

Linzer biol. Beitr.	43/1	195-220	25.7.2011
---------------------	------	---------	-----------

***Trisunius* gen.nov. from the southern East Palaearctic and the
Oriental regions
(Coleoptera: Staphylinidae: Paederinae: Medonina)**

V. ASSING

A b s t r a c t : The medonine genus *Trisunius* nov.gen. (type species: *T. spathulatus* nov.sp.) is described, illustrated, and distinguished from the similar genus *Sunius* STEPHENS 1833. The essentially Oriental genus includes ten species: *T. spathulatus* nov.sp. (China: Yunnan); *T. ligulatus* nov.sp. (China: Yunnan); *T. cultellatus* nov.sp. (China: Yunnan); *T. discrepans* nov.sp. (China: Yunnan); *T. iaculatus* nov.sp. (China: Yunnan); *T. schuelkei* nov.sp. (China: Yunnan); *T. truncatus* nov.sp. (China: Yunnan); *T. appendiculatus* nov.sp. (China: Yunnan); *T. monticola* (CAMERON 1931), nov.comb. (N-India: Uttaranchal); *T. thaicus* nov.sp. (Thailand). A lectotype is designated for *Medon monticola* CAMERON 1931. All the species are described and illustrated. They predominantly live in various forest habitats at altitudes of 850-3000 m. Some species are subject to remarkable dimorphisms. A key to species and a catalogue are provided.

K e y w o r d s : Coleoptera, Staphylinidae, Paederinae, Medonina, *Trisunius*, *Sunius*, Palaearctic region, Oriental region, taxonomy, new genus, new species, new combination, lectotype designation, key to species, catalogue, wing dimorphism

Introduction

According to SMETANA (2004), the subtribe Medonina is represented in the Palaearctic region by twelve genera. In the meantime, two genera have been transferred to the Medonina, one genus has been moved to the subtribe Stilicina, and one genus has been synonymized, so that the number of genera has remained unchanged (ASSING 2009b, in press a, in press b). The medonine fauna of the Oriental region has been subject to fewer taxonomic works and a recent catalogue is not available, but, based on preliminary studies, it can safely be assumed that the diversity is at least as high as that of the Palaearctic region, probably significantly higher. Moreover, most species of Medonina from the south of the East Palaearctic and the Oriental regions are currently included in the genera *Medon* STEPHENS 1833 and *Sunius* STEPHENS 1829, but all the species so far examined from the Oriental region refer to other, mostly undescribed genera, and the same is true of a considerable proportion of taxa distributed in the south of the East Palaearctic region. Consequently, the true number of medonine genera present in these regions is currently subject to speculation.

Unsurprisingly, a revision of the eight previously unrevised *Sunius* species from the East Palaearctic revealed that most of these taxa are not congeneric with the type species of

that genus. One of them, *Medon monticola* CAMERON 1931 from Uttaranchal (India), previously attributed to *Sunius*, resembles *Sunius* in size and habitus, but evidently belongs to an undescribed genus, based on the various external characters, particularly the punctuation and the microsculpture, the shape of the tarsi (protarsi dilated; metatarsomeres distinctly shorter), on the morphology of the mouthparts (maxillary palpus, labrum, labium), and on the morphology of the male sexual characters. Subsequently, additional undescribed species belonging to the same genus were discovered in recently collected material from Thailand and China.

Material and methods

The material referred to in this study is deposited in the following public institutions and private collections:

BMNH The Natural History Museum, London (R. G. Booth)
 ÖÖLL Oberösterreichisches Landesmuseum Linz (F. Gusenleitner)
 cAss author's private collection
 cPüt private collection Andreas Pütz, Mönchengladbach
 cRou private collection Guillaume de Rougemont, London
 cSch private collection Michael Schülke, Berlin
 cWun private collection Paul Wunderle, Mönchengladbach

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). For the photographs a digital camera (Nikon Coolpix 995) was used.

Head length was measured from the anterior margin of the frons to the posterior margin of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra. The length of the median lobe of the aedeagus was measured from the apex of the ventral process to the base of the capsule. The parameral side of the aedeagus (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

The limits of the zoogeographic regions are in accordance with those in LÖBL & SMETANA (2004).

Trisunius nov.gen.

Type species: *Trisunius spathulatus* nov.sp.; present designation.

Etymology: The name is composed of the Latin prefix tri- (three) - alluding to the trilobed ligula - and the generic name *Sunius*. The gender is masculine.

Description: Body of rather small size, body length 2.7-4.0 mm. Forebody with very fine to moderately coarse punctuation (finer than in *Sunius*) (Figs 3, 20, 59, 69); head and pronotum with or without (Figs 3, 20-21, 59, 62, 69, 75), elytra without microsculpture; pubescence short and indistinct. Head approximately as long as wide or weakly oblong; posterior angles moderately marked; neck almost half as wide as head (e.g., Figs 2, 11-12, 18-19). Eyes much shorter than postocular portion in dorsal view. Ventral

aspect of head with or without microsculpture; gular sutures separated by a distance of nearly the width of antennomere IV. Antenna of moderate length, of similar morphology as in *Sunius* (Fig. 4). Labrum strongly transverse; anterior margin with deep U-shaped median incision, with a tooth-like projection on either side of this incision and usually with an additional tooth-like process laterally (Figs 36, 70). Maxillary palpus 4-jointed, preapical palpomere somewhat flattened and enlarged, barely twice as wide as long; apical palpomere needle-shaped and short (Fig. 73). Labial palpus 3-jointed; apical palpomere needle-shaped (Figs 5, 61, 74); ligula trilobed (Fig. 60); left mandible with three, right mandible with three to five molar teeth (Figs 71-72).

Pronotum noticeably oblong, slightly narrower than head; weakly tapering posteriad; posterior angles weakly marked; midline with more or less pronounced, narrow to broad impunctate band.

Elytra slightly to distinctly broader than pronotum, in some species subject to more or less pronounced dimorphisms. Legs short and with short tarsi. Protarsomeres I-IV distinctly dilated in both sexes. Mesotarsomeres II-IV broader than long. Metatarsus distinctly shorter than metatibia; metatarsomere I short, approximately as long as broad and only slightly longer than II, II-IV approximately as long as broad or even broader than long.

Abdomen widest at segment VI. Tergal surfaces with dense fine punctation and with fine microsculpture (Fig. 76).

♂: sternite VII with or without modified pubescence, in posterior portion with or without impression, posterior margin usually weakly concave in the middle (e.g., Figs 6, 13, 23, 30, 37); sternite VIII posteriorly with median incision of variable depth and width (e.g., 7, 14, 24, 31, 38); sternite IX relatively broad, usually 2.0-2.5 times as long as wide (Figs 22, 32). Aedeagus with basal portion more or less strongly produced ventrad in lateral view; ventral process of variable shape; dorso-apical structures more or less hook-shaped; internal structures at most weakly sclerotized.

D i a g n o s i s : The genus is characterized and distinguished from other genera of Medonina resembling *Sunius* particularly by the trilobed ligula, the enlarged, flattened preapical maxillary palpomere, and the shape of the labrum. It is additionally distinguished from *Sunius* by the finer punctation of the forebody, the often more pronounced microsculpture of the head and pronotum, the distinctly dilated protarsomeres I-IV, as well as by the much shorter meso- and metatarsomeres. For illustrations of the mouthparts of *Sunius* see ASSING (2011).

D i v e r s i t y : The genus currently includes ten species, the vast majority of which (eight species) are known only from the Chinese province Yunnan.

D i s t r i b u t i o n : The currently known distribution ranges from Uttarranchal in the northwest to Thailand in the southeast. Although most species are distributed in regions assigned to the East Palaearctic region by LÖBL & SMETANA (2004), *Trisunius* appears to be an essentially Oriental genus, as can be inferred from its absence from high altitudes, as well as from the northern and central parts of China. The distributions of all the Chinese representatives are confined to Yunnan. The individual distributions of the species do not appear to be very restricted and strongly overlap, particularly so in Yunnan.

N a t u r a l h i s t o r y : Based on the data indicated on the labels attached to the examined specimens, the species primarily inhabit the litter layer of various forest habitats. On a few occasions, however, specimens were collected also in open (grassland) or

shrub habitats. The altitudes range from 850 to 3000 m. On many occasions, several species were recorded to occur syntopically; in one locality as many as four *Trisunius* species were found. Adult beetles were collected in March, May-June, August-September, and November. Teneral specimens of several species were observed in August and September. At least some of the species are wing-dimorphic, this dimorphism in two species not only affecting the length of the elytra and the hind wings, but also the shape of the head and the size of the eyes.

The species of *Trisunius*

Trisunius spathulatus nov.sp. (Figs 1-9)

Type material: **Holotype** ♂: "China: Yunnan, Lincang Pref., Bangma Shan, 33 km SSW Lincang, 2150 m, 23°35'41"N, 100°00'27"E, decid. forest remnant, N-slope, litter and dead wood sifted, 11.IX.2009, leg. M. Schülke [CH09-42] / **Holotypus** ♂ *Trisunius spathulatus* sp. n. det. V. Assing 2011" (cAss). **Paratypes:** 131 exs. [13 teneral]: same data as holotype (OOLL, cSch, cAss); 7 exs.: "China: Yunnan, Lincang Pref., Bangma Shan, 20 km NW Lincang, 2210 m, 23°58'25"N, 99°54'36"E, water reservoir, devast. forest with ferns, litter & ferns sifted, reservoir bank, 9.IX.2009, leg. M. Schülke [CH09-37]" (cSch, cAss); 1♀: "China: Yunnan, Lincang Pref., Mekong valley, small creek cleft, 38 km SSE Lincang, 854 m, 23°33'13.2"N, 100°09'56.8"E, wet litter & flood debris under waterfall, 11.IX.2009, leg. M. Schülke" [CH09-44a]" (cSch); 2 exs.: "China: Yunnan, Lincang Pref., Laobie Shan, Wei Bo Shan pass, 24°08'16"N, 99°42'53"E, 2375 m, creek valley, devastated second. decid. forest, litter & moss sifted, 8.IX.2009, leg. M. Schülke [CH09-35]" (cSch); 2 exs.: "China: Yunnan, Pu'er Pref., Ailao Shan, 37 km NW Jingdong, 24°45'12"N, 100°41'24.5"E, 2300 m, devastated forest remnant, litter & dead wood sifted, 13.IX.2009, leg. M. Schülke [CH09-48]" (cSch, cAss); 6 exs.: "China (Yunnan) Pu'er Pref., Ailao Shan, 37 km NW Jingdong, 24°45'12"N, 100°41'24.5"E, 2300 m (devastated forest remnant, litter, moss, grass roots sifted, 13.IX.2009, D.W. Wrase [48]" (cSch, cAss); 3 exs.: "China: Yunnan, Dali Bai Aut. Pref., Wuliang Shan, 9 km SW Weishan, 25°10'15.5"N, 100°14'21.8"E, 2480 m (scrub with oak, alder, pine), litter & mushrooms sifted, 14.IX.2009, leg. M. Schülke [CH09-51]" (cSch, cAss); 7 exs. [2 teneral]: "China: Yunnan, Dali Bai Aut. Pref., Wuliang Shan, 11 km SW Weishan, 24°08'46.7"N, 100°14'14.1"E, 2520 m, pine forest, litter & dead wood sifted, 14.IX.2009, leg. M. Schülke [CH09-52]" (cSch, cAss); 5 exs.: "China: Yunnan, Lincang/Dali Pref., Wuliang Shan, old pass road, N pass, 24°45'16.4"N, 100°29'50.3"E, 2350 m, forest remnant & tea plantation litter, mushrooms, grass sifted, 16.IX.2009, leg. M. Schülke [CH09-55]" (cSch, cAss).

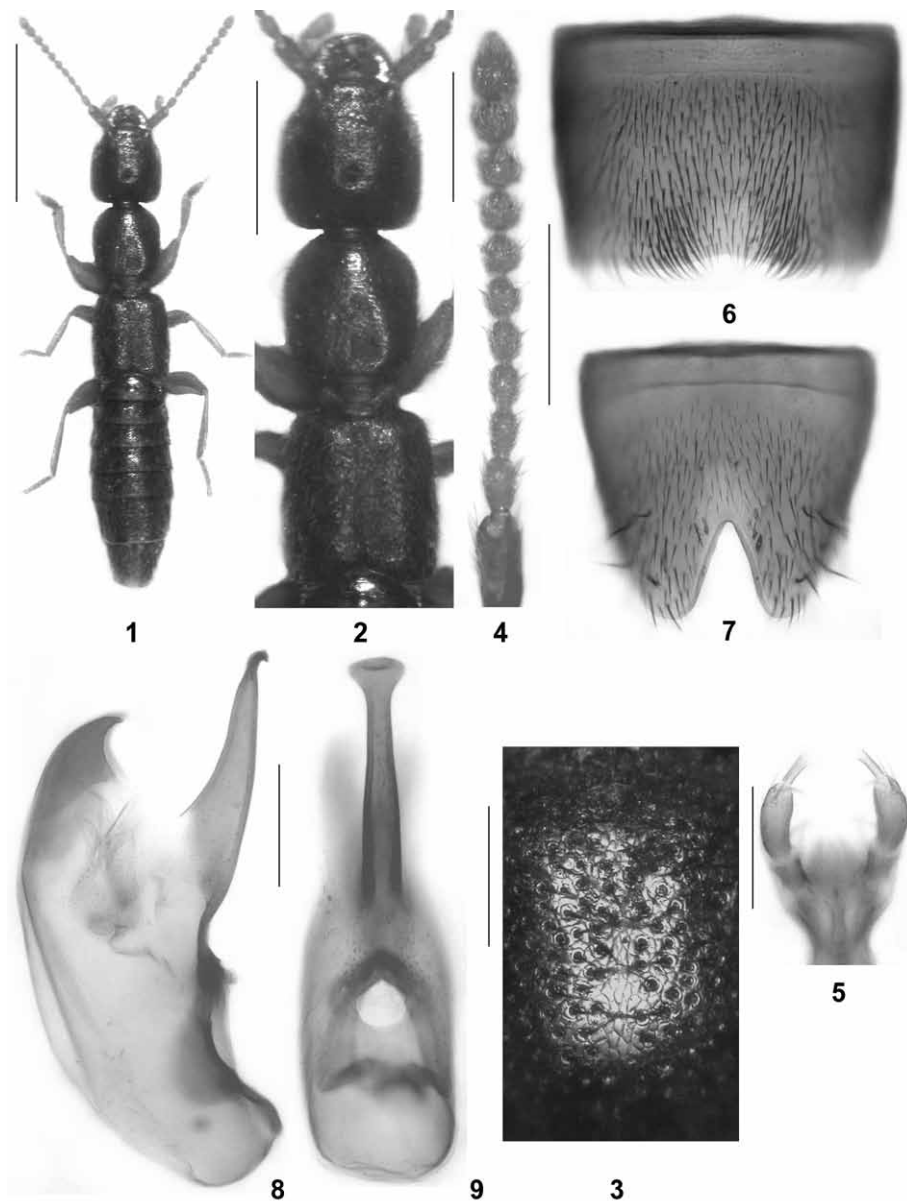
Description: Body length 3.0-3.5 mm. Habitus as in Fig. 1. Coloration: head dark-brown to blackish-brown; pronotum and elytra reddish to reddish-brown; abdomen reddish to dark-brown, with the apex reddish; legs and antennae reddish.

Head (Fig. 2) weakly oblong, approximately 1.05 times as long as wide; punctuation fine and moderately dense; interstices with fine, but distinct microsculpture (Fig. 3). Eyes approximately half as long as postocular region in dorsal view. Antenna as in Fig. 4. Anterior margin of labrum with two distinct teeth on either side of median incision. Labial palpi as in Fig. 5.

Pronotum (Fig. 2) approximately 1.1 times as long as wide and 0.90-0.95 times as wide as head; punctuation rather fine and dense, more distinct than that of head; midline with narrow impunctate band not reaching anterior and posterior margins; interstices without microsculpture.

Elytra short, usually 0.85-0.95 times as long as pronotum; humeral angles marked (Fig. 2); punctuation dense and shallow, less defined than that of pronotum; interstices without microsculpture. Hind wings of reduced length, approximately twice as long as elytra

(approximately 30 specimens examined). Metatarsomere I approximately as long as II. Abdomen slightly broader than elytra, widest at segment VI; punctation fine and dense; interstices with distinct microsculpture; posterior margin of tergite VII with palisade fringe.



Figs 1-9: *Trisunius spathulatus* nov.sp.: (1) habitus; (2) forebody; (3) median dorsal portion of head; (4) antenna; (5) labial palpi; (6) male sternite VII; (7) male sternite VIII; (8-9) aedeagus in lateral and in ventral view. Scale bars: 1: 1.0 mm; 2: 0.5 mm; 4, 6-7: 0.2 mm; 3, 5, 8-9: 0.1 mm.

♂: sternite VII with shallow impression in posterior median portion, on either side of this impression with extensive cluster of long dark setae (Fig. 6); sternite VIII with median impression and with deep and rather narrow V-shaped excision (Fig. 7); aedeagus approximately 0.45 mm long, with long and slender ventral process (Fig. 8); apex of ventral process scoop-shaped in ventral view (Fig. 9).

E t y m o l o g y: The specific epithet is an adjective derived from the Latin noun *spathula* (scoop, spattle) and refers to the conspicuous shape of the ventral process of the aedeagus.

C o m p a r a t i v e n o t e s: This species is characterized particularly by the chaetotaxy of the male sternite VII and by the shape of the aedeagus. It is distinguished from many of its congeners also by the relatively short elytra and by the reduced length of the hind wings.

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y: *Trisunius spathulatus* is known from several localities in southwestern Yunnan, where it was sifted from forest litter at altitudes of 2150-2520 m in September; one specimen was sifted from wet debris at a waterfall at approximately 850 m. Syntopic species are *T. cultellatus*, *T. schuelkei*, *T. iaculatus*, and *T. truncatus*. Several specimens are teneral.

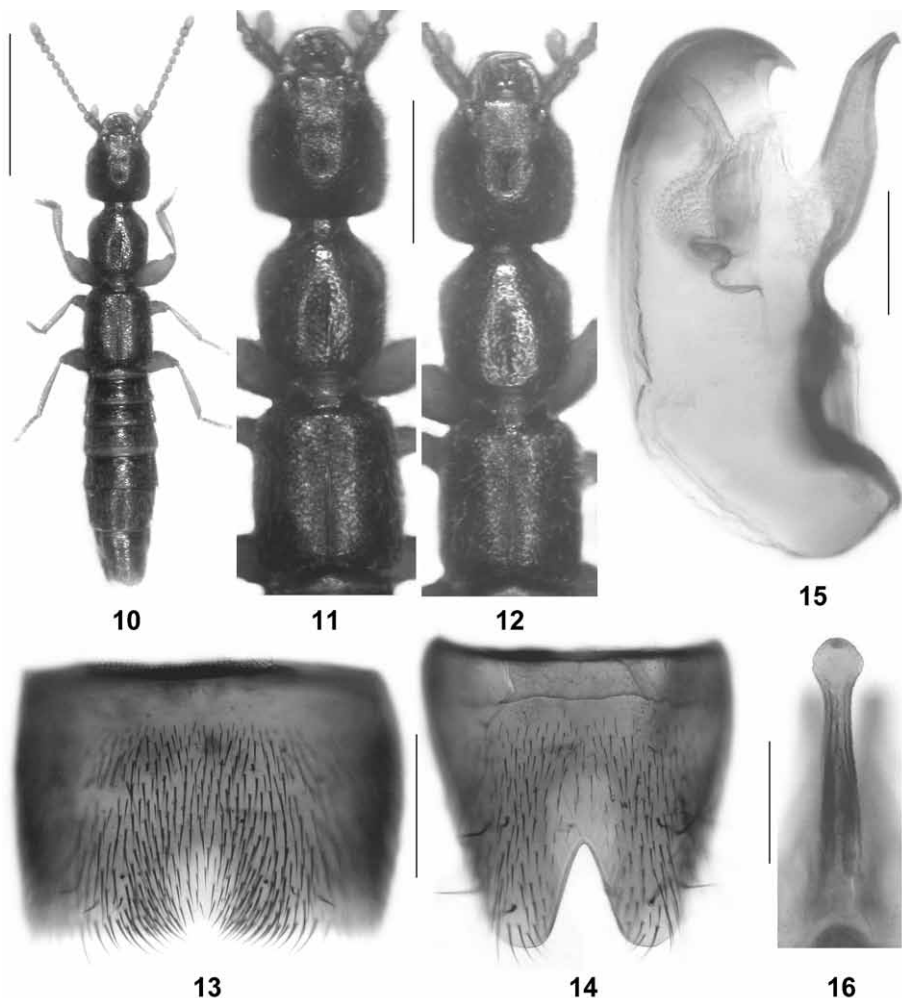
***Trisunius ligulatus* nov.sp.** (Figs 10-16)

T y p e m a t e r i a l: Holotype ♂: "China (Yunnan) Baoshan Pref., Gaoligong Shan nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16"N, 98°45'43"E (prim. decid. forest, litter, sifted) 30.V.&4.VI.2007 D.W. Wrase [11] / Holotypus ♂ *Trisunius ligulatus* sp. n. det. V. Assing 2011" (cAss). Paratypes: 13 exs.: same data as holotype (cSch, cAss); 1 ex.: "China: Yunnan [CH07-11], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16"N, 98°45'43"E, decid. forest, litter, sifted, 30.V.2007, M. Schülke" (cSch); 2 exs.: "China: Yunnan [CH07-11A], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16"N, 98°45'43"E, decid. forest, fungi, sifted, 4.VI.2007, leg. A. Pütz" (cPüt); 3 exs.: "China: Yunnan, Baoshan Pref., Gaoligong Shan, W Pass 35 km SE Tengchong, 2100 m, 24°50'18"N, 98°45'43"E, devast. prim. dec. forest, litter, wood, mushrooms sifted, 25.VIII.2009, leg. M. Schülke [CH09-06]" (cSch, cAss); 5 exs.: "China (Yunnan) Baoshan Pref., mount. range 14 km E Tengchong, 1850 m, 25°00'28"N, 98°38'07"E, 1850 m [sic] (second. mixed forest, field edge, litter, debris sifted) 1.VI.2007 D.W. Wrase [16]" (cSch, cAss); 1 ♀: "China:Yunnan [CH07-17], Baoshan Pref., mountain range 25 km S Tengchong, 1900 m, 24°48'28"N, 98°32'03"E, dev. primery [sic] decid. forest, litter, fungi, sifted, 2.VI.2007, M. Schülke" (cSch); 2 exs.: "China:Yunnan, Baoshan Pref., mount. range 25 km S Tengchong, 1900 m, 24°48'21"N, 98°32'05"E, cleft with devast. primary forest, litter & mushr. sifted, 30.VIII.2009, leg. M. Schülke [CH09-18]" (cAss, cSch); 2 exs.: "China (Yunnan) Dehong Dai Aut. Pref., mount. range 31 km E Luxi, 2280 m, 24°29'31"N, 98°52'58"E (grassland, pasture, under stones & shrubs, in moss & litter) 3.VI.2007 D.W. Wrase [19]" (cSch, cAss); 1 ex.: "China: Yunnan [CH07-19], Dehong Dai Aut. Pref., mountain range 31 km E Luxi, 2280 m, 24°29'31"N, 98°52'58"E, second. pine forest with old decid. trees, litter sifted 3.VI.2007, M. Schülke" (cSch); 2 exs.: "China: Yunnan [CH07-30], Nujiang Lisu Aut. Pref., Nu Shan, 7 km NNW Coajian, 25°43'29"N, 99°07'57"E, 2420 m, second. pine forest with shrubs, litter, bark sifted, 11.VI.2007, M. Schülke" (cSch); 3 exs.: same data, but "leg. A. Pütz" (cPüt, cAss); 1 ex.: "China (Yunnan) Nujiang Lisu Aut. Pref., Nu Shan, 7 km NNW Coajian, 2420 m, 25°43'29"N, 99°07'57"E (second. pine forest with shrubs, litter, moss sifted) 11.VI.2007 D.W. Wrase [30]" (cAss); 1 ex.: "China: Yunnan [CH07-20], Nujiang Lisu Aut. Pref., creek valley 3 km SE Gongshan, 1450-1500 m, 27°43'02"N, 98°41'27"E, litter, moss, sifted, 5.VI.2007, leg. A. Pütz" (cAss).

D e s c r i p t i o n: Body length 3.0-3.7 mm. Habitus as in Fig. 10. Coloration: head dark-reddish to blackish-brown; pronotum and elytra reddish to dark-brown; abdomen reddish-brown to dark-brown, with the apex (segments VIII-X) reddish; legs and antennae reddish.

Head (Figs 11-12) weakly oblong, approximately 1.05 times as long as wide; punctation fine and moderately dense; interstices with fine, but distinct microsculpture. Eyes approximately half as long as postocular region in dorsal view, or nearly so. Anterior margin of labrum with two distinct teeth on either side of median incision.

Pronotum (Figs 11-12) approximately 1.1 times as long as wide and 0.90-0.95 times as wide as head; punctation rather fine and dense, more distinct than that of head; midline with narrow impunctate band; interstices without microsculpture.



Figs 10-16: *Trisunius ligulatus* nov.sp.: (10) habitus (macropterous morph); (11) forebody (macropterous morph); (12) forebody (submacropterous morph); (13) male sternite VII; (14) male sternite VIII; (15) aedeagus in lateral view; (16) ventral process of aedeagus in ventral view. Scale bars: 10: 1.0 mm; 11-12: 0.5 mm; 13-14: 0.2 mm; 15-16: 0.1 mm.

Elytra with weakly pronounced dimorphism, in submacropterous morph (Fig. 12) 0.8-0.9 times as long as pronotum, in macropterous morph (Fig. 11) 0.95-1.00 times as long as pronotum; humeral angles marked; punctation dense and shallow, less defined than that of pronotum; interstices without microsculpture. Hind wings either fully developed (macropterous morph) or of reduced length and approximately twice as long as elytra (submacropterous morph). Metatarsomere I approximately as long as II.

Abdomen slightly broader than elytra, widest at segment VI; punctation fine and dense; interstices with distinct microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with impression in posterior median portion, on either side of this impression with extensive cluster of long dark setae (Fig. 13); sternite VIII with median impression and with deep and rather narrow V-shaped excision (Fig. 14); aedeagus approximately 0.45 mm long; ventral process somewhat sinuate in lateral view and apically spoon-shaped in ventral view (Figs 15-16).

E t y m o l o g y : The specific epithet is an adjective derived from the Latin noun *ligula* (small spoon) and refers to the shape of the apex of the ventral process of the aedeagus in ventral view.

C o m p a r a t i v e n o t e s : As can be inferred from the similarly derived shape and chaetotaxy of the male sternites VII and VIII, as well as from the morphology of the aedeagus (shape of ventral process; shape of dorso-apical structures), *T. ligulatus* is the adelphotaxon of the similar *T. spathulatus*. Both species are reliably separated only by the shape of the aedeagus (shape of ventral process both in ventral and in lateral view; shape of dorso-apical structures).

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y : The species was collected in several localities in the Gaoligong Shan and the Nu Shan in western Yunnan. The distributions of *T. ligulatus* (extreme west of Yunnan) and *T. spathulatus* (southwestern Yunnan), its adelphotaxon, are apparently parapatric. The specimens were sifted from litter and debris in forests, on one occasion also in grassland, at altitudes of 1450-2420 m in May, June, and August. Syntopic species are *T. cultellatus* and *T. truncatus*.

***Trisunius cultellatus* nov.sp. (Figs 17-26)**

T y p e m a t e r i a l : Holotype ♂: "China: Yunnan, Lincang Pref., Bangma Shan, 33 km SSW Lincang, 2150 m, 23°35'41"N, 100°00'27"E, decid. forest remnant, N-slope, litter and dead wood sifted, 11.IX.2009, leg. M. Schülke [CH09-42] / Holotypus ♂ *Trisunius cultellatus* sp. n. det. V. Assing 2011" (cAss). Paratypes: 10 exs. [4 teneral]: same data as holotype (OÖLL, cSch, cAss); 4 ♀ [1 teneral]: "China: Yunnan, Pu'er Pref., Ailao Shan, 37 km NW Jingdong, 24°45'12"N, 100°41'24.5"E, 2300 m, devastated forest remnant, litter & dead wood sifted, 13.IX.2009, leg. M. Schülke [CH09-48]" (cSch); 6 exs. [1 teneral]: "China (Yunnan) Baoshan Pref., Gaoligong Shan, 65 km NNE Tengchong 1750 m (sec. mixed forest, overgrown stone debris, litter and moss sifted) 25°35'20"N, 98°40'21"E, 27.VIII.2009 D.W. Wrase [10]" (cSch, cAss); 4 exs. [1 teneral]: "China: Yunnan, Baoshan Pref., Gaoligong Shan, 65 km NNE Tengchong 1750 m, 25°35'20"N, 98°40'21"E, sec. mixed forest, overgrown stone debris, litter and moss sifted, 31.VIII.2009, leg. M. Schülke [CH09-10b]" (cSch, cAss); 6 exs. [5 macropterous]: "China (Yunnan) Baoshan Pref., Gaoligong Shan nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16"N, 98°45'43"E (prim. decid. forest, litter, sifted) 30.V.&4.VI.2007 D.W. Wrase [11]" (cSch, cAss); 2 exs. [1 macropterous]: "China: Yunnan [CH07-11], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16"N, 98°45'43"E, decid. forest, litter, sifted, 30.V.2007, leg. A. Pütz" (cPüt, cAss); 2 exs.: "China: Yunnan [CH07-11A], Baoshan Pref., Gaoligong Shan, nr. Xiaoheishan N.R., 35 km SE Tengchong, 2110 m, 24°50'16"N, 98°45'43"E, decid. forest, fungi, sifted, 4.VI.2007, leg. A. Pütz" (cPüt, cAss); 2 exs.: "China: Yunnan, Dali Bai Aut. Pref., Mao Jiao

Shan, E pass, 58 km NE Dali, 25°56'41"N, 100°40'05"E, 2525 m, second. mixed forest, litter, moss & mushrooms sifted, 4.IX.2009, leg. M. Schülke [CH09-26]" (cSch); 1♂: "China (Yunnan) Nujiang Lisu Aut. Pref., creek valley 3 km SE Gongshan, 27°43'02"N, 98°41'27"E, 1450-1500 m (litter, moss, sifted) 5.VI.2007 D.W. Wrase [20]" (cAss).

Description: Body length 2.7-3.6 mm. Habitus as in Fig. 17. Coloration of micropterous morph: head usually dark-reddish to reddish-brown, rarely blackish-brown; pronotum reddish to dark-brown; elytra reddish to dark-reddish; abdomen dark-brown to blackish-brown, in pale-coloured specimens distinctly contrasting with the forebody; legs and antennae reddish. Coloration of macropterous morph darker; head and pronotum dark-brown to blackish; elytra variable, dark reddish to predominantly blackish-brown with the posterior margin and the suture indistinctly reddish.

Head as wide as long or indistinctly oblong, weakly dilated behind eyes (micropterous morph) (Fig. 18), or approximately 1.05 times as long as wide, posteriorly subparallel or even narrowed (macropterous morph) (Fig. 19); punctuation fine, dense, and shallow; interstices with pronounced microreticulation, almost matt (Fig. 20). Eyes small, approximately one third as long as postocular region in dorsal view (micropterous morph), or larger and somewhat more than half as long as postocular region in dorsal view. Anterior margin of labrum with two distinct teeth on either side of median incision.

Pronotum (Figs 18-19) 1.05-1.1 times as long as wide and approximately 0.9 times as wide as head; punctuation rather fine, dense, more distinct than that of head; midline with narrow, complete or anteriorly reduced impunctate band; interstices with shallow microsculpture at least in anterior portion of pronotum (occasionally only faint traces visible), sometimes whole dorsal surface with microsculpture (Fig. 21).

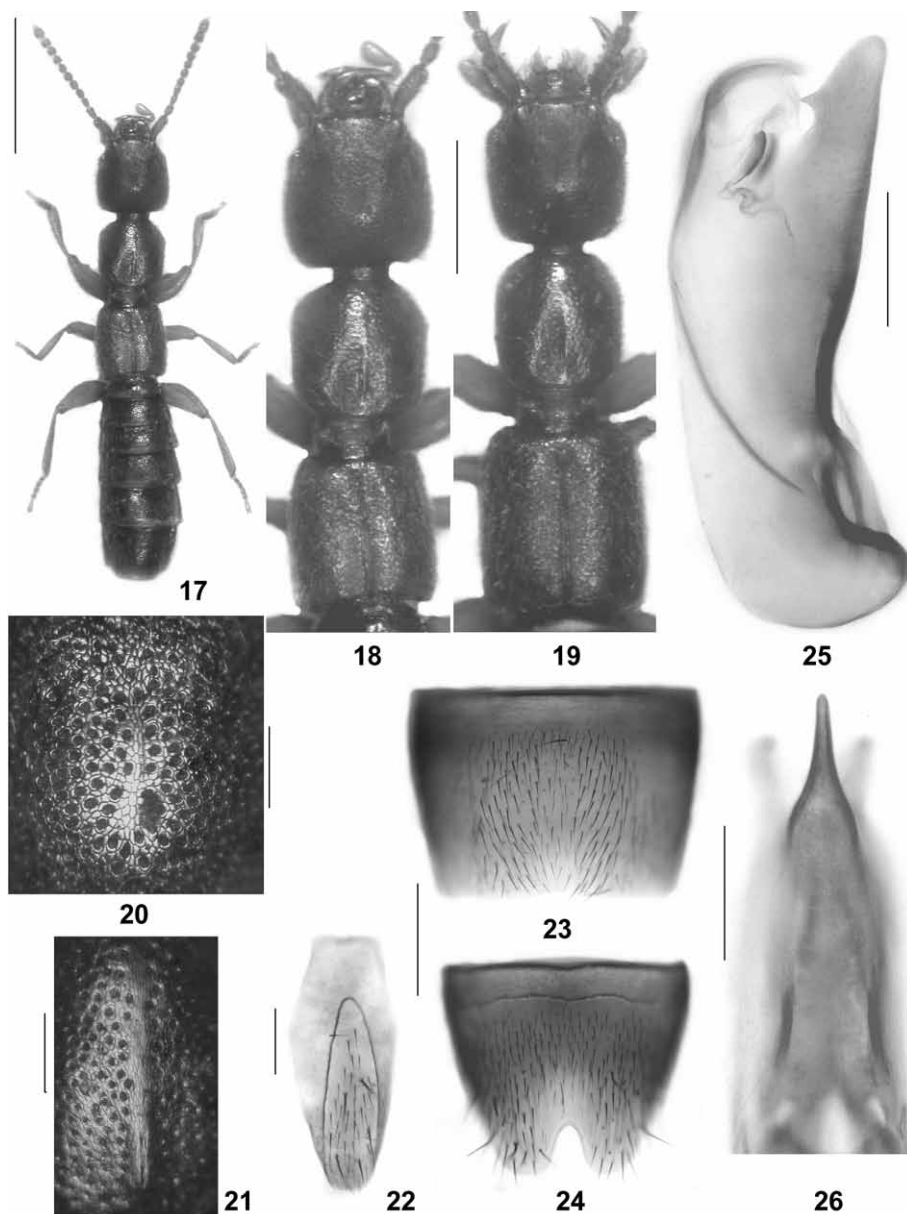
Elytra dimorphic; in micropterous morph short, approximately 0.8 times as long as pronotum and with moderately marked humeral angles (Fig. 18); in macropterous morph approximately 1.1 times as long as pronotum and with pronounced humeral angles (Fig. 19); punctuation dense and fine; interstices without microsculpture. Hind wings of reduced length, rudiments slightly projecting from under the elytra when unfolded (micropterous morph), or fully developed. Metatarsomere I approximately as long as II.

Abdomen broader than elytra, widest at segment VI; punctuation fine and dense; interstices with distinct microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII not distinctly modified (Fig. 23); sternite VIII with small posterior excision (Fig. 24); sternite IX as in Fig. 22); aedeagus approximately 0.45 mm long, with laterally compressed ventral process of distinctive shape (Figs 25-26).

Intraspecific variation: This species is subject to a remarkable dimorphism, this dimorphism not only affecting the length of the elytra and the hind wings, but also the shape of the head and the size of the eyes. A similar phenomenon has been observed also for another paederine, *Micrillus torretassoi* (KOCH 1934), as well as for several other Staphylinidae such as *Vulda ottomana* (CAMERON 1912), and *Carcinocephalus merkli* (EPPELSHEIM 1883) (ASSING 2007, 2008, 2009a). The aedeagus of both morphs of *T. cultellatus* is identical. In all, six macropterous specimens (16 %) were examined, all of them from the same locality, where only few micropterous beetles were collected.

Etymology: The specific epithet is an adjective derived from the Latin noun *cultellus* (knife) and refers to the shape of the laterally compressed ventral process of the aedeagus.



Figs 17-26: *Trisunius cultellatus* nov.sp.: (17) habitus (micropterous morph); (18) forebody (micropterous morph); (19) forebody (macropterous morph); (20) median dorsal portion of head; (21) median dorsal portion of pronotum; (22) male sternite IX; (23) male sternite VII; (24) male sternite VIII; (25) aedeagus in lateral view; (26) ventral process of aedeagus in ventral view. Scale bars: 17: 1.0 mm; 18-19: 0.5 mm; 23-24: 0.2 mm; 20-22, 25-26: 0.1 mm.

Comparative notes: This species is characterized particularly by the short elytra, the coloration, the pronounced microsculpture of the head, the presence of microsculpture on the pronotum (at least in anterior portion), and by the distinctive shape of the aedeagus.

Distribution and natural history: The type specimens were collected in several localities in Yunnan (Bangma Shan, the Gaoligong Shan, the Ailao Shan, and the Mao Jiao Shan) by sifting forest litter at altitudes of 1450-2525 m in May-June and August-September. Teneral specimens were observed in August and September. Syntopic species are *T. spathulatus*, *T. ligulatus*, *T. schuelkei*, *T. iaculatus*, and *T. truncatus*.

***Trisunius discrepans* nov.sp. (Figs 27-33)**

Type material: Holotype ♂: "China: Yunnan [CH07-03], Dali Bai Auton. Pref., Diancang Shan W Dali, 25°41'49"N, 100°06'24"E, 2970 m, sifted at rock edges and under small shrubs, 28.V.2007, M. Schülke / Holotypus ♂ *Trisunius discrepans* sp.n. det. V. Assing 2011" (cAss). Paratypes: 4 exs.: same data as holotype (cSch); 11 exs.: same data, but "leg. A. Pütz" (cPüt, cAss); 6 exs. [1 ♀ macropterous]: "China: Yunnan, Dali Bai Auton. Pref., Diancang Shan W Dali, 25°41'52"N, 100°06'28"E, 2960 m, along path, sifted from litter, moss, flood debris, 6.IX.2009, leg. M. Schülke [CH09-31]" (cSch, cAss); 2 exs.: "China (N-Yunnan) Dali Bai Nat. Aut. Pref., Diancang Shan, 4 km W Dali old town, 2900-3000 m, 25°41.4'N, 100°06.7'E, E slope, former stone pit (in overgrown gravel, soil, plant roots) 31.VIII.2003 Wrase [20]" (cSch); 1 ex.: "China (N-Yunnan) Dali Bai Nat. Aut. Pref., Diancang Shan, 4 km W Dali old town, 2900-3000 m / 25°41.4'N, 100°06.7'E, E slope, former stone pit (in overgrown gravel, soil, plant roots, und. stones) 18.VI.2005 D.W. Wrase [12]" (cSch); 5 exs.: "China (Yunnan) Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley 18 km NW Liuku, 2590 m, 25°58'10"N, 98°42'27"E (devast. prim. forest, litter sifted) 9.-10.VI.2007 D.W. Wrase [29]" (cSch, cAss); 1 ♀: "China: N-Yunnan [C2005-12], Nujiang Lisu Aut. Pref., Gongshan Co., Gaoligong Shan, 2500 m, 27°45.404'N, 98°35.749'E, litter & debris [sic] at snowfield sifted during rain, 19.VI.2005, M. Schülke" (cSch); 2 ♀ ♀: same data, but "[C2005-12A] ... 21.VI.2005" (cSch, cAss).

Description: Relatively large and mostly dark-coloured species; body length 3.2-4.0 mm. Habitus as in Fig. 27. Coloration: head and pronotum dark-brown to blackish, with the pronotum usually slightly paler than head; elytra reddish-brown to blackish-brown; abdomen blackish-brown to blackish; legs and antennae reddish; rarely whole body almost uniformly reddish.

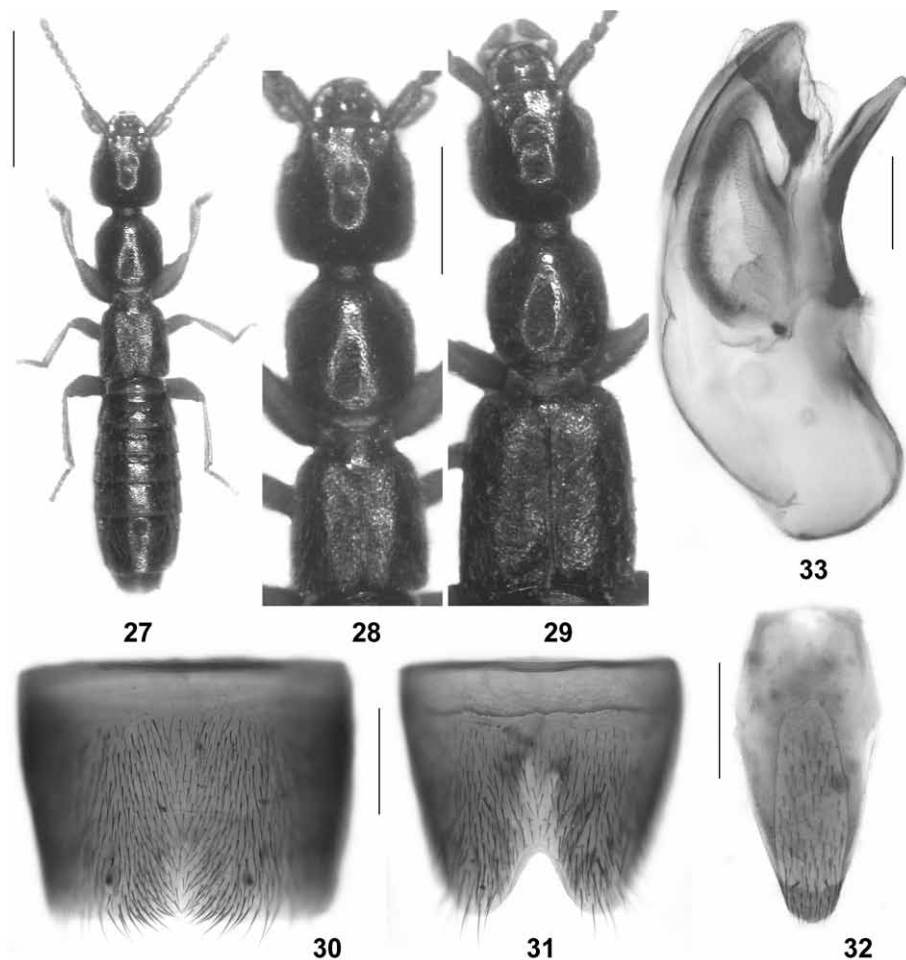
Head approximately as wide as long (micropterous morph) or weakly oblong (macropterous morph), weakly dilated (micropterous morph) or subparallel (macropterous morph) in dorsal view (Figs 28-29); punctuation fine, dense, and shallow; interstices with very shallow to distinct microreticulation. Eyes small, approximately one third as long as postocular region in dorsal view (micropterous morph), or larger and more than half as long as postocular region in dorsal view (macropterous morph). Anterior margin of labrum with two distinct teeth on either side of median incision.

Pronotum (Figs 28-29) approximately 1.1 times as long as wide and 0.95 times as wide as head, widest anteriorly (micropterous morph) or approximately in the middle (macropterous morph); punctuation rather fine and dense; midline with narrow impunctate band; interstices in anterior, lateral, and posterior portions often with shallow traces of microsculpture, in median dorsal portion without microsculpture.

Elytra conspicuously dimorphic; in micropterous morph very short, 0.70-0.75 times as long as pronotum, somewhat widened posteriorly, and with weakly pronounced humeral angles (Fig. 28), in macropterous morph approximately 1.2 times as long as pronotum,

with subparallel lateral margins, and with pronounced humeral angles (Fig. 29); punctation dense, fine, shallow, and weakly defined; interstices without microsculpture. Hind wings completely reduced (micropterous morph), or fully developed (macropterous morph). Metatarsomere I approximately as long as II.

Abdomen much broader (micropterous morph) or much narrower (macropterous morph) than elytra, widest at segment VI; punctation fine and dense on anterior and less dense on posterior tergites; interstices with distinct microsculpture; posterior margin of tergite VII in micropterous morph with fine, in macropterous morph with pronounced palisade fringe.



Figs 27-33: *Trisunius discrepans* nov.sp.: (27) habitus (micropterous morph); (28) forebody (micropterous morph); (29) forebody (macropterous morph); (30) male sternite VII; (31) male sternite VIII; (32) male sternite IX; (33) aedeagus in lateral view. Scale bars: 27: 1.0 mm; 28-29: 0.5 mm; 30-32: 0.2 mm; 33: 0.1 mm.

♂: sternite VII posteriorly impressed in the middle, on either side of this impression with extensive cluster of long dark setae, posterior margin weakly concave in the middle (Fig. 30); sternite VIII with moderately deep and rather broad posterior excision (Fig. 31); sternite IX as in Fig. 32; aedeagus rather large, at least approximately 0.50 mm long, with apically acute ventral process of characteristic shape and with distinctive internal structures (Fig. 33).

Intraspecific variation: This species is subject to a remarkable dimorphism, this dimorphism not only affecting the length of the elytra and the hind wings, but also the shape of the head, the size of the eyes, the shape of the pronotum, and the palisade fringe at the posterior margin of the abdominal tergite VII. The only macropterous specimen examined is a female, so that the possibility that it is not conspecific with the other type specimens cannot be ruled out with absolute certainty. However, the macropterous female is similar to the micropterous morph in many external characters and it was found together with several micropterous specimens, suggesting that it refers to the same species. Moreover, the localities in the Diancang Shan and the Gaoligong Shan are separated by a considerable distance, suggesting that there is a winged morph. Finally, a similarly pronounced dimorphism was observed also in *T. cultellatus*.

Etymology: The specific epithet (Latin, present participle of the verb discrepare) alludes to the remarkable dimorphism (see above).

Comparative notes: This species is characterized particularly by its relative large body size, dark coloration, the conspicuously short elytra of the micropterous morph, the very long elytra of the macropterous morph, as well as by the male primary and secondary sexual characters.

Distribution and natural history: *Trisunius discrepans* is known from several localities in the Diancang Shan and the Gaoligong Shan in western Yunnan, China. The specimens were sifted from litter, moss, and debris in forests, under shrubs, in a former stone pit, and near snowfields at altitudes of 2500-3000 m in May, June, and September. On no occasion was *T. discrepans* collected with other species of the genus.

***Trisunius iaculatus* nov.sp. (Figs 34-40)**

Type material: Holotype ♂: "China: Yunnan [CH07-30], Nujiang Lisu Aut. Pref., Nu Shan, 7 km NNW Coajian, 25°43'29"N, 99°07'57"E, 2420 m, second. pine forest with shrubs, litter, bark sifted, 11.VI.2007, M. Schülke / Holotypus ♂ *Trisunius iaculatus* sp.n. det. V. Assing 2011" (cAss). Paratypes: 4 exs.: same data as holotype (cSch); 6 exs.: "China: Yunnan [CH07-13], Baoshan Pref., Gaoligong Shan, E pass, 36 km SE Tengchong, 2200 m, 24°49'32"N, 98°46'06"E, decid. forest, litter, wood, fungi sifted, 31.V.2007, M. Schülke" (cSch, cAss); 1 ex.: same data, but "leg. A. Pütz" (cPüt); 8 exs. [2 teneral]: "China: Yunnan, Lincang Pref., Laobie Shan, Wei Bo Shan pass, 24°08'16"N, 99°42'53"E, 2375 m, creek valley, devastated second. decid. forest, litter & moss sifted, 8.IX.2009, leg. M. Schülke [CH09-35]" (cSch, cAss); 11 exs. [1 teneral]: "China: Yunnan, Lincang Pref., Wuliang Shan, old pass road, W side, 24°42'58.6"N, 10°29'52.0"E, 2200 m, small creek valley with primary forest remnant, litter & debris sifted, 12.IX.2009, leg. M. Schülke [CH09-47]" (cSch, cAss); 2 exs.: "China: Yunnan, Lincang Pref., Bangma Shan, E pass, 17 km NW Lincang, 23°57'31"N, 99°56'13"E, 2040 m, secondary pine forest, litter, dead wood & mushrooms sifted, 9.IX.2009, leg. M. Schülke [CH09-36]" (cSch, cAss); 12 exs. [teneral]: "China: Yunnan, Lincang Pref., Bangma Shan, 20 km NW Lincang, 2210 m, 23°58'25"N, 99°54'36"E, water reservoir, devast. forest with ferns, litter & ferns sifted, reservoir bank, 9.IX.2009, leg. M. Schülke [CH09-37]" (cSch, cAss); 1 ♀: "China: Yunnan, Pu'er Pref., Ailao Shan, 37 km NW

Jingdong, 24°45'12"N, 100°41'24.5"E, 2300 m, devastated forest remnant, litter & dead wood sifted, 13.IX.2009, leg. M. Schülke [CH09-48]" (cSch); 3 exs. [1 teneral]: "China: Yunnan, Baoshan Pref., Gaoligong Shan, 78 km N Tengchong, 2000 m, 25°44'49"N, 98°33'29"E, cleft with creek and forest remnant, litter & dead wood sifted, 1.IX.2009, leg. M. Schülke [CH09-21]" (cSch, cAss); 2 exs.: "China: Yunnan, Lincang/Dali Pref., Wuliang Shan, old pass road, N pass, 24°45'16.4"N, 100°29'50.3"E, 2350 m, forest remnant & tea plantation litter, mushrooms, grass sifted, 16.IX.2009, leg. M. Schülke [CH09-55]" (cSch, cAss).

Description: Body length 3.0-3.5 mm. Habitus as in Fig. 34. Coloration variable: head (except for the yellowish to reddish-yellow frons) and pronotum reddish to dark-brown; elytra brown to dark-brown, usually at the suture and the humeral angles more or less extensively yellowish, occasionally of uniform coloration; abdomen blackish-brown; legs and antennae reddish.

Head (Fig. 35) approximately as broad as long; punctation fine and moderately dense; interstices with distinct microsculpture. Eyes approximately half as long as postocular region in dorsal view, or slightly shorter. Anterior margin of labrum with two teeth on either side of median incision (Fig. 36), external teeth sometimes very small.

Pronotum (Fig. 35) approximately 1.05 times as long as wide and 0.90-0.95 times as wide as head; punctation less fine and more distinct than that of head; midline with narrow impunctate band; interstices with microsculpture at least in anterior, lateral, and posterior portions, median dorsal portion often without microsculpture.

Elytra 1.05-1.15 times as long as pronotum (Fig. 35); humeral angles marked; punctation dense and shallow, less distinct than that of pronotum; interstices without microsculpture. Hind wings fully developed. Metatarsomere I approximately as long as II.

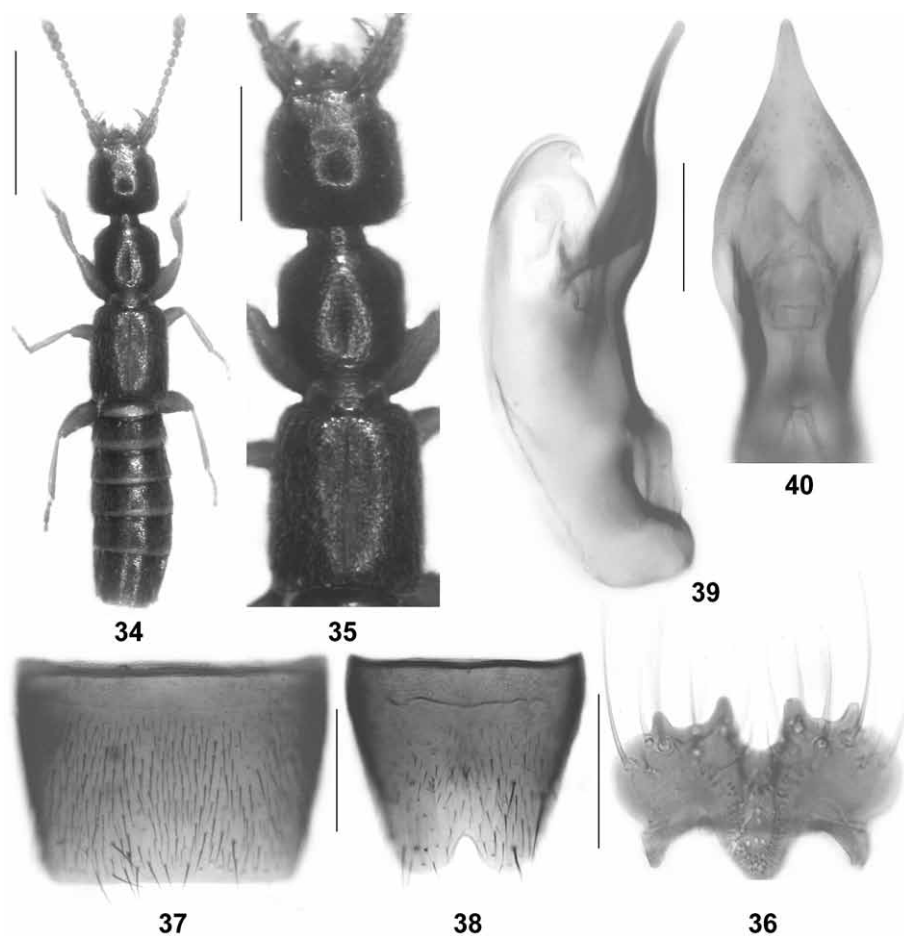
Abdomen slightly narrower than elytra, widest at segment VI; punctation fine and moderately dense; interstices with distinct microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII not distinctly modified (Fig. 37); sternite VIII with small posterior excision (Fig. 38); aedeagus approximately 0.45 mm long; ventral process of distinctive shape, in lateral view slender and apically very acute, in ventral view spear-shaped and apically acute (Fig. 39-40).

Etymology: The specific epithet is derived from the Latin noun *iaculum* (spear) and refers to the shape of the ventral process of the aedeagus in ventral view.

Comparative notes: This species is characterized particularly by the conspicuous shape of the aedeagus, as well as by the coloration of the elytra and the relatively long elytra.

Distribution and natural history: The known distribution of *T. iaculatus* includes the Nu Shan, Gaoligong Shan, Laobie Shan, Wulian Shan, Bangma Shan, and Ailao Shan in western Yunnan, China. The type specimens were sifted from the leaf litter in various forest habitats at altitudes of 2000-2400 m in May, June, and September. Several specimens collected in September are teneral. Syntopic species are *T. truncatus*, *T. spatulatus*, and *T. ligulatus*.



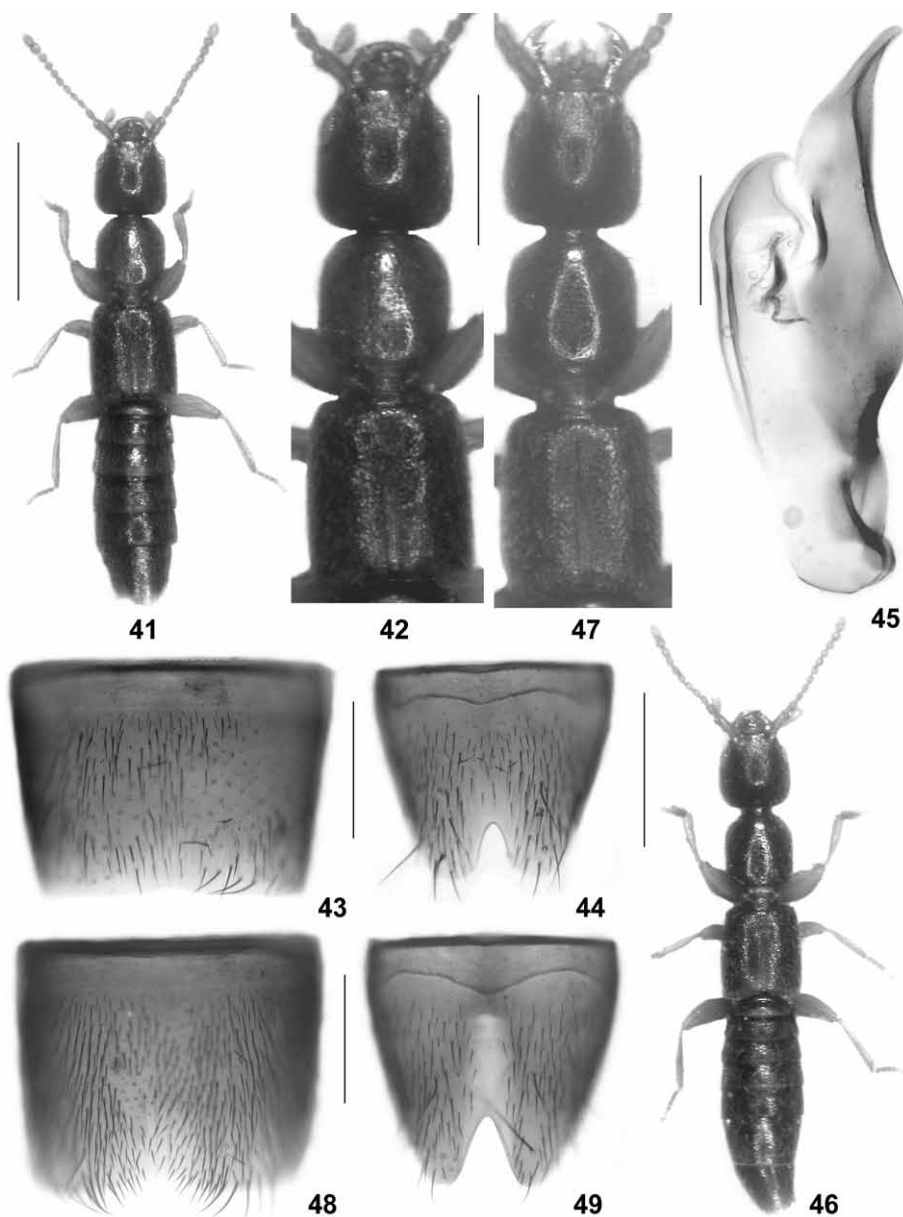
Figs 34-40: *Trisunius iaculatus* nov.sp.: (34) habitus; (35) forebody; (36) labrum; (37) male sternite VII; (38) male sternite VIII; (39) aedeagus in lateral view; (40) ventral process of aedeagus in ventral view. Scale bars: 34: 1.0 mm; 35: 0.5 mm; 37-38: 0.2 mm; 36, 39-40: 0.1 mm.

***Trisunius schuelkei* nov.sp.** (Figs 41-45)

Type material: Holotype ♂: "China: Yunnan, Lincang Pref., Bangma Shan, 33 km SSW Lincang, 2150 m, 23°35'41"N, 100°00'27"E, decid. forest remnant, N-slope, litter and dead wood sifted, 11.IX.2009, leg. M. Schülke [CH09-42] / Holotypus ♂ *Trisunius schuelkei* sp.n. det. V. Assing 2011" (cAss). Paratypes: 8 exs. [4 slightly teneral]: same data as holotype (cSch, cAss).

Description: Body length 2.7-3.2 mm. Habitus as in Fig. 41. Coloration: head reddish-brown; pronotum reddish; elytra dark-brown, with the anterior and posterior margins yellowish; abdomen blackish-brown; legs and antennae reddish.

Head (Fig. 42) weakly oblong, approximately 1.05 times as long as wide; punctation fine and moderately dense; interstices with fine, but distinct microsculpture. Eyes approximately half as long as postocular region in dorsal view. Anterior margin of labrum with two distinct teeth on either side of median incision.



Figs 41-49: *Trisunius schuelkei* nov.sp. (41-45) and *T. truncatus* nov.sp. (46-49): (41, 46) habitus; (42, 47) forebody; (43, 48) male sternite VII; (44, 49) male sternite VIII; (45) aedeagus in lateral view. Scale bars: 41, 46: 1.0 mm; 42, 47: 0.5 mm; 43-44, 48-49: 0.2 mm; 45: 0.1 mm.

Pronotum (Fig. 42) approximately 1.1 times as long as wide and 0.95 times as wide as head; punctation less fine and more distinct than that of head; midline with narrow impunctate band; interstices without microsculpture.

Elytra approximately 1.05 times as long as pronotum; humeral angles marked (Fig. 42); punctuation dense and shallow, less distinct than that of pronotum; interstices without microsculpture. Hind wings fully developed. Metatarsomere I approximately as long as II.

Abdomen narrower than elytra, widest at segment VI; punctuation fine and moderately dense; interstices with distinct microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII with a few long dark setae posteriorly and with weakly concave posterior margin, otherwise unmodified (Fig. 43); sternite VIII with moderately deep and rather narrow V-shaped excision (Fig. 44); aedeagus approximately 0.45 mm long; ventral process of distinctive shape in lateral view (Fig. 45).

Etymology: The species is dedicated to my friend and colleague Michael Schülke, who collected the types of this species, as well as a large proportion of the material of other species treated in the present paper.

Comparative notes: This species is characterized particularly by the conspicuous shape of the aedeagus, as well as by the coloration and the relatively long elytra.

Distribution and natural history: This species is known only from the type locality in the Bangma Shan in western Yunnan, China. The five type specimens, four of them teneral, were collected in a deciduous forest remnant at an altitude of 2150 m. Syntopic species are *T. spathulatus* and *T. cultellatus*.

***Trisunius truncatus* nov.sp. (Figs 46-51)**

Type material: Holotype ♂: "China (Yunnan) Nujiang Lisu Aut. Pref., Nu Shan, 7 km NNW Coajian, 2420 m, 25°43'29"N, 99°07'57"E (second. pine forest with shrubs, litter, moss sifted) 11.VI.2007 D.W. Wrase [30] / Holotypus ♂ *Trisunius truncatus* sp.n. det. V. Assing 2011" (cAss). Paratypes: 11 exs.: same data as holotype (cSch, cAss); 16 exs.: "China: Yunnan [CH07-30], Nujiang Lisu Aut. Pref., Nu Shan, 7 km NNW Coajian, 25°43'29"N, 99°07'57"E, 2420 m, second. pine forest with shrubs, litter, bark sifted, 11.VI.2007, M. Schülke" (cSch, cAss); 5 exs.: same data, but "leg. A. Pütz" (cPüt, cAss); 2 exs.: "China: Yunnan, Lincang Pref., Laobie Shan, Wei Bo Shan pass, 24°08'16"N, 99°42'53"E, 2375 m, creek valley, devastated second. decid. forest, litter & moss sifted, 8.IX.2009, leg. M. Schülke [CH09-35]" (cSch, cAss); 1 ♀: "China: Yunnan [CH07-20], Nujiang Lisu Aut. Pref., creek valley 3 km SE Gongshan, 1450-1500 m, 27°43'02"N, 98°41'27"E, litter, moss, sifted, 5.VI.2007, leg. A. Pütz" (cPüt).

Description: Body length 2.8-3.5 mm. Habitus as in Fig. 46. Coloration: head, pronotum, and abdomen blackish-brown to blackish; elytra blackish-brown to blackish, with the posterior margin and usually also the posterior sutural portion yellowish; legs and antennae reddish.

Head (Fig. 47) weakly oblong, approximately 1.05 times as long as wide; punctuation fine and dense, barely noticeable in the pronounced microsculpture. Eyes somewhat more than half as long as postocular region in dorsal view. Anterior margin of labrum with two distinct teeth on either side of median incision.

Pronotum (Fig. 47) 1.05-1.10 times as long as wide and approximately 0.95 times as wide as head; punctuation less fine and more distinct than that of head; midline with narrow impunctate band; interstices without distinct microsculpture.

Elytra approximately as long as pronotum; humeral angles marked (Fig. 47); punctuation dense and shallow, less distinct than that of pronotum; interstices without microsculpture. Hind wings fully developed. Metatarsomere I approximately as long as II.

Abdomen approximately as wide as elytra, widest at segment VI; punctuation fine and moderately dense; interstices with pronounced microsculpture; posterior margin of tergite VII with palisade fringe.

♂: sternite VII in posterior median portion weakly impressed, on either side of this impression with moderately evident and not very extensive cluster of long setae (Fig. 48); sternite VIII with moderately deep and rather narrow V-shaped excision, midline without pubescence (Fig. 49); aedeagus small, little more than 0.30 mm long; ventral process short, apically truncate, apical margin concave in ventral view (Figs 50-51).

E t y m o l o g y : The specific epithet (Latin, adjective) refers to the short ventral process of the aedeagus.

C o m p a r a t i v e n o t e s : This species is characterized particularly by the small and conspicuously shaped aedeagus, as well as by the coloration of the moderately long elytra, and the strongly microsculptured and finely punctate head.

D i s t r i b u t i o n a n d n a t u r a l h i s t o r y : *Trisunius truncatus* is known only from three localities in the Nu Shan, the Laobie Shan, and the Gaoligong Shan in the west of the Chinese province Yunnan. The specimens were collected from forest litter at altitudes of 1450-2420 m in June and September. Syntopic species are *T. ligulatus* and *T. iaculatus*.

***Trisunius appendiculatus* nov.sp. (Figs 52-56)**

T y p e m a t e r i a l : Holotype ♂: "China: Yunnan, Baoshan Pref., Gaoligong Shan, W Pass 35 km SE Tengchong, 2100 m, 24°50'18"N, 98°45'43"E, devast. prim. dec. forest, litter, wood, mushrooms sifted, 25.VIII.2009, leg. M. Schülke [CH09-06] / Holotypus ♂ *Trisunius appendiculatus* sp.n. det. V. Assing 2011" (cAss). Paratype: 1 ♂: same data as holotype (cSch).

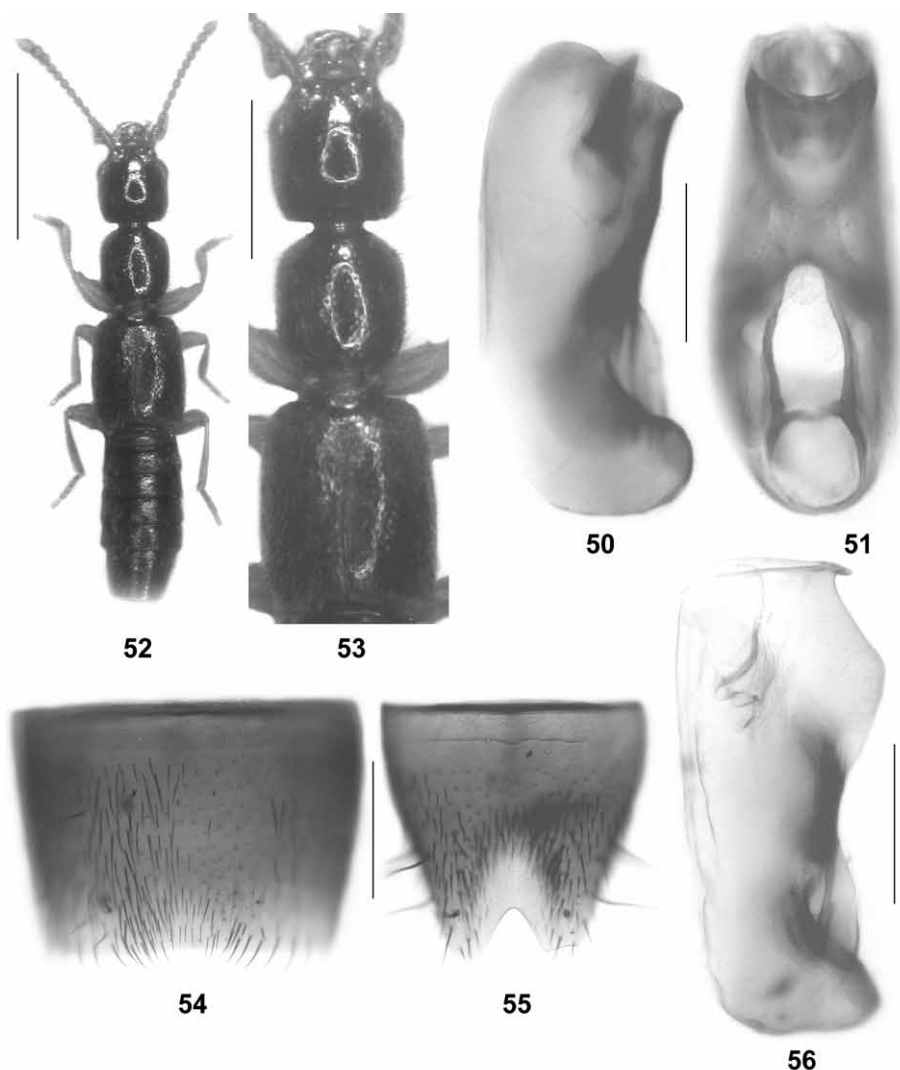
D e s c r i p t i o n : Body length 3.0-3.2 mm. Habitus as in Fig. 52. Coloration: head and pronotum dark-brown; elytra blackish-brown, with the anterior and posterior margins broadly reddish-yellow; abdomen blackish, with the posterior margins of segments VII and VIII yellowish.

Head (Fig. 53) 1.05-1.10 times as long as wide; punctuation fine and moderately dense, in anterior half with pair of larger punctures; interstices without microsculpture and distinctly glossy. Eyes distinctly convex and distinctly more than half as long as postocular region in dorsal view. Anterior margin of labrum with two rather small teeth on either side of median incision.

Pronotum (Fig. 53) 1.05-1.10 times as long as wide and approximately 0.95 times as wide as head; punctuation less fine, less dense, and more distinct than that of head; midline with narrow impunctate band; interstices without microsculpture.

Elytra long and large, approximately 1.15 times as long as, and much broader than pronotum; humeral angles marked; lateral margins convex (Fig. 53); punctuation dense and shallow, weakly defined; interstices without microsculpture. Hind wings fully developed. Metatarsomere I approximately as long as II.

Abdomen narrower than elytra, widest at segment VI; punctuation fine and moderately dense; interstices with pronounced microsculpture; posterior margin of tergite VII with palisade fringe.



Figs 50-56: *Trisunius truncatus* nov.sp. (**50-51**) and *T. appendiculatus* nov.sp. (**52-56**): (**50, 56**) aedeagus in lateral view; (**51**) aedeagus in ventral view; (**52**) habitus; (**53**) forebody; (**54**) male sternite VII; (**55**) male sternite VIII. Scale bars: 52: 1.0 mm; 53: 0.5 mm; 54-55: 0.2 mm; 50-51, 56: 0.1 mm.

♂: sternite VII in posterior median portion weakly impressed, on either side of this impression with moderately dense and not very evident cluster of long setae (Fig. 54); sternite VIII with not very deep, V-shaped excision (Fig. 55); aedeagus small, approximately 0.3 mm long; ventral process laterally compressed, of highly distinctive shape (Fig. 56).

E t y m o l o g y : The specific epithet is an adjective derived from the Latin noun appendix and refers to the small process at the apex of the ventral process of the aedeagus.

Comparative notes: This species is readily distinguished from its congeners by the conspicuous shape of the small aedeagus, from all the species known from China also by the glossy head and the coloration of the long and large elytra.

Distribution and natural history: *Trisunius appendiculatus* is known only from a single locality in the Gaoligong Shan in western Yunnan, China. The two type specimens were sifted from litter in a degraded primary deciduous forest at an altitude of 2100 m in August. *Trisunius ligulatus* was found in the same locality.

***Trisunius monticola* (CAMERON 1931), nov.comb.** (Figs 57-66)

Medon monticola CAMERON 1931: 143 f.

Sunius monticola: SMETANA (2004).

Type material examined: Lectotype ♂, present designation: "Chakrata Dist. Sijla Gad, 5000 / Dr. Cameron. 12.V.22. / M.Cameron Bequest B.M. 1955-147. / Syntype / Syntype *Medon monticola* Cameron, 1931, det. R.G. Booth 2010 / Lectotypus ♂ *Medon monticola* Cameron, desig. V. Assing 2010 / *Trisunius monticola* (Cameron), det. V. Assing 2010" (BMNH). Paralectotype ♂: same data as lectotype (BMNH).

Comment: The original description of *Medon monticola* is based on an unspecified number of syntypes from "Chakrata district: Sijla Gad; Majgaon, alt. 6000 to 6500 feet" (CAMERON 1931). Two male syntypes from the former locality were examined; one of them is designated as the lectotype. The species is listed in the recent Palaearctic catalogue (SMETANA 2004) in *Sunius*, probably because CAMERON (1931) compared it with *Medon gratus* and *Sunius melanocephalus*.

An examination of the type material of *Medon monticola* CAMERON 1931 revealed that it is congeneric neither with the type species of *Sunius*, *S. melanocephalus*, nor with true *Medon* species. Based on the shapes of the ligula, the labrum, and the maxillary palpi, as well as other characters such as the morphology of the tarsi and the male sexual characters, the species belongs to *Trisunius*.

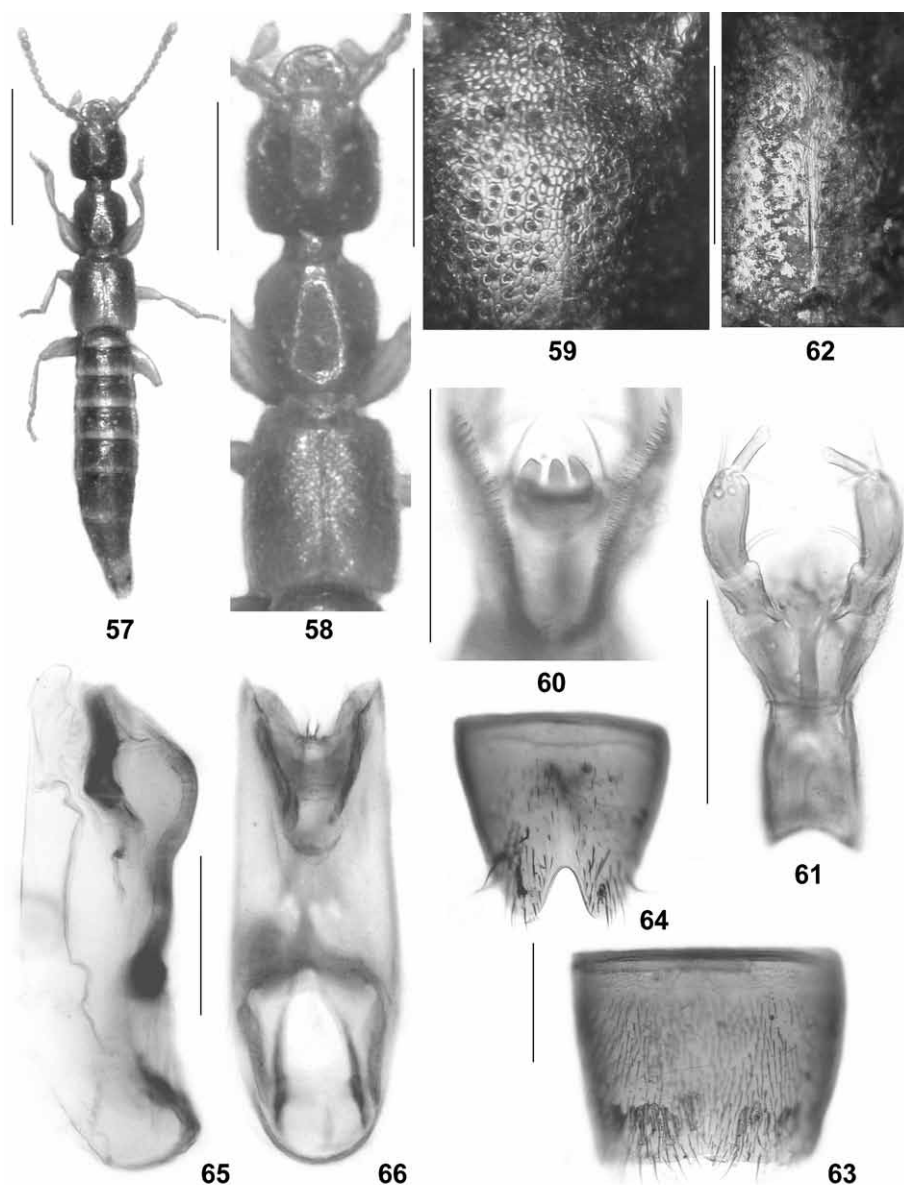
Redescription: Small species; body length 3.2-3.6 mm. Habitus as in Fig. 57. Coloration: head dark-brown; pronotum and elytra reddish to reddish-brown; abdomen reddish-brown to brown; legs and antennae reddish-yellow to reddish.

Head (Fig. 58) approximately 1.05 times as long as broad; lateral margins subparallel in dorsal view; posterior angles rounded, but noticeable; punctation fine and dense; interstices with shallow microreticulation (Fig. 59). Eyes moderately large and weakly convex, distinctly shorter than - but more than half as long as - postocular portion in dorsal view. Labium as in Figs 60-61.

Pronotum (Fig. 58) 1.05-1.10 times as long as broad and slightly narrower than head, weakly tapering posteriad; posterior angles weakly marked; punctation similar to that of head; interstices without microsculpture (Fig. 62); punctation of midline similar to that of lateral portions.

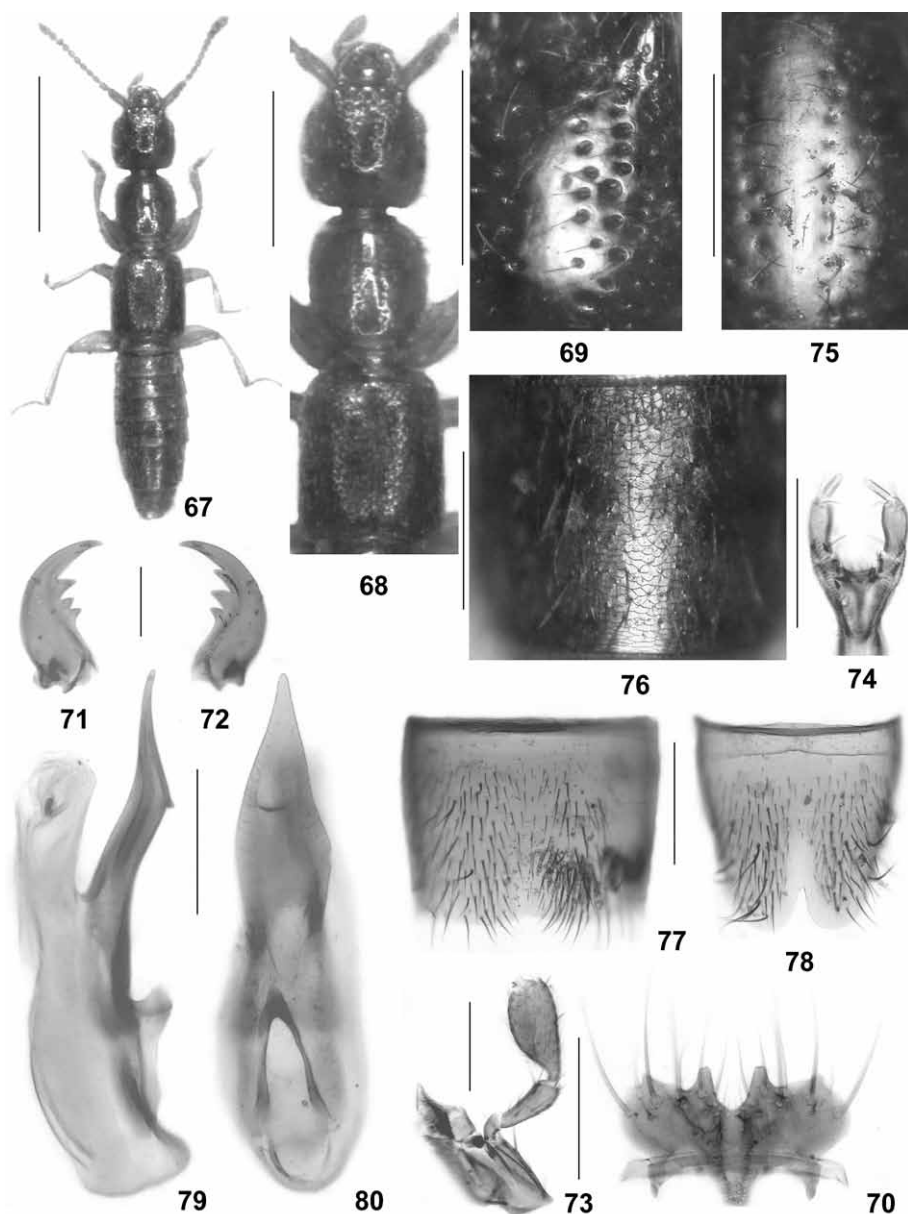
Elytra 1.05-1.10 times as long and approximately 1.2 times as wide as pronotum (Fig. 58); punctation very dense, approximately as fine as that of pronotum. Hind wings apparently fully developed.

Abdomen widest at segment VI; punctation fine, denser on anterior than on posterior tergites; posterior margin of tergite VII with palisade fringe.



Figs 57-66: *Trisunius monticola* (CAMERON): (57) habitus; (58) forebody; (59) median dorsal portion of head; (60-61) labium; (62) median dorsal portion of pronotum; (63) male sternite VII; (64) male sternite VIII; (65-66) aedeagus in lateral and in ventral view. Scale bars: 57: 1.0 mm; 58: 0.5 mm; 59, 62-64: 0.2 mm; 60-61, 65-66: 0.1 mm.

♂: posterior margin of sternite VII weakly concave in the middle (Fig. 63); posterior margin of sternite VIII with moderately deep and almost V-shaped median incision (Fig. 64); aedeagus as in Figs 65-66.



Figs 67-80: *Trisunius thaicus* nov.sp.: (67) habitus; (68) forebody; (69) median dorsal portion of head; (70) labrum; (71-72) mandibles; (73) maxilla; (74) labial palpi; (75) median dorsal portion of pronotum; (76) abdominal tergite VII; (77) male sternite VII; (78) male sternite VIII; (79-80) aedeagus in lateral and in ventral view. Scale bars: 67: 1.0 mm; 68: 0.5 mm; 69, 75-78: 0.2 mm; 70-74, 79-80: 0.1 mm.

Comparative notes: *Trisunius monticola* is currently the only representative of the genus known from northern India. It is readily distinguished from its congeners particularly by the morphology of the aedeagus.

Distribution and natural history: *Trisunius monticola* has become known only from two localities in Uttaranchal, northern India. The type specimens were collected at altitudes of 1800-2000 m (CAMERON 1931).

***Trisunius thaicus* nov.sp.** (Figs 67-80)

Type material: Holotype ♂: "N-Thailand, Chiang Mai, Do Inthanon, Do Pui, 1100-1500 m NN, 10.11.1995, P. Wunderle / Holotypus ♂ *Trisunius thaicus* sp.n. det. V. Assing 2010" (cAss). Paratypes: 2♂♂, 2♀♀, 1 ex. without abdomen: same data as holotype (cWun, cAss); 1♀: "Nordthailand: 1.1.1995, Prov: Chiang Mai, 10 km E. Mae Chaem, Doi Inthanon N. P., 1000 mH, Leg. Schulz & Vock" (cAss); 3♀♀: "Thailand, C.M. Doi Pui, :III:1987, Rougemont" (cRou).

Description: Body length 2.8-3.2 mm. Habitus as in Fig. 67. Coloration: body reddish, with the abdomen slightly darker; legs dark-yellowish; antennae pale reddish.

Head (Fig. 68) approximately as long as wide; punctation coarse and moderately dense, median dorsal portion impunctate; interstices without microsculpture (Fig. 69). Eyes slightly longer than half the length of postocular region in dorsal view. Mouthparts: maxillary palpomere III somewhat flattened and strongly dilated (Fig. 73); anterior margin of labrum with the external tooth-like process relatively short (Fig. 70); mandibles as in Fig. 71-72, right mandible with three teeth; labial palpi as in Fig. 74.

Pronotum (Fig. 68) weakly oblong, approximately 1.05 times as long as wide and about 0.95 times as wide as head; punctation similar to that of head, on either side of the broadly impunctate midline forming a series of approximately 15 punctures; interstices without microsculpture (Fig. 75).

Elytra long, approximately 1.05-1.10 times as long and 1.25 times as broad as pronotum, not distinctly widened posteriad; humeral angles marked (Fig. 68); punctation moderately dense, finer than that of head and pronotum; interstices without microsculpture. Hind wings fully developed.

Abdomen approximately as wide as elytra; punctation fine and dense on tergites III-VI, sparser on tergites VII-VIII; interstices with shallow, more or less isodiametric microsculpture (Fig. 76); posterior margin of tergite VII with palisade fringe.

♂: sternite VII posteriorly with cluster of relatively long setae on either side of middle, posterior margin weakly concave in the middle (Fig. 77); sternite VIII with very narrow and acute posterior excision of approximately 1/5 the length of sternite, posterior margin and posterior median portion impunctate and without pubescence (Fig. 78); aedeagus as in Figs 79-80.

Etymology: The specific epithet is a latinized adjective derived from Thai, the people living in Thailand.

Comparative notes: This species is distinguished from all its congeners by by the conspicuous morphology of the aedeagus, the paler coloration, the shape and chaetotaxy of the male sternite VIII, and additionally from all of them, except *T. appeniculatus*, by the absence of microsculpture on the dorsal and the ventral surface of the head.

Distribution and natural history: *Trisunius thaicus* is known only from two localities in northern Thailand. The specimens from the type locality were collected at an altitude of 1100-1500 m in November, those from Doi Pui in March.

Key to the species of *Trisunius*

- 1 Head glossy, without trace of microsculpture2
- Head with microsculpture3
- 2 Body of more or less uniformly reddish-yellow coloration. ♂: sternite VII as in Fig. 77; posterior excision of sternite VIII small and narrow (Fig. 78); ventral process of aedeagus slender and apically very acute both in lateral and in ventral view (Figs 79-80). Thailand*T. thaicus* nov.sp.
- Head, pronotum, and abdomen dark-brown to blackish; elytra bicoloured, dark-brown to blackish-brown with the anterior and the posterior margins broadly reddish. ♂: sternite VII as in Fig. 54; posterior excision of sternite VIII broader and deeper (Fig. 55); aedeagus of completely different shape (Fig 56). China: Yunnan*T. appendiculatus* nov.sp.
- 3 Species from northern India. ♂: sternite VII weakly modified (Fig. 63); sternite VIII with moderately deep and almost V-shaped posterior excision (Fig. 64); aedeagus small, approximately 0.3 mm long, and of distinctive shape (Figs 65-66). India: Uttaranchal*T. monticola* (CAMERON)
- Species from Yunnan, China. ♂: primary and secondary sexual characters different4
- 4 Elytra usually conspicuously short (Fig. 28), 0.70-0.75 times as long as pronotum and somewhat dilated posteriad (micropterous morph), rarely very long (Fig. 29) and approximately 1.2 times as long as pronotum (macropterous morph). Relatively large (3.2-4.0 mm) and dark-coloured species; body usually brown to blackish-brown; elytra of uniform coloration. ♂: sternites VII and VIII as in Figs 30-31; aedeagus approximately 0.5 mm long and of distinctive shape (Fig. 33)*T. discrepans* nov.sp.
- Elytra in micropterous specimens at least approximately 0.8 times as long as pronotum and not distinctly dilated posteriad. On average smaller and often differently coloured species. ♂: secondary sexual characters different; aedeagus smaller and of different shape5
- 5 Elytra usually bicoloured, dark-brown to blackish-brown with the posterior margin and/or the sutural portion reddish6
- Elytra of uniform coloration8
- 6 Elytra with the posterior sutural portion more or less distinctly reddish; posterior margin not - or only narrowly - reddish. Elytra long, 1.05-1.15 times as long as pronotum (Fig. 35). ♂: sternite VII very weakly modified (Fig. 37); posterior excision of sternite VII very small (Fig. 38); ventral process of aedeagus apically very acute, slender in lateral view and spear-shaped in ventral view (Figs 39-40)*T. iaculatus* nov.sp.
- Elytra with the posterior margin broadly reddish. Elytra shorter, 0.95-1.05 times as long as pronotum. ♂: primary and secondary sexual characters different7
- 7 Head and pronotum reddish to reddish-brown. ♂: sternite VII very weakly modified (Fig. 43); posterior excision of sternite VIII narrow and not very deep (Fig. 44); aedeagus approximately 0.45 mm long and of distinctive shape (Fig. 45). Recorded only from Bangma Shan*T. schuelkei* nov.sp.
- Head and pronotum dark-brown to blackish-brown. ♂: sternite VII impressed in posterior median portion, on either side of this impression with extensive cluster of long setae, posterior margin concave in the middle (Fig. 48); sternite VIII without pubescence along middle, posterior excision rather deep and V-shaped (Fig. 49); aedeagus small, only approximately 0.3 mm long and of distinctive shape (Figs 50-51)*T. truncatus* nov.sp.

- 8 Elytra usually short (Fig. 18) and approximately 0.8 times as long as pronotum (micropterous morph), rarely very long (Fig. 19) and approximately 1.1 times as long as pronotum (macropterous morph). Pronotum usually more or less distinctly microsculptured (Fig. 21). ♂: sternite VII weakly modified (Fig. 23); posterior excision of sternite VIII small (Fig. 24); aedeagus of distinctive shape, ventral process laterally compressed (Figs 25-26)..... *T. cultellatus* nov.sp.
- Elytra in submacropterous morph longer (Figs 2, 12), 0.8-0.9 mm as long as pronotum, and in macropterous morph shorter (Fig. 11), 0.95-1.0 times as long as pronotum. Pronotum glossy, without microsculpture. ♂: sternite VII distinctly modified, with pronounced clusters of long setae (Figs 6, 13); posterior excision of sternite VIII deep and V-shaped (Figs 7, 14); ventral process of aedeagus of completely different shape, not compressed laterally.....9
- 9 ♂: ventral process of aedeagus straight in lateral view and apically somewhat truncate in ventral view (Figs 8-9)..... *T. spathulatus* nov.sp.
- ♂: ventral process of aedeagus sinuate in lateral view and apically rounded in ventral view (Figs 15-16)..... *T. ligulatus* nov.sp.

Catalogue of the species of *Trisunius*

species	distribution
<i>appendiculatus</i> nov.sp.	China: W-Yunnan (Gaoligong Shan)
<i>cultellatus</i> nov.sp.	China: Yunnan (Bangma Shan, Gaoligong Shan, Ailao Shan, Mao Jiao Shan)
<i>discrepans</i> nov.sp.	China: W-Yunnan (Gaoligong Shan, Diancang Shan)
<i>iaculatus</i> nov.sp.	China: Yunnan (Bangma Shan, Nu Shan, Gaoligong Shan, Laobie Shan, Wuliang Shan, Ailao Shan)
<i>ligulatus</i> nov.sp.	China: W-Yunnan (Gaoligong Shan, Nu Shan)
<i>monticola</i> (CAMERON 1931)	India: Uttaranchal
<i>schuelkei</i> nov.sp.	China: SW-Yunnan (Bangma Shan)
<i>spathulatus</i> nov.sp.	China: SW-Yunnan (Bangma Shan, Laobie Shan, Ailao Shan, Wuliang Shan, Mekong valley)
<i>thaicus</i> nov.sp.	Thailand
<i>truncatus</i> nov.sp.	China: W-Yunnan (Nu Shan, Laobie Shan, Gaoligong Shan)

Acknowledgements

My thanks are extended to the colleagues listed in the materials section for the loan of material from their respective collections. In particular, I am grateful to Michael Schülke for the generous permission to retain the holotypes of all the species described from China, as well as to Paul Wunderle for the gift of the holotype of *T. thaicus*. Benedikt Feldmann, Münster, proof-read the manuscript.

Zusammenfassung

Die Gattung *Trisunius* nov.gen. (Typusart: *T. spathulatus* nov.sp.) aus der Subtribus Medonina wird beschrieben, abgebildet und von der ähnlichen Gattung *Sunius* STEPHENS 1833 unterschieden. Die vor allem in der Orientalis verbreitete Gattung umfasst derzeit zehn Arten: *T. spathulatus* nov.sp. (China: Yunnan); *T. ligulatus* nov.sp. (China: Yunnan); *T. cultellatus* nov.sp. (China: Yunnan); *T. discrepans* nov.sp. (China: Yunnan); *T. iaculatus* nov.sp. (China: Yunnan); *T. schuelkei* nov.sp. (China: Yunnan); *T. truncatus* nov.sp. (China: Yunnan); *T. appendiculatus* nov.sp. (China: Yunnan); *T. monticola* (CAMERON 1931), nov.comb. (N-Indien: Uttaranchal); *T. thaicus* nov.sp. (Thailand). Für *Medon monticola* CAMERON 1931 wird ein Lectotypus designiert. Alle Arten werden beschrieben und abgebildet. Sie leben vor allem in Waldbiotopen in Höhenlagen von 850-3000 m. Bei einigen Arten wurden auffällige Dimorphismen festgestellt. Eine Bestimmungstabelle und ein Katalog der Arten werden erstellt.

References

- ASSING V. (2007): On the Xantholinini of Turkey and adjacent regions (Coleoptera: Staphylinidae: Staphylininae). — *Zootaxa* **1474**: 1-54.
- ASSING V. (2008): A revision of the *Micrillus* species of the Palaearctic region, with notes on two species from adjacent parts of the Afrotropical and Oriental regions (Coleoptera: Staphylinidae: Paederinae). — *Stuttgarter Beiträge zur Naturkunde Serie A, Neue Serie* **1**: 301-344.
- ASSING V. (2009a): On the Western Palaearctic species of *Carcinocephalus* (Coleoptera: Staphylinidae: Omaliinae). — *Linzer biologische Beiträge* **41** (1): 463-469.
- ASSING V. (2009b): On the identity of some *Acanthoglossa* and *Hypomedon* species, primarily from the Mediterranean region (Coleoptera: Staphylinidae: Paederinae). — *Linzer biologische Beiträge* **41** (2): 1161-1173.
- ASSING V. (2011): The *Sunius* species of the Palaearctic region (Coleoptera: Staphylinidae: Paederinae). — *Linzer biologische Beiträge* **43** (1): 151-193.
- ASSING V. (in press a): A revision of the genus *Neosclerus* CAMERON (Coleoptera: Staphylinidae: Paederinae). — *Beiträge zur Entomologie, Keltern* **61** (1) (2011).
- ASSING V. (in press b): A revision of the genus *Panscopaeus* SHARP, 1889 (Coleoptera: Staphylinidae: Paederinae). — *Beiträge zur Entomologie, Keltern* **61** (2) (2011).
- CAMERON M. (1931): The fauna of British India including Ceylon and Burma. Coleoptera. Staphylinidae. Volume 2. — London, Taylor and Francis: viii + 1-257.
- LÖBL I. & A. SMETANA (2004): Catalogue of Palaearctic Coleoptera. Volume 2. Hydrophiloidea – Histeroidea – Staphylinidae. — Apollo Books, Stenstrup, 942 pp.
- SMETANA A. (2004): Subfamily Paederinae FLEMING, 1821. — In: LÖBL I. & A. SMETANA (eds), Catalogue of Palaearctic Coleoptera. Volume 2. Hydrophiloidea – Histeroidea – Staphylinidae. — Apollo Books, Stenstrup: 579-624.

Author's address:

Dr. Volker ASSING
Gabelsbergerstr. 2
D-30163 Hannover, Germany
E-mail: vassing.hann@t-online.de

ZOBODAT - www.zobodat.at

Zoologisch-Botanische Datenbank/Zoological-Botanical Database

Digitale Literatur/Digital Literature

Zeitschrift/Journal: [Linzer biologische Beiträge](#)

Jahr/Year: 2011

Band/Volume: [0043_1](#)

Autor(en)/Author(s): Assing Volker

Artikel/Article: [Trisunius gen.nov. from the southern East Palaearctic and the Oriental regions \(Coleoptera: Staphylinidae: Paederinae: Medonina\) 195-220](#)