

Two new *Tarphius* species from Macaronesia (Coleoptera, Zopheridae)

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Two new species of *Tarphius* are described: *Tarphius desertaensis* n. sp. sifted from saxicole lichens on the small islet of Deserta Grande, east of Madeira, and *Tarphius jandiensis* n. sp. from Fuerteventura, in the Canary Islands, where it lives in the upper parts of the massif of Jandía as a relict of the once more hygrophilous fauna that inhabited the island. Both species are of small size and have a fairly convex body.

Keywords: Zopheridae; Colydiidae; *Tarphius*; Madeira; Canary Islands; new species

Introduction

The genus *Tarphius* Erichson, 1848 is well represented in Macaronesia in contrast with only seven species in the continental Mediterranean fauna: eight species are known from the Azores, 22 from the Madeiran Archipelago and 30 from the Canary Islands (Ślipiński and Schuh 2008). The last contributions to the Madeiran and Canarian faunas were published by Gösta Gillerfors in 1997 and 1991, respectively. During my field trips searching for *Laparocerus* (Curculionidae, Entiminae) in these archipelagos, I had the chance of sampling some small *Tarphius* on Deserta Grande and Fuerteventura, islands where the genus was not recorded previously. That study confirmed both as belonging to new species, one to be ascribed to subgenus *Glabrotarphius* Franz, 1967 and the other to subgenus *Atlantotarphius* Franz, 1967.

Taxonomy

Tarphius (Glabrotarphius) desertaensis n. sp.
(Figure 1)

Type material

Holotype. Madeiran archipelago (Portugal), Ilhas Desertas, Deserta Grande, Topo S, 390 m (32°30'05" N, 16°30'01" W) one ex 27 June 2008 leg. A. Machado (reg. TFMC/CO-15958 Museo de Ciencias Naturales, Santa Cruz de Tenerife). *Paratypes*, six exx same data (in my collection).

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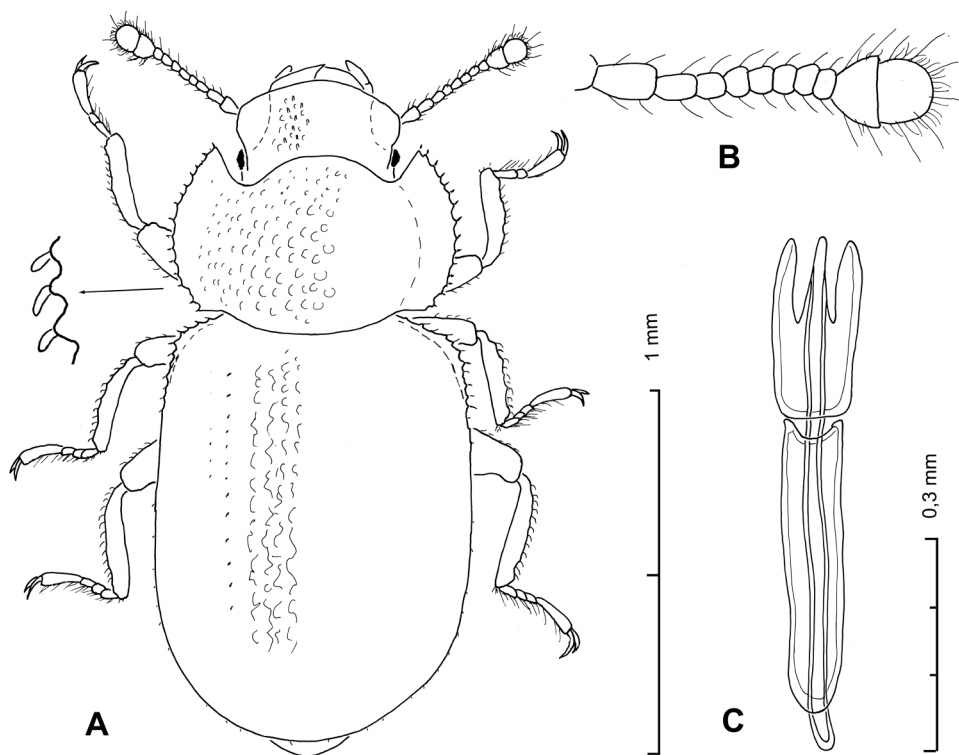


Figure 1. *Tarphius desertaensis* n. sp. imago (A), detail of antenna (B) and aedeagus (C).

Diagnosis

Characterized by its small size (< 2.5 mm), uniform brown colour, convex body, pronotum about $1.6 \times$ as wide as long, abdomen subcylindrical, at apex briefly protruding, elytra devoid of nodules, and tegument indistinctly tuberculate with separate small broad setae in rows.

Other small species (< 3 mm) of *Tarphius* present in the Madeiran archipelago differ as follows: *T. zerchei* Gillerfors, 1997 is smaller and has reduced eyes; *T. excisus* Wollaston, 1857 has a pronotum much wider than twice its length, and *T. lowei* Wollaston, 1854 bears nodules on the elytra (rufescent on a blackish background).

Description

Length 2.15–2.45, width 0.94–1.12 mm. Tegument brown; appendages slightly lighter.

Head. Greatest width before eyes; supraocular callosity developed and delimited by superficial furrows; anterior margin curved. Surface covered with indistinct granules and separate small setae. Eyes small, less protruding. Antennae slightly shorter than head width; segment 2 longer than 3, segments 4 and 5 subequal, and segments 6 to 8 slightly transverse (Figure 1B).

Pronotum transverse, 1.5 – $1.6 \times$ as wide as long; greatest width at or near middle; sides rounded, not greatly constricted anteriorly than posteriorly; separated tubercles

bearing short broad setae fringing lateral margin. Base widely curved distad (except at angles); anterior margin strongly curved. Disc strongly convex, not canaliculated at middle, with a slight declivity towards sides; these moderately flattened. Tegument with diffuse tubercles each bearing a small seta.

Elytra subcylindrical, 1.4–1.5 × as long as wide, slightly wider than pronotum, sides subparallel, widest in posterior half; lateral margin of elytra not visible from above in posterior half (hidden by lateral limbs); apical declivity abrupt and vertical, apex briefly protruding backwards and visible from above. Base oblique laterally; humeral angle obtuse and rounded, margin fringed by small tubercles bearing setae (Figure 1A); flattened humeral area very reduced. Dorsal part without nodules; tegument covered by indistinct flat tubercles ordered transversally and along intervals, these with a row of separate small broad setae pointing backwards.

Aedeagus as in Figure 1C. Median lobe blunt apically, as long as parameres; tegmen 1.6 × as long as parameres; ductus ejaculatoris projecting very slightly from tegmen.

Bionomics

All the specimens of the type series were sifted from leaf-litter, dead branches and vegetation (mostly lichens) growing on rocky walls facing West at the upper parts of the islet of Deserta Grande. The species may well be endemic to this little group of islets.

Tarphius (Atlantotarphius) jandiensis n. sp.

(Figure 2)

Type material

Holotype. Canary Islands (Spain), Fuerteventura, Jandía, Pico de la Zarza, 810 m (28°06'06" N, 14°21'19" W), 1 ♂ 5 March 2011 leg. A. Machado (reg. TFMC/CO15959 Museo de Ciencias Naturales, Santa Cruz de Tenerife). Paratype, 1 ♂, same data (in my collection).

Diagnosis

Characterized by its small size (< 3 mm), short, parallel and convex body, pronotum laterally rounded and slightly constricted at base, disc subglobose and covered with large flat tubercles; elytra squarish with rounded apex and steep sides; each elytron with two ridgelike longitudinal slight protuberances at third interval (basal and subapical), one at middle of fifth interval, and one indistinct latero-apical. Granules each bearing a small suberect lanceolate seta.

In the Canary Islands, only *Tarphius tenerifensis* Franz, 1967 is as small as the new species, but it is much more elongate in shape and belongs to subgenus *Tarphius* s. str. (without nodules on elytra).

Description (♂)

Length 2.75–2.85, width 1.36–1.42 mm. Tegument pitch brown, anterolateral area of pronotum and nodules on elytra lighter, yellowish brown; appendages rufescent.

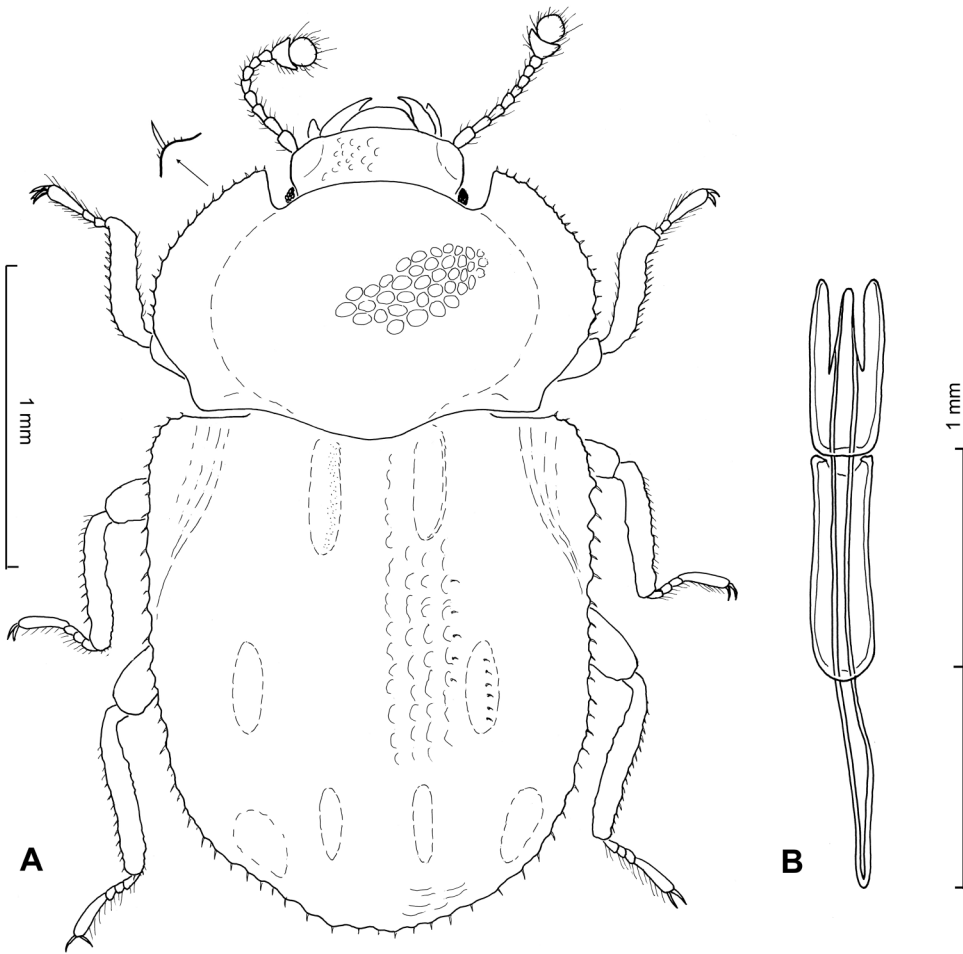


Figure 2. *Tarphius jandiensis* n. sp. imago (A) and aedeagus (B).

Head. Greatest width across eyes; lateral margins before eyes subparallel (slightly swollen), then oblique, anterior margin evenly curved. Surface covered with small granules and setae. Eyes small (smaller than antennal club), moderately protruding. Antennae with segment 2 longer than 3, segments 4 to 6 decreasing in length, segments 7 and 8 subequal.

Pronotum transverse, $1.6 \times$ as wide as long; greatest width at or near middle; sides strongly rounded, more constricted anteriorly than posteriorly, distinctly sinuate before hind angles and these somewhat prominent, obtuse, with blunt tips; anterior angles strongly protruding (tips sharper). Base sinuate, curved posteriad in middle; anterior margin curved forwards. Disc strongly convex, subglobose, not canaliculated at middle, conspicuously covered with large adjacent rounded granules (smaller in anterior region), each bearing a small suberect lanceolate testaceous seta. Lateral marginal area flattened with smaller, less conspicuous granules; granules and setae protruding at margin except at basal third. An incipient posterior fovea at beginning of convex part.

Elytra strongly convex, of squarish outline, somewhat longer than broad (length / width = 1.1), almost two times as long as pronotum, but not much wider. Sides almost parallel (maximum width at basal third), evenly rounded at apical third; sides very steep, particularly at apex (greatest height of abdomen at apical third). Base straight, humeral region widely flattened; humeral angles square, blunt (not protruding). Upper surface with rows of indistinct coalescent granules (less marked and more irregular than on pronotum) with short lanceolate setae and some very minute hairs at their base. These can be seen best with high magnification on granules protruding from lateral rim in dorsal view; setae shorter than distance between them; most are testaceous, some blackish. Nodules elongate and not well developed: in third interval one basal and another apical at the edge of declivity, in fifth interval one median; and in the posterolateral area (7–9 interval) a diffuse and more flattened nodule.

Aedeagus as in Figure 2B. Median lobe acutely pointed, slightly shorter than parameres; ductus ejaculatoris very long, projecting from tegmen by as much as the length of the tegmen.

Comment

A third specimen of *Tarphius* was collected by my colleague Rafael García in the same locality and date. It is a female of similar general aspect and proportions as the males above described, but with some notable differences:

Pronotum with a median longitudinal depression; margin before hind angles more sharply and deeply sinuate or excavate, thus the hind angles more prominent, acute, and pointed. Basal nodule of elytra on third interval more strongly developed; suture slightly elevated at disc. Dorsal tegment with irregular and abrupt rugosity and tubercles poorly defined except on sides (clearly protruding along the margins). Setae longer (as long as distance between tubercles) and basal ones longer and more easily observed. Abdomen less inflated posteriad, and apical declivity of elytra less pronounced.

It could be a remarkable exception, but Zopheridae in general do not show sexual dimorphism, except for some variations in the tarsi of a few species of *Tarphius* (Dajoz, 1977). Judging from the texture of the tegment, this specimen could be a somewhat aberrant one. However, the differences recorded may fall within the normal variation of the species, which belongs to the group of *T. simplex–canariensis* (Franz 1990), where intraspecific variation is high, particularly in sculpture and shape of pronotum. Without studying a longer series, I can not judge if this specimen is the female of *Tarphius jandiensis* n. sp. or of another coexisting undescribed species.

Bionomics

Tarphius jandiensis. n. sp. was found at Pico de la Zarza (Figure 3), the highest point of the massif of Jandía, a hotspot of biodiversity in the island of Fuerteventura. Many endemic relict species from the more humid former fauna of the island survive at present in the summit of this massif (some also in Betancuria), where the cloud layer of the trade winds maintain a special humid microclimate surrounded by lower arid habitats (Machado 1976). The specimens were sifted from leaf-litter, decaying branches and dry leaf rosettes of *Asteriscus sericeus* (Asteraceae), mixed with bryophytes growing on the trunks of this woody plant.



Figure 3. *Asteriscus sericeus* growing in the habitat of *Tarphius jandiensis* n. sp. at Pico de la Zarza, island of Fuerteventura.

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