

**TWO NEW SPECIES OF *GYRIOSOMUS* GUÉRIN-MÉNEVILLE  
FROM THE CHILEAN COASTAL DESERT (COLEOPTERA:  
TENEBRIONIDAE: NYCTELIINI)**

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*Abstract.*—Two new species from the Chilean coastal desert, *Gyriosomus granulipennis* and *Gyriosomus multigranulosus* (Pimeliinae: Nycteliini), are described and included in the most recent key for the genus. Distributional and habitat records, habitus photographs, and illustrations of the pronotum and prosternum for these two new species are included.

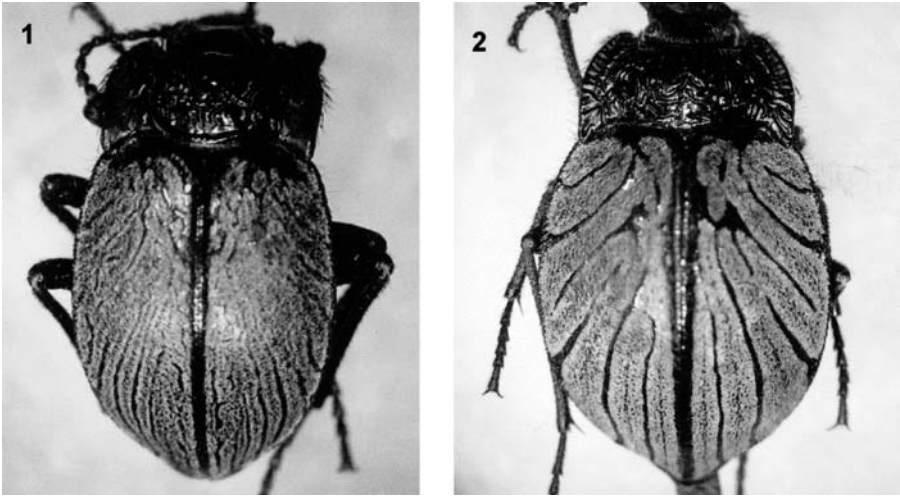
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Members of the tribe Nycteliini are found in the neotropics from central Peru to southern Chile and Argentina (Flores, 1997) and also recorded in northeastern Brazil (Flores and Triplehorn, 2002). *Gyriosomus* Guérin-Méneville is one of the more diverse genera of the Nycteliini, with 35 described species (Flores, 1997). The most recent revision of the genus was made by Kulzer (1959). All species of this genus inhabit northern Chile from Reserva Nacional de Pajón (25°00'S) in Region II to Rancagua (34°11'S) in Region VI (Pizarro-Araya and Jerez, 2004).

Species of *Gyriosomus* are important components of epigeal entomofauna within coastal ecosystems in northern Chile (Peña, 1959; Crawford et al., 1993; Cepeda-Pizarro et al., in press). Most of the species show rapid population growth associated with unusual rains associated with the El Niño-Southern Oscillation (ENSO) (Cepeda-Pizarro et al., in press). *Gyriosomus* species play an important role by increasing the fragmentation of vegetal detritus (Cepeda-Pizarro, 1989), and are an important trophic resource to numerous vertebrates (Crawford et al., 1993) such as the lizard *Callisotax palluma* Molina, the black-faced ibis *Theristicus caudatus* (Gmelin), the seagull *Larus modestus* (Tschudi) (J. Pizarro-Araya, pers. obs.), and the fox *Pseudalopex culpaeus* Molina (Peña, 1959).

In this paper we describe two new species of *Gyriosomus*, with distributional and habitat records and include these in the most recent key for the genus.

Type specimens are deposited in the following collections: FMNH (Field Museum of Natural History, Chicago, USA), IADIZA (Instituto Argentino de Investigaciones de las Zonas Áridas, Mendoza, Argentina), JEBC (Juan Enrique Barriga Private collection, Curicó, Chile), LEULS (Laboratorio de Entomología Ecológica, Universidad de La Serena, La



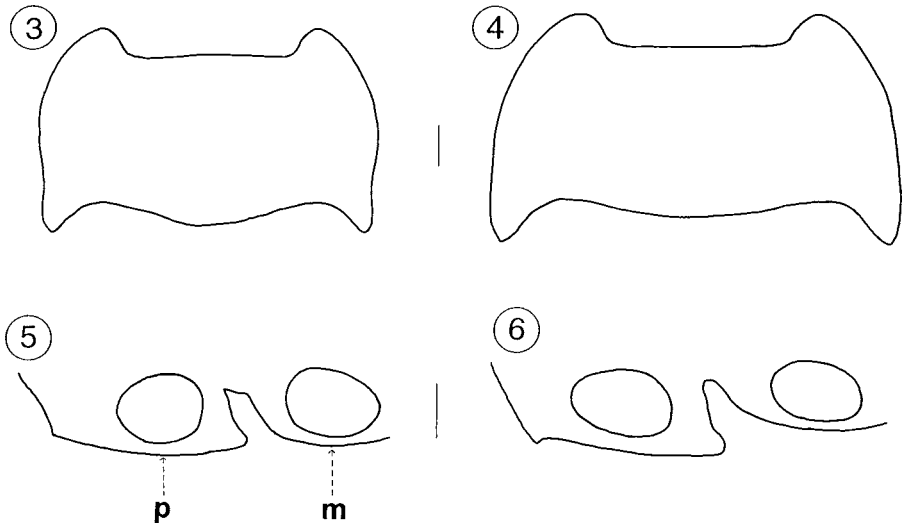
Figs. 1, 2. Habitus in dorsal view of *Gyriosomus granulipennis* (1) and *G. multigranulosus* (2).

Serena, Chile), MACN (Museo Argentino de Ciencias Naturales Bernardino Rivadavia, Buenos Aires, Argentina), MNNC (Museo Nacional de Historia Natural, Santiago, Chile), NHMB (Natural History Museum, Basel, Switzerland), OSUC (Ohio State University, Columbus, USA), UCCC (Universidad de Concepción, Concepción, Chile), and USNM (National Museum of Natural History, Smithsonian Institution, Washington, DC, USA). Body length was measured dorsally, along the midline, from anterior margin of labrum to elytral apex. Drawings were made with a camera lucida adapted to a stereoscopic microscope.

### ***Gyriosomus granulipennis*, new species**

Figs. 1, 3, 5

**Description.** Length 17–24 mm. Disc of pronotum and elytra shiny black (Fig. 1); lateral parts of pronotum, pseudopleuron, head, ventral surface, antennae, and legs dull black. *Head.* Frons with a tuft of setae on inner dorsal margin of eyes. Antennomere 11th with apical tomentose sensory patches on distal 3/4. *Thorax.* Pronotum glabrous; disc of pronotum shiny black, convex, at lower level than elytra, with one crescent shaped depression in posterior half, with deep wrinkles not reaching anterior margin but reaching posteriorly to the crescent depression; wrinkles of disc rugose in male, in female forming a parabola; lateral parts of pronotum dull black, without wrinkles, with small punctures; anterior and lateral margins concave; lateral margins with two rows of long setae on groove formed by double lateral margin; posterior angles acute projecting backward to elytral humeri; pronotum widest at mid point, width of pronotum two and one-half times length at mid point (Fig. 3). Prosternum horizontal with posterior apophysis (Fig. 5), with triangular edge on anterior margin, posterior apophysis longer in male; prosternum higher than mesosternum (Fig. 5). Mesosternum with long setae on the whole surface, longer in the middle. Metasternum in male pubescent on the whole surface, longer in middle, in female pubescent only on sides, glabrous in the middle.



Figs. 3–6. Body details of *Gyriosomus* spp. 3, 4. Pronotum, dorsal aspect. 3, *Gyriosomus granulipennis*; 4, *G. multigranulosus*. 5, 6. Prosternum and mesosternum, lateral aspect. 5, *Gyriosomus granulipennis*; 6, *G. multigranulosus*; m, mesosternum, p, prosternum. Scale bar = 1 mm.

*Elytra* with base shiny black, without protuberances, glabrous; suture feebly raised in anterior half; entire surface almost completely covered with short, fine but conspicuous golden pubescence, including suture, on the anterior half of elytron arranged in irregular patches limited by rugose intervals, on the posterior half arranged into straight, parallel longitudinal 10–11 striae which reach lateral margin (Fig. 1); width of one interval less than width of one stria (Fig. 1); entire surface densely covered with small protuberances arranged on irregular patches, striae, and intervals, more abundant on posterior than anterior, on anterior half protuberances are progressively less dense from outer to inner part; lateral margin thick, granulate, almost reaching the apex, gradually disappearing on apical declivity, not separated by groove from dorsal surface; pseudopleuron smooth, with sparse protuberances and with short golden setae on posterior part of inferior half, not forming any pattern of pubescence; epipleuron smooth and glabrous. *Legs*. Femora more pubescent on ventral surface than dorsal, pro- and mesofemora with pubescence more dense and longer than metafemora, on all surfaces. *Abdominal* sternum 3 of male with a tuft of setae on central area, female glabrous. **Etymology.** Named *granulipennis* to emphasize the grain covering the dorsal surface of elytra of this species.

**Distribution and habitat.** This species has been collected only on Choros island (National Reserve Pingüinos de Humboldt), Region IV of Chile, walking during the daytime on dunes and eating flowers and leaves of *Frankenia chilensis* K. Presl (Frankeniaceae) and *Nolana* sp. (Nolanaceae) (Gina Arancio, pers. comm.). Further sampling would probably allow expansion of the distribution of this species to the two adjacent islands (Gaviota Island and Damas Island) or to the coastline adjacent to Los Choros.

**Types.** Holotype, male and allotype, female: CHILE, **IV Region**, Isla Choros, Los Choros, 80 m (29°16'20"S, 71°32'36.2"W), Elqui Province, 19.x.2002, G. Arancio coll. [*Gyriosomus*/

*granulipennis* n.sp./HOLOTYPUS male/Det. J. Pizarro-Araya & G. Flores 2003] (MNNC). Paratypes: CHILE, IV Region: 3 specimens, same data as holotype (1 UCCC, 1 IADIZA, 1 LEULS).

**Discussion.** The most recent key for the genus *Gyriosomus* is that by Kulzer (1959), which should be modified at couplet 10 to key out *Gyriosomus granulipennis*:

- 13 (10). Pronotum smooth, without wrinkles . . . . . (follows in Kulzer, 1959)  
 10 (13). Pronotum with rugose wrinkles . . . . . 10a  
 10a Elytra with protuberances arranged on the striae and the intervals . . . *G. granulipennis* n. sp.  
 – Elytra with protuberances arranged only on the striae . . . . . (follows in Kulzer, 1959 to key out the species *G. whitei* Waterhouse and *G. kingi* Reed (11 (12)).)

### ***Gyriosomus multigranulosus*, new species**

Figs. 2, 4, 6

**Description.** Length 15–22 mm. Pronotum, head, dorsal surface of elytra, pseudopleuron, and ventral surface shiny black (Fig. 2), femora and tibiae black, tarsi dark brown and antennae black to dark brown. *Head.* Frons with a tuft of setae on inner dorsal margin of eyes. Antennomere 11th with apical tomentose sensory patches on distal 3/4. *Thorax.* Pronotum glabrous, disc convex, irregularly and roughly rugose, with deep wrinkles reaching anterior, posterior, and lateral margins; lateral parts of pronotum with small punctures; anterior and lateral margins concave; lateral margins with one row of long setae on the groove formed by double lateral margin; posterior angles acute projecting backward to elytral humeri; pronotum widest behind middle, width of pronotum twice length at mid point (Fig. 4). Prosternum horizontal with posterior apophysis (Fig. 6), with triangular edge on anterior margin, prosternum higher than mesosternum (Fig. 6). Mesosternum with long setae on whole surface, more abundant in male. Metasternum in male pubescent on whole surface, with a tuft of setae in the middle, in female pubescent only on sides and glabrous in middle. *Elytra* with base shiny black, without protuberances but with sparse golden setae; suture very raised in the anterior half; entire surface almost completely covered with short, fine but conspicuous golden velvet-like pubescence, arranged into 6–7 longitudinal striae which are divergent on the anterior half and parallel on posterior half of elytron, reaching lateral margins (Fig. 2); width of one stria four times width of one interval (Fig. 2); dorsal surface covered with small protuberances arranged only on striae, forming 2–4 sinuous rows within each stria; lateral margin thick, granulate and almost reaching apex, gradually disappearing on apical declivity, not separated by a groove from dorsal surface; pseudopleuron smooth and glabrous; epipleuron smooth and with short dark golden setae. *Legs.* Femora more pubescent on ventral surface than dorsal, pro- and mesofemora with pubescence more dense and longer on dorsal, ventral surface than metafemora; protibiae with pubescence more dense on all surfaces than meso- and metatibiae. *Abdominal* sternum 3 of male with a tuft of golden setae on central area, female glabrous.

**Etymology.** Named *multigranulosus* for the 2–4 sinuous rows of protuberances within each pubescent stria of the elytra.

**Distribution and habitat.** This species was found in Socos, Mineral de Talca and Talinay in Limarí Province, and in Condoriaco, Punta de Teatinos, and Colina El Pino in Elqui Province, Region IV of Chile, showing sympatry with other species of *Gyriosomus* such as *G. luczotii* Laporte, *G. leechi* Kulzer, and *G. reedi* Kulzer and sharing the habitat with other tenebrionid species such as *Praocis (Praocis) hirtella* Kulzer and *Praocis (Anthrasomus) chevrolati*

Guérin-Ménéville (Praocini). *Gyriosomus multigranulosus* inhabits the Gajardo's (1994) mesic vegetational formation called coastal steppe scrub associated with *Nolana brunonianus* Hook. et. Arn (Nolanaceae), *Nolana sedifolia* Poepp., *Haplopappus foliosus* DC. (Asteraceae), and *Puya chilensis* Molina (Bromeliaceae) (J. Pizarro-Araya, pers. obs.).

**Types.** Holotype, male, and allotype, female: CHILE, **IV Region**, Socos, 200 m (30°44'S, 71°31'W), 25.xi.1987, J.E. Barriga, [*Gyriosomus/multigranulosus* n.sp./HOLOTYPUS male/Det. Det. J. Pizarro-Araya/& G. Flores 2003] (MNNC). Paratypes (all with the two following labels below the geographic data: [PARATYPUS] [*Gyriosomus/multigranulosus* n.sp./Det. J. Pizarro-Araya/& G. Flores 2003]): CHILE, **IV Region**: 121 specimens, same data as holotype (7 FMNH, 16 IADIZA, 10 JEBC, 24 LEULS, 10 MACN, 26 MNNC, 7 NHMB, 4 OSUC, 10 UCCC, 7 USNM); 2 specimens, Punta de Teatinos, La Serena (29°49'S, 71°19'W), 9.XI.1991, A. Cortes (1 LEULS, 1 IADIZA); 2 specimens, Colina El Pino, La Serena, 90 m (29°54'S, 71°15'W), 22.IX.1998, J. Pizarro-Araya (1 LEULS, 1 IADIZA); 1 specimen, Condoriaco, Elqui (29°42'S, 70°50'W), 16.XI.1996, J. Pizarro-Araya (LEULS).

**Other material examined** (not paratypes). CHILE, **IV Region**: Mineral de Talca, 50 m (30°55'S, 71°41'W), 28.ix.2003, J. Pizarro-Araya, 3 (LEULS); Talinay, 325 m (30°50'59.5"S, 71°35'21.0"W), 19.x.2003, J. Pizarro-Araya, 1 (LEULS). These latter specimens were found in poor condition but we use these to demonstrate the geographic distribution.

**Discussion.** *Gyriosomus multigranulosus* keys to couplet 6 in Kulzer (1959). This key may be modified to include *G. multigranulosus*:

- 6 (9). Elytra with suture raised . . . . . 7
- 9 (6). Elytra with suture not raised . . . . . (follows in Kulzer, 1959)
- 8 (7). Pronotum smooth; first abdominal sternum in the male glabrous; elytra with slender longitudinal striae velvet-like pubescent gradually becoming irregular patches towards anterior part . . . . . *G. bridgesi* Waterhouse
- 7 (8). Pronotum with rugose wrinkles; first abdominal sternum in the male with long setae; elytra with broad longitudinal striae velvet-like pubescent continuous towards anterior part . . . . . 7a
- 7a Elytra with intervals wider than pubescent striae, with protuberances forming only one straight row within each pubescent stria; pronotum with wrinkles only on the disc and not reaching lateral margins . . . . . *G. luczotii* Laporte
- Elytra with pubescent striae wider than intervals, with protuberances forming 2–4 sinuous rows within each pubescent stria; pronotum with wrinkles arranged on the whole surface and reaching lateral margins . . . . . *G. multigranulosus* n. sp.

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