



***Calacalles (Nanoacalles) mulagua* sp.n.**
(Coleoptera: Curculionidae: Cryptorhynchinae)*

by

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with 6 figures

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Abstract

A new species of the weevil genus *Calacalles* (*Nanoacalles*) Peyerimhoff, 1925 is described and distinguished from the related species *Calacalles pumilio* Bahr 2000 and *Calacalles atomarius* Bahr 2000 from Tenerife (Spain: Canary Island). The species is different to *Calacalles hermigua* Stüben & Astrin 2009 and *Calacalles nataliae* Astrin & Stüben 2009 from the same type locality on La Gomera (El Palmar); with 6 figures.

Key words. Curculionidae, Cryptorhynchinae, genus *Calacalles*, subgenus *Nanoacalles*, new species, taxonomy, systematics, Western Palaearctic, Spain, Canary Islands, La Gomera.

***Calacalles (Nanoacalles) mulagua* sp.n.**

Type material

Holotype. 1♂, „E.: Canary Is., La Gomera, E Hermigua: El Palmar, thermophilous shrub forest: *Descurainia millefolia*, 28°09'26" N 17°09'47" W, 627 m, 30.12.2009, leg. Stüben (39) “; coll. Curculio-Institute, D-Mönchengladbach. / **Paratypes.** 31♂, 33♀, data as for holotype, coll. Stüben; 9♂, 9♀, same locality, 2.12.2009, *Descurainia millefolia*, (*Sederitis*), leg. Stüben (2), coll. Stüben, CURCULIO-Institute, Mönchengladbach (1♀), 1♂ used for molecular analysis; 2♂, same locality, 23.2.2010, *Ficus carica*, leg. Stüben (74), coll. Stüben.

Further material. 11♂, 12♀, “E: Canary Is., La Gomera: Agulo - La Palmita, *Castanea sativa*, 28°10'58"N 17°12'05"W, 591 m, 13.1.2010, leg. Stüben (49a/b)”, coll. Stüben; 12♂, 10♀, “E: Canary Is., La Gomera: Las Rosas - El Tion, *Castanea sativa*, 28°9'59"N 17°14'47"W, 637 m, 21.1.2010, leg. Stüben (57)”, coll. Stüben, 2♂ used for molecular analysis; 30♂, 16♀, “E: Canary Is., La Gomera: S Vallehermoso, Los Loros, garden: *Castanea sativa*, 28° 8'57"N 17°16'36"W, 609 m, 11.2.2010, leg. Stüben (66)”, coll. Stüben; 4♂, 4♀, “E: Canary Is., La Gomera: La Palmita, *Ficus carica*, 28°10'45"N 17°12'39"W, 736 m, 25.2.2010, leg. Stüben (75)”, coll. Stüben; 10♂, 6♀, “E: Canary Is., La Gomera: La Palmita, *Castanea sativa*, 28°10'18"N 17°12'53"W, 672 m, 25.2.2010, leg. Stüben (76)”, coll. Stüben; 1♂, “E: Canary Is., La Gomera: S Vallehermoso (to El Tion), *Ficus carica*, 28°10'17"N 17°15'19"W, 632 m, 26.2.2010, leg. Stüben (78)”, coll. Stüben.

Description (Fig. 1, 3, 5, 6)

Length. 1.60 - 2.80 mm (without rostrum).

Head. Rostrum broader towards the sleek apex; rostrum of male with a dense cover of white scales that continues anteriorly to the insertion of the antennae, 3x as long as wide, finely and sparsely punctuated; rostrum of female slender, nearly 4x as long as wide, more brilliant; antenna with 7 light brown antennomeres; eyes large, rounded.

Pronotum. As long as wide, widest behind the middle, at the end of the second fifth of the pronotum. Oblong-ovaly rounded at the sides, laterally narrowing in rectilinear way behind the fore-margin, with a poorly developed depression; disc of the pronotum strongly arched in front of the base, flat behind fore-margin; circular and saucer-shaped scales completely adherent. If the scale cover is complete, the dense and fine punctures are not visible under the scales; disc of the pronotum with dark brown scales in front of base; this dark brown spot extends to the base of elytra (very characteristically); bright longitudinal fasciae or (very variable) beige-coloured/white spots at the sides and in front of the fore-margin. Fore-margin with corona of 16 to 20 light and dark, erect bristles; identical bristles isolated at the sides and also densely packed in the middle of the pronotum (forming a fascia of bristles).

Elytra. Slender, 1.52x - 1.59x as long as wide, laterally from the base towards the centre line broaden rectilinear (in front of the middle nearly “box-shaped”); rounded egg-shaped towards the apex; contour-line of elytra flatter behind the base in lateral view, elytral declivity more steeply sloped. With round, adherent, mostly brown scales which completely cover the intervals. Circular punctures of the broad elytral striae very dense and always visible. Sutural interval and the second, fourth and sixth intervals elevated (uneven intervals impressed) and with a row of flattened, erect, slender, tapered and 4x - 4,5x as long as wide bristles; these bristles separated by about 2x bristle-length. Base of elytra concave, with a dark brown spot in the middle. Lateral light longitudinal fasciae of pronotum continued as small spots on the fourth and fifth intervals beyond elytral base; scutellum with light scales; with a large, broad and white fascia on the elytral slope.

Legs. Front femora reaching the fore margin of the pronotum, hind femora reaching the fourth abdominal segment (Fig. 6); covered with light and widely-spaced upright bristles. Tarsi and apex of tibiae light brown.

Venter. First abdominal sternite a little bit shorter than the three following sternites together. Second abdominal sternite longer than the very small sternites 3 and 4 together (Fig. 6).

Female genitalia. See Fig. 5.

Aedeagus. Internal sac with structure resembling two brackets which are brought into contact at the apex; with a **W**-shaped structure in the centre (Fig. 3).

Discussion and differential diagnosis

A detailed molecular (Bayesian) phylogeny for the Canarian and Mediterranean genus *Calacalles* (*Nanoacalles*) Peyerimhoff, 1925 was presented by Astrin & Stüben 2009, using two mitochondrial genes (CO1 and 16S).

The new species belongs to the subgenus *Nanoacalles* Astrin & Stüben 2009 and is closely related with *Calacalles pumilio* Bahr 2000 (Tenerife: Teno Mts, La Gomera) and *Calacalles atomarius* Bahr 2000 (Tenerife: Anaga Mts); also these species possess an internal sac of aedeagus with a structure resembling two contiguous brackets, but without **W**-shaped sclerites in the centre (cf. Astrin & Stüben 2009, Fig. 13, 14). The sides of elytra of *C. pumilio*, a very rare species on La Gomera (cf. Bahr 2000), are clearly longer, oblong-ovaly rounded towards the centre line (and practically not rectilinearly broadened) and the more slender and more tapered bristles on the elytral slope are longer (7x-8x). Two different species were described from the same locality on La Gomera (El Palmar, see Fig. 1, 2) by Astrin and Stüben in 2009: *Calacalles hermigua* Stüben & Astrin and *Calacalles nataliae* Astrin & Stüben. However, *C. hermigua* has a broader, laterally oblong-ovaly rounded elytra, which are 1.30x - 1.47x as long as wide (Astrin & Stüben 2009, Fig. 3), and shows an aedeagus with a structure of the internal sac like onion skins (ibid. Fig. 6). The differentiation of females of both species is more difficult, but the bristles on the elytral slope of *C. hermigua* are a little longer, more slender and more tapered. Also the elytra of the similar species *C. nataliae* are oblong-ovaly rounded (cf. Fig. 1 vs. 2), and the aedeagus shows a **V**-shaped structure of the internal sac (Fig. 3 vs. 4).

Ecology. The species was mainly collected near El Palmar (Roque Caraballo) from the lignified and partially dead stems of *Descurainia millefolia* (Jacq.) W. & B. (family Cruciferae) growing on a steep, moist and shadowy rocky slope. However, the species also lives on the dead twigs of the cultivated useful trees *Castanea sativa* and *Ficus carica* in the thermophilous shrub zone - like many others endemic Cryptorhynchinae on the Macaronesian Islands!

Etymology. The specific epithet is a noun in apposition and the Guanche name of one of the four aboriginal districts of La Gomera (Hermigua – Agulo), where the species was first discovered.

Distribution. *Calacalles mulagua* is so far only known from the North of La Gomera, see map (cf. Fig. 1).

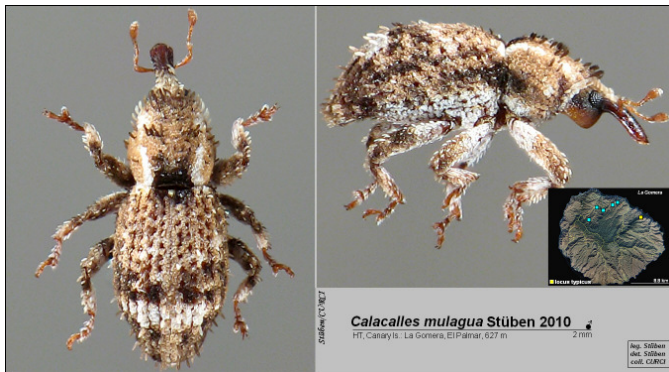


Fig. 1 *C. mulagua* sp.n. - habitus (dorsal/lateral) - distribution



Fig. 2 *C. nataliae* - habitus (dorsal/lateral) - distribution



Fig. 3 *C. mulagua* sp.n. - aedeagus (ven./lat.)



Fig. 4 *C. nataliae* - aedeagus (ven./lat.)



Fig. 5 *C. mulagua* - female genitalia



Fig. 6 *C. mulagua* - habitus (ven.)

References

- Astrin, J.J. & Stüben, P.E. (2009): Molecular phylogeny in 'nano-weevils': description of a new subgenus and two new species of *Calacalles* from the Macaronesian Islands (Curculionidae: Cryptorhynchinae). – *Zootaxa* **2300**: 51-67.
 Bahr, F. (2000) Die westpaläarktischen Arten des Genus *Calacalles* Peyerimhoff 1925 stat. n., Teil 1: Europa, Nordafrika und die Kanarischen Inseln (Col.: Curculionidae: Cryptorhynchinae). In: Stüben, P. E. (ed.). Die Cryptorhynchinae der Kanarischen Inseln. Systematik, Ökologie und Biologie - *SNUDEBILLER: Studies on Taxonomy, Biology and Ecology of Curculionoidea*, **1**, 114–136.

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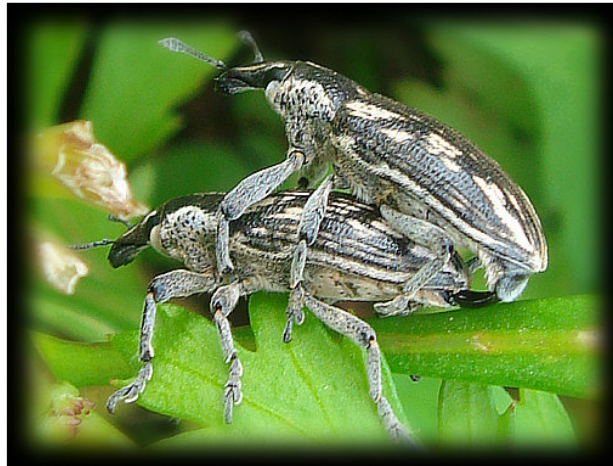


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Cyphocleonus armitagei (Wollaston, 1864), La Gomera

Biological research center CURCULIO-INSTITUTE / La Gomera

In 2010 Peter E. Stüben established the „Biological research center Curculio- Institute / La Gomera“ on La Gomera collaborating closely with the Casa Diversa >casadiversa.com<. The research center is located in the idyllic valley of Hermigua in the vicinity of the world-famous Garajonay National Park. It is part of a nicely furnished apartment-hotel.

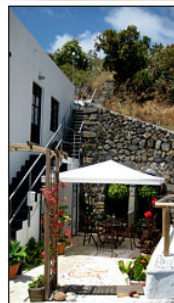
The apartment-hotel, which is near the center of the village, provides both the best conditions for recreation and the initial point of exploration of the weevil fauna of the Canaries for our members, as well as for our Spanish colleagues of the neighbouring islands. Already in 2010, a representative collection available to every member has been established, as well as microscopes and the necessary collecting permit for La Gomera. Moreover, there will be special offers (up to 20 percent, depending on the duration of residence) on accommodation and car rental to members of the Curculio-Institute. Due to all of this, please contact directly with our cooperation partners and members on location: Raquel and Norbert Bewernitz (raquelnorbert@hotmail.com), who will always support and affectionately entertain you.

The main goal of the non-profit-making Curculio-Institute is the advancement of scientific intercommunion and teamwork with local institutions and public authorities responsible for nature conservation. Therefore we do not only attach importance to a close cooperation with the authorities mentioned above (primarily on La Gomera and Tenerife), but we also encourage our members to become as involved as possible in the conservation of the unique fauna and flora of La Gomera.

This of course primarily includes adhering to all policies of the public authorities responsible for nature conservation on La Gomera. In case of the discovery of a weevil species new to science it is assumed that the holotype specimen will be deposited in the Natural History Museum of Santa Cruz de Tenerife. In addition to such matters, our members are expected to do at least one "good deed" per visit. This could for instance be a short presentation in the Casa Diversa with an audience from Hermigua, a field trip with interested visitors of the Casa Diversa, a guided tour along the nature trail of the Barranco Diversa (if you are a botanist), which is about 800 meters long, or the deposition of further specimens in the representative collection. But of course, you are free to develop your own idea of "how best to help and promote La Gomera's wildlife and its conservation and conceive your own personal "good deed". Just make sure to leave behind a well preserved island and people who treasure the Curculio-Institute and you!

In this spirit, we wish you all the best and a pleasant stay in the Casa Diversa. Please help to realise our aim of cross-frontier entomological research and scientific cooperation for the good of the native fauna and flora of La Gomera, which should be a unique experience for us and generations to come.

The managing board of the Curculio-Institute
22nd May 2010



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