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Author: Germann, Christoph

Source: *Revue suisse de Zoologie*, 122(2) : 399-405

Published By: Muséum d'histoire naturelle, Genève

URL: <https://doi.org/10.5281/zenodo.30009>

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On the genus *Styphlidius* Penecke, 1936 with description of *S. pelops* sp. nov. from Greece (Coleoptera, Curculionidae)

Christoph Germann

Naturhistorisches Museum der Burgergemeinde Bern, Bernastrasse 15, CH-3005 Bern, and Natur-Museum Luzern, Kasernenplatz 6, CH-6003 Lucerne, Switzerland. E-mail: germann.christoph@gmail.com

Abstract: *Styphlidius brevisetis* Osella, 1981 and *S. globosus* Osella, 1981 are raised to species level. Both were hitherto ranked as subspecies of *S. corcyreus* (Reitter, 1884). *Styphlidius pelops* sp. nov. is described from the Peloponnese. All specimens of the new species were sifted from leaf litter, moss and plant debris. *Styphlidius corcyreus* is recorded for the first time from Albania. A revised key to all five species is presented and an overview of the species' distribution is given.

Keywords: Curculioninae - Styphlini - new species - changed ranks - taxonomy - Greece.

INTRODUCTION

The genus *Styphlidius* Penecke, 1936 was proposed by Penecke (1936) originally as subgenus of *Orthochaetes* Germar, 1824 for *Adexius corcyreus* Reitter, 1884. Solari (1950) treated *Styphlidius* as a proper genus. González (1967) revised part of the Styphlini Jekel, 1861 and included *Styphlidius* again as a subgenus of *Orthochaetes*. *Styphlidius* is most similar to the genera *Orthochaetes* and *Trachystyphlus* Alonso-Zarazaga & Lyal, 1999 and is characterised by the following traits: i) short, broad, strongly bulging, globose to oval and/or rhomboidal elytra; ii) intervals on elytra narrow and rib-like bulging; iii) uneven intervals with long raised bristles; iv) legs strong with laterally flattened tibiae, those set with long bowed bristles on the outer side; v) internal sac of penis with a single big, fishhook-like sclerite (Figs 10-15).

Styphlidius is actually accepted as a proper genus, represented by four taxa according to Caldara (2013): Two species – *S. italicus* Osella, 1981 present in Italy including Sicily (Osella & Zuppa 1994) – and *S. corcyreus* s. str. (Reitter, 1884) with the two subspecies *brevisetis* Osella, 1981 and *globosus* Osella, 1981 in Greece. It was Osella (1981) who made the most recent revision and provided a determination key. Consequently, Colonnelli (2003) raised *S. italicus* consequently from subspecies (of *S. corcyreus*) to species level.

At present, the most widespread species in Greece is *S. corcyreus* s. str., whereas *brevisetis* and *globosus* are restricted to the Islands Kefalonia and Levkas respectively. From the Peloponnese no records were reported so far.

MATERIAL AND METHODS

For sifting leaf litter a beetle sifter with grid width of 7 mm was used. The extraction method applied follows Germann (2014).

Photographs were taken with a 5-megapixel digital camera (Leica DFC 420), the genital organs were photographed in glycerine. Series of images were captured through a binocular (Leica MZ16) and processed by an Auto-Montage software (Imagic Image Access, Version 8). The drawings by Olena Domschke were made using a camera lucida attached to a stereomicroscope (Olympus BH-2).

All measurements were taken digitally with the measurement-tool of the above mentioned Auto-Montage software. Body length was measured from the base of the rostrum to the apex of the elytra. Additional remarks to label data are set in square brackets ([]).

Abbreviations: NHML – The Natural History Museum, London. MHNG – Muséum d'histoire naturelle de Genève, Switzerland. NMBE – Naturhistorisches Museum der Burgergemeinde Bern. cCG – collection Christoph Germann, Thun. cHW – collection Herbert Winkelmann, Berlin.

TAXONOMIC PART

Genus *Styphlidius* Penecke, 1936

Type species: *Adexius corcyreus* Reitter, 1884.

Remark: The examination of specimens of all taxa of *Styphlidius* (Figs 1-9) except *S. globosus* [depicted

in turn in Osella (1981)] allowed raising *brevisetis* and *globosus* to species level based on the morphological differences given in the key below. Furthermore a new fifth species of the genus is described below.

Additional localities used to draw the map (Fig. 20) were taken from Osella (1981), Osella & Zuppa (1994) and Bahr *et al.* (2015).

Species included:

S. corcyreus (Reitter, 1884): Greece (Corfu, mainland), Albania (data given below)

S. italicus Osella, 1981: Italy (incl. Sicily)

S. brevisetis Osella, 1981: Greece (Kephallonia)

S. globosus Osella, 1981: Greece (Levkas)

S. pelops sp. nov.: Greece (Peloponnese)

Styphlidius corcyreus (Reitter, 1884)

Figs 7-9, 12

Material examined: 1 ♀ Reza e kanalit, Logara, Alban. M., lg. Winkler Mai 1931, coll. O. Voříšek (NHML). Remark: first record for Albania. – 1 ♀, Gr. Igoumenitsa, Restori, 300 m [a.s.l.], 1.9.[19]94, Poganion-Meregalli, coll. O. Voříšek (NHML). – 1 ♂, 1 ♀, GREECE, Maked., 34 km NE Kilkis, Ano Poroia, 500 m, 41°17'26"N, 23°01'55"E, 13.7.2003, leg. Bayer (cHW).

Styphlidius italicus Osella, 1981

Figs 1-2, 10

Material examined: 1 ♀, Roma, Reitter, coll. G.A.K. Marshall (NHML). – 2 ♂, 2 ♀, I, Calabria (RC), P.N. dell Aspromonte, 4 km SE Gambarie, 1700 m [a.s.l.], 22.10.2002, 38°08'49"N 15°51'40"E, [sifting] *Fagus*, leg. C. Germann (cCG, NMBE). – 1 ♀, I, Calabria (RC), P.N. dell' Aspromonte, 8 km SE Gambarie,

1350 m [a.s.l.], 22.10.2002, 38°07'26" 15°54'09"E, Felswand, *Fagus* [sifting near rock face], leg. C. Germann (NMBE).

Styphlidius brevisetis Osella, 1981

Figs 3-4, 11

Material examined: 2 ♂, 2 ♀, Kephallinia, [leg.] Moczarski, coll. G.A.K. Marshall (NHML).

Styphlidius pelops sp. nov.

Figs 5-6, 13-20

Holotype: 1 ♂, 242_14.6 [collection number] GREECE, Peloponnese, E Tripoli, W Agias Sofia, Pass, 800 m [a.s.l.], 24.9.2014, leg. C. Germann. Red label: Holotype *Styphlidius pelops* sp. nov. des. C. Germann 2014 (NMBE).

Paratypes: 8 ♂, 4 ♀, same data as for holotype. – 1 ♂, 242_14.10 [collection number] GREECE, Peloponnese, S Pilos, Mesohori, GS [sifted in] Buschwald [low forest, bushes], 25.9.2014, leg. C. Germann. All with additional red labels: Paratype *Styphlidius pelops* sp. nov. des. C. Germann 2014 (cCG, cHW, NMBE, MHNG, NHML).

Description

Size: males: 1.7-1.8 mm; females: 1.7-2.0 mm

Colour: auburn, tip of rostrum and partly antennal club darkened.

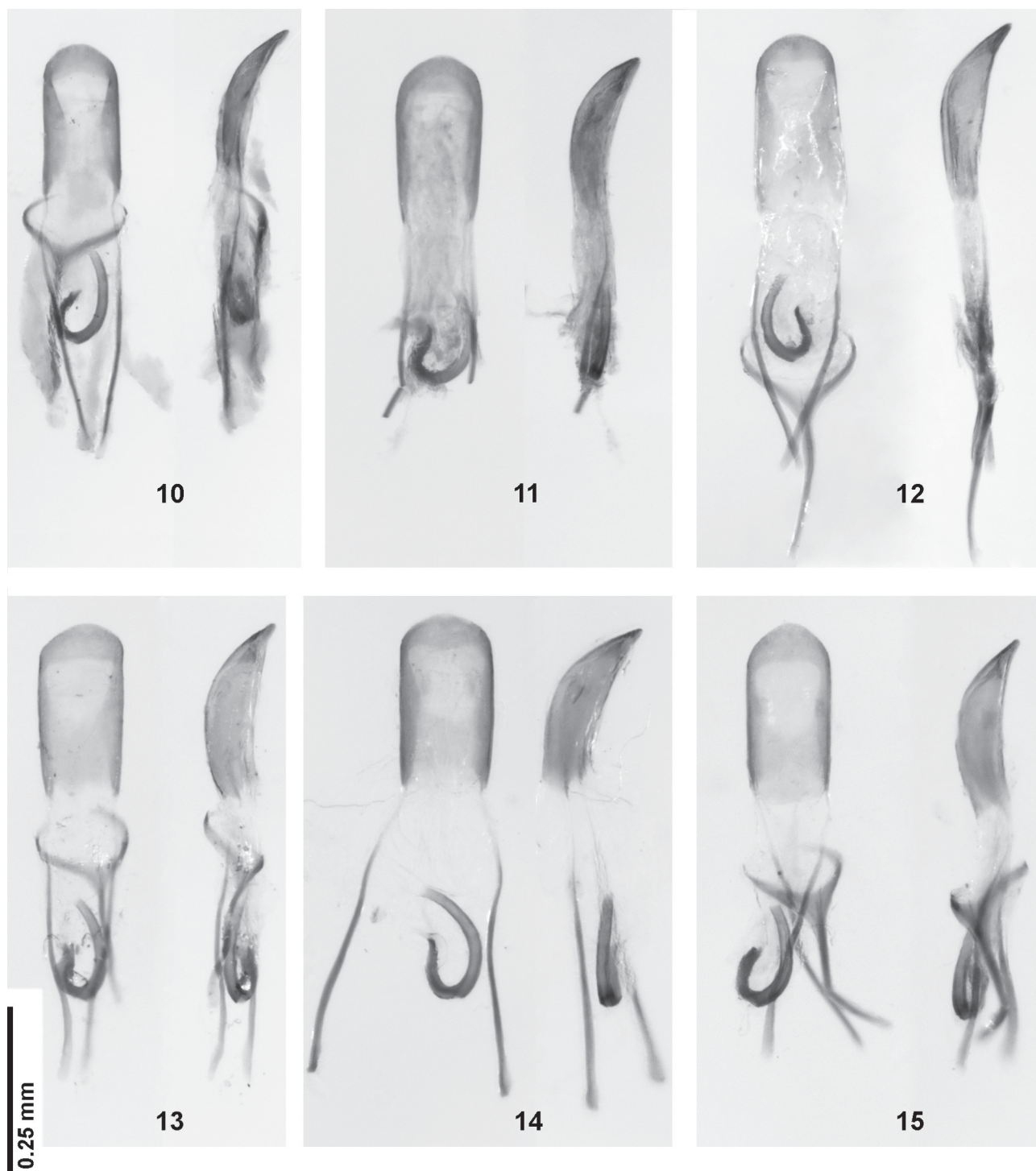
Head, rostrum and antennae: head globular, rostrum well separated from frons by a transverse impression, therefore base of rostrum angular. Rostrum in lateral view strongly curved, in dorsal view weakly converging to insertion of antennae, from there diverging towards tip. Rostrum about 4 times longer than wide, surface striated. Eyes below level of rostral dorsum, oval, weakly

Identification key for the genus *Styphlidius*:

- 1 Shape of elytra globose. Pronotum big and broad (Figs 3-4).....2
- Shape of elytra either rhomboidal or oval to oblong-oval. Pronotum smaller and less broad3
- 2 Uneven intervals on elytra with very long, weakly bowed bristles (at least as long as the span from first to third interval). Penis narrow with pointed apex (fig. 4 in Osella, 1981).....*S. globosus* Osella, 1981
- Uneven intervals with shorter, straight bristles (much shorter than the span from the first to the third interval). Penis with strongly sclerotized margin and oblong oval shape (Fig. 11).....*S. brevisetis* Osella, 1981
- 3 Shape of elytra rhomboidal, broadest behind last third (Figs 5 & 6), uneven intervals stronger elevated than even ones, striae and intervals less dense standing. Penis broad and parallel sided to slightly diverging towards tip in dorsal view, broad in lateral view (Figs 13-15).....*S. pelops* sp. nov.
- Shape of elytra oval to oblong oval, broadest in or just behind middle (Figs 1-2, 7-9), uneven intervals only slightly stronger elevated than even ones, striae and intervals denser standing4
- 4 Uneven intervals on elytra with very long and raised bristles (at least as long as the span from first to third interval). Penis as Fig. 12.....*S. corcyreus* (Reitter, 1884)
- Uneven intervals with shorter bristles (shorter than the span from the first to the third interval). Penis as Fig. 10 ..
.....*S. italicus* Osella, 1981

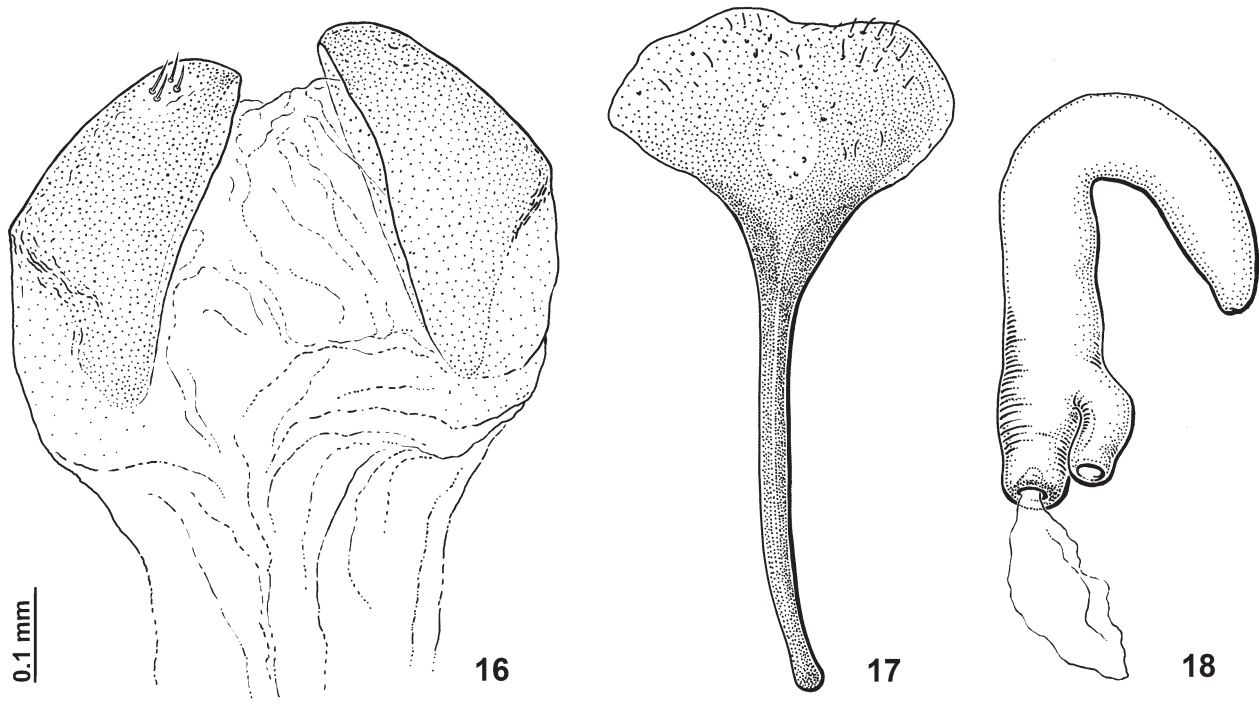


Figs 1-9. Habitus of *Styphlidius* spp. (1) *S. italicus* Osella, 1981 (Aspromonte, male). (2) Ditto (female). (3) *S. brevisetis* Osella, 1981 (Kefalonia, male). (4) Ditto (female). (5) *S. pelops* sp. nov. (Mesohori, male). (6) Ditto (W Agias Sofia, female). (7) *S. corcyreus* (Reitter, 1884) (Kilkis, male). (8) Ditto (Igoumenitsa, female). (9) Ditto (Reza e kalalit, female).



Figs 10-15. Penis dorsal and lateral of *Styphlidius* spp. (10) *S. italicus* Osella, 1981 (Aspromonte). (11) *S. brevisetis* Osella, 1981 (Kephallonia). (12) *S. corcyreus* (Reitter, 1884) (Kilkis). (13-15) *S. pelops* sp. nov. (13 Mesohori, 14-15 W Agias Sofia).

Fig. 19. Habitat of *Styphlidius pelops* sp. nov. near Agias Sofia. The new species was sifted here from leaf litter (*Quercus ilex*) and mosses growing on limestone. ➔



Figs 16-18. Female genital organs of *S. pelops* sp. nov. (16) Gonocoxite. (17) Spiculum ventrale. (18) Spermatheca.



bulged. Antennae inserted before last fourth of rostrum, scrobes lateral, well pronounced, diverging towards the eyes. Antennal scape clubbed, nearly 3 times as long as breadth of rostral dorsum at antennal insertion. Antennal funiculus consisting of 7 segments with following measurements (length/width): 1st: 1.77; 2nd: 1.23; 3rd to 5th: globular, as long as wide; 6th and 7th: transverse: 0.51 and 0.53. Club twice as wide as last segment, short oval. Integument: Frons and rostrum with thin, strong, bowed light brown bristles; similar but smaller bristles on antennal scape and funiculus.

Pronotum: transverse (length/width: 0.78-0.87), widest just behind its middle, constricted towards fore and hind margins, irregularly and very coarsely punctate. Integument consisting of thin, strong, bowed light brown bristles. Scutellum hardly visible, punctiform.

Elytra: rhomboidal (length/width: 1.2-1.3), diverging from base to last third, then strongly rounded to the apex. No shoulders, apterous. In lateral view regularly rounded at decline. Striae coarsely and deeply, regularly punctate. Intervals thin and elevated, uneven intervals 3, 5 and 7 more elevated. Intervals set with short bowed bristles, and long (almost reaching from one uneven interval to another) raised, light brown bristles.

Legs: femora edentate, strong, tibiae strong, flattened, all with thorn at inner angle of apex. Three visible strong tarsal segments; first one twice as long as second; third bilobed, about equal as first. Claw segment gracile, claws simple. Integument consisting of thin, strong, bowed light brown bristles.

Male genitalia: Figs 13-15. Penis broad, in dorsal or ventral view laterally parallel or slightly diverging towards apex, internal sac with one fishhook-shaped sclerite.

Female genitalia: Figs 16-18. Gonocoxite very simple, with one sclerotized pair of segments, without styli, apex lateral with a tiny tuft of sensillae (Fig. 16). Spiculum with short apodeme and a broad and bilobed plate (Fig. 17). Spermatheca with long, inverted J-shaped cornu, straight nodulus and short ramus (Fig. 18).

Etymology: The species name is a noun in apposition and refers to the hero Pelops, son of Tantalus in the ancient Greek mythology. The Peloponnese, where *Styphlidius pelops* sp. nov. was discovered, is named in honour of Pelops.

Ecology: *Styphlidius pelops* sp. nov. was sifted from leaf litter and mosses on limestone rocks between sparsely standing evergreen oaks (*Quercus ilex*) and *Phrygana* vegetation (mainly *Phlomis*, *Thymus*) at 800 m a.s.l. (E Tripoli) (Fig. 19) and once at 200 m a.s.l. (Mesochori). *S. pelops* sp. nov. was sifted together with the following species of Curculionidae: *Acallocrates denticollis* (Germar, 1824), *Echinodera brachati* Wolf, 2002, and *Stomodes letzneri* Reitter, 1889.

Remarks: The gonocoxite is remarkably simple. But the comparison with one of *Orthochaetes setiger* (Beck, 1817), a widespread and quite common species in Central Europe, showed that they look very similar, apart from the tuft of sensillae which is bigger and the generally longer and more numerous sensillae in this latter species.

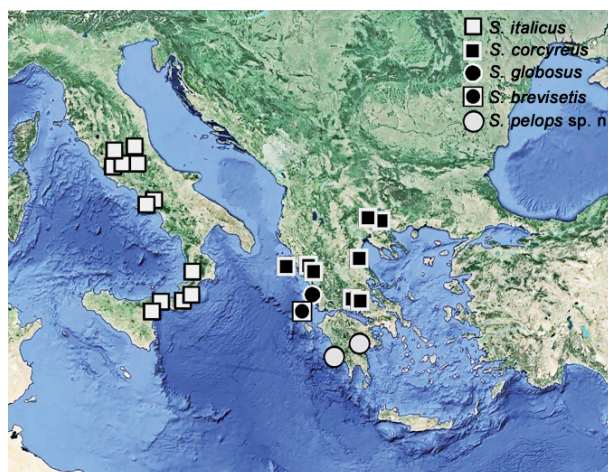


Fig. 20. Map showing known records of all species of *Styphlidius* from specimens examined and literature (Copyright 2014 Google).

ACKNOWLEDGEMENTS

I am due to Nicole Montandon and Janis Soumas (Mesochori) for their hospitality during the excursion to the Peloponnese. I am due to Herbert Winkelmann (Berlin) and to Michael Geiser (NHML) for the loan of specimens for comparison. I am grateful to Olena Domschke (Lucerne University of Applied Sciences and Arts, division nonfiction) for her illustrations.

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