

# Description of *Sphaericus selvagensis* n. sp. from the Salvage Islands, and new data on *Sphaericus bicolor* Bellés (Coleoptera, Ptinidae)

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## Abstract

*Description of Sphaericus selvagensis n. sp. from the Salvage Islands, and new data on Sphaericus bicolor Bellés (Coleoptera, Ptinidae).*— *Sphaericus (Sphaericus) selvagensis* n. sp. is described from the Salvage islands. With *Sphaericus (Sphaericus) bicolor* Bellés, this new species is only the second ptinid beetle reported from these islands. *S. selvagensis* belongs to the *Sphaericus pilula* group, which also includes *S. bicolor*. However, the transverse shape of the pronotum (with its maximal breadth near the base) and the peculiar morphology of the aedeagus, distinguish *S. selvagensis* from all other members of the *S. pilula* group. *S. selvagensis* lives in all the major islands of the Selvagens archipelago: Selvagem Grande, Selvagem Pequena and Ilhéu de Fora.

Key words: Coleoptera, Ptinidae, *Sphaericus*, Salvage Islands.

## Resumen

*Descripción de Sphaericus selvagensis sp. n. del archipiélago de las Salvajes, y nuevos datos sobre Sphaericus bicolor Bellés (Coleoptera, Ptinidae).*— Se describe *Sphaericus (Sphaericus) selvagensis* sp. n. del archipiélago de las Salvajes. Junto a *Sphaericus (Sphaericus) bicolor* Bellés, esta nueva especie es el segundo coleóptero ptínido registrado en esas islas. *S. selvagensis* pertenece al grupo de *Sphaericus pilula*, que también incluye *S. bicolor*, aunque la forma transversa del pronoto (con anchura máxima cerca de la base) y la peculiar morfología del edeago distinguen a *S. selvagensis* de los restantes miembros de grupo de *S. pilula*. *S. selvagensis* vive en todas las islas principales del archipiélago de las Salvajes: Salvaje Grande, Salvaje Pequeña (o Pitón Grande) y La Salvajita (Ilhéu de Fora).

Palabras clave: Coleoptera, Ptinidae, *Sphaericus*, Islas Salvajes.

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## Introduction

The Salvage Islands lie in the Atlantic Ocean between the well-known archipelagos of Madeira and Canaries (BRAVO & COELLO, 1978). Up to now, the only ptinid beetle reported from the Selvagens is *Sphaericus (Sphaericus) bicolor* Bellés, described from Selvagem Pequena (= Pitão Island) (BELLÉS, 1982) and later recorded by ERBER & WHEATER (1987) from Selvagem Grande and Ilhéu de Fora. However, the study of the ptinid beetles collected during a campaign carried out in the Salvages in May 1999, in the context of the Project "Macaronesia 2000" of the Museo de Ciencias Naturales de Tenerife, has led to the discovery of a new species of *Sphaericus*, which is described in the present paper. The data on the arthropods collected during this expedition of 1999 have been reported by ARECHAVALETA et al. (2001).

The genus *Sphaericus* was proposed by Wollaston as early as 1854, but has been the subject of a relatively recent synopsis by BELLÉS (1994), who divided it into three subgenera: *Sphaericus*, the members of which are characterized by having 11-segmented antennae, 5-segmented male metatarsi, the base of the pronotum simple and the parameres of the aedeagus slender and pubescent only at the apex; *Nitpus* Jacquelin du Val, whose two species have 9-segmented antennae and 4-segmented male metatarsi; and *Doramasus* Bellés, described in the same synopsis (BELLÉS, 1994) as similar to *Sphaericus* s. str. but showing the base of the pronotum protuberant and the parameres of the aedeagus robust and evenly pubescent.

With the exception of *Sphaericus (Sphaericus) gibboides* (Boieldieu), which is anthropophilous and nearly cosmopolitan (HINTON, 1941), and *Sphaericus (Sphaericus) niveus* (Boieldieu), *Sphaericus (Sphaericus) exiguus* (Boieldieu) and *Sphaericus (Nitpus) ptinoides* (Boieldieu), which are known from sparse localities in the Mediterranean area (BOIELDIEU, 1856; PIC, 1912; BELLÉS, 1994), all the other species of these three subgenera are endemic to islands of Atlantic archipelagos.

The island groups include the Canaries (10 species), Madeira (nine species), Cape Verde (two species), Salvages (two species, including that described herein), and Açores (one species) (BELLÉS, 1994). More recently, the new subgenus *Leasphaericus* Bellés (1998) (BELLÉS, 1998) has been proposed for two Australian species. These taxa, in contrast with the Palearctic *Sphaericus*, have a triangular scutellum easily visible from above.

Due to the morphology of the aedeagus and the pronotum, the number of the segments in the antennae and tarsi, and the hidden scutellum, the new species described below falls into the subgenus *Sphaericus* Wollaston.

## Description

### *Sphaericus (Sphaericus) selvagensis* n. sp.

#### Types

Holotype: 1♂ labelled "Islas Salvajes, Selvagem Grande, 21/26-V-1999, M. Arechavaleta leg." (Museo de Ciencias Naturales, Santa Cruz de Tenerife).

Paratypes: 84 specimens of both sexes with the same label as the holotype; 6 specimens of both sexes with the label "Islas Salvajes, Selvagem Pequena, 25-V-1999, M. Arechavaleta leg."; 1♀ labelled "Selvagem Pequena, Pico Veado, 21-8-70, Maul leg."; 18 specimens of both sexes with the label "I. Selvagens, Pitão, 5-VI-1970, Maul leg."; 1♀ labelled "Islas Salvajes, Ilhéu de Fora, 25-V-1999, M. Arechavaleta leg." (Museo de Ciencias Naturales, Santa Cruz de Tenerife; Departamento de Biología Animal, Universidad de La Laguna; Museo Nacional de Ciencias Naturales, Madrid; Museo de Zoología, Barcelona; colls. Oromí, Bellés, Arechavaleta and García Becerra).

#### Description of the male (fig. 1)

Length: 1.2–1.8 mm (n = 12)

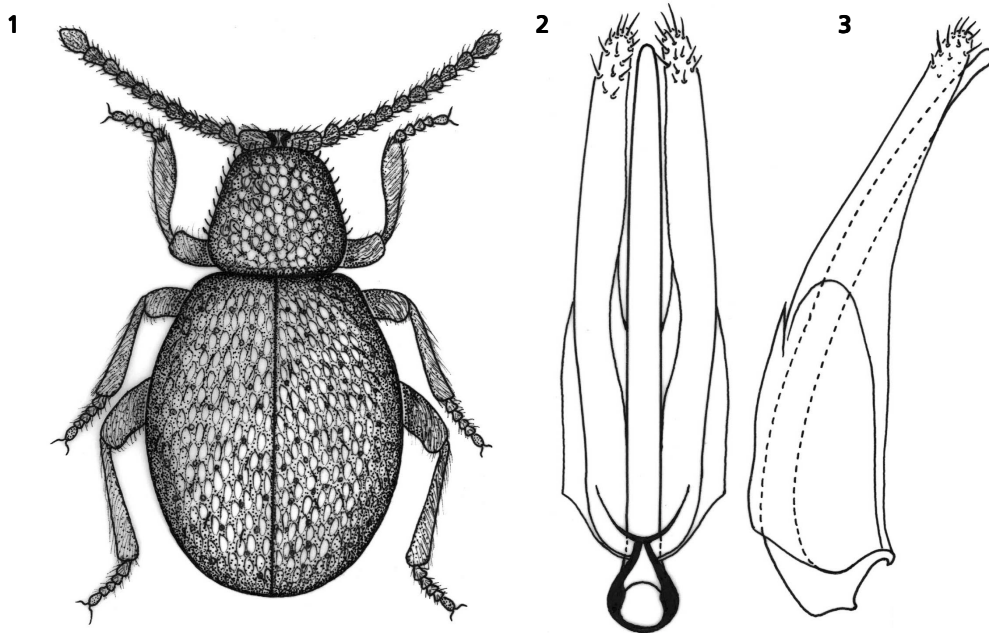
Broadly oval; pronotum black, elytra dark brownish-red, appendages and sternal part of body testaceous. Head clothed with short, recumbent, golden hairs; eyes moderately convex, round, about two-thirds as broad as first antennal segment; space between antennal fossae narrow and acute; antennae 11-segmented, short (about half as long as body) and robust, segments 3 to 10 oval, slightly longer than width. Pronotum evenly convex, transverse, sides feebly arcuate, maximal breadth near base; surface with very dense to contiguous granules each about twice as large as eye facets; covered with flat, obovate, recumbent yellowish scales (easily abraded), each about same size as granules, also sparse, short and suberect dark rufo-piceous hairs; legs relatively short, robust; tarsi 5-segmented. Elytra broadly oval, sides regularly rounded, maximal breadth at middle; surface shiny, with moderately dense, irregularly distributed punctures slightly narrower than pronotal granules; covered with scales like those of pronotum (also easily abraded), but ellipsoidal in shape, also with sparse, short and recumbent yellowish irregularly distributed hairs. Scutellum much reduced, hidden from above. Aedeagus (figs. 2–3) symmetrical, with the median lobe slender, in dorsal view slightly shorter than parameres; parameres elongate, slightly broader than median lobe, with sparse, short and erect setae at apex.

#### Description of the female

The female is externally similar to the male.

#### Distribution and habitat

*S. selvagensis* is known from the three major islands of the Salvage Islands: Selvagem Grande,



Figs. 1–3. *Sphaericus (Sphaericus) selvagensis* n. sp., a typical specimen from Selvagem Grande (21/26 V 1999, M. Arechavaleta leg.): 1. Habitus; 2. Aedeagus, dorsal view; 3. Aedeagus, lateral view.

Figs. 1–3. *Sphaericus (Sphaericus) selvagensis* sp. n., un ejemplar típico de isla Salvaje Grande (21/26 V 1999, M. Arechavaleta leg.): 1. Habitus; 2. Edeago, vista dorsal; 3. Edeago, vista lateral.

Selvagem Pequena (= Pitão Island) and Ilhéu de Fora. Specimens from the campaign of May 1999 were collected with pitfall traps and sifting leafmould from different plant species. Moreover, the label of the female collected by Maul at Pico Veado, in Selvagem Pequena, in August 1970, indicates that it was collected "from sifted dry foliage and leafmould under *Bassia tomentosa*".

In the Salvages, *B. tomentosa* (Lowe) (Chenopodiaceae) is a relatively rare species observed in the Selvagem Pequena, and localized only in two spots, one on the West slope of the Pico Veado and the other one in the Eastern part of the island (PÉREZ DE PAZ & ACEBES, 1978).

#### Comparative notes

Within the subgenus *Sphaericus*, the general shape and the typical scaliform pubescence of *S. selvagensis* reminds one of the species belonging to the *Sphaericus gibboides* and *Sphaericus dawsoni* groups (sensu BELLÉS, 1994). However, the narrow interantennal space distinguishes *S. selvagensis* from the species of these groups. Moreover, the pronotum evenly convex and the morphology of the aedeagus, especially that of the basis of the median lobe,

easily separates *S. selvagensis* from the species of the *Sphaericus gibbicollis* group (sensu BELLÉS, 1994). The new species appears to belong to the *Sphaericus pilula* group (sensu BELLÉS, 1994), which includes *S. bicolor*, previously known from the Salvage Islands. The members of this group have the interantennal space narrow, the pronotum evenly convex and the elytra irregularly punctated. In the case of *S. selvagensis*, the transverse shape of the pronotum (with its maximal breadth near the base) and the peculiar morphology of the aedeagus, distinguish it from all other members of the *S. pilula* group. The differences are well apparent between *S. selvagensis* and *S. bicolor*, as shown by the key shown below.

#### New data on *Sphaericus bicolor* Bellés, 1982

Up to now, *S. bicolor* was the only known ptinid species from the Salvage Islands. It was described from Selvagem Pequena (= Pitão Island), on the basis of abundant material collected in February 1976 by P. Oromí (BELLÉS, 1982). The specimens were found in leaf mould under *Suaeda vera* Gmelin (Chenopodiaceae) (OROMÍ et al., 1978),

Key to the *Sphaericus* of the Salvage Islands.

Clave para los *Sphaericus* de las Islas Salvajes.

<p>1 Antennae long and slender, clearly longer than half the body, with the segments 2–10 subcylindrical, nearly longer than width. Pronotum longer than width, with the maximal breadth near the middle. Legs long and slender. Elytra ellipsoidal (fig. 1 from BELLÉS, 1982). Aedeagus in dorsal view with the median lobe much shorter than the parameres; parameres clearly broader than the median lobe (figs. 3–4 from BELLÉS, 1982)</p>	<p><i>S. bicolor</i> Bellés, 1982</p>
<p>Antennae short and robust, about half as long as the body, with the segments 2–10 oval, slightly longer than width. Pronotum transverse, with the maximal breadth near the base. Legs short and robust. Elytra broadly oval (fig. 1, present paper). Aedeagus in dorsal view with the median lobe almost as long as the parameres; parameres slightly broader than the median lobe (figs. 2–3, present paper)</p>	<p><i>S. selvagensis</i> n. sp.</p>

which is one of the most abundant and typical plants of the Salvages, either in the Selvagem Grande or in the Selvagem Pequena (PÉREZ DE PAZ & ACEBES, 1978). Interestingly, no specimens of *S. selvagensis* were collected during this 1976 campaign. Almost simultaneously, SERRANO (1983) recorded an undetermined species of *Sphaericus* from the Selvagem Grande (1 specimen) and Selvagem Pequena (549 specimens). Seventy-two specimens were examined by the author from this large series and all were *S. bicolor*. The specimen from Selvagem Grande was collected on *S. vera* and those from Selvagem Pequena on *Elytrigia junceiforme* A. et D. Löve (Poaceae) (SERRANO, 1983). *A. junceiforme* is relatively rare in Selvagem Pequena, being found in a single locality on the Eastern part of the island. More recently, ERBER & WHEATER (1987) have reported the identification of 89 specimens of *S. bicolor* from Selvagem Pequena, 4 from Ilhéu de Fora and 1 from Selvagem Grande, which had been collected by Backhuys in 1968 and deposited in the Museum of Funchal. Materials from the expedition in 1999 studied in the present work included specimens of *S. bicolor* mixed with the new *S. selvagensis*, and was collected using pitfall traps and sifting leaf mould from different plants. The number of specimens of both species present in these and in other samples studied by the author is indicated in table 1. These data suggest that any of the two species may be very abundant

Table 1. Number of specimens of *Sphaericus bicolor* and *Sphaericus selvagensis* collected in the Salvage Islands and studied by the author: *M. Maul*, 5 VI 1970; *O. Oromí*, 26/29 II 1976; *S. Serrano*, 20 IV–15 V 1980; *A. Arechavaleta* 21/26 V 1999; SP. Selvagem Pequena; SG. Selvagem Grande. (\* From a total sample of 549 specimens identified by SERRANO, 1983 as *Sphaericus* sp., 72 were studied by the author and identified as a *S. bicolor*.)

Tabla 1. Número de ejemplares de *Sphaericus bicolor* y *Sphaericus selvagensis* recogidos en las Islas Salvajes, estudiados por el autor: *M. Maul*, 5 VI 1970; *O. Oromí*, 26/29 II 1976; *S. Serrano*, 20 IV–15 V 1980; *A. Arechavaleta*, 21/26 V 1999; SP. Salvaje Pequeña; SG. Salvaje Grande. (\* De un total de 549 ejemplares identificados por SERRANO, 1983 como *Sphaericus* sp., 72 fueron estudiados por el autor e identificados como *S. bicolor*.)

	SP				SG
	M	O	S	A	A
<i>S. bicolor</i>	13	75	72(549)*	6	6
<i>S. selvagensis</i>	18	0	0	6	91

depending on the time and eventually on the precise site of collection. All data (BELLÉS, 1982; ERBER & WHEATER, 1987; present results) indicate that both *S. bicolor* and *S. selvagensis* are widespread in the three main islands of the archipelago: Selvagem Grande, Selvagem Pequena (= Pitão Island) and Ilhéu de Fora.

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