Contributions to the knowledge of the Quediina (Coleoptera: Staphylinidae, Staphylinini) of China. Part 52. Genus *Quedius* STEPHENS, 1829. Subgenus *Raphirus* STEPHENS, 1829. Section 14. Genus *Quetarsius* SMETANA, 1996. Section 1.

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A b s t r a c t : Two new species of the subgenus *Raphirus* STEPHENS, 1829 of *Quedius* STEPHENS, 1829 are described based on specimens from the People's Republic of China: *Q. liangtangi* nov.sp. (Yunnan) and *Q. bleptikos* nov.sp. (Yunnan). The species are described, illustrated and distributional data are given. Additional faunistic and bionomic data on numerous previously described species are presented. New faunistic data for *Quetarsius peteri* SOLODOVNIKOV, 2004 are presented.

K e y w o r d s : Coleoptera, Staphylinidae, Staphylinini, Quediina, genus *Quedius*, subgenus *Raphirus*, genus *Quetarsius*, taxonomy, new species, description, geographical distribution, mainland China, Palaearctic Region.

Introduction

This is the fifty-second of a series of papers dealing with the Quediina of the People's Republic of China. It deals with the species of the subgenus *Raphirus* STEPHENS, 1829 of *Quedius* STEPHENS, 1829. *Quedius liangtangi* and *Quedius bleptikos* are described as new, based on specimens from Yunnan. New faunistic and bionomic data on numerous previously described species are presented, including first province records for several species. New faunistic data are presented for *Quetarsius peteri* SOLODOVNIKOV, 2004.

Material and methods

The acronyms used in text when referring to the deposition of the specimens are as follows:

ASC.....Collection of Aleš Smetana, deposited at The National Museum of Nature and Science, Toshiba, Japan

MSC Collection of Michael Schülke, Berlin, Germany

SNUC..... Collection of Shanghai Normal University, Shanghai, Peoples Republic of China

The measurement ratios given in the description are average values when more than one

specimen was available. Label data for holotypes and allotypes are quoted exactly as they appear on the label.

Separate lines are indicated by a slash, when applicable.

Descriptions and additional records

Quedius (Raphirus) liangtangi nov.sp. (Figs 1-8)

T y p e 1 o c a 1 i t y . China: Yunnan, Gongshan County, Qiqi, 1900 m.

T y p e m a t e r i a l. Holotype (♂) and allotype (♀): China: "China: Yunnan Prov. Gongshan County Qiqi alt. 1,900 m 2-VII-2010 Liang Tang leg." (SNUC). Paratype (♂): same data as holotype (ASC).

D e s c r i p t i o n . Head piceous-black, becoming narrowly paler anteriorly, pronotum piceous to piceou-black, with all margins, lateral ones more widely, paler, scutellum pale testaceous, elvtra pale testaceous, abdomen pale testaceous. Palpi pale testaceous, antennae with first three segments pale testaceous, following segments becoming gradually darker, with outer segments more or less piceous. Head rounded, distinctly wider than long (ratio 1.36), eves very large and convex, tempora considerably shorter than length of eyes seen from above (ratio 0.20); two additional setiferous punctures between anterior frontal punctures; posterior frontal puncture almost touching posteriomedial margin of eye, one puncture between it and posterior margin of head; temporal puncture almost touching posterior margin of eye; surface of head with quite fine and dense microsculpture of transverse waves. Antenna long, segment 3 longer than segment 2 (ratio 1.22), following segments longer than wide, gradually becoming shorter, last segment shorter than two preceding segments combined. Pronotum wider than long (ratio 1.20), widest at about posterior third, narrowed anteriad, with lateral margins continuously arcuate with broadly rounded base, transversely convex; dorsal rows each with three punctures, sublateral rows each with one puncture close to anterior margin of pronotum; surface of pronotum with extremely fine (markedly finer and denser than that on head) microsculpture of rudimentary transverse waves, waves becoming more regular and more pronounced near posterior margin of pronotum. Scutellum with a few fine punctures, surface with extremely fine microsculpture of rudimentary transverse waves. Elytra relatively short, at suture somewhat shorter (ratio 0.83), at sides as long as pronotum at midline; punctuation coarse and dense, transverse interspaces between punctures distinctly smaller that diameters of punctures, without microsculpture; pubescence pale testaceous. Wings markedly reduced, non-functional. Abdomen with tergite 7 (fifth visible) without whitish apical seam of palisade setae; tergite 2 (in front of first fully visible tergite) impunctate; punctuation of tergites somewhat finer than that on elytra, more or less evenly covering each tergite, in general becoming finer and sparser toward apex of abdomen; surface between puntures with excessively fine microsculpture of rudimentary striae.

M a l e . First four segments of front tarsus markedly dilated, subbilobed, each densely covered with tenent setae ventrally; segment 2 markedly wider than apex of tibia (ratio 1.43); segment 4 narrower than preceding two segments. Sternite 7 slightly sinuate medioapically, with three long black setae at each side of sinuation, small narrow area

before sinuation impunctate (Fig. 1; sternite 8 with two long black setae on each side, apical margin with rather wide and deep, obtusely triangular medioapical emargination, large triangular area before emargination flattened and smooth (Fig. 2). Genital segment with tergite 10 triangular, markedly narrowed toward arcuate apex, setose as in Fig. 3; sternite 9 with short and wide, rounded basal portion, apical portion with arcuate apex, with differentiated apical and subapical seta on each side, setose as in Fig. 4. Aedoeagus (Figs 5-7) large, elongate, of characteristic shape, median lobe wide, parallelsided in middle portion, anteriorly suddenly narrowed into differentiated attenuate apical portion, on face adjacent to paramere with characteristic carina (Fig. 6); paramere quite long, shaped as in Figs 5, 7, with narrowly arcuate apex slightly exceeding apex of median lobe; four apical setae at apex of paramere, with medial pair conspicuously stronger and longer than lateral pair; two fine setae at each lateral margin below apex and numerous fine setae on each side around and below end of sensory peg setae; sensory peg setae on underside numerous, situated along each lateral margin of apical portion of paramere (Fig. 7).

F e m a l e . First four segments of front tarsus similar to those of male, but considerably less dilated, segment 2 slightly narrower that apex of tibia (ratio 0.83). Tergite 10 of genital segment of characteristic shape, setose as in Fig. 8.

Length 12.0-12.5 mm.

E t y m o l o g y. The specific epithet is patronymic, the species has been named for Liang Tang, Shanghai Normal University, Shanghai, who collected all specimens of the original series and whoes exciting company I enjoyed during his study stay in Ottawa.

Geographical distribution. *Quedius liangtangi* is present known only from the type locality in Gongshan county in northwesternmost Yunnan, west of Salween river.

B i o n o m i c s . Nothing is known about the collecting circumstances of the specimens of the original series.

R e c o g n i t i o n a n d c o m m e n t s . *Quedius liangtangi* is a very distinctive species both in external characters (size, coloration, chaetotaxy of the head and pronotum, kind of punctuation of scutellum, elytra and abdomen) as well as in the shape of the aedoeagus and tergite 10 of female genital segment. The assignment of this species to the subgenus *Raphirus* is tentative, there is a possibility that it actually represents a different genus/subgenus level taxon.

All three specimens of the original series are more or less teneral, therefore the coloration of mature specimens would be somewhat darker than as described.

Quedius (Raphirus) bleptikos nov.sp. (Figs 9-17)

- T y p e locality. Yunnan, Nabanhe Nature Reserve, Bengganghani, Nanmugahe, 22°08'383''N 100°34'126E, 1700 m.
- T y p e m a t e r i a l. Holotype, male and allotype, female: « China: Yunnan Prov. Nabanhe N.R. Bengganghani, Nanmugahe N22.08.383 E100.34.126 / Alt. 1700 m 13-XI-2008 HU Jia-Yao & TANG Liang leg.». Holotype I SNUC, allotype in ASC. Paratypes: Yunnan: same data as holotype, 1♂ (ASC); Nabanhe N. R., Chuguohe, Bengganghani, 1750 m, 28-IV-2009, Jia-Yao Hu & Zi-Wei Yin leg., 1♂ (SNUC).

D e s c r i p t i o n . Body deep black with forebody shiny; maxillary and labial palpi with first segment piceous, following segments brunneotestaceous, antennae black, legs black with tarsi testaceobrunneous. Head of rounded shape, with entirely rounded posterior angles, wider than long (ratio 1.28); eyes very large and convex, tempora reduced to a narrow space between posterior margin of eye and posterior margin of head; no additional setiferous punctures between anterior frontal punctures; posterior frontal puncture touching posteriomedial margin of eye, one puncture between it and posterior margin of head; temporal puncture quite fine, touching posterior margin of eye; surface of head with extremely fine, superficial microsculpture of transverse waves with intermixed micropunctulation. Antenna moderately long, segment 3 vaguely longer than segment 2 (ratio 1.10), following segments longer than wide, gradually becoming shorter, last segment slightly shorter than two preceding segments combined. Pronotum at widest point wider than long (ratio 1.13), broadly rounded basally, markedly narrowed anteriad; dorsal rows each with three punctures; sublateral rows each with one puncture near anterior margin of pronotum, therefore situated considerably before level of large lateral puncture; surface of pronotum with microsculpture similar to that on head to becoming quite rudimentary and difficult to observe on disc of pronotum. Scutellum without punctures, with dense mirosculpture of transverse waves. Elytra at suture vaguely shorter than pronotum at midline (ratio 0.92), at sides as long as pronotum at midline; punctuation very coarse and moderately dense, becoming finer and denser toward each lateral margin and on declivous portion of each elytron, transverse interspaces between punctures on disc about as large as diameters of punctures; surface between punctures without microsculpture; pubescence black. Abdomen with tergite 7 (fifth visible) with distinct whitish apical seam of palisade fringe; tergite 2 (in front of first fully visible tergite) impunctate; punctures on tergites distinctly finer than those on elytra, slightly elongate, punctuation finer than that on elytra, becoming sparser and finer toward apical margin of each tergite, and in general toward apex of abdomen; pubescence black; surface between punctures with extremely fine and dense, here and there rudimentary, microsculpture of transverse striae.

M a l e . First four segments of front tarsus moderately dilated, sub-bilobed, each densely covered with tenent setae ventrally, segment 2 about as wide as apex of tibia, segment 4 narrower than preceding segments. Sternite 7 with apical margin vaguely sinuate, with setae at apical margin as in Fig.10. Sternite 8 with two long setae at each side, with rather deep and wide medioapical emargination, small triangular area before emargination flattened and smooth (Fig. 10). Genital segment with tergite 10 narrow, markedly narrowed toward subtrunctate apex, setose only on apical portion (Fig. 11); sternite 9 rather elongate, with short and wide, rounded basal portion, apical portion with obtuse apex, setose as in Fig. 12. Aedoeagus (Figs 13-16) elongate, median lobe subparallelsided in middle portion, anteriorly rather suddenly attenuated into small, narrow apical portion with subacute apex, with distinct carina below apex on face adjacent to paramere (Figs 14, 15); paramere large, covering almost entire median lobe, with narrowly arcuate apex vaguely exceeding apex of median lobe; four minute setae at apex and one much longer seta at each lateral margin below apex; sensory peg setae on underside of paramere not numerous, forming short row of five or six setae along each lateral margin of apical portion of paramere (Fig. 16).

F e m a l e . First four segments of front tarsus similar to those of male, but much less dilated, segment 2 slightly narrower than apex of tibia. Tergite 10 of female genital seg-

ment very narrow, conspicuously narrowed toward acute apex, bearing numerous long, strong setae on apical half (Fig. 17).

Length 7.0-7.2 mm.

E t y m o l o g y . The specific epithet is the Greek noun $\beta\lambda\epsilon\pi\tau\iota\kappao\varsigma$ (one who is sharp seeing) in apposition. It refers to the large eyes of the species.

Geographical distribution. *Quedius bleptikos* is at present known only from the Nabanhe Natural Reserve in southernmost Yunnan.

B i o n o m i c s . Nothing is known about the collecting circumstances of the specimens of the original series.

C o m m e n t s . The species is quite characteristic, in addition to both the male and female sexual characters (including the unique configuration of the apical setae of paramere), by the combination of the following characters: deep black body with shiny forebody, very large and convex eyes almost eliminating tempora, coarsely punctate elytra, and characteristic punctuation of abdominal tergites (see description).

The allotype is missing last three segments of left antenna.

Quedius (Raphirus) gang SMETANA, 1996

Quedius gang SMETANA, 1996: 232 (Quedius; subgenus Raphirus; description).

N e w r e c o r d s : <u>Fujian</u>: Wushan City, Guadun vill., 27°44'N 117°38'E, 1200-1600 m, 26.V.2012, Peng & Dai leg., 2 spec. (ASC, SNUC). <u>GuanxI</u>: Jinxiu County, Dayaoshan N.R., 850-950 m, 24.VII.2011, Hu & Yin leg., 1 spec. (SNUC).

C o m m e n t s . This is the first record from Guanxi. The species was until now known only from Fujian.

Quedius (Raphirus) assamensis CAMERON, 1932

Quedius assamensis CAMERON, 1932: 293 (Quedius; subgenus Raphirus; description).

N e w r e c o r d s . <u>Yunnan</u>: Jinghong City, Nabanhe N.R., Benggangxinzhai, 1750 m, 3.V.2009, Hu & Yin leg., 1 spec. (SNUC); Nabanhe N.R., Benggganghan, Shanshenmiao, 22.08.450N 100.35.289E, 1750 m, 12.XI.2008, HU Jia-Yao & TANG Liang leg., 1 spec. (ASC).

C o m m e n t s . In mainland China the species is at present known only from Yunnan.

Quedius (Raphirus) chinensis BERNHAUER, 1915

Quedius chinensis BERNHAUER, 1915: 74 (Quedius, subgenus Raphirus; description).

- N e w r e c o r d s : <u>Guangxi</u>: Shangsi County, Shiwandashan N. R., 300-500 m, 23.IV.2011, Zhai, Peng & Zhu leg., 1 spec. (SNUC). <u>Guizhou</u>: Zunyi City, Ginggangbao, 850 m, 18.X.2011, LI Run-Yu leg., 3 spec. (ASC, SNUC). <u>Zhejiang</u>: Linan City, Tianmushan, 300 m, 15.VIII.2010, HU Jia-Yao leg., 1 spec. (SNUC); Hangzhou City, Wesi Station, 1.V.2011, LI Zhen-Li leg., 1 spec. (ASC).
- C o m m e n t s . This is the first record of this species from Guizhou.

Quedius (Raphirus) herbicola SMETANA, 2002

Quedius herbicola SMETANA, 2002: 122 (Quedius; subgenus Raphirus; description; habitat).

N e w r e c o r d s : <u>Guizhou</u>: Suiyang County, KuanKuoshu N.R., Gongtonggou, 1530-1550 m, 7.VIII.2010, L, Yin & Zhai leg., 1 spec. (SNUC). <u>Zhejiang</u>: Anji City, Longwangshan Mt., Qianmutian, 4.8 km, 30°24'N 19°21'E, 1050-1250 m, 8.VI.2012, Hu & Jin leg., 4 spec. (ASC,SNUC); Tianmushan, 6.V.1998, LI Zhen-li leg., 2 spec. (ASC,SNUC); Tianmushan, 300 m, 17.V.2006, Hu & Tang leg., 1 spec. (SNUC); Lin-an City, Mt. Tianmu, Gaolin, 830-900 m, 31.V.2010, Wang, Xu & Zhu leg., 1 spec. (SNUC).

C o m m e n t s . This is the first record of *Q*. *herbicola* from Zhejiang. It was previously known from Chongqing Municipality, Guizhou and Hubei.

Quedius (Raphirtus) chongqingensis ZHENG FA-KE, 2003

- Quedius chongqingensis ZHENG FA-KE, 2003: 294 (Quedius; subgenus Raphirus; description; habitat).
- N e w r e c o r d s . I was able to study two specimens with labels in Chinese as follows: Spec. No 1 (male): "China Sichuan, Jiyunshan Nantong Institute / 1982.VII.12 III-29 / Mt. Jin yun, No. 1". Spec. No. 2 (female): "China Sichuan Jiyunshan Nantong Institute / 1982.VII.12 III-29 / Mo. Jin Yun, No. 1".

C o m m e n t s . The label data agree partially with those given for the holotype of the species (see ZHENG FA-KE 2003: 295), including the date, confirming that the two specimens come from the type locality of the species.

Quedius chongqingensis is in all characters quite similar to *Q. fen* and differs only by the differently shaped aedoeagus, particularly by the shape of median lobe which is narrow, elongate and gradually, almost conically, narrowed into sharp apex.

Length 10.0-11.0 mm.

Quedius (Raphirus) muscicola CAMERON, 1932

Quedius muscicola CAMERON, 1932:295 (Quedius; subgenus Raphirus; description).

N e w r e c o r d s . <u>Gansu</u>: Min Shan, 38 km SSW Longnan, 1500 m, N slope, 33°05"24"N, 6.VIII. 2012, M. Schülke, 3 spec. (ASC,MSC); same, 2080 m, 33°13'03"N, 4.VIII.2012, M. Schülke, 3 spec. (ASC,MSC). <u>ShaanxI</u>: Micang Shan, 42 km S Hanzhong, 1090 m, 32°40'43" N 106°48'33"E, 17.VIII.2012, M. Schülke, 2 spec. (MSC); same, 34 km S Hanzhong, 1460 m, 32°44'22"N 106°51'55"E, 14.VIII.2012, M. Schülke, 2 spec. (MSC); same 40 km SW Hanzhong, 1530 m, N slope, 32°52'25"N 106°37'11"E, 16.VIII.2012, M. Schülke, 2 spec. (MSC); same, 33 km S Hanzhong, 1360 m, 32°44'44"N 106°52'46"E, 15.VIII.2012, M. Schülke, 1 spec. (MSC); same, 40 km SW Hanzhong, 1530 m, 32°52'25"N 106°37'11"E, 16.VIII.2012, M. Schülke, 2 spec. (MSC); same, 40 km SW Hanzhong, 1530 m, 32°52'25"N 106°37'11"E, 16.VIII.2012, M. Schülke, 3 spec. (ASC, MSC); Mts. 36 km SE Longnan, 2170 m, N-slope, 33°13'20"N 105°15'10"E, 31.VII.2012, M. Schülke, 4 spec. (ASC, MSC).

C o m m e n t s . Specimens were taken in makkia type of vegetation by sifting litter and moss; in mixed pine and birch forest on north slope by sifting forest floor litter and mushrooms; in a stream valley in secondary mixed forest on shady S slope by sifting forest floor litter, grass and herbs, and in deciduous forest with bamboo by sifting various litter, grass and moss. This is the first record of *Q. muscicola* from Gansu.

Quedius (Raphirus) leigongshanensis LI, TANG & ZHU, 2007

Quedius leigongshanensis LI, TANG & ZHU, 2007: 264, 267 (Quedius; subgenus Microsaurus; description).

N e w r e c o r d . Zhejiang: Longwang Shan, 3.X.2003, Hu & Tang leg., 1 spec. (ASC).

C o m m e n t. This is the first record of *Q. leigongshanensis* from Zhejiang. It was previously known only from Guizhou.

Quedius (Raphirus) zhoui ZHENG FA-KE, 2003

Quedius zhoui ZHENG FA-KE, 2003: 289 (Quedius; subgenus Raphirus; description; habitat).

N e w r e c o r d . Sichuan: Mt. Emei, 17.VII.2003, Hu & Tang leg., 1 spec. (SNUC).

C o m m e n t . The species is at present known only from Sichuan.

Quedius (Raphirus) puetzi SMETANA, 1998

Quedius puetzi, SMETANA, 1998: 106 (Quedius; subgenus Raphirus; description; characters in key; habitat).

N e w r e c o r d s . <u>Sichuan</u>: Luding County, Hailuogou, 2200-2300 m, 27.VII.2006, Hu & Tang leg., 1 spec. (SNUC); Nanjiang County, Bazhong City, Micang Shan, Daxiaolan-Gou, 32.40.021N 106.54.578E, 1350 m, 29.IV.2008, XU Wang leg., 1 spec. (ASC); Daxue Shan, Hailuogou Glacier Park, Camp 1, 2100 m, 29°36'00"N 102°03'35"E, 27.-31.2005, M. Schülke, 1 spec. (ASC). <u>Yunnan</u>: dali Bai Aut. Pref., Jizu Shan, path to cable car, 37 km NE Dali, 2450 m, 25°58'N 100°23'E, 5.IX.2009, D. W. Wrase [29], 1 spec. (MSC).

C o m m e n t s . These are the first records of *Q. puetzi* from Sichuan. It was previously known from Hubei, Shaanxi and Yunnan. The specimen from Yunnan was taken in mixed forest by sifting moss and floor litter.

Quedius (Raphirus) collinsi SMETANA, 2009

Quedius collinsi SMETANA, 2009: 286 (Quedius; subgenus Raphirus; description; habitat).

N e w r e c o r d . <u>Sichuan</u>: Tianquan Co., Laba River, 39°9'N 102°26'E, 12.VII.2012, Peng, Dai &Yin leg., 2 spec. (ASC, SNUC).

C o m m e n t s . This is the first record of *Q. collinsi* from Sichuan It was previously known only from Chongquing Municipality (Jinfo Shan).

Quedius (Raphirus) viridimicans SMETANA, 2009

Quedius viridimicans SMETANA, 2009: 290 (Quedius; subgenus Raphirus; description; habitat).

N e w r e c o r d s . <u>Yunnan</u>: Nujiang Lisu Aut. Pref., Gongshan Co., Gaoligong Shan, valley at 3000-3050 m, 27°47'90"N 98°30'19"E, 21.VI. 2005, A. Smetana [C 169], 3 spec. (ASC); same data, but M. Schülke, [C20005-16], 1 spec. (MSC).

C o m m e n t s . Specimens were taken in a coniferous forest with *Rhododendron* and broadleaved bushes by sifting litter, moss and dead wood along a creek and snowfields.

Quedius (Raphirus) bisignatus SMETANA, 2002

Quedius bisignatus SMETANA, 2002 132 (Quedius; subgenus Raphirus; description; habitat).

N e w r e c o r d s . <u>Shaanxi</u>: Ningshaan County, Ankang City, Pingheilang, 33°28'N 108°29'E, 2100 m, 13.VII.2012, Pan Yu-Hong leg., 2 spec. (ASC, SNUC). <u>Fujian</u>: Wuyishan City, Guadun vill., 27°44'N 117°38'E, 1500 m, 25.V.2012, Peng & Dai leg., 2 spec. (ASC, SNUC).

C o m m e n t s . This is the first record of *Q. bisignatus* from Fujian. It was previously known only from Shaanxi.

Quetarsius peteri SOLODOVNIKOV, 2004

Quetarsius peteri SOLODOVNIKOV, 2004: 658 (Quetarsius; description).

N e w r e c o r d . <u>Jiangxi</u>: Jinggangshan City, Jinggangshan N. R., Jingzhushan, 1000-1200 m, 19.X.2010, Peng, Zhai & Zhu leg., 2♂♂ (ASC, SNUC).

C o m m e n t s . This is the first record of *Quetarsius peteri* from Jiangxi. It was previously known only from Fujian.

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Zusammenfassung

Die zwei neuen Arten *Quedius (Raphirus) liangtangi* nov.sp. (Yunnan) und *Quedius (Raphirus) bleptikos* nov.sp. (Yunnan) werden beschrieben und abgebildet. Weitere Nachweise von mehrerer Arten werden gemeldet. Es gelang ein erster Nachweis von *Quetarsius peteri* SOLODOVNIKOV, 2004 aus Jiangxi.

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Figs 1-7: *Quedius liangtangi* nov.sp.: (1) apical portion of male sternite 7 (only setae at apical margin and around medial impunctate area are shown); (2) apical portion of male sternite 8; (3) tergite 10 of male genital segment; (4) sternite 9 of male genital segment; (5) aedoeagus, ventral view; (6) apical portion of median lobe, paramere removed; (7) apical portion of underside of paramere with sensory peg setae.

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Figs 8-17: *Quedius liangtangi* nov.sp.: (8) tergite 10 of female genital segment. *Quedius bleptikos* nov.sp.: (9) apical portion of male sternite 7 (only setae at and near apical margin are shown); (10) apical portion of male sternite 8; (11) tergite 10 of male genital segment; (12) sternite 9 of male genital segment; (13) aedoeagus, ventral view; (14) apical portion of median lobe, paramere removed; (15) apical portion of median lobe, lateral view, paramere removed; (16) apical portion of underside of paramere with sensory peg setae; (17) tergite 10 of female genital segment.

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