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Five new species of *Trachyphloeus* from western mediterranean (Coleoptera: Curculionidae: Entiminae: Trachyphloeini)

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Abstract. Five new species of the genus *Trachyphloeus* are described, illustrated and compared with closely related species: *T. gonzalezi* sp. nov. from Spain, *T. ifranensis* sp. nov. from Morocco, *T. pseudodenticulatus* sp. nov. from Spain, *T. romanifilii* sp. nov. from Algeria and *T. rouaulti* sp. nov. from France.

INTRODUCTION

The genus *Trachyphloeus* Germar, 1817, assumed earlier as widely distributed (Lona 1937, Winkler 1932), is restricted only to the Palaearctic Region (Borovec 2009, 2013). It contains 70 species, the majority of them is known from the western mediterranean. Due to better mobility and also better collecting methods, new species are often collected. These soil-associated, cryptic weevils, living by hidden way of life, belong to least known short-nosed ones. A third of known species (25 species) were thus discovered over the last 25 years. The present paper brings results of study of next, primarily newly collected material.

MATERIAL AND METHODS

Examined specimens were measured in profile from anterior margin of eyes to the apex of the elytra. Dissected female genitalia were embedded in Solakryl BMX, male genitalia were mounted dry. Genitalia are mounted on the same card as the respective specimen. The terminology of rostrum follows Oberprieler (1988), terminology of female genitalia follows Borovec (2006), with the exception of the use of gonocoxites instead of hemisternites.

Throughout the text, the following abbreviations for collections are used:

CGTS Christoph Germann, private collection, Thun, Switzerland;
ERTF Eric Rouault, private collection, Toulaud, France;
GOVI Giuseppe Osella, private collection, Verona, Italy;
JKHC Jiří Krátký, private collection, Hradec Králové, Czech Republic;
JPMF Jean Pelletier, private collection, Monnaie, France;
MNBG Museum für Naturkunde der Humboldt Universität, Berlin, Germany;
MNCN Museo Nacional de Ciencias Naturales, Madrid, Spain;
NMPC Národní Museum Prague, Czech Republic;
PSMG Peter Stüben, collection of CURCI Institute, Mönchengladbach, Germany;
RBSC Roman Borovec, private collection, Sloupno, Czech Republic;

SMDG Staatliches Museum für Tierkunde, Dresden, Germany;
ZSMG Zoologische Staatssammlung, München, Germany.

TAXONOMIC PART

Trachyphloeus (s. str.) *gonzalezi* sp. nov.
(Figs 1-7)

Type material. Holotype (♂): Spain, Murcia, Los Belones env., near Cobaticas, 37°36´13.34″N, 0°45´01.78″W, 25M [m a.s.l.], 24.iv.2011, sieving, lgt. J. Krátký, (MNCN). Paratype: (1 ♀): Spain, Murcia, Los Belones env., near Cobaticas, 37°36´13.34″N, 0°45´01.78″W, 25M [m a.s.l.], 24.iv.2011, sieving, lgt. Jan Pelikán, (RBSC). Holotype lacks the right hind tarsus.

Additional material examined. 1 ♀, Spagna [Spain], Almeria, Sorbas, 26.iii.[19]93, C. Bellò lgt. (GOVI). This female is slightly different from the both type specimens, by longer body, 3.23 mm long, funicle segment 1 twice as long as wide and segment 2 1.5 times as long as wide, pronotum 1.33 times as wide as long, and ramus of spermatheca short and wide, wider than long and about three times wider than slender, tube-shaped nodulus.

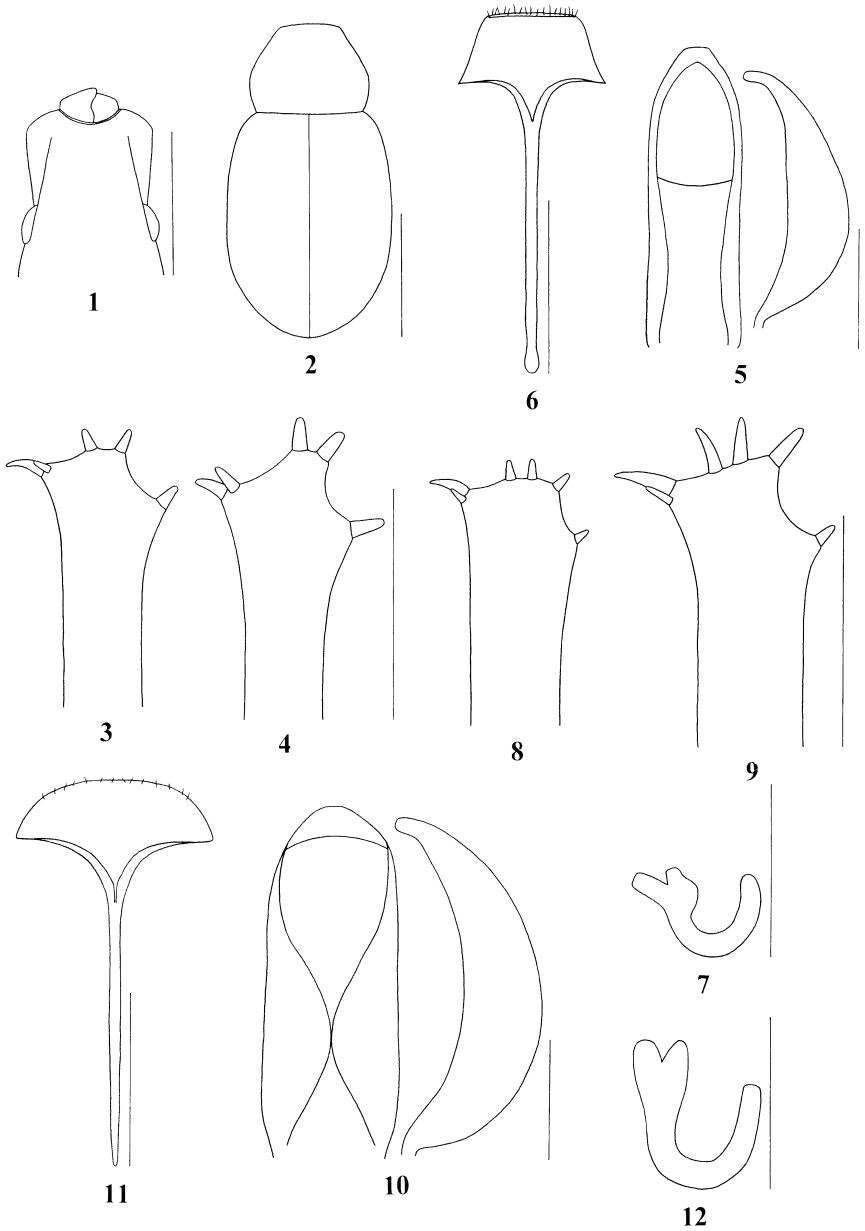
Description. Length holotype 2.56 mm, paratype 2.69 mm (rostrum excluded).

Body blackish, legs and antennae brownish, tarsi and antennal funicles with clubs brown reddish. The whole body except of antennal funicles with clubs and tarsi covered by adherent scales and except of antennal clubs with erect setae. Adherent scales on elytra, pronotum and head with rostrum irregularly rounded, with irregular striae inside of scales and fringe of short thrums on circumferences. Scales dense, leaving very slender interspaces with one another. Setae on elytra very short, inconspicuous, about as long as a quarter width of one interval, almost perpendicularly erect, parallel-sided, creating one scarce regular row on each interval. Pronotum, head with rostrum, femora, tibiae and antennal scapes with similar, but even shorter, irregularly scattered erect setae. Antennal funicles with short, semierect, piliform setae.

Rostrum (Fig. 1) 1.22-1.30 times as wide as long, from base to apex somewhat widened with straight sides, in lateral view distinctly vaulted. Epifrons strongly tapered anteriad with straight sides, flat, without deepening. Frons densely squamose just to small, U-shaped epistome, separated from frons by slender carina. Antennal scrobes in dorsal view invisible; in lateral view feebly curved, slender, somewhat enlarged distad, directed towards eyes, separated from them by wide squamose stripe. Eyes moderately large and vaulted, feebly prominent from outline of head; in lateral view oval, placed slightly below the middle of the head.

Antennae with moderately robust scapes, 1.2 times as long as funicles, in basal half weakly, in apical half strongly enlarged, straight, at apex as wide as antennal clubs. Funicle 7-segmented; segment 1 conical, 1.4-1.5 times as long as wide, 1.3 times as long as segment 2, which is 1.7-1.8 times as long as wide; segments 3-5 1.2 times as wide as long; segment 6 1.5 times as wide as long; segment 7 1.6 times as wide as long. Clubs short, oval.

Pronotum (Fig. 2) 1.20-1.29 times as wide as long, widest in basal half, anteriad more tapered than posteriad. Anterior margin distinctly narrower than posterior one. Disc of pronotum in dorsal and lateral view regularly vaulted, only with small, ill-defined, hardly visible shallow depression in the middle near base.



Figs 1-12. *Trachyphloeus gonzalezi* sp. nov.: 1- head with rostrum in dorsal view. Scale = 0.50 mm; 2- pronotum and elytra, dorsal view. Scale = 1.00 mm; 3- apex of male protibia; 4- apex of female protibia; 5- penis in dorsal and lateral views; 6- sternite VIII in female; 7- spermatheca. Scale = 0.25 mm. *Trachyphloeus elongatus* Borovec: 8- apex of male protibia; 9- apex of female protibia; 10- penis in dorsal and lateral views; 11- sternite VIII in female; 12- spermatheca. Scale = 0.25 mm.

Scutellum invisible.

Elytra (Fig. 2) 1.32-1.40 times as long as wide, long-oval, with almost parallel sides, broadly rounded at apex. Base feebly arched. Striae indistinct, intervals only slightly vaulted. Elytra in lateral view almost flat.

Apex of protibiae (Figs 3-4) distinctly three-lobed with five spines. In female the both indentations moderately deep and long. Middle lobe and inner lobe armed ever with two spines, outer lobe with only one spine. Spines short, inner bottom spine hook-shaped, inner upper spine shorter than the others. Apex of protibiae in male with lobes and spines shorter and finer, indentations shallower. Tarsi slender. Segment 2 1.2 times as wide as long; segment 3 deeply bilobed, 1.2 times as wide as long, 1.3-1.4 times as wide and 1.3 times as long as segment 2; onychium 1.4 times as long as segment 3 and shorter than segment 2 and 3 combined, distinctly enlarged apicad. Claws free.

Penis (Fig. 5) in ventral view about parallel-sided with indistinctly concave sides, anteriad tapered with rounded sides and short, obtuse apex; in lateral view widest at basal third, regularly tapered anteriad, with faintly lengthened, inside curved apex.

Female genitalia. Sternite VIII (Fig. 6) with moderately large plate, wider than long, obtuse at apical margin and with elongate and pointed basal corners. Apical margin with setae, plate moderately sclerotised. Spermatheca (Fig. 7) with long, slender, regularly curved cornu and enlarged corpus. Ramus straight, about twice longer than wide; nodulus very short, angular, inconspicuous.

Biology. Type material was collected by sifting of rocky slope, with dominant *Quercus*, *Thymus* and *Astragalus* (J. Krátký, pers. comm.).

Differential diagnosis. *T. gonzalezi* sp. nov. belongs by 7-segmented funicle, claws free and antennal scrobes not reaching eye to subgenus *Trachyphloeus* s. str. In that subgenus *T. gonzalezi* sp. nov. is by rostrum enlarged anteriad, strongly vaulted long pronotum, elongated elytra and slender tarsi very similar to *T. elongatus* Borovec, 1991, known also from Spain (Granada, Almería). *T. gonzalezi* sp. nov. distinguishes from this species as follows:

1. Erect setae on the whole body subspatulate, white greyish. Apex of protibiae with five spines (Figs 3-4). Funicle segment 2 short, 1.7-1.8 times as long as wide, shorter than segment 1. Penis in ventral view with symmetrical apex (Fig. 5). Plate of sternite VIII in females bell-shaped, with concave sides before basal corners (Fig. 6). Spermatheca with ramus strikingly longer than nodulus (Fig. 7)..... *T. gonzalezi* sp. nov.
- Erect setae on the whole body pointed, bristle-shaped, black. Apex of protibiae with six spines (Figs 8-9). Funicle segment 2 long, twice as long as wide, equally long as segment 1. Penis in ventral view at apex asymmetrically deformed (Fig. 10). Plate of sternite VIII in females arched, without concavity (Fig. 11). Spermatheca with ramus and nodulus equall in size (Fig. 12). ..... *T. elongatus* Borovec

Remarks. The most interesting character of this species is rostrum enlarged apicad, which is a character known in 8 species of the sg. *Trachyphloeus* s. str., from which only *T. elongatus* and *T. laticollis* Boheman, 1843 are known also from Spain. *T. gonzalezi* sp. nov. differs from *T. corniculatus* Hoffmann, 1956 (known from Morocco), *T. caldarai* Borovec et Osella, 2002 (known from Sardinia) and *T. colonnellii* Borovec et Osella, 2002 (known from Gorgona island in Italy) by straight sides of rostrum and epistome of standard size (those three species have sides of rostrum concave and epistome lengthened); from *T. pierottii* Borovec, 1991

(known from Italy) by apex of protibiae three-lobed with 5 spines (*T. pierottii* has apex of protibiae semicircle-shaped with 10 spines); from *T. lothari* Borovec, 1991 (known from France) by epifrons flat and pronotum without constriction behind anterior margin (*T. lothari* has epifrons with distinct longitudinal median groove and pronotum strikingly constricted behind anterior margin); from *T. belloi* Borovec et Osella, 2002 (known from Piana Asinara island in Italy) and *T. laticollis* (known from the whole coast of Mediterranean Sea) by apex of anterior tibiae with 5 spines and antennal scrobes separated from frons by wide squamose stripe (*T. belloi* and *T. laticollis* have apex of protibiae with 6 spines and antennal scrobes separated from eye by narrow squamose stripe). *T. gonzalezi* sp. nov. differs from all above stated species where sternite VIII in females is known, which are *T. colonnellii*, *T. laticollis*, *T. lothari*, *T. caldarai*, *T. belloi* and *T. pierottii* by sternite VIII in females. None of the mentioned species has sternite VIII bell-shaped, with concave sides before basal corners.

Etymology. The name is dedicated to the late Spanish curculionologist, Manuel González Gutiérrez (1931-1972), who improved our knowledge of Iberian Entiminae.

***Trachyphloeus* (s. str.) *ifranensis* sp. nov.**

(Figs 13-20)

Type material. Holotype (♀): Mk [Morocco], M-Atlas [Moyen] 20 km NE Ifrane, Q. ilex, N 33°36′54″, E 04°54′52″, 3.i.2002, 1550 m, [P.] Stüben [lgt.], (PSMG).

Description. Length 2.69 mm (rostrum excluded).

Holotype is partially teneral: Body blackish, femora and tibiae brownish, tarsi and antennae yellow reddish. The whole body except of antennal funicles with clubs and tarsi covered by adherent scales and except of antennal clubs with erect setae. Adherent scales on elytra irregularly angular, with one or more holes in the middle, dense, with narrow intervals. Elytra and pronotum with several irregular, more glabrous small spots with adherent scales smaller and with wider intervals among scales. Pronotum and head with rostrum with adherent scales irregularly star-shaped, with irregularly different density, with several almost glabrous small spots in basal part of pronotum. Adherent scales greyish, on elytra with feeble pearly sheen. Semiperpendicularly erect setae on elytra long, longer than half of width of one interval, narrow, create one sparse regular row on each interval. Pronotum and head with rostrum with very short, inconspicuous, irregularly scattered semierect setae. Semierect setae on femora, tibiae and antennal scapes short, hair-shaped. Antennal funicles with short, semierect, piliform setae.

Rostrum (Figs 13, 14) 1.13 times as wide as long, from base to apex feebly tapered, just before apex abruptly widened again and here almost as wide as in basal part, in lateral view distinctly vaulted, with small but distinct tooth of prominent epistome. Epifrons in short basal part about parallel-sided, then abruptly, strongly tapered anteriad with straight sides, flat, without deepening. Frons somewhat declined to epistome, long, squamose just to wide and short, U-shaped epistome, visibly separated from it by slender, sharp carina. Antennal scrobes in dorsal view invisible; in lateral view weakly curved, enlarged distad, sharply bordered, dorsal margin directed closely above dorsal margin of eye, ventral margin directed to ventral half of eye, separated from eye by only narrow squamose stripe. Eyes moderately large and

vaulted, prominent from outline of the head; in lateral view placed about in the middle of the head. Head separated from basal part of rostrum by indistinct, shallow, transversal furrow.

Antennae slender. Antennal scapes in basal half weakly, in apical half strikingly enlarged, in the middle somewhat curved, at apex slightly narrower than antennal clubs. Segment 1 conical, 1.75 times as long as wide, 1.4 times as long as segment 2, which is 1.7 times as long as wide; segments 3-5 1.5 times as wide as long; segment 6 1.75 times and segment 7 1.8 times as wide as long. Clubs slender, 1.5 times as long as wide.

Pronotum (Fig. 15) 1.32 times as wide as long, widest at anterior third, weakly tapered posteriad and conspicuously tapered anteriad with wide and deep transversal constriction behind anterior margin; anterior margin distinctly narrower than posterior one. Disc with two shallow, ill-defined, indistinct depressions in hind corners. Pronotum in lateral view flat in anterior third and distinctly vaulted in basal two thirds.

Scutellum invisible.

Elytra 1.17 (Fig. 15) times as long as wide, oval, with almost parallel sides, broadly rounded at apex, shoulders indistinct. Striae very narrow, indistinct, intervals wide, only slightly vaulted, intervals 1, 3 and 5 slightly more elevated than the others in elytral declivity. Elytra in lateral view vaulted.

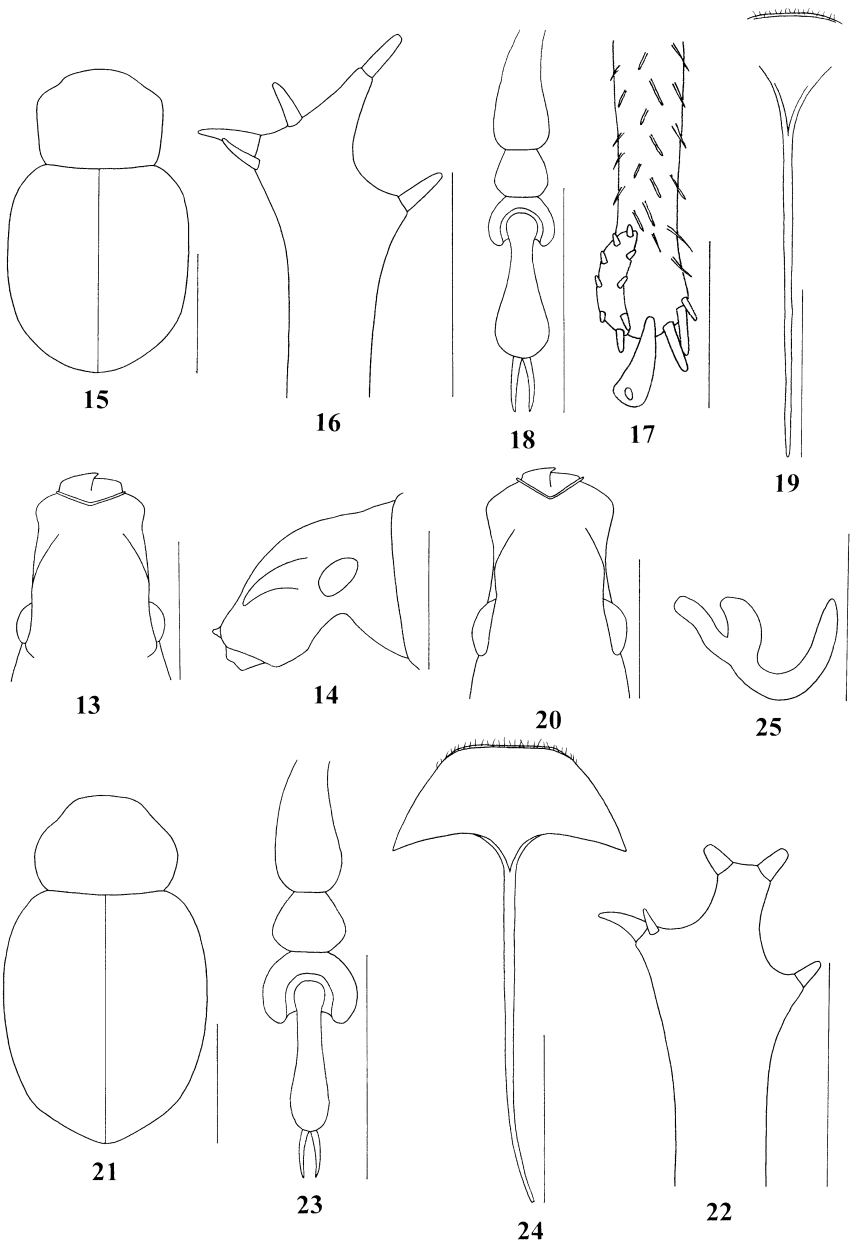
Apex of protibiae (Fig. 16) distinctly three lobed, laterally and mesally enlarged, with outer indentation longer and mainly deeper than inner one. Middle lobe armed with one long and slender, laterally directed spine; outer lobe with one and inner lobe with two spines of different length. The last spine is placed in inner indentation. All the spines of equal size, only inner upper spine somewhat smaller than the others. Tarsi slender and long (Fig. 18). Segment 2 1.1 times as wide as long; segment 3 1.25 times as wide as long and only 1.1 times as wide as segment 2; onychium strikingly enlarged apicad, 2.4 times as long and at apex 0.8 times as wide as segment 3. Claws free, long.

Female genitalia. Sternite VIII (Fig. 19) with plate small, inconspicuous, wider than long, translucent. Basal margin slender, Y-shaped, apical margin with several scarce short setae. Spermatheca not examined.

Biology. The type specimen was collected by sifting below *Quercus ilex*.

Differential diagnosis. *T. ifranensis* sp. nov. belongs by 7-segmented funicle, claws free and antennal scrobe not reaching eye to the sg. *Trachyphloeus* s. str. *T. ifranensis* sp. nov. is by rostral epifrons parallel-sided in basal third and abruptly tapered from middle part of rostrum and long frons similar to *T. orbitalis* Seidlitz, 1868. It is possible to distinguished them by following characters:

1. Middle lobe of protibiae armed with the only one spine (Fig. 16). Metatarsal segment 3 1.1 times as wide as segment 2; onychium of metatarsi 0.8 times as wide as segment 3 (Fig. 18). Rostrum at apex feebly enlarged, at apex narrower than base of rostrum (Fig. 13). Adherent elytral scales irregularly angular. Pronotum 1.32 times as wide as long, widest at anterior third. Elytra 1.17 times as long as wide (Fig. 15). ..... *T. ifranensis* sp. nov.
- Middle lobe of protibiae armed with two, equally long spines (Fig. 22). Metatarsal segment 3 1.4-1.5 times as wide as segment 2; onychium of metatarsi 0.4 times as wide as segment 3 (Fig. 23). Rostrum at apex strongly enlarged, at apex as wide as base of rostrum (Fig. 20). Adherent elytral scales star-shaped. Pronotum 1.41-1.48 times as wide as long, widest at midlength. Elytra 1.26-1.29 times as long as wide (Fig. 21). .... *T. orbitalis* Seidlitz



Figs 13-25. *Trachyphloeus ifranensis* sp. nov.: 13- head with rostrum in dorsal view; 14- head with rostrum in lateral view. Scale = 0.50 mm; 15- pronotum and elytra, dorsal view. Scale = 1.00 mm; 16- apex of female protibia; 17- apical part of right metatibia; 18- tarsus; 19- sternite VIII in female. Scale = 0.25 mm. *Trachyphloeus orbitalis* Seidlitz: 20- head with rostrum in dorsal view. Scale = 0.50 mm; 21- pronotum and elytra, dorsal view. Scale = 1.00 mm; 22- apex of female protibia; 23- tarsus; 24- sternite VIII in female; 25- spermatheca. Scale = 0.25 mm.

Remarks. Type of *T. orbitalis* Seidlitz was not examined. In author's collection (ZSMG), under the name *orbitalis* there is one pin with two Trachyphloeini on separate cards, bearing three labels: Sammlung v. Seidlitz [printed] / Vaulogeri Pic Alg. [handwritten] / Trachyphloeus Vaulogeri Pic [handwritten]. The two specimens belong to *Romualdius beauprei* (Pic, 1905). "*Trachyphloeus vaulogeri*", as stated on the label, was never described by Pic, mistake could be caused by *Cathormiocerus vaulogeri* Pic, 1904 described also from Algeria. Seidlitz (1868) described *T. orbitalis* based on "Zwei Stücke aus Algier von Herrn Capiomont und Herrn Reiche mitgetheilt". I consider that two females deposited in Formánek's collection (NMPC), labelled "Algerien", fitting very correctly to Seidlitz's description, and being by these characters stated in the original description, to be well distinguished from newly described *T. ifranensis* sp. nov., for example by: "die Vorderschienen sind so wie bei pustulatus, die Tarsen jedoch haben ein breites zweilappiges drittes Glied".

T. ifranensis sp. nov., the same as *T. orbitalis*, have special structure on metatibial corbels. In *Trachyphloeus* metatibial corbels are completely squamose, flat, obliquely subtruncate, creating not protruding continuation of tibia but lying almost entirely on the inner face of the tibiae. In *T. ifranensis* sp. nov. outer border of metatibial corbels is doubled, protruding somewhat laterally from the metatibial corbel, armed by two rows of short spines with curved, slender area between them (Fig. 17). This structure is possible to find in all the species of subgenera *Lacordairius* Ch. Brisout, 1866 and *Pseudolacordairius* Escalera, 1923 and in several species of subgenus *Trachyphloeus* s. str., mainly from northwestern Africa and Iberian peninsula (for example *T. atlasicus* Hustache, 1939, *T. crassicornis* Borovec, 1996, *T. italicus* Hoffmann, 1956, *T. nodipennis* Chevrolat, 1860, *T. staifi* Borovec, 1993 and others). In several species known from countries east of Spain, this structure gradually disappears and it is badly visible, as indistinct, very slender stripe between two closely placed rows of fine spines (for example *T. corsicus* Borovec, 1999, *T. ilvensis* Borovec et Osella, 2008, *T. tenuis* Borovec, 1999 and others). This structure reminds of external bevel as defined by Thompson (1992), tribal character of the Cneorhinini Lacordaire, 1863. But bevel in the Cneorhinini is not duplication of outer margin of corbels, but wide, semicircle-shaped longitudinal plate dividing corbels, in many species almost equally large as real corbel, not externally fringed by stout setae. By set of characters as "otiorhynchine" antennal scrobes, structure of rostrum, apex of protibiae and very specific shape of sternite VIII in females, species with doubled outer edge of metatibial corbels belong to the genus *Trachyphloeus* without any doubt and this character does not bring *Trachyphloeus* closer to the Cneorhinini.

Etymology. Patronymic.

Trachyphloeus (*Pseudolacordairius*) *pseudodenticulatus* sp. nov.
(Figs 26-28)

Type material. Holotype (♀): Espagne [Spain], Candasnos, Huesca, 3.iv.1997, Boleum asperatum, J. Blasco-Zumeta leg., (JPMF).

Description. Body length (rostrum excluded) 3.56 mm.

Body black, only funicles with clubs and tarsi brownish, spines at apex of protibiae

reddish. The entire body except of antennal funicles with clubs and tarsi covered by adherent scales and erect setae. Adherent scales on the whole body irregularly angle-shaped, dense, distance between two scales gently smaller than diameter of one scale. Erect elytral setae inconspicuous, piliform, in basal half semiperpendicular, shorter than half width of elytral interval, in apical declivity perpendicular, as long as half width of elytral interval. Erect setae on pronotum and head with rostrum similar to elytral ones but visibly shorter, semiperpendicular, irregularly scattered. Vestiture white-greyish. Antennae and legs with semierect, piliform setae.

Rostrum (Fig. 26) wide and short, 1.67 times as wide as long, anteriad regularly and feebly tapered. Epifrons very wide, flat, with shallow, wide, longitudinal middle depression, anteriad distinctly tapered. Epistome anteriad lengthened, in lateral view visible as two small dents. Scrobes in dorsal view invisible; in lateral view short, weakly enlarged posteriad, directed above the eye but not reaching it. Eyes very small, flat, in dorsal view inconspicuous, in lateral view placed in the middle of the head, separated from dorsal surface of the head by scaled shallow furrow.

Antennae short. Scapes hardly reaching anterior margin of pronotum, in apical half thickened. Funicles 6-segmented. Segment 1 strikingly more robust, longer and wider than segment 2, 1.6 times as long as wide; segment 2 conical, also 1.6 times as long as wide; segments 3 and 4 slightly wider than long; segment 5 1.4 times as wide as long; last segment 1.5 times as wide as long. Clubs short and wide, as long as last three segments and almost as wide as scapes at apex.

Pronotum (Fig. 28) transversal, 1.28 times as wide as long, in basal half about parallel-sided, in anterior half strikingly constricted and tapered anteriad. Dorsal surface of pronotum almost regularly flat, only with shallow, hardly visible depression in posterior corners. Posterior margin straight. Pronotum in lateral view strongly and regularly vaulted.

Scutellum invisible.

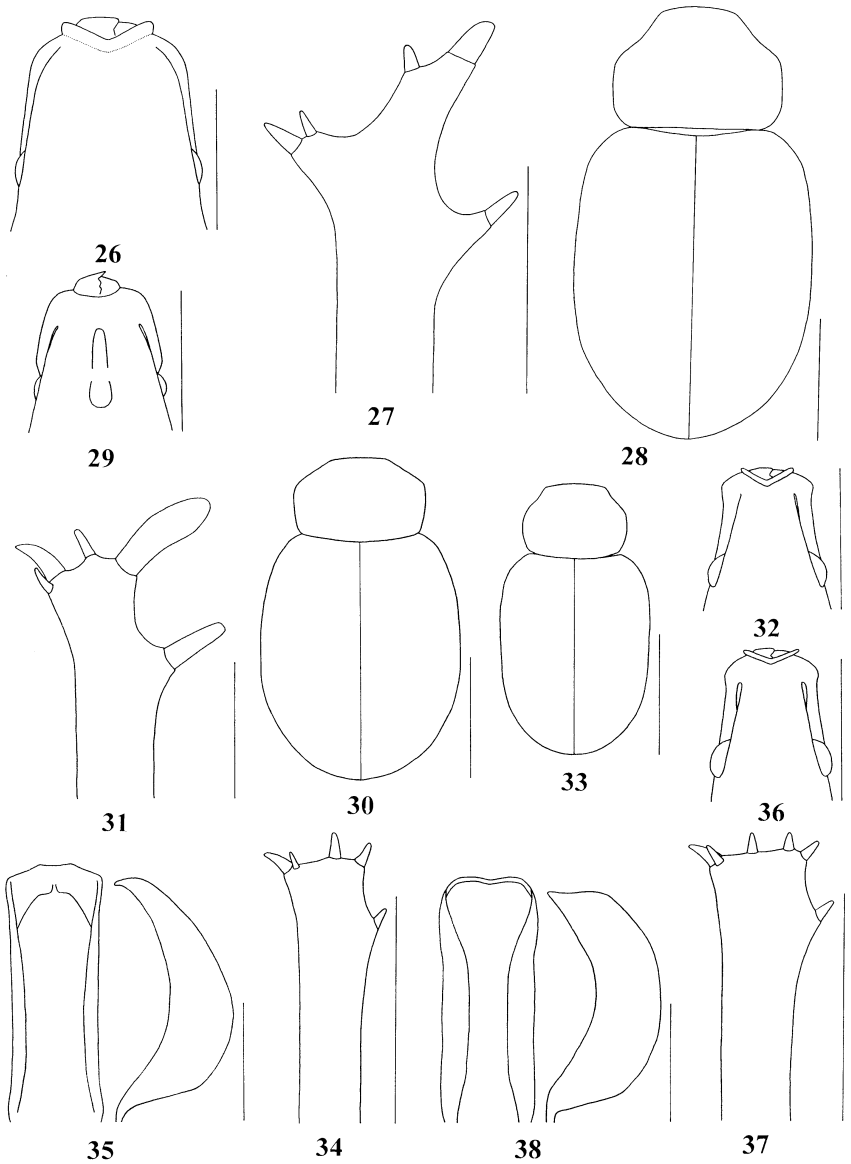
Elytra (Fig. 28) long-oval, 1.32 times as long as wide, with arched base. Striae narrow, weakly visible. Odd intervals mainly in basal half slightly more elevated than flat even intervals. Shoulders obliquely subtruncate, not conspicuous.

Apex of protibiae (Fig. 27) strikingly three-lobed, with five spines. Middle, very lengthened lobe armed with two, diverged spines of unequal size, outer spine is strikingly larger and longer than inner one. Outer lobe armed with one, small spine, inner lobe armed with two, small spines. Outer indentation longer and somewhat deeper than inner one. Tarsi long, slender. Segment 1 conical, very long; segment 2 1.2 times as wide as long; deeply bilobed segment 3 as long as segment 2, 1.3 times as wide as long, only slightly wider than previous one; onychium very long, longer than segments 2 and 3 combined, thickened to apex. Claws free.

Male unknown.

Female genitalia not examined.

Biology. Unknown.



Figs 26-38. *Trachyphloeus pseudodenticulatus* sp. nov.: 26- head with rostrum in dorsal view. Scale = 0.50 mm; 27- apex of female protibia. Scale = 0.25 mm; 28- pronotum and elytra, dorsal view. Scale = 1.00 mm. *Trachyphloeus denticulatus* Escalera: 29- head with rostrum in dorsal view. Scale = 0.50 mm; 30- pronotum and elytra, dorsal view. Scale = 1.00 mm. *Trachyphloeus pustulatus* Seidlitz: 31- apex of female protibia. Scale = 0.25 mm. *Trachyphloeus romanifilii* sp. nov.: 32- head with rostrum in dorsal view. Scale = 0.50 mm; 33- pronotum and elytra, dorsal view. Scale = 1.00 mm; 34- apex of male protibia; 35- penis in dorsal and lateral views. Scale = 0.25 mm. *Trachyphloeus pollicatus* Formánek: 36- head with rostrum in dorsal view. Scale = 0.50 mm; 37- apex of male protibia; 38- penis in dorsal and lateral views. Scale = 0.25 mm.

Differential diagnosis. Having 6-segmented funicles. the newly described species belongs to the subgenus *Pseudolacordairius* Escalera, 1923. In the last key of that subgenus (Borovec 1999) *T. pseudodenticulatus* sp. nov. belongs just behind the point 2, as an inserted point 2a:

2a. Middle lobe of protibiae long, distinctly longer than its outer spine (Fig. 27). Constricted part behind anterior pronotal margin long. Antennal scrobes in lateral view directed above the eye. Adherent elytral scales small, dense, 5 to 6 across one interstria. ..... *T. pseudodenticulatus* sp. nov.
- Middle lobe of protibiae short, shorter than its outer spine (Fig. 31). Constricted part behind anterior pronotal margin short. Antennal scrobes in lateral view directed towards the eye. Adherent elytral scales large, scarce, 4 across one interstria..... Point 3, *T. orbipennis* Desbrochers des Loges, 1901; *T. pustulatus* Seidlitz, 1868

T. pseudodenticulatus sp. nov. is by shape of body and protibiae very similar to *T. denticulatus* from subgenus *Lacordairius* Ch. Brisout, 1866, from which it is, in addition to the 6-segmented funicle, also distinguishable by the characters as follows:

1. Dorso-lateral margins of rostrum before the eyes regularly convergent anteriad. Epifrons long, reaching almost apex of rostrum having very short frons (Fig. 26). Pronotum longer, 1.28 times as wide as long, strikingly constricted behind anterior margin (Fig. 28). Tarsi long, with onychium longer than segments 2 and 3 combined. ..... *T. pseudodenticulatus* sp. nov.
- Dorso-lateral margins of rostrum before the eyes abruptly enlarged, then converegent anteriorly. Epifrons short, reaching about two thirds the length of rostrum having long frons (Fig. 29). Pronotum shorter, 1.38-1.42 times as wide as long, behind anterior margin inconspicuously constricted (Fig. 30). Tarsi short, with onychium as long as segments 2 and 3 combined. ..... *T. denticulatus* Escalera

Etymology. The name *pseudodenticulatus* (*pseudo* = false) refers to the similarity with *T. denticulatus* Escalera, 1914.

***Trachyphloeus* (s. str.) *romanifilii* sp. nov.**
(Figs 32-35)

Type material. Holotype (♂): [Algeria], Oran, Kirsch, (SMDG). Holotype lacking the whole right metaleg and parts of tarsi on left metaleg and the mesolegs.

Description. Body length (rostrum excluded) 2.21 mm.

Body black, antennae and legs rusty brownish. Whole body except of tarsi, funicles and clubs covered by adherent scales and semierect setae. Adherent scales irregularly star-shaped, distance between them slightly shorter than semidiameter of one scale. Semierect setae on elytra subspatulate, slightly longer than half width of one interval, arranged in one scarce, regular row on each interval. Semierect setae on head with rostrum and pronotum similar as setae on elytra, irregularly scattered.

Rostrum (Fig. 32) 1.22 times as wide as long, from base tapered anteriad to anterior third and then enlarged again. Epifrons short, distinctly and regularly tapered anteriad, flat. Scrobes dorsally invisible; in lateral view feebly curved, extending towards eyes, separated from them by wide squamose stripe. Dorsal margin of scrobe lengthened above eye, creating edge well visible in lateral view. Frons long, densely squamose, lowered in lateral view. Epistome

well developed in dorsal view, not projecting in tooth in lateral view. Eyes moderately large, subcircular in outline, almost flat, hardly protruding from side of head; in lateral view placed about at the middle of head height.

Scapes of antennae slender and almost parallel-sided in basal half, gradually thickened to apex in apical half, at apex slightly narrower than club. Funicles 7-segmented, progressively wider towards club. Segment 1 conical, 1.7 times as long as wide, twice as long as segment 2; segment 2 short, 1.2 times as long as wide; segments 3 and 4 1.4 times as wide as long; segments 5 and 6 1.5 times as wide as long; segment 7 1.6 times as wide as long. Clubs oval, 1.6 times as long as wide, with segment 1 largest, comprising more than half club length.

Pronotum (Fig. 33) 1.33 times as wide as long, widest shortly behind the midlength, with rounded sides, moderately constricted behind anterior margin. Disc with shallow, ill-defined, median longitudinal depression before base. Base arched. In lateral view basal two thirds of pronotum feebly vaulted, anterior third lowered, flat.

Scutellum invisible.

Elytra (Fig. 33) 1.25 times as long as wide, robust, almost parallel-sided, broadly rounded apically, base arched. Intervals flat, only intervals 3 and 5 slightly more elevated than the others. Elytra vaulted in lateral view.

Apex of protibiae (Fig. 34) almost rounded, weakly three-lobed, armed with 5 short spines. Middle part armed with two spines of equal size; inner part with one long spine pointing inside and with one mall spine placed above it; outer part with one laterally pointing spine, shorter than middle spines. Outer and inner indentations flat. Tarsi moderately wide; segment 2 1.5 times as wide as long; segment 3 wide, distinctly bilobed, 1.4 times as wide as long and 1.4 times as wide as segment 2; onychium 1.3 times as wide as segment 3.

Penis (Fig. 35) moderately long, well sclerotised, in ventral view narrowest at base, regularly widened apically, before apex abruptly widened, apex very wide, obtuse, with bevelled edges on sides. Penis in lateral view widest at base, regularly curved and regularly tapered anteriad, with short apex bent inside.

Female genitalia not known.

Biology. Unknown.

Differential diagnosis. *T. romanifilii* sp. nov. belongs by its 7- segmented funicles, claws free and antennal scrobe not reaching the eye to the subgenus *Trachyphloeus* s. str. and is very similar to *T. pollicatus* Formánek, 1907, by having dorsal margin of scrobes lengthened above the eye, erect elytral setae subspatulate, arranged in a row on each interval, elytra without bumps and tarsal segment 3 distinctly wider than segment 2. *T. romanifilii* sp. nov. differs from *T. pollicatus* by following set of characters:

1. Apex of penis in ventral view angular; in lateral view distinctly tapered apicad, at base conspicuously wider than at apex, with short apical part bent inside (Fig. 35). Apex of protibiae with 5 spines, in males with inner and outer indentations flat (Fig. 34). Eyes hardly prominent from outline of head (Fig. 32). .. *T. romanifilii* sp. nov.
- Apex of penis in ventral view heart-shaped; in lateral view equally wide along the whole length, at apex as wide as at base, with very short apical part lengthened forward (Fig. 38). Apex of protibiae with 6 spines, in both sexes with inner and outer indentations concave (Fig. 37). Eyes moderately prominent from outline of head (Fig. 36). ..... *T. pollicatus* Formánek

Remarks. *T. pollicatus* was described from Algeria, Nemours, and there are only old specimens from Algeria in different museums. But this species was not collected also in Morocco since long ago. I was able to examine material of *T. pollicatus* as follows: 1 spec. (type), Algeria, Nemours (NMPC); 2 ♂♂, Algeria, Nemours (JPMF); 1 ♂, Algeria, Nemours (SMDG); 2 ♂♂ 2 ♀♀, Algeria, Oran (MNBG); 2 ♂♂ 1 ♀, Morocco, M. de Kebdana, Küste [coast], 3 km SW Ras-el-Ma, Launaea spinoza, 50 m, 31.xii.2001, leg. C. Germann (CGTS, RBSC).

Etymology. The new species is dedicated to my son Roman, as my debt to him, having species dedicated to my wife Zita and daughter Erika. The name is compound from the latin word *filius* (son) and my name, meaning the son of Roman. I cannot used simple name *romani*, because there is already *Stuebenius romani* (Fremuth, 1992), originally described in the genus *Trachyphloeus*.

Trachyphloeus (s. str.) *rouaulti* sp. n.

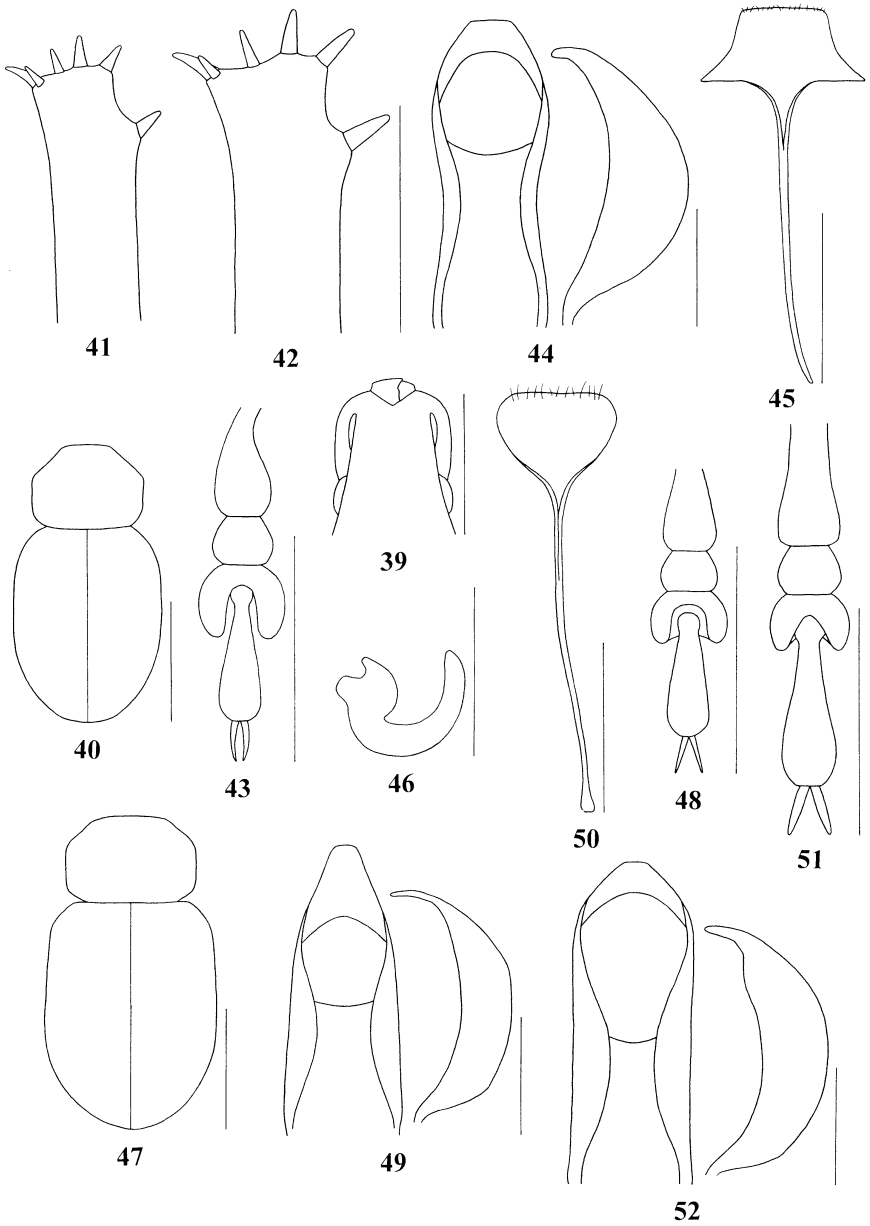
(Figs 39-46)

Type material. Holotype (♂): F [France], Provence: Alpes-Maritimes, 3 km SE Sospel, Forêt de Albaréa, N 43°51′45″, E 07°28′35″, 28.xii.2007, 780 m, Quercus ilex, Ginster, -14-, P. Stüben lgt., (PSMG). Paratypes: (1 ♂ 2 ♀♀): the same data as holotype, (PSMG); (119 spec.): F06 [France], Sospel, Ft Albarea, 9.xii.2008, E. Rouault lgt., (107 ERTF, 12 RBSC).

Description. Length males 2.19-2.50 mm, females 2.38-2.75 mm (holotype 2.34 mm) (rostrum excluded).

Body black, basal parts of antennal scapes, funicles with clubs, tarsi and spines at apex of protibiae red brownish. The whole body, except of antennal funicles with clubs and tarsi covered by adherent scales and except of antennal clubs also with erect setae. Adherent scales on the body irregularly star-shaped, mostly with 5-6 tips and with distinct hole in the middle. Adherent scales scarce, distance between two scales slightly shorter than diameter of one scale. Erect elytral setae almost perpendicular, conspicuous, subspatulate, about as long as half width of one interval. Semiadherent setae on pronotum and head with rostrum similar to elytral ones, but distinctly shorter. Semierect setae on femora, tibiae and antennal scapes even shorter than setae on pronotum and more slender. Antennal funicles with short, semierect, piliform setae.

Rostrum (Fig. 39) 1.35-1.40 times as wide as long, with distinctly arcuate sides. Epifrons strikingly tapered anteriad, with straight sides, flat, without any depression. Frons somewhat declined to epistome, in narrow stripe around epistome partly glabrous. Epistome V-shaped, narrow, visibly separated from frons by slender, sharp carina. Antennal scrobes in dorsal view well visible in anterior half as narrow furrows; in lateral view feebly curved, enlarged distad, sharply bordered, dorsal margin directed to dorsal margin of eye, ventral margin directed to the middle of eye, separated from eye by narrow squamose stripe. Eyes in dorsal view moderately large, distinctly prominent from outline of the head. Eyes in lateral view oval, placed somewhat below middle of head height.



Figs 39-52. *Trachyphloeus rouaulti* sp. nov.: 39- head with rostrum in dorsal view. Scale = 0.50 mm; 40- pronotum and elytra, dorsal view. Scale = 1.00 mm; 41- apex of male protibia; 42- apex of female protibia; 43-tarsus; 44- penis in dorsal and lateral views; 45- sternite VIII in female; 46- spermatheca. Scale = 0.25 mm. *Trachyphloeus angustus* Borovec: 47- pronotum and elytra, dorsal view. Scale = 1.00 mm; 48-tarsus; 49- penis in dorsal and lateral views; 50- sternite VIII in female. Scale = 0.25 mm. *Trachyphloeus tenuis* Borovec: 51- tarsus; 52- penis in dorsal and lateral views. Scale = 0.25 mm.

Antennae slender. Antennal scapes in basal half weakly, in apical half strikingly enlarged, in the middle weakly curved, at apex slightly wider than antennal clubs. Segment 1 1.5-1.6 times as long as wide, 1.3 times as long as segment 2, which is 1.5-1.6 times as long as wide; segments 3-5 1.3 times as wide as long; segment 6 1.4 times and segment 7 1.6-1.7 times as wide as long. Clubs slender.

Pronotum (Fig. 40) 1.34-1.42 times as wide as long, widest before midlength, sides with indistinct concavity, anteriad more tapered than posteriad, with anterior margin distinctly narrower than posterior one. Disc of pronotum furrowy, with four conspicuous, wide, elongated depressions. One longitudinal depression placed in middle part of pronotum, two others longitudinal on each side of the disc, the fourth depression transversal, bow-shaped, behind anterior margin of pronotum. Pronotum in lateral view flat, anterior third lowered.

Scutellum invisible.

Elytra (Fig. 40) 1.24-1.30 times as long as wide, long oval, with sides slightly rounded, broadly rounded at apex, shoulders indistinct. Striae very narrow, indistinct, intervals wide, only slightly vaulted. Elytra in lateral view flat.

Apex of protibiae (Figs 41-42) distinctly three-lobed, in females laterally and mesally enlarged, with outer indentation slightly deeper than inner one. Middle lobe armed with two, outer lobe with one and inner lobe with two spines, the last spine is located at inner indentation. All the spines of equal size, only inner upper spine somewhat smaller than the others. Apex of protibiae in males laterally about straight, mesally feebly enlarged. Inner indentation almost flat, outer indentation shallow. All the spines short and fine. Tarsi (Fig. 43) slender. Segment 2 1.3-1.4 times as wide as long; segment 3 1.4-1.5 times as wide as long and 1.4-1.5 times as wide as segment 2; onychium 1.5-1.6 times as long as segment 3. Claws free.

Penis (Fig. 44) well sclerotised, in ventral view at basal half with concave sides, at apical part slightly wider, with rounded sides, tapered, apex shortly wide, obtuse; in lateral view regularly vaulted, apex lengthened.

Female genitalia. Sternite VIII (Fig. 45) with plate moderately large, conspicuous, in apical half well sclerotised, bell-shaped, at basal margin obtuse, hind corners distinctly lengthened, slender, long, pointed, laterally orientated; basal margin of plate slender, apical margin with several scarce short setae. Spermatheca (Fig. 46) with cornu slender, curved; corpus well developed; ramus conical, longer than wide and nodulus shorter than ramus, triangular, with point curved forward.

Biology. Type material was sifted around *Thymus* and *Genista*, in dry and stony habitat with low vegetation (E. Rouault pers. comm.). P. Stüben, according to locality label, collected his type material below *Quercus ilex* and *Genista*.

Differential diagnosis. *T. rouaulti* sp. nov. belongs, by its antennal funicle 7-segmented, claws free and antennal scrobes not reaching the eye to the subgenus *Trachyphloeus* s. str. By rostral epifrons regularly tapered, with straight sides and antennae slender with segment 2 distinctly longer than wide, *T. rouaulti* sp. nov. belongs to group of species around *T. laticollis* Boheman, 1843, as defined by Borovec (1991). By rostrum not enlarged apicad and wider than long, pronotum not distinctly constricted behind anterior margin, all elytral intervals flat,

tarsal segment 3 small, not distinctly wider than segment 2, apex of protibiae with 6 spines and mainly pronotum with distinct longitudinal and transversal depressions, *T. rouaulti* sp. nov. is very similar to *T. angustus* Borovec, 1991 and partly also to *T. tenuis* Borovec, 1998. It is possible to distinguish it from the two species by the following characters:

1. Elytral setae semierect, about as long as half of width of one interval, in dorsal view distinctly prominent from outline of basal half of elytra. Elytra wider, 1.24-1.30 times as long as wide (Fig. 40). Onychium shorter, 1.5-1.6 times as long as segment 3 (Fig. 43). Penis in ventral and lateral views with apex shortly prolonged (Fig. 44). Plate of sternite VIII in females bell-shaped, with hind corners lengthened, slender, laterally orientated (Fig. 45). ..... *T. rouaulti* sp. nov.
- Elytral setae semiadherent, shorter than half of width of one interval, in dorsal view inconspicuously prominent from outline of elytra. Elytra more slender, 1.32-1.37 times as long as wide (Fig. 47). Onychium longer, 1.7-1.8 times as long as segment 3 (Fig. 48). Penis in ventral and lateral view with apex lengthily prolonged (Fig. 49). Plate of sternite VIII in females subtrapezoidal, without sharp, laterally directed basal corners (Fig. 50). ..... *T. angustus* Borovec

1. Tarsi short, robust; segment 3 1.4-1.5 times as wide as segment 2; onychium 1.5-1.6 times as long as segment 3 (Fig. 43). Erect elytral setae subspatulate, about as long as half width of one interval. Apex of penis in ventral view wider, shortly obtuse (Fig. 44). ..... *T. rouaulti* sp. nov.
- Tarsi long, slender; segment 3 1.1-1.2 times as wide as segment 2; onychium twice as long as segment 3 (Fig. 51). Erect elytral setae narrow, hardly as long as half width of one interval. Apex of penis in ventral view pointed (Fig. 52). ..... *T. tenuis* Borovec

Etymology. Species is dedicated to one of the collectors of the type material, Eric Rouault, (Toulaud, France), who is strongly interested in French fauna of weevils.

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