdek 2004; Evans and Smith 2009). This genus contains 240 described species distributed from Canada to Panama, and the West Indies. Mexico has the highest diversity, with 183 species, followed by the United States with 108 species (Vaurie 1958, 1960; Delgado 1990; Delgado and Capistrán 1992, 1993; Delgado and Rivera-Cervantes 1992; McCleve 1993; Delgado 2001; Davidson and Davidson 2006; Evans and Smith 2009). The species of this genus are arranged in 38 species-groups, with six unassigned species. The *D. brevicollis-haydenii* species-group includes 26 species, 21 of which are distributed in the United States and 14 in Mexico (Vaurie 1960).

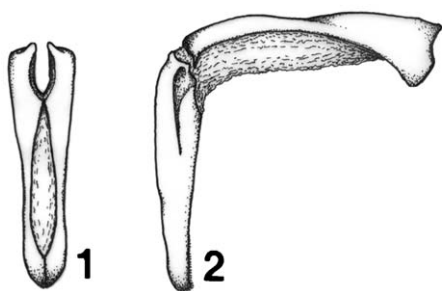
During study of material of this genus, principally from the Instituto de Biología, UNAM (Mexico City), eight specimens from the state of Nuevo León, Mexico were found. These specimens represent a new species described here and assigned to the *D. brevicollis-haydenii* species-group. Terminology and taxonomic characters used are those defined by Vaurie (1958, 1960).

***Diplotaxis riusi* Delgado, new species**  
(Figs. 1–2)

**Type Material.** Holotype male and five male paratypes labeled “MÉXICO: Nuevo León, Santiago,

Cola de Caballo, 28.iii.1979, J. Figueroa col.”. Two male paratypes labeled “MÉXICO: Nuevo León, Santiago, Potrero Redondo, 28.iii.1979, H. Pérez col.”. The holotype and three paratypes are deposited in the entomological collection of the Instituto de Biología, UNAM (Mexico City). Four paratypes are deposited in the following collections: Instituto de Ecología, A. C. (Veracruz, Mexico), Scott McCleve collection (Douglas, Arizona, USA), and L. Delgado collection (Mexico City, Mexico).

**Holotype.** Male. Length 12.6 mm; maximum width across elytra 7.4 mm. Body oval, convex. Head, pronotum, venter, and legs shiny black; elytra dull black. Dorsum glabrous. Length of clypeus  $2/5$  cephalic length; apex of clypeus emarginate between rounded angles, sides oblique; margin moderately reflexed at middle, to sides less reflexed; canthus not prominent; surface of clypeus tumid at lateral third; clypeus densely rugose; reflexed underside of clypeus transversely furrowed. Frontoclypeal suture complete, straight at middle and curved at sides. Front of head transversely tumid behind clypeus, with a middle impression; surface of frons coarse and densely punctate, punctures becoming smaller and sparser to vertex. Transverse eye diameter almost  $1/7$  as wide as head. Antennae with 10 antennomeres. Labrum distinctly concave longitudinally, frontal margin strongly arcuate, labrum at middle almost 1.5X longer than and distinctly advanced from the reflexed underside of clypeus. Mandibles large, bulbous; last segment of maxillary palp with small, dorsal, basal impression. Mentum



**Figs. 1–2.** Parameres of *Diplotaxis riusi*. 1) Caudal view; 2) Lateral view.

not sunken, concave with transverse declivity posteriorly bounded by a blunt and glabrous edge.

Pronotum much wider than long (1.00:0.53), sides moderately curved, widest slightly behind the middle, base with tiny denticulations at lateral third, anterior angles slightly acute and slightly concave, posterior angles obtuse and almost flat; surface of pronotum with moderately dense punctures of same size as those of frons, punctures sparser at middle. Scutellum with few basal punctures. Elytra longer than wide (1.00:0.74), flat, sparsely punctate; striae and broad intervals with punctures larger than those of pronotum, costae with minute and scarcely visible punctures, sutural interval with scarce, minute punctures; margins with few small setae at basal third. Abdomen laterally rounded, second and third visible sternites with two small rounded swellings at middle; propygidium distinctly grooved; pygidium wider than long and slightly convex, surface with coarse, sparse, setiferous punctures.

Protibiae tridentate with the apical inner border cut-out, basal tooth situated in front of middle and separated from anterior two teeth; first mesotarsomere longer than second; metafemora scarcely punctate between the marginal rows of punctures; metacoxae laterally angled; tarsi longer than respective tibiae; claws gently curved, tooth nearer apex of claw than base, and slightly longer and wider than apex of claw. Genitalia with parameres shorter than basal piece, jointed on inner margin at about basal fourth, and with minute setae on apical and ventral surfaces (Figs. 1–2).

**Variation.** Males (seven paratypes). Length 12.1–13.5 mm; maximum width across elytra 6.6–7.8 mm. In some specimens the swellings at the lateral third of the clypeus are more distinct, and the convexity of the front of the head is more pronounced. The angles of the pronotum may be more concave than in the holotype, and the punctuation of head, pronotum, and elytra varies slightly in density.

**Female.** Unknown.

**Etymology.** It is my pleasure to name this species for Eduardo del Río García, known by the nickname Rius, who is a great Mexican cartoonist and social critic, and resident of the state of Morelos. His extensive work has been translated into several languages, and has been read by many generations.

**Distribution.** *Diplotaxis riusi* is known from two nearby localities about 40 km southeast of the city of Monterrey, Nuevo León, Mexico. These localities have a humid forest with oak (*Quercus* L., Fagaceae) as the principal tree element. They range in elevation from 750 m to 850 m. These features contrast with the drier forests inhabited by *Diplotaxis belfragei* Fall and *Diplotaxis bakeri* Cazier, the two species seemingly most closely related to *D. riusi*.

**Remarks.** *Diplotaxis riusi* belongs to the *D. brevicollis-haydenii* species-group because of the following characters: dorsum entirely glabrous; clypeus with anterior angles rounded; reflexed underside of clypeus transversely furrowed; mandibles large and bulbous; labrum prominent and situated in front of the underside of clypeus; eyes small, not reaching the gular region; antennae with 10 antennomeres; protibiae tridentate with the apical inner border cut-out; first mesotarsomere longer than second; and metacoxae laterally angled. Within this species-group, *D. riusi* shares the following characters with *D. belfragei* and *D. bakeri*: length of clypeus less than one-half the cephalic length; apical margin of clypeus distinctly emarginated; base of clypeus without transverse ridge extending almost from eye to eye, labrum deeply concave with its frontal margin strongly arcuate; labrum no more than twice wider than long, at middle distinctly longer than reflexed underside of clypeus; mentum concave with transverse declivity posteriorly bounded by a distinct and glabrous edge; pronotum with front and hind angles feebly concave; and hind femora scarcely punctate between the marginal rows of punctures.

*Diplotaxis riusi* differs from *D. bakeri* in having the body length equal to or greater than 12 mm (equal to or less than 11 mm for *D. bakeri*) and the front of head transversely tumid (flat in *D. bakeri*). From *D. belfragei*, the new species differs by the head having punctures smaller and sparser (coarse and densely punctate in *D. belfragei*). From both species, *D. riusi* differs by the clypeus being tumid at lateral thirds (entirely flat in *D. bakeri* and *D. belfragei*), the dull elytra (not shiny in *D. bakeri* and *D. belfragei*), the elytral costae with minute, scarcely visible punctures (with small, distinct punctures in *D. bakeri* and *D. belfragei*), and parameres shorter than basal piece and with minute setae on apical and ventral surfaces (Figs. 1–2) (parameres as long as the basal piece and glabrous in *D. bakeri* and *D. belfragei*).

The key to the *D. brevicollis-haydenii* species-group given by Vaurie (1960) is modified as follows to incorporate *D. riusi*:

20. Clypeus feebly emarginate in front and as long as at least one-half length of head; declivity of mentum appearing rather flat, not advanced; Arizona and northwestern Mexico.....*D. boops* in part
- 20'. Clypeus distinctly emarginate and about one-third length of head; declivity of mentum either advanced prominently as a ledge or deeply concave from side to side..... 20a
- 20a. Clypeus tumid at lateral third; elytra opaque; parameres with minute setae on apical and ventral surfaces; northeastern Mexico .....  
.....*D. riusi*, new species
- 20a'. Clypeus entirely flat; elytra shiny; parameres glabrous ..... 21
21. Head coarsely punctate; declivity of mentum usually as long as one-half length of mentum; length 10–14 mm; claws toothed either medially or subapically; western United States and northeastern Mexico..... *D. belfragei*
- 21'. Head finely, shallowly punctate; declivity of mentum usually no longer than one-third length of mentum; length 8.5–11.0 mm; claws toothed in front of middle; northeastern Mexico.....*D. bakeri*

#### ACKNOWLEDGMENTS

I thank Harry Brailovsky and Santiago Zaragoza (Instituto de Biología, UNAM) for the loan and gift of most specimens in the type series. I also thank the helpful comments of two anonymous reviewers.

#### REFERENCES CITED

- Bezdek, A. 2004.** Catalogue of Diplotaxini (Coleoptera: Scarabaeidae: Melolonthidae) of the Old World. *Zootaxa* 463: 1–90.
- Davidson, J. P., and J. M. Davidson. 2006.** Two new species of *Diplotaxis* Kirby, 1837, from Arizona with a key and notes on the *D. misella* group (Coleoptera: Scarabaeidae). *The Pan-Pacific Entomologist* 82(1): 74–81.
- Delgado, L. 1990.** Dos nuevas especies mexicanas de *Diplotaxis* del grupo “puberea” (Coleoptera: Melolonthidae: Melolonthinae). *Folia Entomológica Mexicana* 78: 61–70.
- Delgado, L. 2001.** A new Mexican species of *Diplotaxis* Kirby (Coleoptera, Melolonthidae, Melolonthinae) of the *puberula* group. *Bulletin de la Société Entomologique Suisse* 74: 139–142.
- Delgado, L., and F. Capistrán. 1992.** Two new species of *Diplotaxis* from Mexico (Coleoptera: Melolonthidae). *Journal of the New York Entomological Society* 100(4): 574–580.
- Delgado, L., and F. Capistrán. 1993.** Two new species of *Diplotaxis* from Biosphere Reserve of El Cielo, Mexico. *Revista Brasileira de Entomologia* 37(2): 267–272.
- Delgado, L., and L. E. Rivera-Cervantes. 1992.** A new species of *Diplotaxis* (Coleoptera: Melolonthidae; Melolonthinae) from Mexico. *The Coleopterists Bulletin* 46(4): 325–329.
- Evans, A. V., and A. B. T. Smith. 2009.** An electronic checklist of the New World chafers (Coleoptera: Scarabaeidae: Melolonthinae). Version 3. Available from: [www-museum.unl.edu/research/entomology/SSSA/NW-Melo-v3.pdf](http://www-museum.unl.edu/research/entomology/SSSA/NW-Melo-v3.pdf) (Accessed on 4 February 2011).
- McCleve, S. 1993.** Three new species of flightless *Diplotaxis* from Oaxaca, Mexico (Coleoptera: Scarabaeidae: Melolonthinae). *The Coleopterists Bulletin* 47(1): 43–50.
- Vaurie, P. 1958.** A revision of the genus *Diplotaxis* (Coleoptera, Scarabaeidae, Melolonthinae), Part I. *Bulletin of the American Museum of Natural History* 115(5): 267–396.
- Vaurie, P. 1960.** A revision of the genus *Diplotaxis* (Coleoptera, Scarabaeidae, Melolonthinae), Part II. *Bulletin of the American Museum of Natural History* 120(2): 161–434.

(Received 13 March 2011; accepted 20 April 2011. Publication date 20 June 2011.)