

**Three new species of *Trachyphloeus* from Sardinia
(Coleoptera: Curculionidae: Entiminae: Trachyphloeini)**

**Tři nové druhy *Trachyphloeus* ze Sardínie
(Coleoptera: Curculionidae: Entiminae: Trachyphloeini)**

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Taxonomy, new species, Coleoptera, Curculionidae, Entiminae, Trachyphloeini, *Trachyphloeus*, Sardinia

Abstract. Three new species of the genus *Trachyphloeus* Germar, 1817 from Sardinia are described, illustrated and compared with closely related species: *T. cesarei* sp. nov., *T. fancelloi* sp. nov. and *T. mariaesilvanae* sp. nov.

INTRODUCTION

The genus *Trachyphloeus* Germar, 1817 is distributed throughout the whole of Europe, and also in the north western part of Africa and the western part of Asia. The genus includes 77 valid species (Alonso-Zarazaga et al. 2017), but only a limited number of species can be commonly collected, mainly species known from central and northern Europe. The vast majority of these are widespread thanks to their parthenogenetic way of reproduction (Borovec 2009). In contrast, many *Trachyphloeus* are very infrequently found, and known from only small ranges mainly in south western Europe or north western part of Africa. Many of them seem to be local endemics of small regions or even restricted to regional landscapes (Borovec et al. 2008). Thus, by targetted research at new localities, using sifting, which has never been tried in the past in many regions, new species can occasionally be discovered. The present study reports three new species from the Mediterranean island of Sardinia.

The genus *Trachyphloeus* is remarkably speciose in Sardinia. To date, ten species are known from this island, six of which are endemic for Sardinia or Sardinia and Corsica (Borovec & Osella 2003), five of these six endemic species were described in the last thirty years: *Trachyphloeus pericarti* Borovec, 1991; *T. margheritae* Borovec et Osella, 1993; *T. caldarai* Borovec et Osella, 2002; *T. melonii* Borovec et Osella, 2003 and *T. nuragicus* Borovec et Osella, 2003.

MATERIALS AND METHODS

The body length of all specimens was measured in dorsal view from the anterior border of the eyes to the apex of the elytra, excluding the rostrum. Width/length ratio of the rostrum was measured at the maximum width at the base versus the maximum length to the base of the mandibles. Width/length ratios of pronotum, elytra, antennal segments and tarsomeres were taken at the maximum width and length of the respective parts in dorsal view; length of the onychium was taken as the part exceeding the outline of tarsal segment 3. Dissected male and female genitalia were studied in glycerine. Female genitalia were then embedded in Solakryl BMX (Medika, Prague); male genitalia were mounted dry on the same card as the respective specimen, with tegmen and sternite IX embedded in Solakryl

BMX. Habitus images were taken with a Canon EOS 5D mark II in combination with a Canon MP-E65 1-5× macro lens. Images were stacked using Zerene Stacker and edited in Adobe Photoshop CC 2015. The terminology of the rostrum and the terminalia follows Oberprieler et al. (2014).

The material is deposited in the following collections: Cesare Bellò, Castelfranco Veneto, Italy (CBCI), Giuseppe Osella, Verona, Italy (GOVI), Luciano Diotti, Cinisello Balsamo, Italy (LDCI), Luca Fancello, Cagliari, Italy (LFCI), Roman Borovec, Sloupno, Czech Republic (RBSC).

TAXONOMY

Trachyhphloeus cesarei sp. nov.

(Figs 1, 4, 5, 10, 11, 17, 22, 26)

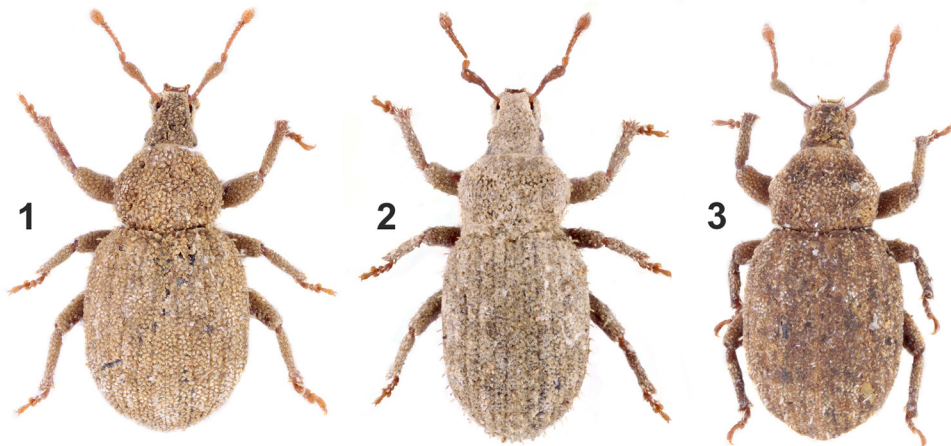
Type locality. Sardinia, Orani, M.te Gonare.

Type material. Holotype: ♂, “Sardegna (NU), Orani, M.te Gonare, 2.VI.2002, 1000 m, B. Osella lgt.” (GOVI). Paratypes: 2 ♂♂, 1 ♀, the same data as holotype (1 ♂, 1 ♀ GOVI, 1 ♂ RBSC).

Additional material examined. 5 ♀♀, Sardegna, Supramonte, Punta Corradi, 30.v.2002, 1300 m, B. Osella leg. (GOVI); 3 ♀♀, NU - Supramonte, M.te Corradi, 30.v.2002, 1350 m, leg. C. Bellò (CBCI); 1 ♀, Oliena (NU), M. Corradi, 30.v.2002, 1300 m, leg. H. Pierotii (GOVI); 1 ♀, Sardegna (NU), Baunei Golgo, Nuraghe Orgoduri, 20.vi.2006, 600 m, G. Osella leg. (GOVI); 1 ♀, Sardegna (NU), M.te Arqueri, vaglio, 16.v.2006, 950 m, G. Osella leg. (GOVI). These females differ slightly from the four specimens in the type series, by the indentation at the apex of protibiae, which is slightly shorter. Since the male genitalia is an important character for distinguishing species in this group, without the possibility to examine a male specimen, the females listed under “additional material” have not been included into the type material of the newly described species, to conserve the characters of the type population. Their proper taxonomic status needs to be confirmed by the collecting of at least one male.

Description. Body length 2.56–2.77 mm, holotype 2.56 mm. Body (Fig. 1) covered by irregularly angular appressed scales, 4 across the width of one interval, leaving a narrow space between them. Semierect setae on elytra in males slightly shorter, in female slightly longer than half of the width of one seta, on odd intervals much denser than on even ones, distance between two setae on odd intervals exceeds the length of one seta 4–5 times, even intervals have 3–5 setae in total. Pronotum and head with rostrum sparsely and irregularly covered with scattered similar semierect setae, those on pronotum slightly, on head and rostrum distinctly shorter.

Rostrum in males (Fig. 4) 1.15–1.19 × as wide as long, at basal two thirds to three quarters slightly evenly enlarged apicad with straight sides, then abruptly enlarged, at apex 1.20–1.22 × as wide as at base and 0.93–0.97 × as wide as head including eyes. Rostrum in female (Fig. 5) 1.17 × as wide as long, parallel-sided with straight sides, at apex equally wide as at base and 0.85 × as wide as head including eyes. Epifrons in both sexes flat, evenly tapered anteriad with straight sides, with ill-defined shallow longitudinal furrow. Epistome in males distinctly lengthened apicad, forming two brownish teeth directed partly upwards, visible mainly in dorsolateral view, in females indistinct, smaller and finer. Scrobes dorsally visible only in apical half of rostrum as very narrow furrows; in profile curved and enlarged posteriad, directed towards eyes, separated from them by wide squamose stripe. Eyes small, somewhat prominent from outline of head; in profile placed in ventral third of rostrum.



Figs 1–3. New species of *Trachyphloeus*, dorsal view. 1 – *Trachyphloeus cesarei* sp. nov., male holotype. 2 – *T. fancelloi* sp. nov., male paratype. 3 – *T. mariaesilvanae* sp. nov., male paratype (photograph: Pavel Krásenský).
Obr. 1–3. Nové druhy *Trachyphloeus*, pohled shora. 1 – *Trachyphloeus cesarei* sp. nov., samec, holotyp. 2 – *T. fancelloi* sp. nov., samec, paratyp. 3 – *T. mariaesilvanae* sp. nov., samec, paratyp (fotografie: Pavel Krásenský).

Antennae moderately slender. Scape straight, slender in basal half, in apical half enlarged apicad, at apex as wide as club. Funicle segment 1 conical, $1.6\text{--}1.8 \times$ as long as wide, equally long to $1.1 \times$ as long as segment 2, which is $2.3\text{--}2.4 \times$ as long as wide; segments 3 and 4 isodiametric; segment 5 $1.1 \times$ as wide as long; segment 6 $1.3 \times$ as wide as long; segment 7 $1.4 \times$ as wide as long; club $1.5\text{--}1.6 \times$ as long as wide.

Pronotum (Fig. 1) $1.26\text{--}1.29 \times$ as wide as long, widest at midlength, more tapered anteriorly than posteriorly; disc with three wide, ill-defined longitudinal depressions along the whole length, lateral depressions somewhat deeper than the middle one; in profile vaulted, its anterior third flattened. Base slightly arched. Anterior border obliquely directed posteriorly.

Elytra (Fig. 1) $1.23\text{--}1.26 \times$ as long as wide, oval, with rounded sides, broadly rounded apicad, in profile somewhat vaulted. Odd intervals slightly more elevated, and slightly wavy, forming low irregular humps. Tergite VII in males short, subtrapezoidal, with slightly concave anterior border, in females long, subtrapezoidal with distinctly concave anterior border. Tergite VIII in males very short, broadly subtrapezoidal, with slightly concave anterior border, in females long, subtrapezoidal with distinctly concave anterior border.

Apex of protibiae in female (Fig. 10) distinctly lobed, slightly enlarged outside and inside, with four equally long, reddish brown spines, two at middle lobe and one each at lateral and inner lobes. Outer and inner indentations nearly equal, long and moderately deep. Apex of protibiae in males (Fig. 11) with almost straight lateral edge and four very short and fine spines and short and shallow, but distinct outer and inner indentations. Tarsi slender, segment 2 $1.3\text{--}1.4 \times$ as wide as long; segment 3 $1.5\text{--}1.6 \times$ as wide as long and $1.3\text{--}1.4 \times$ as wide as segment 2; onychium twice as long as segment 3, distinctly enlarged apicad, at apex almost as wide as segment 2.

Penis (Fig. 17) dorsally widest at base, with concave sides, at apex slightly constricted, tip weakly subtriangular; laterally irregularly curved, moderately wide, slightly enlarged apicad, at apex wide, truncate, with shortly lengthened tip.

Sternite VIII in female (Fig. 22) short, forming distinct basal margin; plate composed of two distinct, subtriangular arms and wide, oval fenestra; arms not connected at apical margin. Spermatheca (Fig. 26) with slender, long, slightly curved cornu; ramus and collum subparallel, ramus slightly longer and twice wider than collum.

Bionomy. Type material was sifted in Mediterranean Macchia.

Etymology. The newly described species is dedicated to one of the collectors of the type material, my very good friend and colleague, Cesare Bellò (Castelfranco Veneto, Italy), outstanding expert mainly on Tyrrhenian terricolous entomines, and on Peritelini. I dedicate this species to him to express my thanks for several trips together to the Italian Alps, where I had the possibility to gain insights into his incredible knowledge of nature, and to follow how he was able to discover extremely interesting weevils even in habitats where I was unable to find any insects.

Differential diagnosis. Based on the male rostrum abruptly enlarged apicad, *Trachyphloeus cesarei* sp. nov. belongs to the group of five species known from Italy and Morocco: *T. corniculatus* Hoffmann, 1956 (Morocco), *T. stuebeni* Borovec, 2003 (Morocco), *T. caldarai* Borovec et Osella, 2002 (Sardinia), *T. colonnelli* Borovec et Osella, 2002 (Italian island of Gorgona) and *T. mariaesilvanae* sp. nov. described below, also from Sardinia. Both species from northern Africa are moderately easy to distinguish by their very slender tarsi with segment 3 as wide as 2, and onychium longer than 2+3 together in *T. corniculatus*, and wide funicle segments with segments 3–7 distinctly transverse and segment 7 even twice as wide as long and penis with deep apical concavity in *T. stuebeni*. All four Italian species are moderately similar, and so are all three species from Sardinia (two of them described in the present paper). Their identification is based on relatively slight morphological differences, but based on the structure of the penis, they are clearly distinguishable. In contrast, sternite VIII in females, differing in many *Trachyphloeus* species, is identical in these species. Within this group, *T. cesarei* sp. nov. is most similar to *T. mariaesilvanae* sp. nov., described below. All distinguishing characters are stated below, in the key to the Italian species of the group, and included in the discussion of *T. mariaesilvanae* sp. nov.

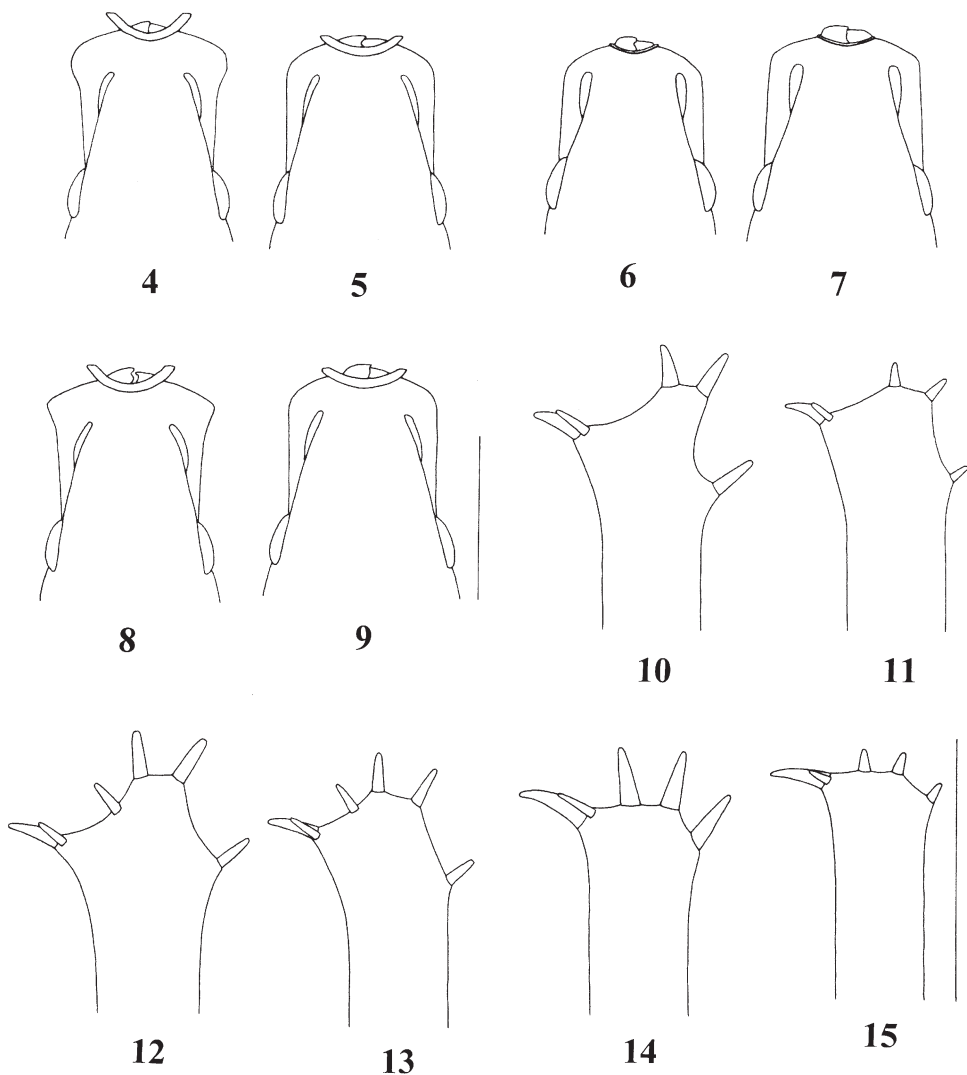
***Trachyphloeus fancelloi* sp. nov.**

(Figs 2, 6, 7, 12, 13, 19, 23, 27)

Type locality. Sardinia, Teulada, Nuraxi Monte Maria.

Type material. Holotype: ♂, “SARDEGNA (CA), TEULADA, NURAXI MONTE MARIA, 1.IV.2013, LEG. FANCELLO” (GOVI). Paratypes: 1 ♂, the same data as holotype (RBSC); 1 ♂ 1 ♀, “Italy, Sardegna, Cagliari – Iglesias, Santadi, Nuraxi de monte Maria, vaglio, 18.V.2016, Fancello leg.” (1 ♂ LFCI, 1 ♀ GOVI).

Description. Body (Fig. 2) length 2.38–2.81 mm, holotype 2.38 mm. Elytra densely covered with moderately large, irregularly oval, distinctly imbricated appressed, finely striolate scales, 3–4 across one interval; pronotum and head with rostrum with irregularly angular, distinctly striolate appressed scales, leaving very narrow space between them. Elytra with one moderately dense row of semierect subspatulate setae, widest at midlength, shorter than half the width of an interval and slightly longer than the diameter of one appressed scale, distance between two setae about 3 times as long as the length of one seta, on even intervals only indistinctly sparser than on odd ones. Pronotum and head with rostrum with



Figs 4–15. 4–9: head with rostrum, dorsal view. 4 – *T. cesarei* sp. nov., male; 5 – *T. cesarei* sp. nov., female; 6 – *T. fancelloi* sp. nov., male; 7 – *T. fancelloi* sp. nov., female; 8 – *T. mariaesilvanae* sp. nov., male; 9 – *T. mariaesilvanae* sp. nov., female. 10–15: apex of right protibia. 10 – *T. cesarei* sp. nov., female; 11 – *T. cesarei* sp. nov., male; 12 – *T. fancelloi* sp. nov., female; 13 – *T. fancelloi* sp. nov., male; 14 – *T. mariaesilvanae* sp. nov., female; 15 – *T. mariaesilvanae* sp. nov., male. Scale bars 0.50 mm for 4–9, 0.25 mm for 10–15.

Obr. 4–15. 4–9: hlava s noscem, pohled shora. 4 – *T. cesarei* sp. nov., samec; 5 – *T. cesarei* sp. nov., samice; 6 – *T. fancelloi* sp. nov., samec; 7 – *T. fancelloi* sp. nov., samice; 8 – *T. mariaesilvanae* sp. nov., samec; 9 – *T. mariaesilvanae* sp. nov., samice. 10–15: špiče pravé přední holeně. 10 – *T. cesarei* sp. nov., samice; 11 – *T. cesarei* sp. nov., samec; 12 – *T. fancelloi* sp. nov., samice; 13 – *T. fancelloi* sp. nov., samec; 14 – *T. mariaesilvanae* sp. nov., samice; 15 – *T. mariaesilvanae* sp. nov., samec. Měřítka 0,50 mm u obrázků 4–9 a 0,25 mm u obrázků 10–15.

similar semierect setae as on elytra, densely irregularly scattered, slightly shorter and more slender than elytral setae.

Rostrum (Figs 6, 7) $1.23\text{--}1.27 \times$ as wide as long, subparallel-sided, with straight sides; laterally regularly weakly vaulted. Epifrons distinctly evenly tapered anteriad, with indistinctly concave sides. Frons create very narrow glabrous stripe along epistome. Epistome small, inconspicuous but visible, hardly protruding anteriad, U-shaped, carinated posteriad, identical in both sexes. Scrobes dorsally visible in apical half of rostrum as slender furrows; laterally weakly curved and enlarged posteriad, directed to dorsal half of eyes and separated from them by squamose stripe narrower than diameter of eye. Eyes small, dorsally weakly prominent from outline of head; laterally placed in the middle of rostrum.

Antennal scape $1.1\text{--}1.2 \times$ as long as funicle, curved at midlength, in apical half evenly enlarged apicad, at apex only slightly narrower than club. Segment 1 conical, $1.7\text{--}1.8 \times$ as long as wide and $1.2\text{--}1.3 \times$ as long as slender subparallel-sided segment 2, which is $2.1\text{--}2.2 \times$ as long as wide; segment 3 isodiametric; segment 4 $1.1 \times$ as wide as long; segment 5 $1.2 \times$ as wide as long; segment 6 $1.3 \times$ as wide as long; segment 7 $1.6\text{--}1.7 \times$ as wide as long; club short, $1.5\text{--}1.6 \times$ as long as wide, segment 1 largest, occupying half the length of the club.

Pronotum (Fig. 2) $1.35\text{--}1.38 \times$ as wide as long, at basal two thirds subparallel-sided, then distinctly regularly tapered anteriad, slightly constricted subapically. Disc with three ill-defined, shallow and wide longitudinal depressions in middle and lateral parts. Pronotum laterally weakly vaulted, behind anterior border flattened.

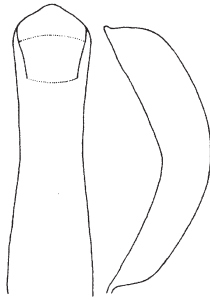
Elytra (Fig. 2) long oval, $1.35\text{--}1.41 \times$ as long as wide, with weakly rounded sides and broadly rounded apex. Odd intervals in some specimens slightly more elevated than even ones; laterally almost flat. Tergite VII in males short, subtrapezoidal, with slightly concave anterior border, in females long, subtrapezoidal with distinctly concave anterior border.

Protibiae in males (Fig. 13) less enlarged outside and inside at apex than in female, with shorter and shallower indentations and shorter and finer spines. Apex of protibiae in female (Fig. 12) with five almost equally long and wide slender brownish spines and reddish brown mucro at internal corner, middle lobe armed with two spines, outer and inner lobe with one spine and the last, fifth spine is placed in inner indentation; the both indentations shallow but distinct, about equally long. Tarsi moderately slender; segment 2 $1.4\text{--}1.5 \times$ as wide as long; segment 3 $1.4 \times$ as wide as long and $1.4 \times$ as wide as segment 2; onychium $1.6 \times$ as long as segment 3.

Penis (Fig. 19) long and slender, widest at base, subparallel-sided along the whole length, apex regularly tapered apicad with convex sides, tip small and short, rounded; in profile very slender, evenly tapered apicad.

Figs 16–29. 16–21: dorsal (on the left) and lateral view of penis. 16 – *T. caldarai* Borovec et Osella; 17 – *T. cesarei* sp. nov.; 18 – *T. colonnellii* Borovec et Osella; 19 – *T. fancelloi* sp. nov.; 20 – *T. margheritae* Borovec et Osella; 21 – *T. mariaesilvanae* sp. nov. 22–25: sternite VIII of female. 22 – *T. cesarei* sp. nov.; 23 – *T. fancelloi* sp. nov.; 24 – *T. margheritae* Borovec et Osella; 25 – *T. mariaesilvanae* sp. nov. 26–29: spermatheca. 26 – *T. cesarei* sp. nov.; 27 – *T. fancelloi* sp. nov.; 28 – *T. margheritae* Borovec et Osella; 29 – *T. mariaesilvanae* sp. nov. Scale bars 0.50 mm for 16–21, 0.25 mm for 22–29.

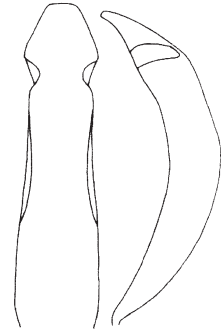
Obr. 16–29. 16–21: penis, pohled shora a z boku. 16 – *T. caldarai* Borovec et Osella; 17 – *T. cesarei* sp. nov.; 18 – *T. colonnellii* Borovec et Osella; 19 – *T. fancelloi* sp. nov.; 20 – *T. margheritae* Borovec et Osella; 21 – *T. mariaesilvanae* sp. nov. 22–25: sternit VIII samice. 22 – *T. cesarei* sp. nov.; 23 – *T. fancelloi* sp. nov.; 24 – *T. margheritae* Borovec et Osella; 25 – *T. mariaesilvanae* sp. nov. 26–29: spermatéka. 26 – *T. cesarei* sp. nov.; 27 – *T. fancelloi* sp. nov.; 28 – *T. margheritae* Borovec et Osella; 29 – *T. mariaesilvanae* sp. nov. Měřítka 0,50 mm u obrázků 16–21 a 0,25 mm u obrázků 22–29.



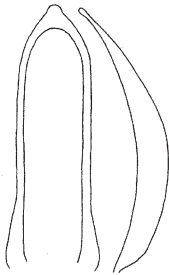
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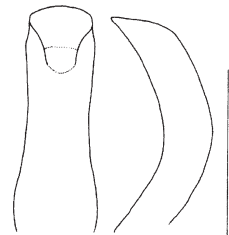
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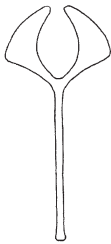
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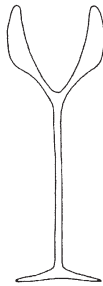
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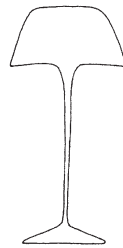
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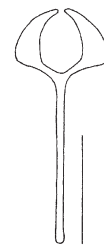
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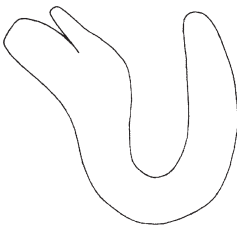
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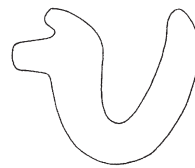
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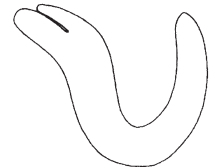
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Sternite VIII (Fig. 23) with conspicuous, long, transverse anterior bar; plate created only by V-shaped, very slender basal margin and less sclerotised, long and slender, narrowly subtriangular arms. Spermatheca (Fig. 27) with wide, weakly but regularly curved cornu and longitudinal corpus; ramus and nodulus equally short, ramus slightly wider and shorter than subtriangular nodulus.

Bionomy. Sifted near the base of *Pistacia lentiscus* (Anacardiaceae), in an environment of Mediterranean Macchia on granite substrate, together with *Dolichomeira* sp.

Etymology. The newly described species is dedicated to its collector, my friend and colleague Luca Fancello (Cagliari, Sardinia, Italy), expert and specialist in taxonomy and faunistics of endogean Coleoptera in the Mediterranean region.

Differential diagnosis. By its general habitus, mainly the long oval, slender elytra with slightly more elevated odd intervals *T. fancelloi* sp. nov. is similar to the species of the *T. fusciscapus* Desbrochers des Loges, 1909 group, defined by Borovec & Osella (2003) and represented on Sardinia. *T. fancelloi* sp. nov. differs from all species of that group by the female with the outer lobe on the apex of anterior tibia only slightly distant from the middle lobe and the middle lobe with equally long and equally sized spines, and also by ramus and nodulus of spermatheca short and not parallel. In the *T. fusciscapus* group *T. fancelloi* sp. nov. is most similar to *T. margheritae* Borovec et Osella, 1993. Also in the last key to the Italian species of *Trachyploesus* (Borovec et al. 2008) *T. fancelloi* sp. nov. comes out at couplet 31 just next to *T. margheritae*, because of its parallel-sided rostrum with straight sides and with distinctly and evenly tapered epifrons, slender tarsal segment 3 and short onychium, pronotum not conspicuously constricted behind anterior border and apex of protibiae with 5 spines plus mucro, with two equally long and shallow indentations. Moreover, the two species are similar because of their moderately large and distinctly imbricated, appressed elytral scales, large first segment of the club comprising half of the club's length and long, conspicuous, transverse anterior bar of sternite VIII in females, which is known only in these two species in the whole genus. It is possible to distinguish the two species using a few poorly discernible external morphological characters, but they are easily distinguishable by male and female genitalia, as follows:

- 1 Penis subparallel-sided with straight sides, with small but distinct tip; laterally very slender, distinctly tapered apicad (Fig. 19). Sternite VIII in females without visible plate, only with basal margin and forked arms (Fig. 23). Spermatheca with transverse ramus and wide cornu (Fig. 27). *T. fancelloi* sp. nov.
- Penis with concave sides, apically broadly rounded, lacking tip; laterally wide, slightly tapered apicad (Fig. 20). Sternite VIII in females with distinct plate, subtrapezoidal, wider than long, lacking arms (Fig. 24). Spermatheca with ramus as long as wide and slender cornu (Fig. 28). *T. margheritae* Borovec et Osella

Trachyploesus mariaesilvanae sp. nov.

(Figs 3, 8, 9, 14, 15, 21, 25, 29)

Type locality. Sardinia, Urzulei, Campu Planu Oddeu, Fennau.

Type material. Holotype: ♂, "Sardegna (NU), Urzulei, Campu Planu Oddeu, Loc. Fennau, 800 m, 7.VI.2001, B. Osella leg." (GOVI). Paratypes: 1 ♂, "SARDEGNA (CA), dintorni SADALI, 27 – V – 2014, L. DIOTTI" (LDCI); 1 ♀, "I, Sardegna, Ogliastra, Supramonte, Urzulei, Su Nercone, 985 m, vaglio Teucium, 7.VI.2014, N 40°07.348', E 009°30.121', legg. Bellò & Chemello" (CBCI); 1 ♂, "I, Sardegna, Ogliastra, Seui, Tonneri, Montarbu, Capicciola, 980 m, vaglio Teucium, 10.VI.2014, N 39°51'57.78", E 9°21'50.37", legg. Bellò & Chemello" (RBSC).



Fig. 30. Habitat of *Trachyphloeus mariaesilvanae* sp. nov., Sardinia, Urzulei (photograph: Cesare Bellò).
 Obr. 30. Lokalita *Trachyphloeus mariaesilvanae* sp. nov., Sardinia, Urzulei (fotografie: Cesare Bellò).

Description. Body (Fig. 3) length 2.48–2.81 mm, holotype 2.48 mm. Body densely covered by irregularly angular appressed scales, leaving only narrow spaces between them, 3 across an interval width. Elytra with sparse row of semierect, subspatulate setae, slightly shorter than half the width of one interval, distance between two setae about five times the length of one seta. Pronotum and head with rostrum with sparsely irregularly scattered semierect setae, distinctly shorter than elytral ones.

Rostrum in males (Fig. 8) $1.17\text{--}1.19 \times$ as wide as long, at basal two thirds anteriorly weakly but evenly enlarged, at anterior third abruptly expanded apicad, at apex $1.12\text{--}1.17 \times$ as wide as at base and $0.93\text{--}0.97 \times$ as head including eyes. Female with rostrum (Fig. 9) parallel-sided with straight sides, $1.12 \times$ as wide as long, at apex equally wide as at base and $0.83 \times$ as wide as head including eyes. Rostrum laterally distinctly vaulted. Epifrons in both sexes flat, tapered anteriorly, at basal half less than at apical half, with weakly convex sides. Epistome in males lengthened apicad, forming two brownish teeth, distinctly visible dorsally and laterally, in females shorter and finer, not exceeding outline of rostrum. Scrobes dorsally visible only in apical half of rostrum as very narrow furrows; in profile curved and enlarged posteriorly, directed towards eyes, separated from them by wide squamose stripe. Eyes small, weakly prominent from outline of head; laterally placed slightly below middle of head height.

Antennae moderately slender. Scape weakly curved at midlength, at apical half evenly enlarged apicad, at apex as wide as club. Funicle segment 1 conical, $1.7\text{--}1.8 \times$ as long as wide, equally long to $1.1 \times$ as long as segment 2, which is $2.3\text{--}2.5 \times$ as long as wide; segments 3 and 4 isodiametric; segment 5 $1.1 \times$ as wide as long; segment 6 $1.2 \times$ as wide as long; segment 7 $1.3 \times$ as wide as long; club $1.6\text{--}1.7 \times$ as long as wide.

Pronotum (Fig. 3) $1.24\text{--}1.27 \times$ as wide as long, widest at midlength or just before it, with distinctly rounded sides, weakly tapered posteriad and distinctly tapered anteriad. Disc with wide and shallow median longitudinal furrow and with wide and shallow depression in lateral basal half, with shallow and wide transverse constriction. Base weakly arched. Pronotum laterally weakly vaulted, behind anterior border flattened with anterior border obliquely directed posteriad.

Elytra (Fig. 3) $1.29\text{--}1.33 \times$ as long as wide, long oval, with weakly rounded sides, narrowly rounded apicad, laterally weakly domed. Odd intervals slightly more elevated than even ones.

Apex of protibiae in female (Fig. 14) with almost straight lateral edge, slightly enlarged inside, indistinctly lobed, armed with four spines and mucro at inner portion. Middle part with two equally long, slender, brownish spines, lateral spine identical to middle ones, inner spine shorter and finer. Outer and inner indentation very short and shallow, indistinct. Apex of protibiae in males (Fig. 15) with almost straight lateral edge, apically irregularly rounded, lacking indentations, with four equally distant and very short spines distinctly shorter than mucro. Tarsi slender; segment 2 $1.4\text{--}1.5 \times$ as wide as long; segment 3 $1.7 \times$ as wide as long and $1.3 \times$ as wide as segment 2; onychium twice as long as segment 3, distinctly enlarged apicad, at apex almost as wide as segment 2; claws free, long, distinctly divaricate.

Penis (Fig. 21) dorsally widest at base, with concave sides, at apex slightly constricted, tip subtruncate, slightly broadly rounded; laterally regularly curved, moderately slender, only indistinctly enlarged apicad, apex evenly tapered apicad.

Sternite VIII (Fig. 25) in female with apodeme of medium length, basal margin of plate distinct, V-shaped continuing to large, curved, narrowly subtriangular arms leaving distinct oval fenestra, not connected at apical part with indistinct apical margin. Spermatheca (Fig. 29) U-shaped, with slender cornu and corpus; ramus and nodulus subparallel, longer than wide, tube-shaped, ramus slightly longer and distinctly wider than nodulus.

Bionomy. The type material was sifted under *Teucrium marum* (Lamiaceae).

Etymology. The new species is dedicated to the wife of Cesare Bellò, Maria Silvana Chemello, Cesare's source of inspiration and also his guide in his sometimes very hard field trips.

Differential diagnosis. Based on the rostrum in males abruptly enlarged apicad *T. mariaesilvanae* sp. nov. belongs to the same species group as *T. cesarei* sp. nov. described above, and both are most similar. It is possible to distinguish all four Italian species of that group using the following key:

Key to the Italian *Trachyploeus* species with rostrum enlarged at apex

- 1 Onychium exceeding tarsal segment 3 at most $1.5 \times$ times. Elytral intervals with equally dense raised setae. Pronotum with slender median furrow. Rostrum in females with concave sides. Penis with apex separated by lateral grooves (Fig. 18). Gorgona Island. *T. colonnellii* Borovec et Osella
- Onychium exceeding tarsal segment 3 at least twice. Odd elytral intervals with distinctly denser setae than even ones. Pronotum with wide median furrow. Rostrum in females with straight sides. Penis without separated apex (Figs 16, 17, 21). Sardinia. 2

- 2 Apex of protibiae with 5 spines besides mucro. Apex of protibiae in females with outer indentation distinctly shorter than inner one. Pronotum and elytra wider, pronotum $1.38\text{--}1.44 \times$ as wide as long, elytra $1.19\text{--}1.25 \times$ as long as wide. Rostrum in males abruptly enlarged apically, at apex as wide as head including eyes. Larger species, at least 3.0 mm. *T. caldarai* Borovec et Osella
- Apex of protibiae with 4 spines besides mucro. Apex of protibiae in females with outer and inner indentation equal. Pronotum and elytra narrower, pronotum $1.24\text{--}1.29 \times$ as wide as long, elytra $1.23\text{--}1.33 \times$ as long as wide. Rostrum in males gradually enlarged apically, at apex narrower than head including eyes. Smaller species, at most 2.8 mm. 3
- 3 Raised elytral setae exclusively on odd intervals. Elytra narrow, subparallel-sided, $1.29\text{--}1.33 \times$ as long as wide. Apex of protibiae in females with almost straight lateral side, indistinctly lobed, inner and outer indentations short and not deepened (Fig. 14). Penis in profile narrow at apical part, at apex evenly tapered apicad (Fig. 21). *T. mariaesilvanae* sp. nov.
- Elytra with raised setae also on even intervals, although very sparse. Elytra wider with weakly rounded sides, $1.23\text{--}1.26 \times$ as long as wide. Apex of protibiae in females slightly enlarged laterally, distinctly lobed, inner and outer indentations long, deep and distinct (Fig. 10). Penis in profile wide at apical part, truncate at apex (Fig. 17). *T. cesarei* sp. nov.

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SOUHRN

Rod *Trachyphloeus* Germar, 1817 je rozšířen po celé Evropě, severozápadní Africe a také v západní Asii, k dnešku je známo 77 druhů (Alonso-Zarazaga et al. 2017). Ale jen několik málo druhů z tohoto počtu je možné sbírat jako druhy běžné, což jsou především druhy známé i ze střední a severní Evropy, většina z nich má velký areál rozšíření díky jejich přechodu k partenogenetickému způsobu rozmnožování (Borovec 2009). Mnoho druhů patří mezi vzácné až velmi vzácné, mnohdy známé jen z omezeného počtu lokalit, některé z nich pokládáme za endemity velmi malých území (Borovec et al. 2008). Podrobný průzkum mnoha lokalit, především s využitím prosevů, tak dodnes přináší nový, zajímavý materiál, zahrnující také nové druhy.

Fauna rodu *Trachyphloeus* je na ostrově Sardinie poměrně bohatá. Zatím známe z tohoto ostrova 10 druhů, z nichž šest je pro tento ostrov, eventuálně pro Sardinii s Korsikou, endemických (Borovec & Osella 2003). Pět z těchto šesti endemických druhů bylo popsáno v posledních 30 letech.

Současná práce přináší popis tří nových druhů ze Sardinie. Druhy *Trachyphloeus cesarei* sp. nov. a *T. mariaesilvanae* sp. nov. doplňují skupinu druhů, kde samci mají rozšířenou přední část nosce a kam dosud patřily pouze *T. corniculatus* Hoffmann, 1956 (z Maroka), *T. stuebeni* Borovec, 2003 (z Maroka), *T. caldarai* Borovec et Osella, 2002 (ze Sardinie) a *T. colonnellii* Borovec et Osella, 2002 (z italského ostrova Gorgona). Třetí druh, *T. fancelloi* sp. nov., patří do skupiny *T. fusciscapus* Desbrochers des Loges, 1909, ve které je velmi podobný druhu *T. margheritae* Borovec et Osella, 1993, známému také ze Sardinie. Všechny tři druhy jsou v práci ilustrovány a pro všechny druhy jsou uvedené krátké určovací klíče, definující odlišující znaky od nejbližších podobných druhů.