



***Auletobius (Canarauletes) garajonay* sp.n. from La Gomera (Canary Islands)**
(Coleoptera: Curculionoidea: Rhynchitidae)*

von

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with 11 figures

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Abstract

A new species of the weevil genus *Auletobius* Desbrochers des Loges, 1869, *Auletobius garajonay* sp.n. is described from the Canary Island La Gomera (Spain). This species is distinguished from the closely related species *A. cylindricollis* (Wollaston, 1864) (locus typicus: La Palma). The new species was included in a molecular analysis of the subgenus *Canarauletes* Legalov, 2007 (using the mitochondrial COI-gene). The p-distances of the COI-gene to the closely related species are presented here in a map and a Neighbor Joining tree.

Key Words. Curculionoidea, Rhynchitidae, new species, taxonomy, molecular analysis, morphology, Spain, Canary Islands, La Gomera



Auletobius garajonay sp.n., a new Rhynchitidae from La Gomera (photo by P.E. Stüben)

Introduction

T.V. Wollaston recognised that the Canarian species of *Auletobius*, currently placed in the subgenus Legalov, 2007, included taxa that are hard to separate [Wollaston 1864]. However, Morris considered *Auletobius cylindricollis* (Wollaston, 1864) to be the most distinctive and least controversial of the Canarian species of the genus [Morris 2004: 35]. I argued vigorously, in my catalogue of the Curculionoidea of the small Canarian island of La Gomera, for a molecular revision of the Canarian-Moroccan *Canarauletes*, having realised how difficult it is to establish morphological differential diagnoses of the five species of the group [Stüben, 2011]. That number could be higher, as I noticed that specimens of *Auletobius* cf. *cylindricollis* from La Gomera did not have elongate pronota, like those from La Palma (the

type locality), but slightly transverse or quadrate ones [Stüben, 2011]. Unlike M. G. Morris, I did not believe that “these anomalous Gomeran *Auletobius* are not thought to constitute an undescribed species” [Morris 2007: 196], especially the elytra of *A. cylindricollis* (from La Palma) are more slender and more ogivally rounded apicad.

This hypothesis is now confirmed by molecular data. The new species from La Gomera can be distinguished from specimens of *A. cylindricollis* from Mount Tagoja (La Palma) – living on *Cistus monspeliensis* L. – and from specimens from the entrance of the Cubo de la Galga (in the north-east of La Palma) – living on *Rubus* sp. – by a p-distance of **9.4 - 9.7%** of the mitochondrial COI gene. At present it is not possible to determine whether distinctly smaller specimens of *A. cylindricollis* from Mount Tagoja belong to a further new species or subspecies [Stüben, 2015].

Auletobius (Canarauletes) garajonay sp.n.

Typenmaterial

Holotype: 1♂, “E: Canary Is., La Gomera: N Epina: Teselinde, laurel forest: *Rubus*, 28°11'36"N 17°17'31"W, 705m, 6.1.2010, leg. Stüben (45)”, coll. Museo de Ciencias Naturales de Santa Cruz (Tenerife). / **Paratypes:** 1♀, same data (see holotype), coll. CURCULIO Institute (Germany, Mönchengladbach.); 2♂, 1♀, “E: Canary Is., La Gomera: N Epina, Teselinde, laurel forest: *Rubus*, 28°11'33"N 17°17'39.17"W, 704 m, 19.2.2011, leg. Stüben (27)”; coll. Stüben. / 1♂, 2♀, “E.: Canary Is., La Gomera, S Hermigua: El Cedro (creek), *Rubus*, 28° 7'52"N 17°13'02"W, 845 m, 8.2.2011, leg. Stüben (6a)”, coll. Stüben. / 2♀, “E.: Canary Is., La Gomera, S Hermigua: La Carbonera, 28° 8'4"N 17°11'36"W, 650 m, 19.12.2011, leg. Stüben (6)”, coll. Stüben. / 1♂, “E: Canary Is., La Gomera: S Hermigua, Meriga, gardens (at night): *Rubus*, 28°09'15"N 17°14'10"W, 824 m, 7.2.2011, leg. Stüben (3b)”, coll. ZFMK. / 1♂, “E: Canary Is., La Gomera: Las Rosas, El Tion, Rosaceae, 28° 9'59"N 17°14'47"W, 637 m, 21.1.2010, leg. Stüben (57)”, coll. Stüben. / 2♂, 1♀, “E: Canary Is., La Gomera: vic. Arure, laurel forest (gardens), *Rubus*, 28° 8'12"N 17°17'50"W, 969 m, 20.12.2011, leg. Stüben (9)”, coll. Stüben. / 1♂, “E.: Canary Is., La Gomera, P.N. Garajonay: near Laguna Grande (laurel forest), 28° 7'44"N 17°15'17"W, 1245 m, 14.2.2011, leg. Stüben (18)”, coll. Stüben. / 1♂, “E: Canary Is., La Gomera: S Hermigua, La Palmita: 28°10'33"N 17°12'37"W, 632 m, 7.2.2011, leg. Stüben (4)”, coll. Stüben. / 1♀, “E.: Canary Is., La Gomera: “La Meseta” to Presa de los Gallos (barrage), laurel forest: 28° 9'11"N 17°16'48"W, 756m, 20.12.2011, leg. Stüben (8)”, coll. Stüben. / 2♀, “E: Canary Is., La Gomera: El Cedro: Mirador de El Bailadero, N 28°07'22" W 17°12'29", *Rubus*, 1045 m, 8.2.2011, leg. Stüben (5)”, coll. Stüben / 29 spec., “E.: Canary Is., La Gomera: Meriga, 28°09'14"N 17°14'11"W, 794 m, *Rubus*, 12.12.2014, leg. Stüben (2)”, coll. Stüben / 7 spec., “E.: Canary Is., La Gomera: La Palmita, 28°09'32"N 17°13'31"W, 748 m, *Rubus*, 12.12.2014, leg. Stüben (3)”, coll. Stüben / 22 spec., “E.: Canary Is., La Gomera: Los Acevinos, 28° 9'18"N 17°13'17"W, 831 m, *Rubus bollei*, 19.12.2014, leg. Stüben (13)”, coll. Stüben / 2 spec., “E.: Canary Is., E Hermigua, PN Majona: near Casas del Palmar, 28° 9'33"N 17° 9'36"W, 554 m, , 22.12.2014, leg. Stüben (16)”, coll. Stüben / 2 spec., “E.: Canary Is., N Igualeiro, 28° 6'29"N 17°15'23"W, 1295 m, *Cistus*, 24.12.2014, leg. Stüben (17)”, coll. Stüben / 3 spec., “E.: Canary Is., La Gomera: PN de Garajonay, near Mirador de Tajaqué, 28°06'25"N 17°13'59"W, 1335 m, *Cistus*, 24.12.2014, leg. Stüben (18)”, coll. Stüben / 6 spec., “E.: Canary Is., La Gomera: Las Rosas, 28° 9'59"N 17°14'53"W, 613 m, *Rubus*, 29.12.2014, leg. Stüben (22)”, coll. Stüben.

DNAtype: 1Ex., “E: Canary Is., La Gomera: S Hermigua, Meriga, gardens (at night): *Rubus*, 28°09'15"N 17°14'10"W, 824 m, 7.2.2011, leg. Stüben (3b)”, collector's no: 96-PST_3G2011; GenBank COI acc.: KC783803.

Description [Fig. 1 - 4]

Length. 3.1 – 4.0 (without rostrum).

Head & rostrum. Eyes distinctly protruding of head: rostrum straight and long in both sexes, in the female clearly longer, in the middle section much narrower, slightly broader apicad; 3rd segment of antennae nearly 2.0x, 4th segment 1.5x as long as the first two segments, 5th and 6th segments each as long as 2nd; 7th very short, nearly as broad as each of the three trapezoidal segments of the club. The antennae of male shorter and stronger than that of female; in both sexes sometimes darker.

Pronotum. As long as broad, but in some cases (such as in the holotype) broader than long, in males often strongly rounded laterally, widest at middle or slightly behind middle; in females laterally more long-ovally rounded, quadrate; punctures closely packed and fine; setae long and attached, particularly well visible at sides; pronotal disc (as vertex between eyes) with dark brown to black spots; otherwise the whole body is light brown to yellowish-brown (honey coloured).

Elytra. 1.35x – 1.45x as long as broad, widest behind middle, laterally straight behind base, laterally obovate towards apex; the long and fine setae slightly raised apicad; punctures of elytral striae not very deep and irregularly arranged, mainly placed next to one another and very broadly arranged only on the 2nd and 3rd interstices behind middle and at declivity; here the areas without dark spots are a lighter yellow.

Legs. Very long, honey coloured, the narrow tibia longer than the thicker femur; 1st tarsomere of male parallel-sided, a little longer than the conical 2nd tarsomere and the strongly lobed 3rd tarsomere combined, onychium also very long; first tarsomere of mid- and hind-legs shorter than first tarsomere of front legs; 1st tarsomeres of females clearly more slender and longer than those of males; tibiae in both sexes with remotes and fine setae.

Venter. First abdominal segment as long as, or marginally longer than the following three segments together.

Female genital. Spermatheca, 7th tergite, ovipositor and spiculum ventrale as in [Fig. 4].

Male genital. Aedeagus with a complex structure of the internal sac [Fig. 3].



Fig. 1 *Auletobius (Canarauletes) garajonay* sp.n., **male** – holotype (HT), habitus, (dor./lat.), Spain: Canary Islands, La Gomera: Teselinde



Fig. 2 *Auletobius (Canarauletes) garajonay* sp.n., **female** – paratype (PT), habitus, (dor./lat.), Spain: Canary Islands, La Gomera: Teselinde



Fig. 3 *Auletobius garajonay* sp.n. - aedeagus / structure of the internal sac (HT)

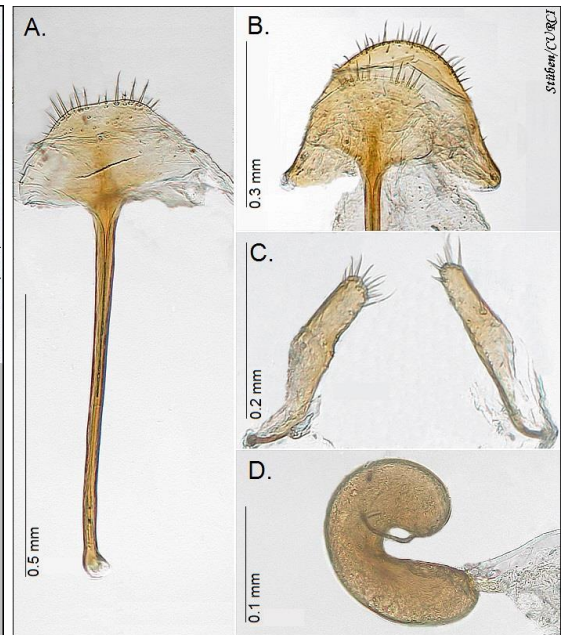


Fig. 4 *Auletobius garajonay* sp.n. - female genitalia (PT)
A. spiculum ven. B. 7. tergite C. ovipositor D. spermatheca

Discussion and differential diagnosis

The following is an overview of the distribution of the species and populations in subgenus *Canarauletes* Legalov, 2007, which belongs to a discrete clade [Stüben et al. 2015] and contains six species: *Auletobius anceps* (Wollaston, 1864), *A. convexifrons* (Wollaston, 1864), *A. cylindricollis* (Wollaston, 1864), *A. maderensis* (Wollaston, 1854), *A. maroccanus* Hoffmann, 1953 [see Legalov 2007] and the new species, *A. garajonay*. These occur in the Macaronesian Islands, Morocco and the south of Spain. The p-distance of the mitochondrial COI gene, in percentages, is shown in the map [Fig. 5] and appendix 2. It remains questionable whether there exists a further, smaller species from the Mont Tagoja (La Palma) living on *Cistus monspeliensis*. For the present I have referred to the specimens of this taxon as *A. cf. cylindricollis* in the Neighbour-Joining tree [Fig. 5]; a further study is in preparation. The new species, *A. garajonay*, can be separated by > 9% from *A. cylindricollis* on La Palma, the type locality.

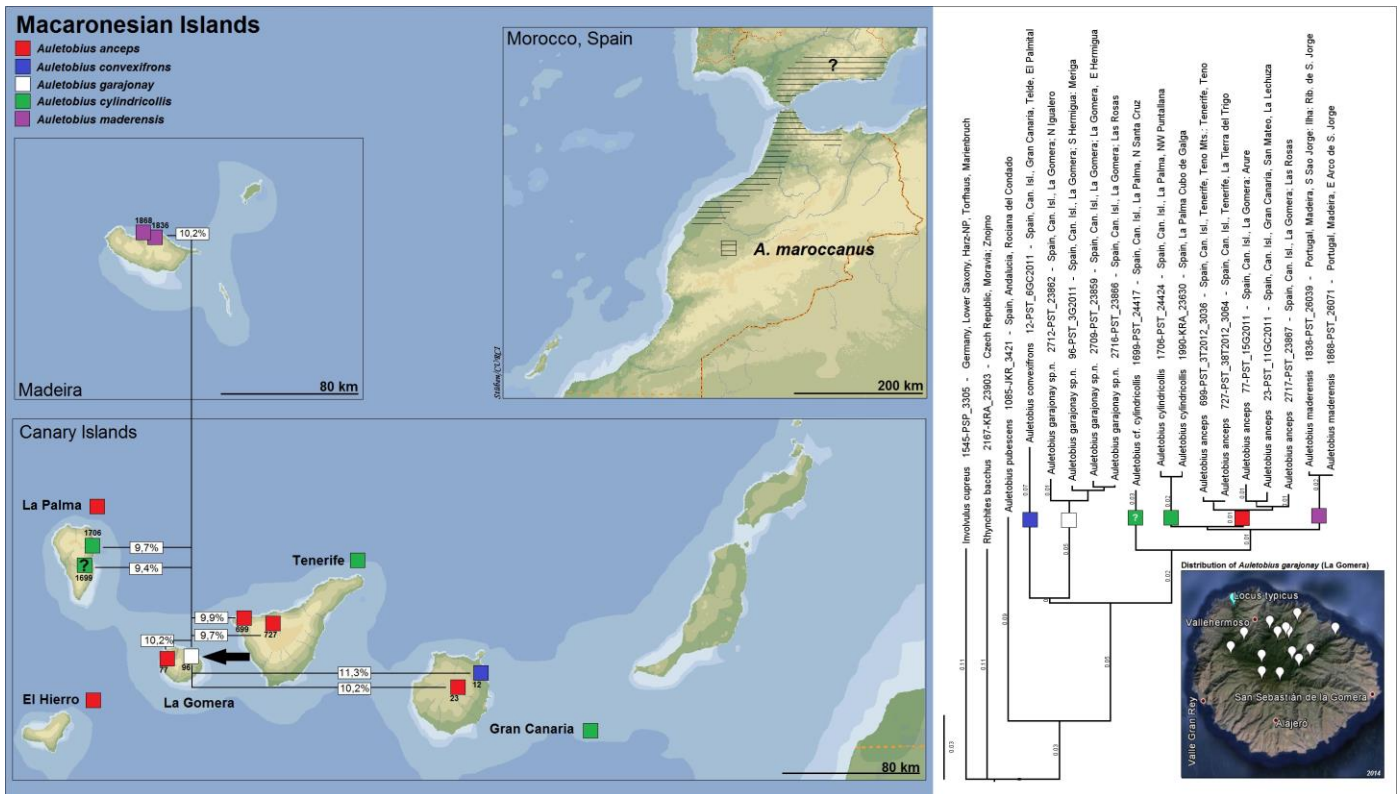


Fig. 5. Overview on the distribution of the species and populations of the subgenus *Canarauletes* Legalov, 2007 with the p-distance (in percent) of the mitochondrial COI gene. Right: Neighbor-Joining Tree for COI and the localities of *Auletobius garajonay* on La Gomera.



Fig. 6 *Auletobius (Canarauletes) cylindricollis*, male - habitus, dorsal and lateral, Spain: Canary Islands, La Palma (locus typicus)

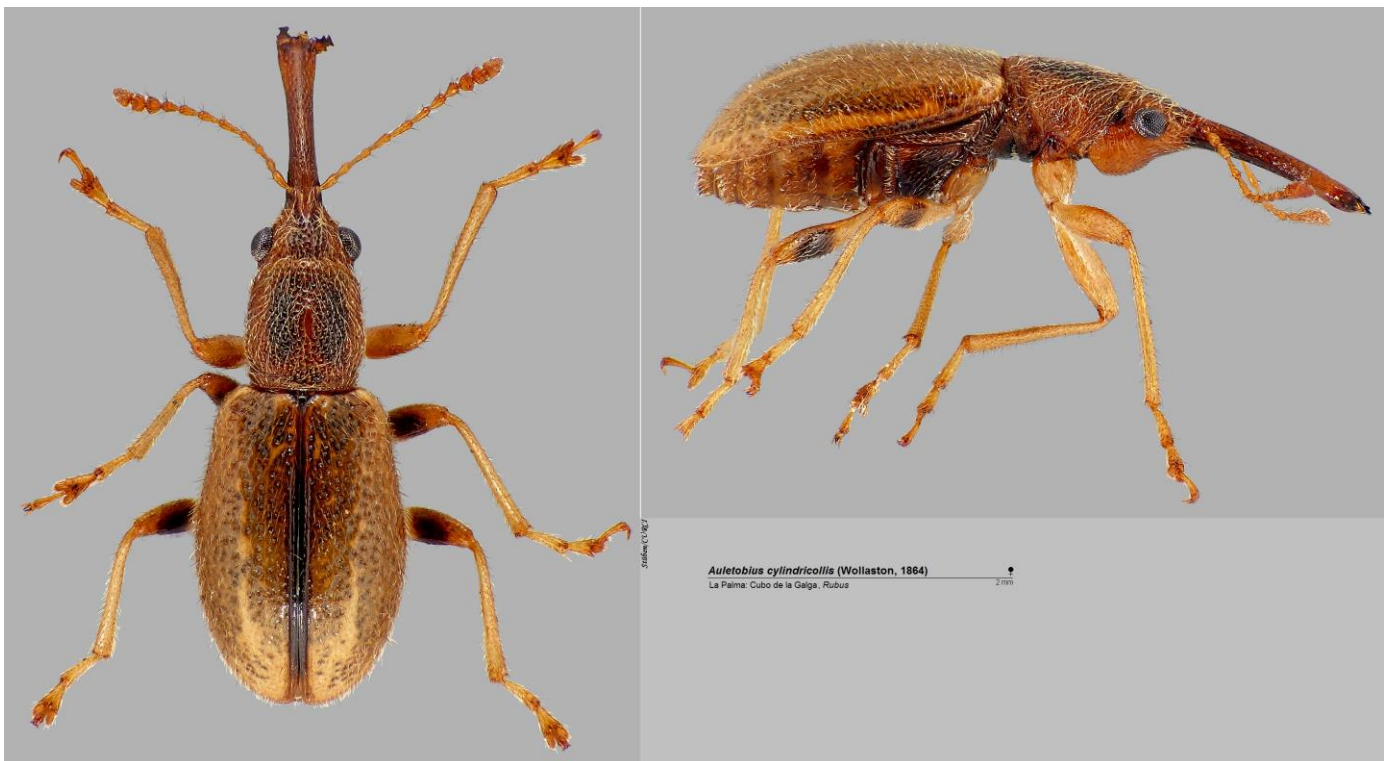


Fig. 7 *Auletobius (Canarauletes) cylindricollis* female - habitus, dorsal and lateral, Spain: Canary Islands, La Palma (locus typicus)

The new species from La Gomera is similar to its sister taxon *A. cylindricollis* [Fig. 6-9] and should be compared morphologically with this species from La Palma, Tenerife and Gran Canaria:

1. Pronotum of *A. garajonay* as long as broad, in some cases (such as the holotype) broader than long, in males often strongly rounded laterally [Fig. 1], in females more long-ovally rounded, quadrate [Fig. 2]; Pronotum of *A. cylindricollis* clearly elongate and 1.10x – 1.15x as long as broad [Figs 6-8] (see also Morris, 2004).

2. Elytra of *A. garajonay* stubby, broader, shorter, and at most 1.45x as long as wide, also the elytra are wider (ovoid) behind middle and apicad [Fig. 1]; the elytra of *A. cylindricollis* (from La Palma) are more slender and at least 1.45x as long as wide, broadest at middle and more ogivally rounded apicad [Fig. 6-7].

Both species are the largest *Auletobius* species from the Macaronesian Islands, with a length of 3.0 – 4.5 mm. In a small number of specimens these measurements are subject to minor variation both plus and minus. In only a few cases *A. garajonay* was collected from *Cistus monspeliensis* L., the preferential host plant of *A. anceps*. But both species can be easily distinguished: in a lateral view forehead and rostrum of *A. garajonay* form a straight line, whereas forehead and rostrum of *A. anceps* are separated by a deep depression.

Etymology: The name of the new species refers to the mythological lovers on La Gomera: the princess *Gara* and the poor farmer's son *Jonay*, who were prohibited from marrying and who chose suicide in the laurel forest as a way out. Since that time the Gomeros say that the highest mountain in the island was named *Garajonay*. Nowadays one of the largest National Parks in the Canary Islands is the Garajonay NP on La Gomera.

Bionomics: The new species was collected from *Rubus* sp. on La Gomera (in only two cases from *Cistus* sp.). A second, and smaller species on La Gomera, *A. anceps*, was beaten mainly from *Cistus* sp.

Distribution: So far *A. garajonay* is known only from La Gomera [Fig. 5].



Fig. 8 *Auletobius cylindricollis*, lectotype (BMNH), habitus, (dor./lat.), La Palma

Fig. 9 *A. cylindricollis* - aedeagus / structure of internal sac

References

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Auletobius garajonay sp.n. (male) on *Rubus bollei* Focke from La Gomera (photo by P.E. Stüben)

Appendix 1

Collecting data, voucher numbers and GenBank accession numbers for the material analysed in this study for the Neighbor Joining Tree [Fig. 5]: All GenBank accession numbers are published together with this publication. Dates are given in format dd.mm.yyyy. Abbreviations: ES=Spain, CI=Canary Islands, loc=location, GB=GenBank.

Auletobius anceps (Wollaston, 1864), loc.: ES, CI, Gran Canaria, San Mateo, La Lechuza, host: *Chamaecytiscus proliferus*, 10.12.2010, 1039masl, N28°00'12" W15°33'12", leg. Stüben, det. Stüben, Collector's no: 23-PST_11GC2011, ZFMK-Biobank no: 213, ZFMK Tissue-ID: ZFMK-TIS-2D100447033, ZFMK DNA extraction no: ZFMK DNA-100438105, GB acc: KC783744 | ***Auletobius anceps*** (Wollaston, 1864), loc.: ES, CI, La Gomera, Arure, host: *Cistus monspeliensis*, 13.02.2011, 801masl, N28°08'23" W17°18'29", leg. Stüben, det. Stüben, Collector's no: 77-PST_15G2011, ZFMK-Biobank no: 267, ZFMK Tissue-ID: ZFMK-TIS-2D100446971, ZFMK DNA extraction no: ZFMK DNA-100438043, GB acc: KC783786 | ***Auletobius anceps*** (Wollaston, 1864), loc.: ES, CI, Tenerife, Teno Mts.: Teno Alto, 03.01.2012, 830masl, N28°20'32" W16°51'50", leg. Stüben, det. Stüben, Collector's no: 699-PST_3T2012_3036, ZFMK-Biobank no: 968, ZFMK Tissue-ID: ZFMK-TIS-3036, ZFMK DNA extraction no: ZFMK DNA-100448188, GB acc: KC784284 | ***Auletobius anceps*** (Wollaston, 1864), loc.: ES, CI, Tenerife, La Tierra del Trigo, host: *Marcetella moquiniana*, 24.01.2012, 372masl, N28°21'37" W16°48'07", leg. Stüben, det. Stüben, Collector's no: 727-PST_38T2012_3064, ZFMK-Biobank no: 996, ZFMK Tissue-ID: ZFMK-TIS-3064, ZFMK DNA extraction no: ZFMK DNA-100448153, GB acc: KC784298 | ***Auletobius anceps*** (Wollaston, 1864), loc.: ES, CI, La Gomera, Las Rosas, host: *Cistus*, 29.12.2014, 614masl, N28°09'59" W17°14'53", leg. Stüben, det. Stüben, Collector's no: 2717-PST_23867, ZFMK-Biobank no: 16731, ZFMK Tissue-ID: ZFMK-TIS-23867, ZFMK DNA extraction no: ZFMK DNA-171661273, GB acc: KR817571 | ***Auletobius cf. cylindricollis***, loc.: ES, CI, La Palma, N Santa Cruz: M. de Tagoja, host: *Cistus*, 21.12.2013, 1047masl, N28°43'18" W17°47'07", leg. Stüben, det. Stüben, Collector's no: 1699-PST_24417, ZFMK-Biobank no: 12150, ZFMK Tissue-ID: ZFMK-TIS-24417, ZFMK DNA extraction no: ZFMK DNA-155622480, GB acc: KR817562 | ***Auletobius convexifrons*** (Wollaston, 1864), loc.: ES, CI, Gran Canaria, Telde, El Palmital, host: *Tamarix canariensis*, 05.12.2010, 476masl, N28°01'10" W15°27'17", leg. Stüben, det. Stüben, Collector's no: 12-PST_6GC2011, ZFMK-Biobank no: 202, ZFMK Tissue-ID: ZFMK-TIS-2D100447035, ZFMK DNA extraction no: ZFMK DNA-100437977, GB acc: KC783736 | ***Auletobius cylindricollis*** (Wollaston, 1864), loc.: ES, CI, La Palma, NW Puntallana: Cubo de la Galga, host: *Rubus*, 27.12.2013, 537masl, N28°45'38" W17°46'42", leg. Stüben, det. Stüben, Collector's no: 1706-PST_24424, ZFMK-Biobank no: 12157, ZFMK Tissue-ID: ZFMK-TIS-24424, ZFMK DNA extraction no: ZFMK DNA-155622487, GB acc: KR817563 | ***Auletobius cylindricollis*** (Wollaston, 1864), loc.: ES, La Palma, Cubo de Galga, host: *Rubus*, 07.02.2014, 467masl, N28°45'42" W17°46'34", leg. Krátky,J., det. Krátky,J., Collector's no: 1990-KRA_23630, ZFMK-Biobank no: 16005, ZFMK Tissue-ID: ZFMK-TIS-23630, ZFMK DNA extraction no: ZFMK DNA-169170508, GB acc: KR817566 | ***Auletobius garajonay* sp.n.** Stüben, 2015, loc.: ES, CI, La Gomera, S Hermigua: Meriga, host: *Rubus*, 07.02.2011, 824masl, N28°09'15" W17°14'10", leg. Stüben, det. Stüben, Collector's no: 96-PST_3G2011, ZFMK-Biobank no: 286, ZFMK Tissue-ID: ZFMK-TIS-2D100446888, ZFMK DNA extraction no: ZFMK DNA-100438007, GB acc: KC783803 | ***Auletobius garajonay* sp.n.** Stüben, 2015, loc.: ES, CI, La Gomera, La Gomera, E Hermigua, PN Majona: near Casas del Palmar, host: *Rubus*, 22.12.2014, 554masl, N28°09'33" W17°09'36", leg. Stüben, det. Stüben, Collector's no: 2709-PST_23859, ZFMK-Biobank no: 16723, ZFMK Tissue-ID: ZFMK-TIS-23859, ZFMK DNA extraction no: ZFMK DNA-171661290, GB acc: KR817568 | ***Auletobius garajonay* sp.n.** Stüben, 2015, loc.: ES, CI, La Gomera, N Igualero, host: *Cistus*, 24.12.2014, 1295masl, N28°06'29" W17°15'23", leg. Stüben, det. Stüben, Collector's no: 2712-PST_23862, ZFMK-Biobank no: 16726, ZFMK Tissue-ID: ZFMK-TIS-23862, ZFMK DNA extraction no: ZFMK DNA-171661287, GB acc: KR817569 | ***Auletobius garajonay* sp.n.** Stüben, 2015

loc.: ES, CI, La Gomera, Las Rosas, host: *Rubus*, 29.12.2014, 614masl, N28°09'59" W17°14'53", leg. Stüben, det. Stüben, Collector's no: 2716-PST_23866, ZFMK-Biobank no: 16730, ZFMK Tissue-ID: ZFMK-TIS-23866, ZFMK DNA extraction no: ZFMK DNA-171661272, GB acc: KR817570 | *Auletobius maderensis* (Wollaston, 1854), loc.: Portugal, Madeira, S Sao Jorge: Ilha: Rib. de S. Jorge, host: *Rubus*, 28.06.2014, 235masl, N32°48'37" W16°55'27", leg. Stüben, det. Stüben, Collector's no: 1836-PST_26039, ZFMK-Biobank no: 14976, ZFMK Tissue-ID: ZFMK-TIS-26039, ZFMK DNA extraction no: ZFMK DNA-171606121, GB acc: KR817564 | *Auletobius maderensis* (Wollaston, 1854), loc.: Portugal, Madeira, E Arco de S. Jorge: Caminho da Cancelinha, host: *Rubus*, 05.07.2014, 469masl, N32°49'22" W16°56'27", leg. Stüben, det. Stüben, Collector's no: 1868-PST_26071, ZFMK-Biobank no: 15008, ZFMK Tissue-ID: ZFMK-TIS-26071, ZFMK DNA extraction no: ZFMK DNA-171606105, GB acc: KR817565 | *Auletobius pubescens* (Kiesenwetter, 1851), loc.: ES, Andalucía, Rociana del Condado, host: *Cistus*, 18.04.2012, 150masl, N37°21'01" W06°36'55", leg. Krátky,J., det. Krátky,J., Collector's no: 1085-JKR_3421, ZFMK-Biobank no: 9985, ZFMK Tissue-ID: ZFMK-TIS-3421, ZFMK DNA extraction no: ZFMK DNA-100449618, GB acc: KR817560 | *Involvlus cupreus* (Linne, 1758), loc.: Germany, Lower Saxony, Harz-NP, Torfhaus, Marienbruch, group of trees, host: *Sorbus aucuparia*, 28.06.2013, 616masl, N51°49'46" E10°31'58", leg. Sprick,P., det. Sprick,P., Collector's no: 1545-PSP_3305, ZFMK-Biobank no: 11031, ZFMK Tissue-ID: ZFMK-TIS-3305, ZFMK DNA extraction no: ZFMK DNA-155633287, GB acc: KR817561 | *Rhynchites bacchus* (Linne, 1758), loc.: Czech Republic, Moravia, Znojmo, host: *Prunus avium*, 12.04.2014, 255masl, N48°51'32" E16°04'28.5", leg. Stejskal,R., det. Stejskal,R., Collector's no: 2167-KRA_23903, ZFMK-Biobank no: 16182, ZFMK Tissue-ID: ZFMK-TIS-23903, ZFMK DNA extraction no: ZFMK DNA-169170620, GB acc: KR817567

Appendix 2

Uncorrected p-distances values of the COI gene of all <i>Auletobius</i> - species (included <i>Rhynchites bacchus</i> and <i>Involvlus cupreus</i> as outgroup) considered in the Neighbor Joining Tree (Fig. 5)		Auletobius pubescens 1085-JKR	Auletobius convexifrons 12-PST	Auletobius garajonay sp.n. 2712-PST	Auletobius garajonay sp.n. 96-PST	Auletobius garajonay sp.n. 2709-PST	Auletobius garajonay sp.n. 2716-PST	Auletobius cf. cylindricollis 1699-PST	Auletobius cylindricollis 1706-PST	Auletobius cylindricollis 1990-KRA	Auletobius maderensis 1836-PST	Auletobius maderensis 1868-PST	Auletobius anceps 2717-PST	Auletobius anceps 77-PST	Auletobius anceps 23-PST	Auletobius anceps 699-PST	Auletobius anceps 727-PST	Rhynchites bacchus 2167-KRA	Involvlus cupreus 1545-PSP
Auletobius pubescens 1085-JKR_3421 - Spain, Andalucía, Rociana del Condado		18,9	17,2	18	18,1	17,9	17,2	17,8	17,3	17,5	17,3	16,6	17,7	17,2	17	17,2	18,7	19,8	
Auletobius convexifrons 12-PST_6GC2011 - Spain, Can. Isl., Gran Canaria, Telde		18,9		11,1	11,3	11,4	11,1	11,9	11,8	12,1	11,8	11,9	10,7	11,1	11,2	11,1	11,3	20,3	21,8
Auletobius garajonay sp.n. 2712-PST_23862 - Spain, Can. Isl., La Gomera; N Igualero		17,2	11,1		1,8	1,5	1,7	9,6	10,3	10,6	10,8	10,6	10,2	10,1	10	10	10,2	20,1	20,4
Auletobius garajonay sp.n. 96-PST_3G2011 - Spain, Can. Isl., La Gomera; S Hermigua		18	11,3	1,8		0,6	0,3	9,4	9,7	9,9	10,2	10	9,7	10,2	10,2	9,9	9,7	20,1	20,3
Auletobius garajonay sp.n. 2709-PST_23859 - Spain, Can. Isl., La Gomera; La Gomera		18,1	11,4	1,5	0,6		0,3	9,9	9,9	10,2	10,3	10,2	10	10,3	10	10,2	10	19,9	20,2
Auletobius garajonay sp.n. 2716-PST_23866 - Spain, Can. Isl., La Gomera; Las Rosas		17,9	11,1	1,7	0,3	0,3		9,7	9,7	10	10,2	10	9,9	10,1	9,9	10	9,9	19,8	20,1
Auletobius cf. cylindricollis 1699-PST_24417 - Spain, Can. Isl., La Palma, N Santa Cruz		17,2	11,9	9,6	9,4	9,9	9,7		6,2	6,2	6,2	6,1	4,7	5,2	5,2	5,2	5	19,9	19,9
Auletobius cylindricollis 1706-PST_24424 - Spain, Can. Isl., La Palma, NW Puntallana		17,8	11,8	10,3	9,7	9,9	9,7	6,2		0,5	5,2	5	3,8	4,3	4,2	3,6	3,5	20,7	19,9
Auletobius cylindricollis 1990-KRA_23630 - Spain, La Palma Cubo de Galga		17,3	12,1	10,6	9,9	10,2	10	6,2	0,5		5	4,9	3,8	4,4	4,1	3,6	3,5	20,8	20,1
Auletobius maderensis 1836-PST_26039 - Portugal, Madeira, S Sao Jorge		17,5	11,8	10,8	10,2	10,3	10,2	6,2	5,2	5		0,2	4,3	4,8	4,1	3,8	3,6	21,1	19,3
Auletobius maderensis 1868-PST_26071 - Portugal, Madeira, E Arco de S. Jorge		17,3	11,9	10,6	10	10,2	10	6,1	5	4,9	0,2		4,1	4,6	3,9	3,6	3,5	21	19,3
Auletobius anceps 2717-PST_23867 - Spain, Can. Isl., La Gomera; Las Rosas		16,6	10,7	10,2	9,7	10	9,9	4,7	3,8	3,8	4,3	4,1		1,3	1,5	1,4	1,2	19,3	19,9
Auletobius anceps 77-PST_15G2011 - Spain, Can. Isl., La Gomera: Arure		17,7	11,1	10,1	10,2	10,3	10,1	5,2	4,3	4,4	4,8	4,6	1,3		1,1	1,9	1,7	20,6	20,4
Auletobius anceps 23-PST_11GC2011 - Spain, Can. Isl., Gran Canaria, San Mateo		17,2	11,2	10	10,2	10	9,9	5,2	4,2	4,1	4,1	3,9	1,5	1,1		1	0,8	20,7	20,6
Auletobius anceps 699-PST_3T2012_3036 - Spain, Can. Isl., Tenerife, Teno Mts.		17	11,1	10	9,9	10,2	10	5,2	3,6	3,6	3,8	3,6	1,4	1,9	1		0,2	20,1	20,2
Auletobius anceps 727-PST_38T2012_3064 - Spain, Can. Isl., Tenerife, La Tierra		17,2	11,3	10,2	9,7	10	9,9	5	3,5	3,5	3,6	3,5	1,2	1,7	0,8	0,2		19,9	20,1
Rhynchites bacchus 2167-KRA_23903 - Czech Republic, Moravia; Znojmo		18,7	20,3	20,1	20,1	19,9	19,8	19,9	20,7	20,8	21,1	21	19,3	20,6	20,7	20,1	19,9		18,1
Involvlus cupreus 1545-PSP_3305 - Germany, Lower Saxony, Harz-NP, Torfhaus		19,8	21,8	20,4	20,3	20,2	20,1	19,9	19,9	20,1	19,3	19,3	19,9	20,4	20,6	20,2	20,1	18,1	

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