New species and additional records of Lomechusini from the Palaearctic region (Coleoptera: Staphylinidae: Aleocharinae)

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Abstract

Ten species of Palaearctic Lomechusini are described and illustrated: *Pella kirgisica* **n. sp.** (Kyrgyzstan), *P. puetzi* **n. sp.** (China: Yunnan), *Tetrabothrus puetzi* **n. sp.** (China: Yunnan), *Amaurodera schuelkei* **n. sp.** (China: Yunnan), *Orphnebius paucisetosus* **n. sp.** (eastern Nepal), *O. scissus* **n. sp.** (China: Yunnan), *O. truncus* **n. sp.** (China: Yunnan), *O. tricuspis* **n. sp.** (China: Yunnan), *Lomechusa gerardiphila* **n. sp.** (Spain: Andalucía), and *Zyras (Termidonia) viti* **n. sp.** (Taiwan). The previously unknown sexual characters of *Orphnebius oculatus* Coiffait, 1982 are described and illustrated. The following synonymies are proposed: *Peltodonia* Bernhauer, 1936, **n. stat.** = *Chaetosogonocephus* Pace, 1987, **n. syn.**; *Peltodonia bodemeyeri* (Bernhauer, 1936) = *Chaetosogonocephus adventicius* Assing, 2004, **n. syn.** The species previously attributed to *Chaetosogonocephus* are moved to *Peltodonia*. The distribution of *P. bodemeyeri* is mapped. Additional records of various Palaearctic Lomechusini species are reported, among them several new country records.

Keywords: Staphylinidae, Aleocharinae, Lomechusini, Palaearctic region, taxonomy, new species, new synonymies, new combinations, distribution, new records, myrmecophily, termitophily.

Zusammenfassung

Zehn Arten der Tribus Lomechusini werden aus der Paläarktis beschrieben und abgebildet: *Pella kirgisica* **n. sp.** (Kirgistan), *P. puetzi* **n. sp.** (China: Yunnan), *Tetrabothrus puetzi* **n. sp.** (China: Yunnan), *Amaurodera schuelkei* **n. sp.** (China: Yunnan), *Orphnebius paucisetosus* **n. sp.** (Ost-Nepal), *O. scissus* **n. sp.** (China: Yunnan), *O. truncus* **n. sp.** (China: Yunnan), *O. tricuspis* **n. sp.** (China: Yunnan), *Lomechusa gerardiphila* **n. sp.** (Spanien: Andalusien) und *Zyras (Termidonia) viti* **n. sp.** (Taiwan). Die bisher unbekannten Sexualmerkmale von *Orphnebius oculatus* Coiffait, 1982 werden beschrieben und abgebildet. Folgende Synonymisierungen werden vorgenommen: *Peltodonia* Bernhauer, 1936, **n. stat.** = *Chaetosogonocephus* Pace, 1987, **n. syn.**; *Peltodonia bodemeyeri* (Bernhauer, 1936) = *Chaetosogonocephus adventicius* Assing, 2004, **n. syn.** Die bisher der Gattung *Chaetosogonocephus* zugeordneten Arten werden in die Gattung *Peltodonia* gestellt. Für *P. bodemeyeri* wird eine Verbreitungskarte erstellt. Weitere Nachweise (darunter mehrere Länder-Erstnachweise) paläarktischer Lomechusini werden gemeldet.

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1 Introduction

According to the Palaearctic catalogue (Smetana 2004) and recent articles not included in the catalogue (Assing 2003, 2004a, 2005a–c, 2006b–e, 2007, 2008a, 2008b; Hlaváč 2005a, b; Maruyama 2006a, b; Maruyama & Hlaváč 2004; Maruyama & Kishimoto 2002a, b; Lecoq & Quéinnec 2005; Pace 2004), the Lomechusini are represented in the Palaearctic region by 23 genera and some 250 species. The Lomechusini have received more attention by taxonomists than most other groups of Palaearctic Aleocharinae. Several of the more speciose genera have been comprehensively revised only recently: *Lomechusa* Gravenhorst, 1806 (Palaearctic region) by Hlaváč (2005a), *Amaurodera* Fauvel, 1905 (Palaearctic) by Assing (2003, 2005c, 2006b), *Drusilla* Leach, 1819 (Western Palaearctic, Middle Asia, Japan) by Assing (2002, 2005a, 2005b, 2006a, 2007, 2008b) and Maruyama & Kishimoto (2002a, b), *Orphnebius* Motschulsky, 1858 (Palaearctic) by Assing (2006c, d), *Pella* Stephens, 1835 (Palaearctic) by

Maruyama (2006a) and Assing (2007, 2008a), and *Tetrabothrus* Bernhauer, 1915 (Himalaya) by Assing (2006e). Apart from most of the Eastern Palaearctic representatives of *Drusilla*, the only larger genera for which comprehensive revisions are still required are *Lomechusoides* (19 valid species in the Palaearctic region), *Myrmoecia* Mulsant & Rey, 1874 (17 species), and especially *Zyras* Stephens, 1835 (86 species).

The foremost reason for the attention that the Lomechusini have attracted is probably that a large proportion of the species are more or less strictly associated with ants or termites, have evolved more or less conspicuous morphological, physiological, and behavioural adaptations, and are consequently of particular interest from a more general biological perspective. However, for a considerable number of species, myrmecophily has not been confirmed and is rather unlikely, since they are usually found without ants. This is at least true of a portion of the *Drusilla* and *Pella* species, although Maruyama (2006a) suggests otherwise. It is probably true also of some species in other genera such as *Amaurodera* and *Myrmoecia*.

The present paper is based on material of Lomechusini – predominantly of previously revised genera – that has become available for examination in the past few years. The study not only yielded additional records of zoogeographic interest, but also ten species new to science.

Acknowledgements

My thanks are due to the colleagues indicated in the material section for the loan of material under their care. In particular, I am indebted to Michael Schülke, Berlin, Andreas Pütz, Eisenhüttenstadt, Ludger Schmidt, Hannover, and Stanislav Vit, Genève, for the most generous gift of the holotypes of several species described in this paper. Bernhard Seifert, Görlitz, identified the host ant of *Lomechusa gerardiphila* n. sp. Moreover, I am grateful to Christopher Majka, Halifax, for stylistic improvement and to Benedikt Feldmann, Münster, and Heinrich Terlutter, Billerbeck, for proof-reading the manuscript.

2 Material, methods, and depositories

In all, 269 specimens deposited in the following public institutions and private collections were examined:

cAss	author's private collection
cFel	private collection B. Feldmann, Münster, Germany
cHir	private collection G. Hirthe, Damm, Germany
cKas	private collection V. Kastcheev, Almaty, Kazakhstan
cPüt	private collection A. Pütz, Eisenhüttenstadt, Germany
cRou	private collection G. de Rougemont, Londinières, France
cSch	private collection M. Schülke, Berlin, Germany
cSol	private collection A. Solodovnikov, Copenhagen, Denmark
cVav	private collection J. Vávra, Ostrava-Krásné Pole, Czech Republic
DEI	Deutsches Entomologisches Institut, Müncheberg, Germany (L. Zerche)
FMNH	Field Museum of Natural History, Chicago, USA (J. H. Boone, A. F. Newton)
MCSNV	Museo Civico di Storia Naturale, Verona, Italy (L. Latella)
MHNG	Muséum d'Histoire Naturelle, Genève, Switzerland (G. Cuccodoro)
NHMW	Naturhistorisches Museum Wien, Austria (H. Schillhammer)
NME	Naturkundemuseum, Erfurt, Germany (M. Hartmann)
SNSD	Staatliche Naturkundliche Sammlungen, Dresden, Germany (O. Jäger)

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena) with a drawing tube. For the photographs a digital camera (Nikon Coolpix 995) was used. The map was generated using the online generic mapping tool (GMT) of the Geomar website at www.aquarius.ifm-geomar.de/omc.

Head length was measured from the anterior margin of the clypeus (without ante-clypeus) to neck, elytral length at the suture from the apex of the scutellum to the posterior elytral margin.

Labels of type material are cited in their original spelling and language, except for the following adaptations according to the general format requirements of the journal: names of persons (except authors of species) in small capitals, scientific names of genera and species in italics, dates with the months always in Roman numbers.

3 Results

3.1 Genus *Drusilla* Leach, 1819

Fifty-two *Drusilla* species are currently known from the Palaearctic region. According to recent revisions, 31 species are represented in the Western Palaearctic region and Middle Asia, seven of them in the subgenus *Apteranopsis* Jeannel, 1960 and the remainder in the nominal subgenus (Assing 2002, 2005a, 2005b, 2006a, 2007, 2008b). There is no confirmed evidence that the Western Palaearctic and Middle Asian species are myrmecophilous. The vast majority of species from the Eastern Palaearctic are unrevised.

Drusilla canaliculata (Fabricius, 1787)

Additional material examined (total: 40 exs.)

Spain: 1 ex., Soria, Puerto de Oncala, 1450 m, 31.V.1999, leg. Assmann (cFel).

Turkey: **Erzurum**: 2 exs., 30–45 km NE Erzurum, Dumludağı, ca. 40°08'N, 41°24'E, 2200–2500 m, 14.VI.1998, leg. Solodovnikov (cAss, cSol); 1 ex., 35 km NW Tortum, Mescit Dağları, ca. 40°30'N, 41°25'E, 2100 m, poplar litter, 18.VI.1998, leg. Solodovnikov (cAss); 1 ex., 40 km NW Tortum, Mescit Dağları, ca. 40°36'N, 41°23'E, 2100 m, pine forest, 20.VI.1998, leg. Solodovnikov (cAss). – **Gümüşhane**: 1 ex., ca. 50 km SW Trabzon, 9–10 km S Dikkaya, ca. 40°36'N, 39°29'E, 2000 m, 9.VI.1998, leg. Solodovnikov (cAss).

Russia: 7 exs., White Sea area, Kandalakscha Bay, 6.–19. VIII.1991, leg. Hirthe (cHir, cAss); 2 exs., Tulskaja oblast, Gal-

itsa env., NW Jefremov, 53°09'N, 37°59'E, 24.IV.1986, leg. PÜTZ (cAss, cPüt).

Georgia: 3 exs., Likhskiy Khrebet ["Meskisches Gebirge"], leg. LEDER (MCSNV).

Kazakhstan: 4 exs., Altai, Marchikha river, 8.VII.1991, leg. KASTCHEEV (cAss, cKas); 6 exs., Almaty, Kaskelen, 28.V.1984, leg. KASTCHEEV (cAss); 3 exs., Dzhungar mt., Aksu river, near Suyksai, 16.VIII.1987, leg. KASTCHEEV (cAss); 4 exs., Dzhungar mt., Keskenterek river, 23.VIII.1987, leg. KASTCHEEV (cAss); 2 exs., Dzhungar Alatau, Golubinovka, 3.VI.1984, leg. KASTCHEEV (cAss); 3 exs., Dzhungar and Kokjota mt., 12.VIII.1987, leg. KASTCHEEV (cAss, cKas).

Comment

Although a macropterous morph is unknown, this trans-Palaearctic species is remarkably widespread. For more records and maps illustrating its distribution in Turkey and Italy see ASSING (2005a, 2005b, 2006a, 2008b).

Drusilla limata Assing, 2005

Additional material examined (total: 4 exs.)

Turkey: **Antalya**: 2 exs., N Alanya, 5 km W Gündoğmus, 36°49'N, 31°57'E, 980 m, 26.IV.2008, leg. BRACHAT & MEYBOHM (cAss); 1 ex., N Side, Yaylaalan, 36°57'N, 31°30'E, 460 m, 27.IV.2008, leg. BRACHAT & MEYBOHM (cAss). – **Karaman**: 1 ex., Baçyaya, 6 km direction Taşkent, 21.IV.2008, leg. BRACHAT & MEYBOHM (cAss).

Comment

This recently described species was previously known only from two localities in Antalya province, southern Turkey (ASSING 2005a). The spermatheca of the female from Karaman is of slightly different morphology and, in addition, the antennae are darker than is usually the case in *D. limata*. More material is needed to decide if it is indeed conspecific with *D. limata* or if it represents a different species.

Drusilla recta Assing, 2005

Additional material examined (total: 2 exs.)

Turkey: **Antalya**: 2 exs., 5 km NE Gazipaşa, 36°17'N, 32°22'E, 50 m, 24.IV.2008, leg. BRACHAT & MEYBOHM (cAss).

Comment

The distribution of *D. recta* is confined to Mersin, eastern Antalya, and Konya provinces, southern Anatolia (ASSING 2005a, 2008b).

Drusilla cernens Assing, 2005

Additional material examined (total: 7 exs.)

Israel: 2 exs., North district, Upper Galilee, Alma plateau, S Alma village, Alma cave environs, 33°02'N, 35°31'E, 630 m, stony pasture, under stones, 9.III.2008, leg. WRASE (cSch, cAss); 2 exs., Upper Galilee, Alma env., cave, 9.III.2008, leg. BUSE (cFel); 1 ex., North district, Upper Galilee, Meron Mts., Nakhar (Wadi) Moran, 1 km W Meron field school, 900 m, leaf litter sifted, 11.III.2008, leg. WRASE (cSch); 2 exs., Upper Galilee, Meron, 8.III.2008, leg. BUSE (cFel).

Comment

The distribution of this species is confined to the Middle East, from central southern Anatolia to Israel, from where it was reported for the first time only recently (ASSING 2005a, 2008b).

Drusilla alutacea Reitter, 1901

Additional material examined (total: 6 exs.)

Kazakhstan: 2 exs., SE-Kazakhstan, Ile river, splav, Aral-tobe, 23.VIII.1982, leg. KASTCHEEV (cAss, cKas); 1 ex., Ile river, splav, Karagach, 10.VII.1982, leg. KASTCHEEV (cAss); 2 exs., Ile river, splav, Bakanas, 2.VI.1989, leg. KASTCHEEV (cAss); 1 ex., Balkhash, Karatal river, 1.VII.2004, leg. KASTCHEEV (cAss).

Comment

Previously, only material from Tajikistan and Uzbekistan had been examined (ASSING 2005b). The above specimens represent the first confirmed records from Kazakhstan.

3.2 Genus *Pella* Stephens, 1835

According to a recent revision (MARUYAMA 2006a) and subsequent additions (ASSING 2007, 2008a), the genus is represented in the Palaearctic region by 43 species. This figure does not include *Pella pumila* (Fiori, 1914), presumably a junior synonym of *P. similis* (Märkel, 1845), but nevertheless listed as "incertae sedis" by MARUYAMA (2006a). Most species are apparently more or less strictly associated with ants. At least in the Western Palaearctic region there are, however, some species which are usually collected without ants and for which myrmecophily has not been confirmed [e. g. *Pella limbata* (Paykull, 1789)].

Pella humeralis (Gravenhorst, 1802)

Additional material examined (total: 6 exs.)

Turkey: **Bolu**: 1 ex., Abant Gölü, 1200 m, 4.–23.VI.1996, leg. Vávra (cVav). – **Sinop**: 1 ex., Çangal Dağı, 16.–26.V.1957, leg. Schubert (NHMW); 1 ex., Çangal Dağı, VI.1959, leg. Schubert (NHMW); 1 ex., Çangal Dağı, 8.–16.VII.1961, leg. Schubert (NHMW); 1 ex., Çangal Dağı, V.1962, leg. Schubert (cAss). – **Artvin**: 1 ex., Borçka, 1700 m, 18.–27.VI.1970, leg. Schubert (NHMW).

Kazakhstan: 1 ex., Altai, Marchikha river, 8.VII.1991, leg. Kastcheev (cAss).

Comment

In Turkey, the distribution of this common trans-Palaearctic species is confined to the north (Assing 2008a).

Pella erratica (Hagens, 1863)

Additional material examined (total: 1 ex.)

Turkey: **Sinop**: 1 ex., Çangal Dağı, 8.–16.VII.1961, leg. Schubert (NHMW).

Comment

This rare species is widespread in the Mediterranean and in the southern parts of Central Europe. It is herein reported from Turkey for the first time.

Pella cognata (Märkel, 1842)

Additional material examined (total: 2 exs.)

Turkey: **Sinop**: 1 ex., Çangal Dağı, 16.–26.V.1957, leg. Schubert (NHMW).

Russia: 1 ex., Tulskaja oblast, Jefremov, 53°09'N, 38°07'E, 27.IV.1986, leg. Pütz (cAss).

Comment

Pella cognata has a Ponto-Mediterranean distribution ranging to Ukraine, the Baltic countries, Scandinavia, the British Isles, and France. It is herein reported from Turkey and the Russian Central European territory for the first time.

Pella similis (Märkel, 1845)

Additional material examined (total: 2 exs.)

Turkey: **Kastamonu**: 1 ex., Ilgaz Dağı, leg. Schubert (cAss). – **Karaman**: 1 ex., Ermenek-Gülnar, Moca Geçidi, 36°32'N, 33°00'E, 1420 m, 21.IV.2008, leg. Brachat & Meybohm (cAss).

Comment

The species is widespread, but not very common in the Mediterranean region and in Central Europe. In Turkey, it was previously known from Sinop and Kahramanmaraş provinces (Assing 2004b, 2006f, 2008a; Maruyama 2006a). The above specimen from Karaman was collected from a nest of *Lasius* sp.

Pella ruficollis (Grimm, 1845)

Additional material examined (total: 5 exs.)

Turkey: **Isparta**: 5 exs., Sütçüler, NE Keşmeköy, 37°28'N, 31°16'E, 1000 m, 14.IV.2008, leg. Brachat & Meybohm (cAss).

Comment

The species has a Ponto-Mediterranean distribution. In Turkey, it was previously known only from Izmir. The above specimens were collected from a nest of *Myrmica* cf. *rubra*.

Pella limbata (Paykull, 1789)

Additional material examined (total: 1 ex.)

Kazakhstan: 1 ♀, Tarbagata range, 47°14'N, 81°43'E, 1100 m, 27.V.2007, leg. Cooter (cAss).

Comment

The species is widespread and common in Europe and was recorded also from eastern Siberia by Shavrin (2007). It is herein reported from Kazakhstan and Middle Asia for the first time. Maruyama (2006a) states that *P. limbata* may be associated with the ant *Lasius fuliginosus*. Based on the ample collection data available from Europe, especially Central Europe, and on personal observations, however, the species is not strictly associated with any ant species and is generally not found in ant nests. Nevertheless, it seems quite possible that, like *Drusilla canaliculata*, it preys on foraging *Lasius* workers.

Pella kirgisica **n. sp.**
(Figs. 1–8)

Type material

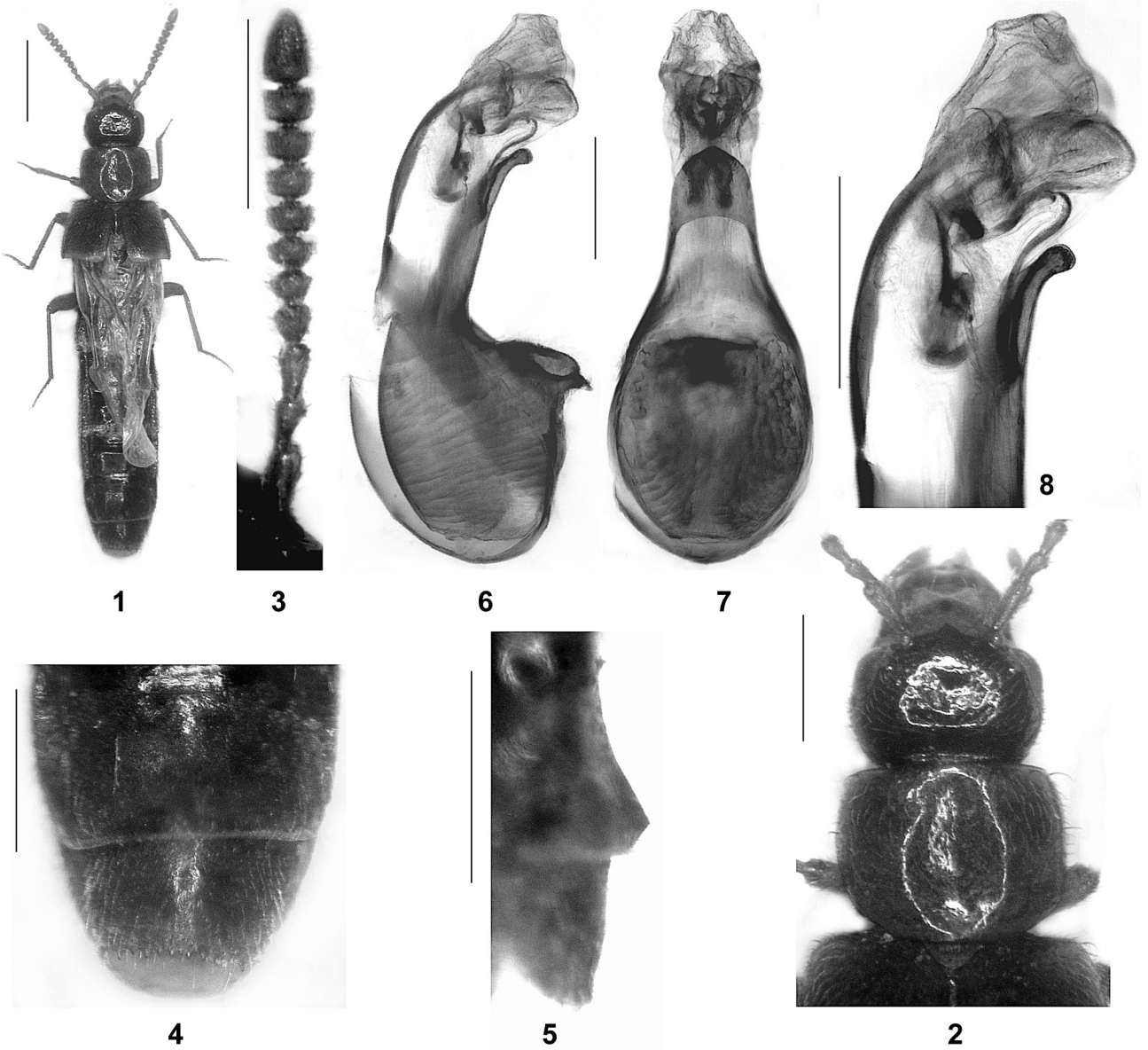
Holotype ♂: "Kyrgyzstan, Tschui, U. Bischkek, Boz Pel'dek, 24.III.2007, N42°45'47", E74°33'51", 1153 m, leg. L. Schmidt / Holotypus ♂ *Pella kirgisica* sp. n. det. V. Assing 2008" (cAss).

Etymology

The name is derived from the ancient name of the region where the type locality is situated.

Description

Body length: 6.2 mm. Habitus as in Fig. 1. Coloration: head and abdomen blackish; pronotum reddish; elytra



Figs. 1–8. *Pella kirgisica* n. sp., holotype. – **1**. Habitus. **2**. Head and pronotum. **3**. Antenna. **4**. Male abdominal segments VII–VIII in dorsal view. **5**. Male tergites VII–VIII in lateral view. **6–7**. Median lobe of aedeagus in lateral and in ventral view. **8**. Apex of median lobe of aedeagus in lateral view. – Scale bars: 1.0 mm (1), 0.5 mm (2–5), 0.2 mm (6–8).

dark yellowish with the disc extensively and diffusely infuscate; legs, antennae, and mouthparts reddish.

Head (Fig. 2) approximately 1.15 times as wide as long; punctation in lateral dorsal area rather coarse and moderately dense, with interstices on average approximately as wide as punctures; median dorsal area impressed (sexual dimorphism) and impunctate; pubescence greyish, long, suberect, and directed diagonally postero-mediad; integument with indistinct traces of shallow microsculpture and glossy. Eyes approximately as long as postocular region in dorsal view. Antenna with antennomeres II and III oblong and of subequal length; III moderately transverse and oval-shaped in cross-section; IV approximately 1.5 times as wide as long; V–X approximately twice as wide as long; XI of conical shape, almost as long as combined length of IX and X (Fig. 3).

Pronotum (Fig. 2) 1.25 times as wide as long and 1.18 times as wide as head, widest in anterior half; in the middle with extensive oval impression (sexual dimorphism?); punctation very fine, barely noticeable; pubes-

cence shorter and more depressed than that of head; microsculpture absent; pronotal hypomera visible in lateral view.

Elytra approximately as long as pronotum; punctation moderately dense, more distinct than that of pronotum; pubescence similar to that of pronotum. Hind wings fully developed. Metatarsomere I slightly longer than II, much shorter than combined length of II and III.

Abdomen subparallel, with very sparse and fine punctation and very shallow microsculpture, shiny; posterior margin of tergite VII with pronounced palisade fringe.

♂: tergite VII in posterior half with keel, this keel indistinct anteriorly, its elevation gradually increasing caudad, and pronounced at posterior margin (Fig. 5); tergite VIII with truncate and distinctly denticulate (approximate 15 teeth) posterior margin (Fig. 4); sternite VIII slightly longer than tergite VIII, its posterior margin membranous and weakly convex; median lobe of aedeagus as in Figs. 6–8.

♀: unknown.

Comparative notes

Based on the external and sexual characters, *P. kirgisica* refers to the *P. excepta* group, which currently includes seven species from the Mediterranean region and Middle Asia (Assing 2008a, Maruyama 2006a). *Pella kirgisica* is readily separated from all these species by the medially impressed and impunctate (male) head, the modifications of the male tergite VII, and by the distinctive shape of the median lobe of the aedeagus, especially by the shape of the apex of the ventral process in lateral view. Five species of the *P. excepta* group have been recorded from Middle Asia and Turkey: *P. cinctipennis* (Eppelsheim, 1884), *P. bohaci* (Dvořàk, 1984), *P. kuluensis* (Cameron, 1939), *P. sultanica* Assing, 2008, and *P. discolor* Assing, 2008. From these species, *P. kirgisica* is additionally distinguished as follows:

from *P. cinctipennis* (Middle Asia, Turkey) by the distinctly bicoloured body, the smaller eyes, the shorter setae at the lateral margins of the pronotum, and the more distinctly denticulate posterior margin of the male tergite VIII;

from *P. bohaci* (Middle Asia) and *P. kuluensis* (Pakistan) by larger body size, the distinctly bicoloured body, smaller eyes, the less transverse pronotum, and the much more strongly denticulate posterior margin of the male tergite VIII;

from the similarly coloured *P. discolor* (Turkey) by more transverse antennomeres IV–X, coarser punctation and longer pubescence of the head, slightly smaller eyes, more distinct punctation of the pronotum, and the median impression of the (male?) pronotum;

from *P. sultanica* (Turkey), whose male sexual characters are unknown, by somewhat smaller size, the more transverse antennomere X, and by a much less transverse pronotum (in *P. sultanica* at least 1.4 times as wide as long) with less distinct punctation.

For illustrations of the above species see Maruyama (2006a) and Assing (2008a).

Distribution and bionomics

The type locality is situated in northern Kyrgyzstan, near the town Bishkek. The holotype was collected at an altitude of approximately 1150 m.

Pella puetzi **n. sp.**
(Figs. 9–14)

Type material

Holotype ♂: "China: Yunnan [CH07-28], Nujiang Lisu Aut. Pref., Gaoligong Shan, side valley 19 km NW Liuku, 25°59'02"N, 98°42'23"E, 2730 m, devast. prim. forest, litter sifted, 9.VI.2007, leg. A. Pütz / Holotypus ♂ *Pella puetzi* sp. n. det. V. Assing 2008" (cAss).

Etymology

The species is dedicated to Andreas Pütz, Eisenhüttenstadt, specialist of Byrrhidae, who collected the holotype.

Description

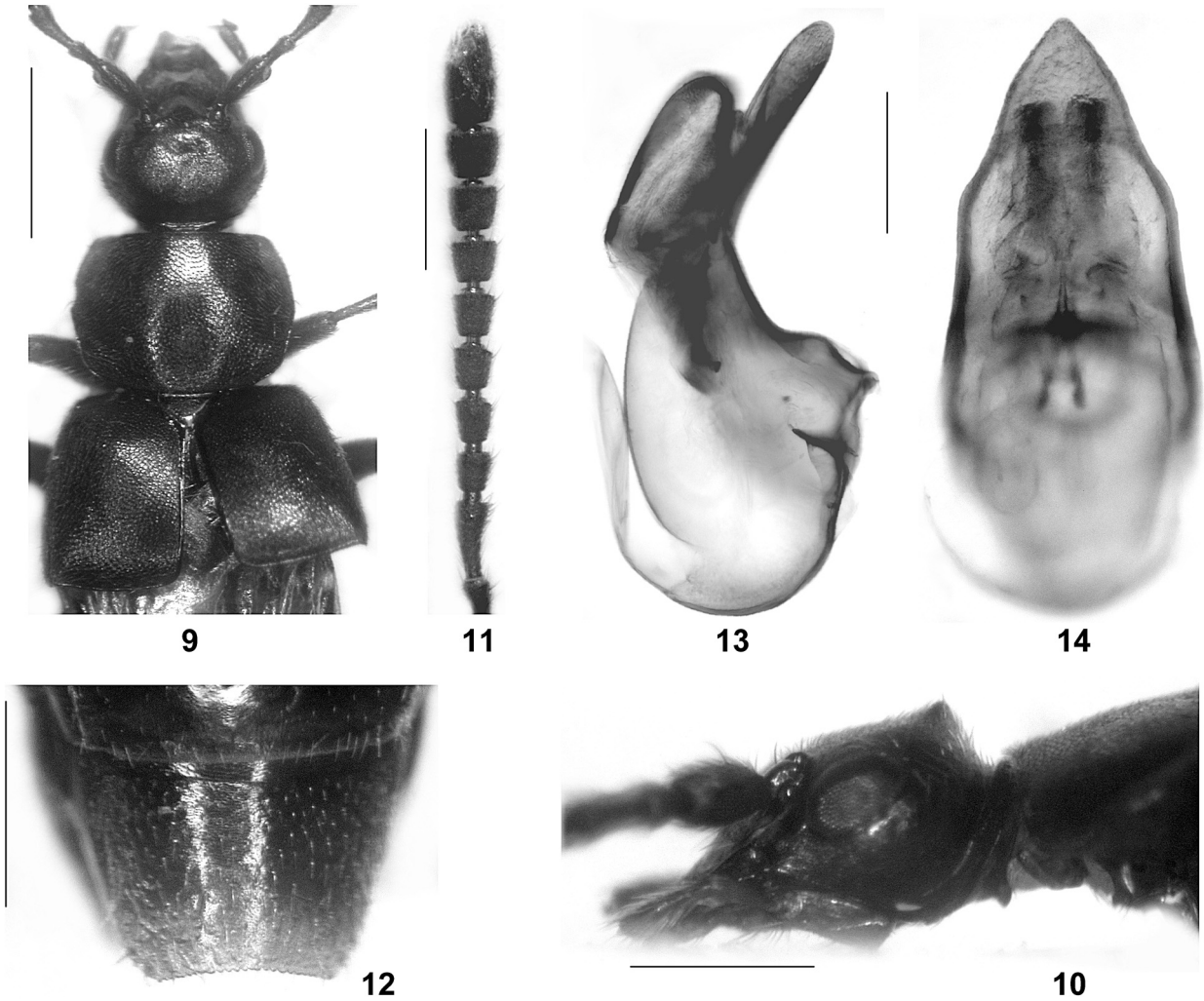
Body length: 8.0 mm. Coloration: head blackish; pronotum and elytra uniformly blackish brown; abdomen blackish, with the posterior margins of the segments reddish brown; femora dark brown; tibiae and tarsi reddish-brown; antennae reddish-brown, with antennomere I blackish.

Head (Fig. 9) almost 1.20 times as wide as long; frons with rather shallow microreticulation and some luster; remainder of dorsal surface with pronounced microreticulation and matt; punctation very fine, barely noticeable within the microsculpture. Eyes slightly longer than postocular region in dorsal view. Antennae long (2.65 mm); antennomere X indistinctly transverse, almost as long as wide; XI approximately as long as I (Fig. 11).

Pronotum (Fig. 9) 1.32 times as wide as long and 1.37 times as wide as head; maximal width approximately at the middle; posterior angles weakly marked, almost obsolete; punctation dense and fine, much more distinct than that of head; interstices with shallow microsculpture and some luster; hypomera fully visible in lateral view.

Elytra approximately 0.95 times as long as pronotum; punctation slightly denser than that of pronotum; microsculpture somewhat more pronounced than that of pronotum. Hind wings fully developed. Metatarsomere I slightly longer than combined length of II and III.

Abdomen with very sparse punctation and shallow transverse microsculpture, shiny; posterior margin of tergite VII with distinct palisade fringe.



Figs. 9–14. *Pella puetzi* n. sp., holotype. – **9**. Forebody. **10**. Head in lateral view. **11**. Antenna. **12**. Male tergite VIII in dorsal view. **13**, **14**. Median lobe of aedeagus in lateral and in ventral view. – Scale bars: 1.0 mm (9), 0.5 mm (10–12), 0.2 mm (13–14).

♂: posterior margin of head distinctly angled in the middle (Fig. 10); posterior margin of tergite VIII broadly concave and finely crenulate (Fig. 12); sternite VIII somewhat longer than tergite VIII, its posterior margin membranous and weakly convex; median lobe of aedeagus as in Figs. 13, 14.

♀: unknown.

Comparative notes

Based on the shape of the pronotum and above all the morphology of the aedeagus the species refers to the *P. cognata* group; according to Maruyama (2006a), the only representative of the *P. cognata* group known from China is *P. kishimotoi* Maruyama, 2006. From this species, *P. puetzi* is distinguished by the uniformly blackish to blackish-brown coloration of the forebody, the longer antennae with less transverse antennomeres IV–X, the sexual dimorphism of the head, and the different shape of the ventral process of the aedeagus, especially in ventral view. For illustrations of *P. kishimotoi* see Maruyama (2006a).

Distribution and bionomics

The type locality is situated in the Gaoligong Shan, to the northwest of Liuku in western Yunnan province, China. The holotype was sifted from leaf litter in a degraded primary forest at an altitude of 2730 m.

3.3 Genus *Myrmoecia* Mulsant & Rey, 1874

The distribution of this genus is confined to the Western Palaearctic region, where it is represented by 17 species.

Myrmoecia plicata (Märkel, 1845)

Additional material examined (total: 1 ex.)

Turkey: **Adıyaman**: 1 ex., 5 km SW Tut, 11.III.2007 (cAss).

Comment

The general distribution of the rarely found *M. plicata* is of the Ponto-Mediterranean type. In Turkey, it was previously known from three localities in Manisa, Kastamonu, and Muğla (Assing 2006f, 2007).

3.4 Genus *Peltodonia* Bernhauer, 1936

Peltodonia Bernhauer, 1936: 320 f.
Chaetosogonocephus Pace, 1987: 218; **n. syn.**

Peltodonia was previously treated as a subgenus of *Zyras* Stephens, 1835 and included only the type species *Zyras bodemeyeri* Bernhauer, 1936 from Turkey. Since this species is evidently not congeneric with *Zyras haworthi* (Stephens, 1832), the type species of *Zyras*, *Peltodonia* is elevated to generic rank.

The genus *Chaetosogonocephus* was originally described to accommodate only the type species (by original designation) *C. rougemonti* Pace, 1987 from Malaysia (Pace 1987). Additional species subsequently attributed to *Chaetosogonocephus* are *C. chinensis* from China (Pace 1998b), *C. adventicius* from Turkey (Assing 2004a), and four taxa recently described from Borneo by Pace (2008): *C. borneensis*, *C. notaticornis*, *C. burckhardti*, and *C. kinabaluensis*.

An examination of the type species of *Peltodonia* and of two species previously attributed to *Chaetosogonocephus* revealed that they are congeneric. Consequently, *Chaetosogonocephus* is here synonymised with *Peltodonia*, and all the species previously in *Chaetosogonocephus* are now in the genus *Peltodonia*.

Peltodonia bodemeyeri (Bernhauer, 1936), **n. comb.** (Fig. 15)

Zyras (Peltodonia) bodemeyeri Bernhauer, 1936: 321.
Chaetosogonocephus adventicius Assing, 2004a: 62 ff.; **n. syn.**

Type material examined

Holotype: "v. Bodemeyer, Asia minor, Alhem Dagh / Tars. 4.5.5., 4. Kieftastgld so lang als 3. / Fortsatz der Mittelbrust breit – Hüfte weit getrennt / Gen. nov. sp. nov. / *Bodemeyeri* Brnh. Typus unic. *Peltodonia* / Chicago NHMus M. Bernhauer Collection" (FMNH). – The examination of the holotype is based on photographs of the holotype specimen and the labels kindly made available to me by J. H. Boone (FMNH).

Additional material examined (total: 4 exs.)

Turkey: **Antalya**: 1 ex., N Kumluca, Altınyaka, 24.V.1991, leg. Schönmann & Schillhammer (NHMW); 1 ex., Köprü valley, Çaltepe, 37°19'N, 31°11'E, 430 m, 14.IV.2008, leg. Brachat & Meybohm (cAss). – **Konya**: 1 ex., Akşehir env., "Tekketal", 28.IV.1960, leg. Ressl (NHMW); 1 ex., Akşehir env., Sultan Dağları, 25.IV.1960, leg. Ressl (cAss).

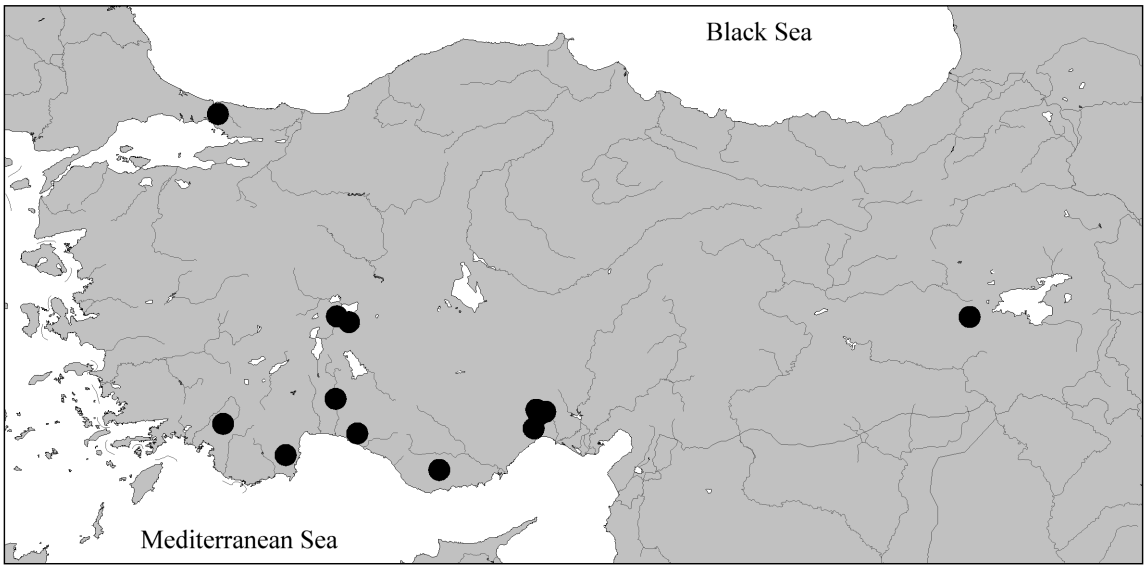


Fig. 15. Distribution of *Peltodonia bodemeyeri* (Bernhauer) in Turkey.

Comment

The original description of *Zyras bodemeyeri* is based on a single holotype specimen from the "Alhem Dagh", Istanbul province (Bernhauer 1936). An examination of this holotype revealed that it is conspecific with the type material of the recently described *Chaetosogonocephus adventicius* Assing.

Distribution and bionomics

Peltodonia bodemeyeri has been recorded only from Turkey, where it is apparently rather widespread (Fig. 15). The species has been recorded from Istanbul, Denizli, Antalya, Konya, Mersin, and Bitlis provinces. For previous records see Assing (2004a, 2004b, 2006f).

The bionomics of this species are still unclear. It has been collected – mostly as single individuals – in various habitats such as forests (*Quercus*, *Carpinus*) and flood plains at a wide range of altitudes (50–1700 m), from sifted leaf litter and under stones, especially in April and May, but also in July and November. There is no evidence of an association with ants.

Peltodonia chinensis (Pace, 1998)

Additional material examined (total: 3 exs.)

China: 3 exs., Zhejiang, Tianmu Shan, pass 25 km NNW Linan, 30°26'N, 119°36'E, 620–820 m, creek valley with bamboo and mixed forest, litter sifted, 16.VI.2007, leg. Schülke & Wrase (cSch, cAss).

Comment

The original description is based on a single female from the Tianmu Shan (Pace 1998b). This is the second record of the species.

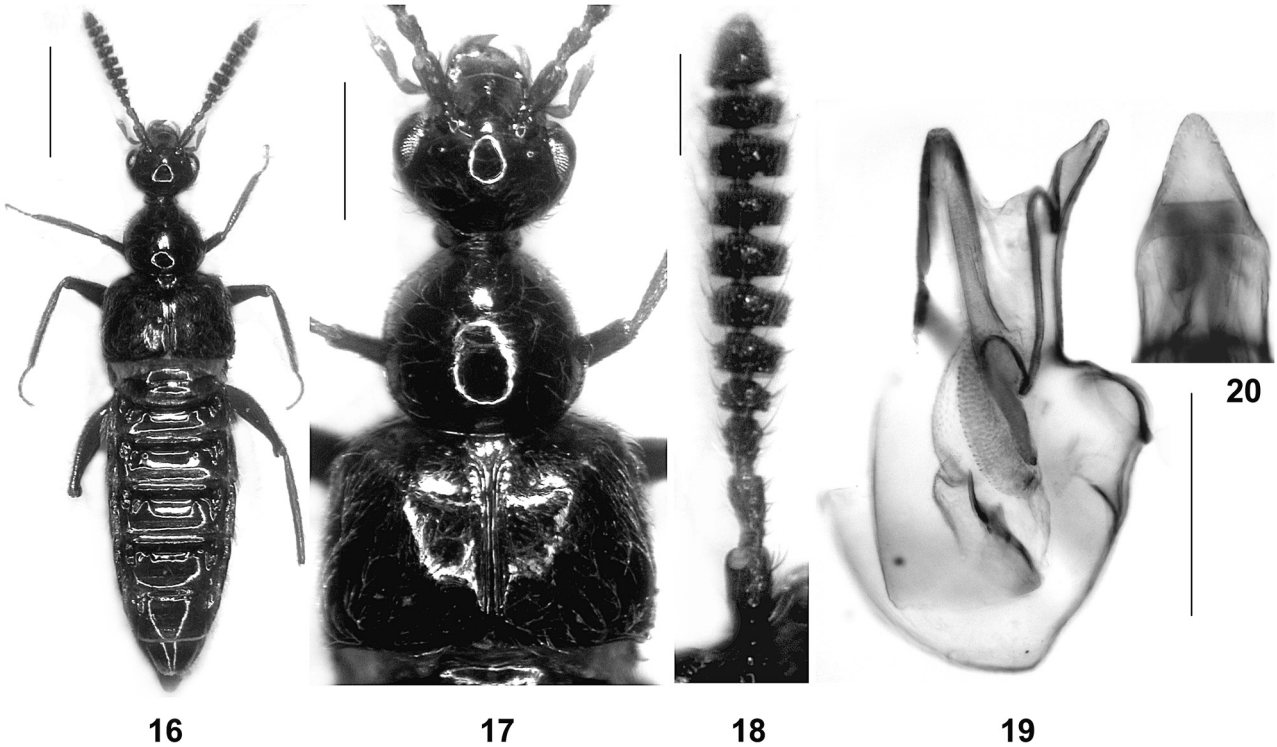
3.5 Genus *Tetrabothrus* Bernhauer, 1915

In the Palaearctic region, *Tetrabothrus* was previously represented by nine species, all of which are distributed in the Eastern Palaearctic (Assing 2006e, Smetana 2004). The Himalayan species were recently revised (Assing 2006e).

Tetrabothrus puetzi **n. sp.**
(Figs. 16–20, 32)

Type material

Holotype ♂: "China: Yunnan [CH07-25], Nujiang Lisu Aut. Pref., Salween side valley 5 km S Fugong, road SS 228 km 223, under stones, moist embankment, 8.VI.2007, leg. A. Pütz / Holotypus ♂ *Tetrabothrus puetzi* sp. n. det. V. Assing 2008" (cAss).



Figs. 16–20. *Tetrabothrus puetzi* n. sp., holotype. – **16**. Habitus. **17**. Forebody. **18**. Antenna. **19**. Median lobe of aedeagus in lateral view. **20**. Ventral process of median lobe of aedeagus in ventral view. – Scale bars: 1.0 mm (16), 0.5 mm (17), 0.2 mm (18–20).

Etymology

The species is dedicated to my friend and colleague Andreas Pütz, Eisenhüttenstadt, who collected the holotype.

Description

Body length: 5.3 mm. Habitus as in Fig. 16. Coloration: forebody castaneous brown, with the anterior part of the head and the anterior part of the elytra (between humeral angles and scutellum) paler, reddish-brown; abdomen dark reddish; legs reddish to reddish-brown, with the profemora darker brown; antennae dark brown, with the basal three antennomeres reddish; mouthparts reddish.

Head (Fig. 17) approximately 1.15 times as wide as long; neck approximately 0.3 times as wide as maximal head width; integument with sparse and very fine punctation, with long whitish pubescence, without microsculpture, and distinctly glossy. Eyes large and almost as long as postocular region. Antennae not distinctly asymmetric, massive; antennomeres IV–X strongly transverse, at least 3 times as wide as long; XI short and small, distinctly narrower than X (Fig. 18).

Pronotum (Fig. 17) strongly convex in cross-section, approximately as wide as long and 1.1 times as wide as head; lateral margins subparallel in dorsal view; whole surface with sparse and extremely fine punctation and with long suberect to erect, whitish to yellowish pubescence; lateral margins without long stout setae; microsculpture absent, surface with pronounced luster.

Elytra 1.52 times as wide and at suture 0.83 times as long as pronotum (Fig. 17); punctation sparse and fine, but less so than that of head and pronotum; microsculpture absent; pubescence suberect to erect, long, whitish to yellowish. Hind wings fully developed. Legs slender; metatibia weakly curved.

Abdomen widest at segments IV–V, segments VI–VIII gradually tapering posteriad; integument without microsculpture and with pronounced luster (Fig. 32); tergites impunctate, except for two pairs of setiferous punctures at the posterior margins of tergites III–VI, one pair of setiferous punctures on tergite VII, and several setiferous punctures near the posterior margin of tergite VIII.

♂: tergite VIII with broadly convex posterior margin; sternite VIII longer than tergite VIII, its posterior margin strongly convex (Fig. 32); median lobe of aedeagus as in Figs. 19, 20.

♀: unknown.

Comparative notes

The only *Tetrabothrus* species previously known from China is *T. rougemonti* Pace 1998. From this species, *T. puetzi* is separated by darker coloration of the forebody (in *T. rougemonti* reddish) and of the legs (femora in *T. rougemonti* yellowish with brownish apices), and by the different shape of the median lobe of aedeagus (ventral process in *T. rougemonti* much shorter and broader). *Tetrabothrus bicolor* Cameron, 1939 from Burma is distinguished from the new species by different coloration (blackish forebody, blackish legs with reddish tarsi, uniformly blackish antennae), the absence of punctures in the median dorsal area of the head, a transverse pronotum, and the absence of punctures along the middle of the pronotum. For illustrations of *T. rougemonti* see Pace (1998b), for a key to the *Tetrabothrus* species of the Himalayan region see Assing (2006e).

Distribution and bionomics

The type locality is situated near Fugong in western Yunnan province, China. The holotype was found near a river bank under a stone.

3.6 Genus *Amaurodera* Fauvel, 1905

In the Palaearctic region, *Amaurodera* was previously represented by 18 species, all of which are distributed in the Eastern Palaearctic (Assing 2003, 2005c, 2006b; Smetana 2004). The Himalayan species were recently revised (Assing 2003, 2005c, 2006b).

Amaurodera veluticollis (Motschulsky, 1858)

Additional material examined (total: 2 exs.)

India: 2 exs., Arunachal Pradesh, Along, 30.V.2006, leg. de Rougemont (cRou, cAss).

Comment

The species is widespread in the Himalaya and in the Oriental region. It is here reported from Arunachal Pradesh for the first time.

Amaurodera silvana Pace, 1992

Additional material examined (total: 7 exs.)

Nepal: 7 exs., Annapurna, Myagdi district, Ghorepani, 3200 m, 21.–23.III.1994, leg. Ahrens (DEI, cAss).

Comment

The distribution of *A. silvana* is confined to the Annapurna and Dhaulagiri Himal in central Nepal, where the species is apparently rather common (Assing 2003, 2005c, 2006b).

Amaurodera coriacea Assing, 2003

Additional material examined (total: 63 exs.)

Nepal: 14 exs., Manaslu, E-slope of Ngali Khola valley, 28°22'N, 84°29'E, 2000–2300 m, 15.V.2005, leg. Schmidt (NME,

cAss); 40 exs., Manaslu, E-slope of Ngali Khola valley, 28°22'N, 84°30'E, 2800–3000 m, 13.V.2005, leg. SCHMIDT (NME, cAss); 9 exs., W-Manaslu, Ngadi Khola region, below Bara Pokhari Lekh, 28°22'N, 84°30'E, 2800 m, 12.–13.V.2005, leg. JÄGER (SNSD, cAss).

Comment

The species is apparently endemic to the Manaslu range in central Nepal (ASSING 2003, 2005c).

Amaurodera bomfordi (Eppelsheim, 1890)

Additional material examined (total: 23 exs.)

Nepal: 10 exs., Manaslu, E-slope of Ngali Khola valley, 28°22'N, 84°29'E, 2000–2300 m, 15.V.2005, leg. SCHMIDT (NME, cAss); 4 exs., Manaslu, Bara Pokhari Leak, above Bhachok Goan vill., 28°14'N, 24°25'E, 1600–1800 m, 29.IV.2005, leg. SCHMIDT (NME, cAss).

India: **Uttarranchal state**: 8 exs. [partly teneral], Nainital, China peak env., 1900–2300 m, 18.–19.VII.2003, leg. KEJVAL & TRÝZNA (NHMW, cAss); 1 ex., 30 km N Bageshwar, W Loharket vill., 1800–1900 m, 24.VI.2003, leg. KEJVAL & TRÝZNA (NHMW).

Comment

In the Himalayan region, *A. bomfordi* is one of the most widespread and common species of the genus (ASSING 2003, 2005c, 2006b). Some specimens collected in July (Uttarranchal state) are teneral. For a distribution map see ASSING (2006b).

Amaurodera soror Cameron, 1939

Additional material examined (total: 4 exs.)

Nepal: 1 ex., Annapurna, S Ghorepani, Ulleri, 2000 m, 16.VI.1993, leg. SCHMIDT (DEI); 1 ex., Dhaulagiri, S-slope, upper Ruhagat Khola between Chima Khola and Dwari, 1750 m, 10.V.2002, leg. SCHMIDT (NME); 1 ex., Mahakali prov., Latinath, 29°44'N, 80°46'E, 1100 m, river bank, 2.VI.2005, leg. WEIPERT (NME); 1 ex., Mechi prov., N Phidim, bridge at Hinwa Khola, 27°10'N, 87°46'E, 620 m, 29.III.2003, leg. WEIPERT (cAss).

Comment

Like the closely related *A. bomfordi*, *A. soror* is widespread in the Himalayan region, but it has been collected more rarely (ASSING 2003, 2005c, 2006b). For a distribution map see ASSING (2006b).

Amaurodera schuelkei n. sp.
(Figs. 21–31)

Type material

Holotype ♂: "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 / Holotypus ♂ *Amaurodera schuelkei* sp. n. det. V. ASSING 2007" (cAss).

Paratypes: 1 ♀ [slightly teneral]: same data as holotype (cSch); 1 ♂: same data, but leg. A. PÜTZ (cPüt).

Etymology

The species is dedicated to my friend and colleague MICHAEL SCHÜLKE, Berlin, who collected two of the type specimens.

Description

Body length: 5.8–6.2 mm. Habitus as in Fig. 21. Coloration: forebody, posterior margins of abdominal segments III–IV, and abdominal tergites V–VII dark brown; anterior parts of abdominal segments III–IV, most of the paratergites, posterior margins of segments V–VII, and segment VIII reddish; legs pale reddish-yellow, with the apical halves of the femora slightly darker; antennae reddish-yellow, with at least antennomeres IV–VII and apical half of III darker.

Head (Figs. 22, 23) slightly (ca. 1.05×) longer than wide; punctation sparse and rather fine; integument with very shallow microreticulation and glossy; eyes bulging, slightly longer than half the length of postocular region in dorsal view. Antennae very long and slender, approximately 3.5 mm long, reaching posterior margin of abdominal segment IV (Fig. 24).

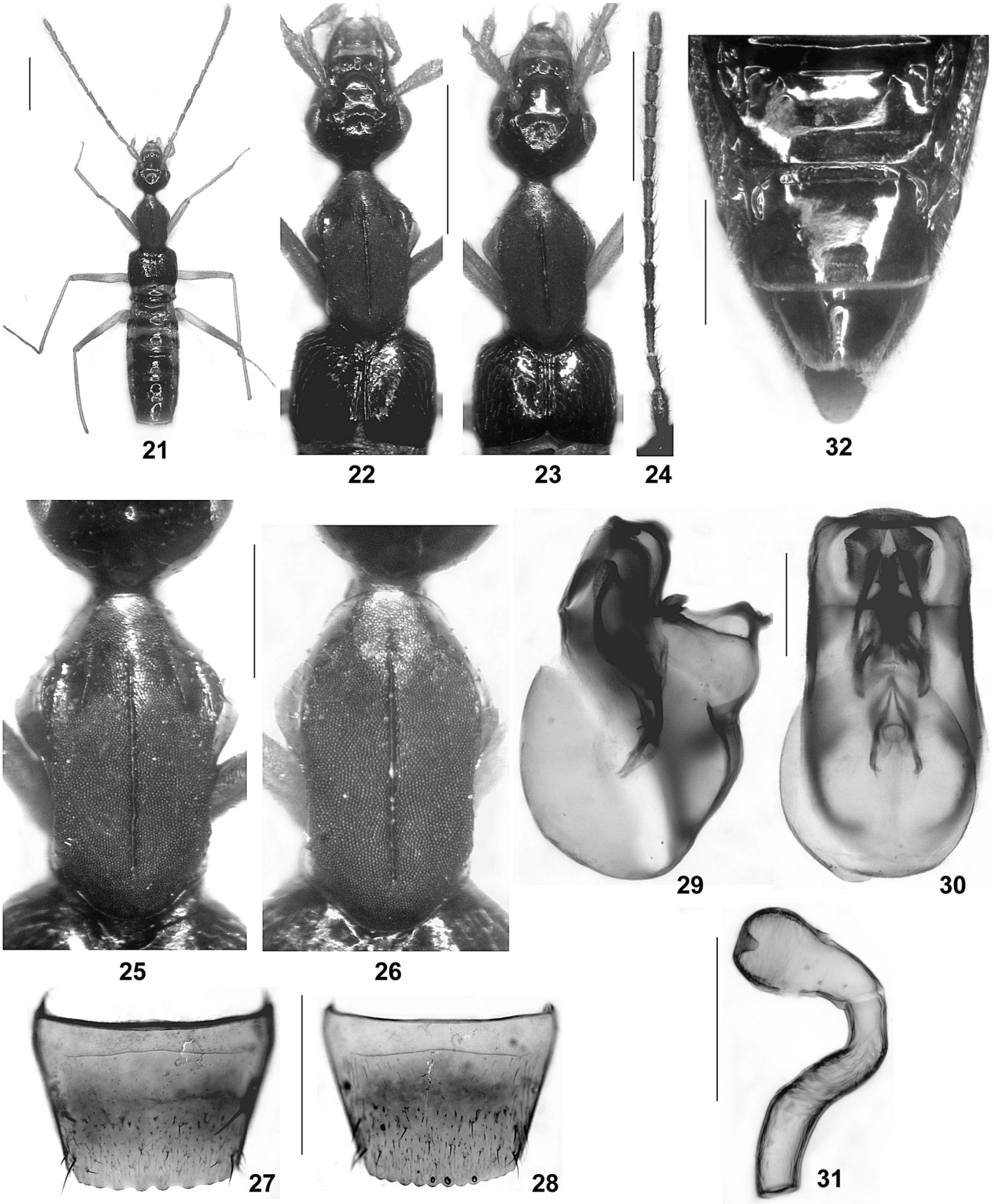
Pronotum approximately 1.2 mm long, with pronounced sexual dimorphism (Figs. 25, 26); dorsal surface in posterior ⅔ with pronounced microreticulation and matt, in anterior ⅓ with shallower microreticulation and subdued luster; median sulcus deep and narrow, not reaching anterior and posterior margins.

Elytra short, at suture only approximately 0.45 times as long as pronotum (Figs. 22, 23); dorsal surface with fine and sparse punctation, with sparse and depressed whitish pubescence, with extremely shallow microreticulation (visible only at higher magnification), and distinctly glossy. Legs very long and slender (Fig. 21).

Abdomen slightly wider than elytra, widest at segments IV and V; punctation fine and very sparse; integument with extremely shallow, barely noticeable microsculpture and distinctly glossy; posterior margin of tergite VII with palisade fringe.

♂: pronotum anteriorly on either side with rather pronounced elevated carina with five stout blackish setae and, mediad of this carina, with additional weakly elevated carina, area between these carinae with shallow microsculpture and some luster (Figs. 22, 25); posterior margin of tergite VIII truncate and distinctly serrate (Fig. 27); posterior margin of sternite VIII truncate; median lobe of aedeagus rather massive, 0.7 mm long, of distinctive morphology, in ventral view of subrectangular shape (Figs. 29, 30).

♀: pronotum anteriorly on either side sharply edged, but without carinae (Figs. 23, 26); posterior margin of



Figs. 21–32. *Amaurodera schuelkei* n. sp. (21–31) and *Tetrabothrus puetzi* n. sp. (32). – **21**. Female habitus. **22**. Male forebody. **23**. Female forebody. **24**. Antenna. **25**. Male pronotum. **26**. Female pronotum. **27**. Male tergite VIII. **28**. Female tergite VIII. **29**, **30**. Median lobe of aedeagus in lateral and in ventral view. **31**. Spermatheca. **32**. Abdominal segments VI–VIII. – Scale bars: 1.0 mm (21–24), 0.5 mm (25–28, 32), 0.2 mm (29–31).

tergite VIII more finely serrate than in ♂ (Fig. 28); sternite VIII weakly convex posteriorly; spermatheca as in Fig. 31, duct truncate proximally.

Comparative notes

The species evidently belongs to the *A. bomfordi* species group, as can be inferred from several synapomorphies: the sexual dimorphism of the pronotum, the stout and in lateral view broadly truncate median lobe of the aedeagus, as well as the proximally truncate spermatheca (see Assing 2003). The *A. bomfordi* group previously comprised eight species distributed in the Himalaya and adjacent regions, only two of which are widespread (Assing 2003, 2005c). From all of them, the new species is particularly distinguished by the shape of the median lobe of the aedeagus and the modifications of the male pronotum. From the widespread *A. bomfordi* and *A. soror*, it is additionally separated by the longer and more slender antennae, from *A. soror* also by longer legs, the much shallower microsculpture of the head and elytra (in *A. soror* pronounced, integument matt), the much sparser punctation of the elytra (in *A. soror* very dense), and the distinctly paler coloration of the abdomen and legs (in *A. soror* abdomen almost uniformly dark brown to blackish brown and apical halves of femora blackish brown). For illustrations of the external and sexual characters of the Himalayan *Amaurodera* species see Assing (2003, 2005c, 2006b).

Only two species of *Amaurodera* were previously known from China, both of them reported only from Yunnan province: *A. yaoana* Pace, 1992, which was originally described from Thailand (Pace 1992a) and later also recorded from Yunnan (Pace 1998a), and *A. yunnanensis* Pace, 1998, which has been recorded only from western Yunnan province (Pace 1998b). Based on the illustrations of the habitus and the genitalia by Pace (1992a, 1998b), neither of these species refers to the *A. bomfordi* group.

Distribution and bionomics

The type locality is situated near Tengchong (China: western Yunnan). The type specimens were sifted from the litter of a deciduous forest at an altitude of 1900 m. The female paratype is slightly teneral.

Amaurodera martensi Coiffait, 1982

Additional material examined (total: 30 exs.)

Nepal: 30 exs., Kathmandu, Shivapuri Lekh, slope W of Bagmati river, 2000–2300 m, 22.–23.V.2005, leg. Schmidt (NME, cAss).

Comment

The species has been recorded from several localities in central Nepal and from the Rolwaling Himal in eastern Nepal (Assing 2003, 2005c, 2006b).

Amaurodera cameroni Assing, 2003

Additional material examined (total: 1 ex.)

Nepal: 1 ex., Mahakali prov., Darchula distr., NE Gamla, Chamaliya Khola, 29°42'N, 80°42'E, 850 m, river margin, 31.V.2005, leg. Hartmann (NME).

Comment

The previously known distribution of *A. cameroni* included northern India, as well as central and eastern Nepal (Assing 2003, 2005c). The above specimen represents the first record from western Nepal.

3.7 Genus *Orphnebius* Motschulsky, 1858

Orphnebius currently comprises some 120 species worldwide, most of which are distributed in the tropics, especially in the Oriental and Neotropical regions (Assing 2006c, 2006d; Pace 2007). According to a recent revision (Assing 2006c, 2006d), the genus is represented in the Palaearctic region by 22 species, all of them distributed in the Himalayan region and China. A reliable identification of most species is possible only based on the male sexual characters.

Orphnebius hauseri Eppelsheim, 1895

Additional material examined (total: 1 ex.)

Nepal: 1 ♂, Karnali prov., Jumla distr., 2 km W Churta, 2900 m, stream bank, 4.V.1995, leg. Hartmann (cAss).

Comment

Owing to frequent previous confusion with similar species, the distribution of *O. hauseri* is still somewhat unclear. Confirmed records were previously known only from Himachal Pradesh (Assing 2006c). The above specimen represents the first verified record from Nepal.

Orphnebius appendiculatus Assing, 2006

Additional material examined (total: 1 ex.)

Nepal: 1 ♂, Arun Valley, Mure, 2050 m, leg. Probst (NHMW).

Comment

The species was known only from central Nepal (Assing 2006c). The above specimen represents the first record from eastern Nepal.

Orphnebius oculatus Coiffait, 1982
(Figs. 33–37)

Additional material examined (total: 4 exs.)

India: 3 ♂♂, 1 ♀, Himachal Pradesh, Katrain near Kulu, leg. Franz [Pa 358] (NHMW, cAss).

Comment

The original description is based on a single holotype specimen from central Nepal (Coiffait 1982), which was studied earlier (Assing 2006c). The abdomen of the holotype is missing, so that the sexual characters of this species were previously unknown. An examination of the above material yielded no significant external characters separating it from the holotype of *O. oculatus* (Figs. 33, 34). Therefore, they are here hypothesised to be conspecific. Nevertheless, in view of the distance between the type locality in central Nepal and the surroundings of Kulu in Himachal Pradesh, the possibility that the above specimens may represent a distinct species cannot be ruled out completely.

The female listed above had been dissected prior to the present study and is additionally labelled as follows: "Holotypus *Orphnebius franzi* mihi, det. R. Pace 1983 / *Orphnebius franzi* n. sp. det. R. Pace 1983". A description pertaining to this specimen was never published. Pace (1985) attributed the name *Orphnebius franzi* to a species from Venezuela.

Description of the sexual characters

♂: median lobe of aedeagus 0.75–0.80 mm long with relatively short and straight ventral process (lateral view) of triangular shape (ventral view), and with relatively broad crista apicalis in lateral view (Figs. 35, 36); paramere with rather stout condylite and with paramerite of distinctive shape and chaetotaxy (Fig. 37).

♀: primary and secondary sexual characters highly similar to those of *O. hauseri*.

Comparative notes

The species is readily distinguished from other species of similar coloration by the morphology of the paramere, as well as by the shape of the median lobe of the aedeagus; from the sympatric *O. hauseri* and *O. jumlaicus* also by the uniformly yellowish-brown legs, the large eyes, and the morphology of the antennae.

Distribution

The species is known only from central Nepal and from the surroundings of Kulu, Himachal Pradesh, from where *O. hauseri* and *O. jumlaicus* have also been recorded.

Orphnebius paucisetosus **n. sp.**
(Figs. 38–46)

Type material

Holotype ♂: "Nepal Mechi/Taplejung, 20 km NEE [sic] Taplejung, env. Phumphe, 1850 m, 27°24'28"N, 87°51'46"E, 24.V.2003, leg. A. Weigel / Holotypus ♂ *Orphnebius paucisetosus* sp. n. det. V. Assing 2008" (NME).

Etymology

The name (Latin, adjective: with few setae) refers to the distinctive chaetotaxy of the pronotum.

Description

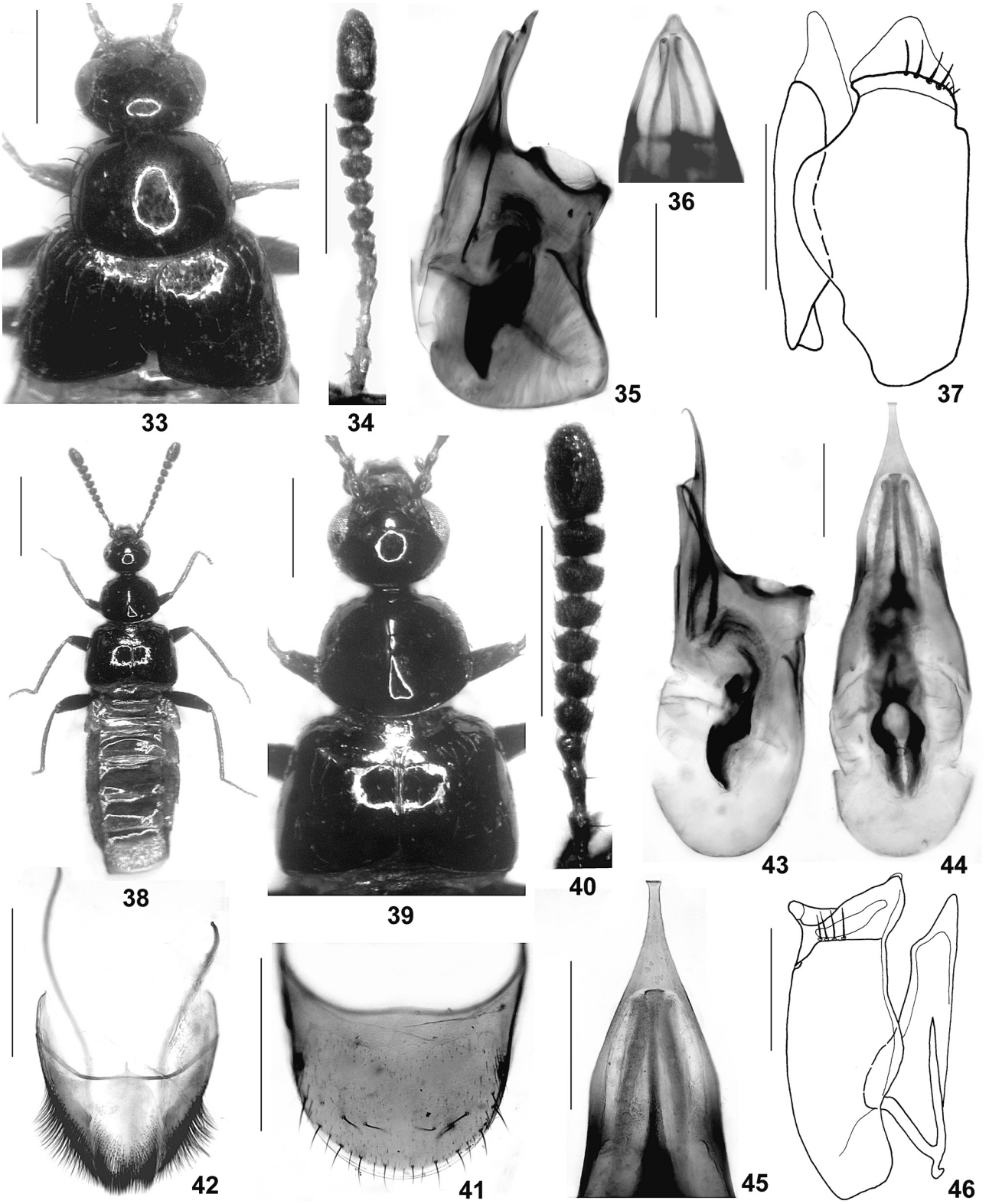
Body length: 4.7 mm. Habitus as in Fig. 38. Coloration: forebody black; abdomen bright pale reddish; legs with the femora blackish, tibiae dark brown, tarsi reddish-brown; antennae blackish, with antennomeres II–III slightly paler dark brown.

Head distinctly transverse, approximately 1.25 times as wide as long, posteriorly vertically sloping ventrad towards neck, but not angulate; posterior margin of head between posterior margins of eyes in dorsal view smoothly and moderately convex, i. e., posterior angles completely obsolete; neck approximately 0.3 times as wide as head; punctation extremely fine and sparse, punctures present only in lateral and posterior areas, median dorsal area impunctate; microsculpture absent. Eyes very large and bulging, somewhat longer than postocular region (from posterior margin of eye to neck) in dorsal view (Fig. 39). Antenna moderately asymmetric; antennomeres IV weakly transverse, V–X strongly transverse; X approximately twice as wide as long; XI almost as long as combined length of VIII–X (Fig. 40).

Pronotum rather weakly convex in cross-section, slightly depressed on either side of midline, distinctly transverse, 1.25 times as wide as long and 1.25 times as wide as head; maximal width in posterior half, posterior angles almost obsolete; disc impunctate, punctation present only at margins; near anterior angles with few black setae; lateral margins without black setae; areas near lateral margins with some pale brownish setae (Fig. 39).

Elytra nearly 1.60 times as wide and at suture approximately 0.8 times as long as pronotum, distinctly widened posteriad (Fig. 39); punctation very sparse and fine; microsculpture absent; pubescence suberect to depressed, long, and whitish. Hind wings fully developed. Legs long and slender; metatarsomere I approximately as long as combined length of II–III.

Abdomen widest at segments III–V, gradually tapering posteriad; integument without microsculpture; paratergites of segments III–V sharply edged and strongly elevated; tergites III–VI impunctate except for four setiferous punctures at posterior margins of tergites IV–VI; tergite VII, except for area near anterior and posterior mar-



Figs. 33–46. *Orphnebius oculatus* Coiffait (Himachal Pradesh) (33–37) and *O. paucisetosus* n. sp. (38–46). – **33**, **39**. Forebody. **34**, **40**. Antenna. **35**, **43**. Median lobe of aedeagus in lateral view. **36**, **45**. Ventral process of median lobe of aedeagus in ventral view. **37**, **46**. Paramere. **38**. Habitus. **41**. Male tergite VIII. **42**. Male abdominal segments IX–X. **44**. Median lobe of aedeagus in ventral view. – Scale bars: 1.0 mm (38), 0.5 mm (33–34, 39–42), 0.2 mm (35–37, 43–46).

gins, with oblong punctures, near posterior margin with row of short setae; posterior margin of tergite VII with distinct palisade fringe; tergite VIII impunctate, except for two rows of submarginal and marginal punctures bearing black setae (Fig. 41).

♂: segments IX–X modified, with dense and long black pubescence (Fig. 42); median lobe of aedeagus approximately 1.0 mm long and slender, with long, slender, and apically very acute ventral process (Figs. 43–45); paramere with rather massive condylite, paramerite apically of distinctive shape, with four subapical setae (Fig. 46).

♀: unknown.

Comparative notes

Based on external features (chaetotaxy of pronotum, asymmetric antennae, morphology and chaetotaxy of abdomen, distinctly bicoloured body) and sexual characters (modifications of male segments IX–X, morphology of median lobe of aedeagus, shape of paramere), the species doubtlessly belongs to the *O. hauseri* subgroup. From all the Himalayan species of this group, it is reliably distinguished by the morphology of the paramere, from most species additionally also by the chaetotaxy of the pronotum (absence of black setae at the lateral margins) and by the shape of the ventral process of the aedeagus. For illustrations of the external and sexual characters of the Himalayan representatives of the *O. hauseri* group see Assing (2006c).

Distribution and bionomics

The type locality is situated in eastern Nepal, where the holotype was collected at an altitude of 1800 m. Additional bionomic data are not available.

Orphnebius scissus **n. sp.**
(Figs. 47–55)

Type material

Holotype ♂: "China (Yunnan), Baoshan Pref., Gaoligong Shan nr. Xiaoheisha N. R., 29 km ESE Tengchong, 24°55'37"N, 98°45'09"E, 2350 m (devast. decid. forest with clearings and shrubs, litter, wood, sifted), 1.VI.2007, D. W. Wrase [15] / Holotypus ♂ *Orphnebius scissus* sp. n. det. V. Assing 2007" (cAss).

Etymology

The name (Latin, adjective: incised) refers to the distinctive lateral incision of the paramerite.

Description

Body length: 4.4 mm. Habitus as in Fig. 47. Coloration: forebody black; abdomen bright pale reddish; legs with the femora blackish-brown, tibiae and tarsi dark reddish-brown; antennae blackish-brown, with antennomeres I–IV reddish.

Head distinctly transverse, approximately 1.25 times as wide as long, posteriorly vertically sloping ventrad towards neck, but not angulate; posterior margin of head between posterior margins of eyes in dorsal view smoothly and moderately convex, i. e., posterior angles completely obsolete; neck little more than 0.3 times as wide as head; punctation extremely fine and sparse, punctures present only in lateral and posterior areas, median dorsal area impunctate; microsculpture absent. Eyes very large and bulging, somewhat longer than postocular region in dorsal view (Fig. 48). Antenna moderately asymmetric; antennomeres IV weakly transverse, V–VI moderately transverse, and VII–X strongly transverse; X approximately twice as wide as long; XI almost as long as combined length of VIII–X (Fig. 49).

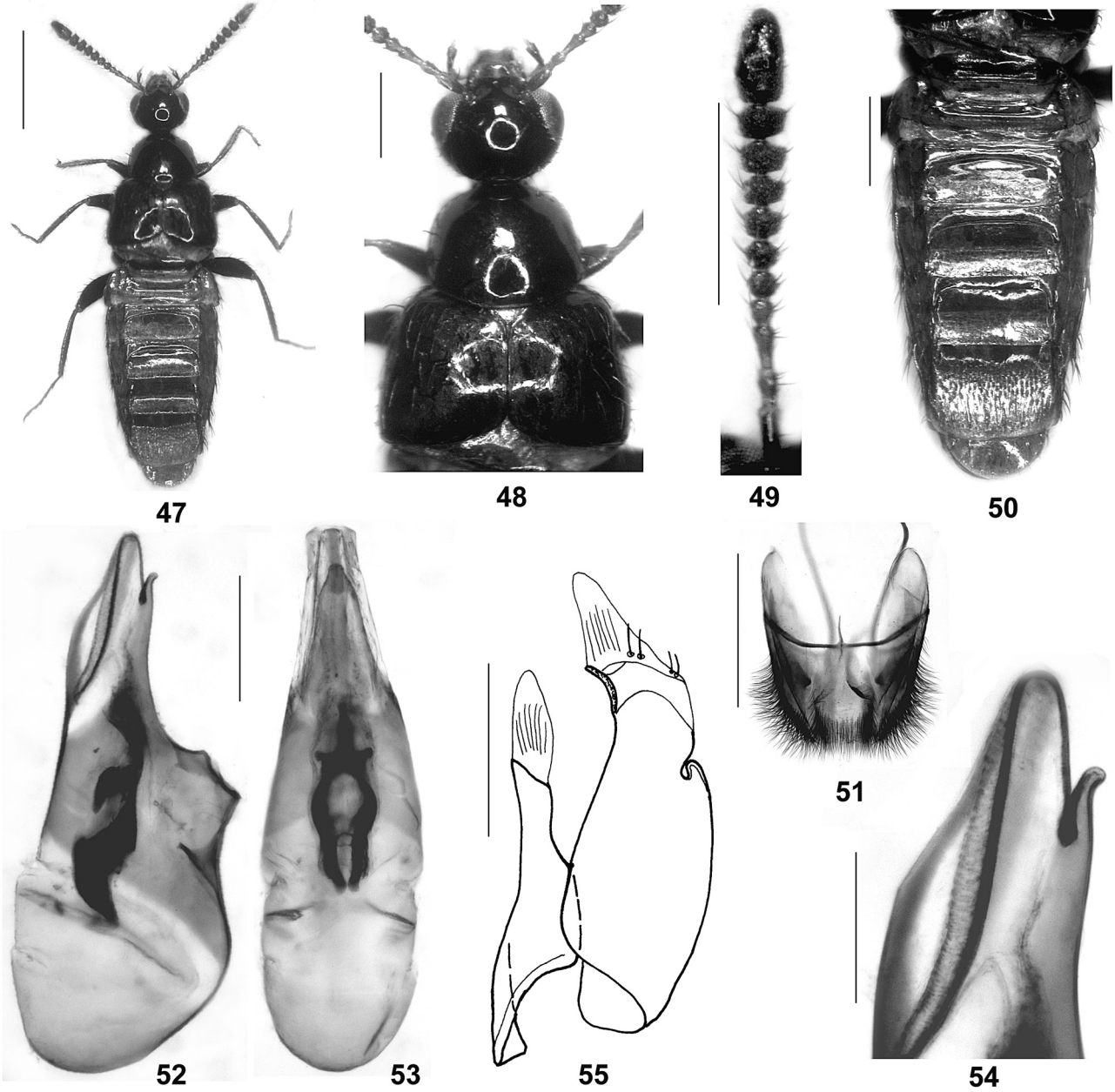
Pronotum (Fig. 48) strongly convex in cross-section, distinctly transverse, almost 1.25 times as wide as long and 1.20 times as wide as head; maximal width in posterior half, posterior angles obsolete; disc impunctate, punctation present only at margins; lateral margins each with four dark setae of slightly more than ¼ the length of pronotum.

Elytra 1.60 times as wide and at suture approximately 0.7 times as long as pronotum, distinctly widened posteriad (Fig. 48); punctation very sparse and fine; microsculpture absent; pubescence suberect, long, and brownish. Hind wings fully developed. Legs of moderate length; metatarsomere I shorter than combined length of II–III.

Abdomen (Fig. 50) widest at segment III, distinctly and gradually tapering posteriad; integument without microsculpture; paratergites sharply edged and strongly elevated, gradually decreasing in height and width from segments III–VI; tergites III–VI impunctate except for four setiferous punctures at posterior margins of tergites IV–VI; disc of tergite VII, too, impunctate, posterior margin with more numerous short setae; whole surface of tergite VII with short striae somewhat resembling oblong punctures; posterior margin of tergite VII with distinct palisade fringe; tergite VIII impunctate, except for two rows of submarginal and marginal punctures bearing black setae.

♂: segments IX–X modified, with dense and long black pubescence (Fig. 51); median lobe of aedeagus 0.82 mm long and slender, with slender, apically acute, and weakly bent ventral process Figs. 52–54); paramere with condylite distinctly shorter than paramerite, paramerite apically with four short setae and laterally with incision of distinctive shape (Fig. 55).

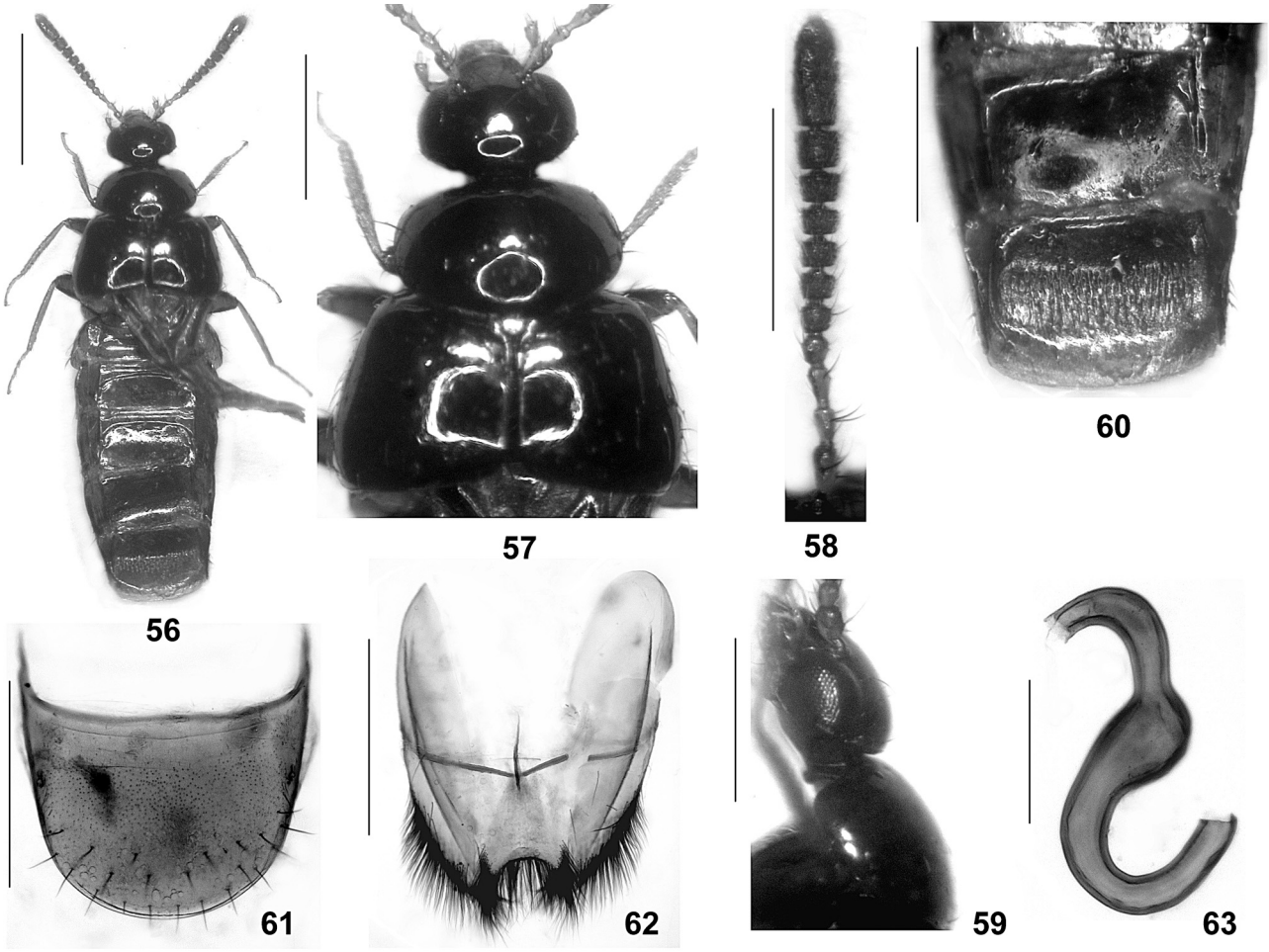
♀: unknown.



Figs. 47–55. *Orphnebius scissus* n. sp., holotype. – **47**. Habitus. **48**. Forebody. **49**. Antenna. **50**. Abdomen. **51**. Male abdominal segments IX–X. **52**, **53**. Median lobe of aedeagus in lateral and in ventral view. **54**. Apex of median lobe of aedeagus in lateral view. **55**. Paramere. – Scale bars: 1.0 mm (47), 0.5 mm (48–51), 0.2 mm (52, 53, 55), 0.1 mm (54).

Comparative notes

Based on external features (chaetotaxy of pronotum, asymmetric antennae, morphology and chaetotaxy of abdomen, distinctly bicoloured body) and sexual characters (modifications of male segments IX–X, morphology of median lobe of aedeagus, shape of paramere), the species doubtlessly belongs to the *O. hauseri* group. Five species of this group were previously known from China (Assing 2006d). From all of them, *O. scissus* is readily distinguished by the distinctive morphology of the median lobe of the aedeagus and the paramere, as well as by the characteristic sculpture of the abdominal tergite VII. From *O. longistriatus*, whose male sexual characters are unknown, it is additionally separated by distinctly smaller size, a larger impunctate area on the head, distinctly paler antennomeres I–IV (in *O. longistriatus* dark brown to blackish-brown), the distinctly longer elytral pubescence, and the much brighter coloration of the abdomen (segments III–VI



Figs. 56–63. *Orphnebius truncus* n. sp., holotype. – **56**. Habitus. **57**. Forebody. **58**. Antenna. **59**. Head and pronotum in lateral view. **60**. Abdominal segments VI–VII in dorsal view. **61**. Tergite VIII. **62**. Female abdominal segments IX–X. **63**. Spermatheca. – Scale bars: 1.0 mm (56), 0.5 mm (57–62), 0.1 mm (63).

in *O. longistriatus* blackish to brown). For illustrations of the external and sexual characters of other *Orphnebius* species known from China and the Himalaya see Assing (2006c, 2006d).

Distribution and bionomics

The type locality is situated near Tengchong (China: W-Yunnan). The holotype was sifted from the leaf litter of a deciduous forest at an altitude of 2350 m.

Orphnebius truncus **n. sp.**
(Figs. 56–63)

Type material

Holotype ♀: "China: Yunnan [CH07-16], Baoshan Pref., mountain range 14 km E Tengchong, 1850 m, 25°00'28"N, 98°38'07"E, second. mixed forest, litter sifted, 1.VI.2007, M. Schülke / Holotypus ♀ *Orphnebius truncus* sp. n. det. V. Assing 2007" (cAss).

Etymology

The name (Latin, adjective: truncated) refers to the shape of the head.

Description

Body length: 4.1 mm. Habitus as in Fig. 56. Coloration: forebody black; abdomen bright pale reddish; legs reddish-brown, femora only indistinctly darker; antennae dark brown, with antennomeres I–IV and apex of XI reddish.

Head strongly transverse, approximately 1.30 times as wide as long; posterior margin distinctly angled, i. e., dorsal and posterior face of head meeting approximately at right angles (visible both in lateral and in dorsal view, posterior face vertically sloping ventrad towards neck;

eyes large, almost reaching posterior margin; neck less than 0.4 times as wide as head (Figs. 57, 59); punctation extremely fine and sparse, punctures present only in lateral and posterior areas, median dorsal area impunctate; microsculpture absent; pubescence sparse, long, and whitish. Antennae not distinctly asymmetric; antennomeres IV weakly transverse; V–IX of similar length, increasingly transverse and of gradually increasing width; IX less than twice as wide as long; X somewhat longer and less transverse than IX; XI conspicuously long, as long as combined length of VIII–X (Fig. 58).

Pronotum (Fig. 57) strongly transverse, 1.55 times as wide as long and 1.42 times as wide as head; lateral and posterior margins smoothly rounded, i. e., posterior angles obsolete; lateral margins each with four long blackish setae (one in anterior angle, two lateral, one in transitional region between lateral and posterior margins) of ¼–⅓ the length of pronotum; pronotum otherwise impunctate, except for few punctures at posterior margin.

Elytra 1.70 times as wide and at suture approximately as long as pronotum, distinctly widened posteriad (Fig. 57); punctation very sparse and fine; microsculpture absent; pubescence depressed to suberect, long, and whitish. Hind wings fully developed. Legs relatively short; metatarsus less than 0.7 times the length of metatibia; metatarsomere I slightly longer than II, but distinctly shorter than combined length of II–III.

Abdomen widest at base, distinctly and gradually tapering posteriad; integument without microsculpture; paratergites sharply edged and strongly elevated, gradually decreasing in height and width from segments III–VIII; tergites III–VI impunctate except for two setiferous punctures at posterior margins of tergites IV–VI; disc of tergite VII, too, impunctate, posterior margin with approximately ten setae; median ⅓ of tergite VII with short striae somewhat resembling oblong punctures (Fig. 60); posterior margin of tergite VII with distinct palisade fringe; tergite VIII impunctate, except for two rows of submarginal and marginal punctures bearing black setae (Fig. 61).

♂: unknown.

♀: segments IX–X distinctly modified, with dense and long black pubescence (Fig. 62); spermatheca of distinctive shape (Fig. 63).

Comment

The shapes of the proximal and distal ends of the spermatheca raise the suspicion that they may be damaged and that parts may be missing. However, despite a careful search of the whole abdomen of the holotype, I have been unable to find any additional parts. In any case, even if the spermatheca illustrated in Fig. 63 is incomplete, the remainder is highly distinctive and not to be confused with any of the spermathecae known from other Palaearctic species.

Comparative notes

The only species known from China with a similarly shaped head and pronotum is *Orphnebius conicornis* Assing, which is known only from the type locality in the Daba Shan at the border between Sichuan and Shaanxi. From this species, *O. truncus* is immediately separated by the darker coloration of the pronotum (in *O. conicornis* brown), the elytra (in *O. conicornis* yellowish with the area near the posterior angles extensively blackish), and the legs (in *O. conicornis* uniformly pale reddish), by the longer and more slender antennomere XI, the distinctly fewer and longer setae at the lateral and posterior margins of the pronotum, as well as by the longer and denser striation of the abdominal tergite VII. For illustrations of the external and sexual characters of *O. conicornis* see Assing (2006d).

Distribution and bionomics

The type locality is situated near Tengchong (China: W-Yunnan). The holotype was sifted from the leaf litter of a secondary mixed forest at an altitude of 1850 m.

Orphnebius tricuspis **n. sp.**
(Figs. 64–68)

Type material

Holotype ♀: "China (Yunnan), Baoshan Pref., Gaoligong Shan nr. Xiaoheisha 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 ♀ *Orphnebius tricuspis* sp. n. det. V. Assing 2007" (cAss).

Etymology

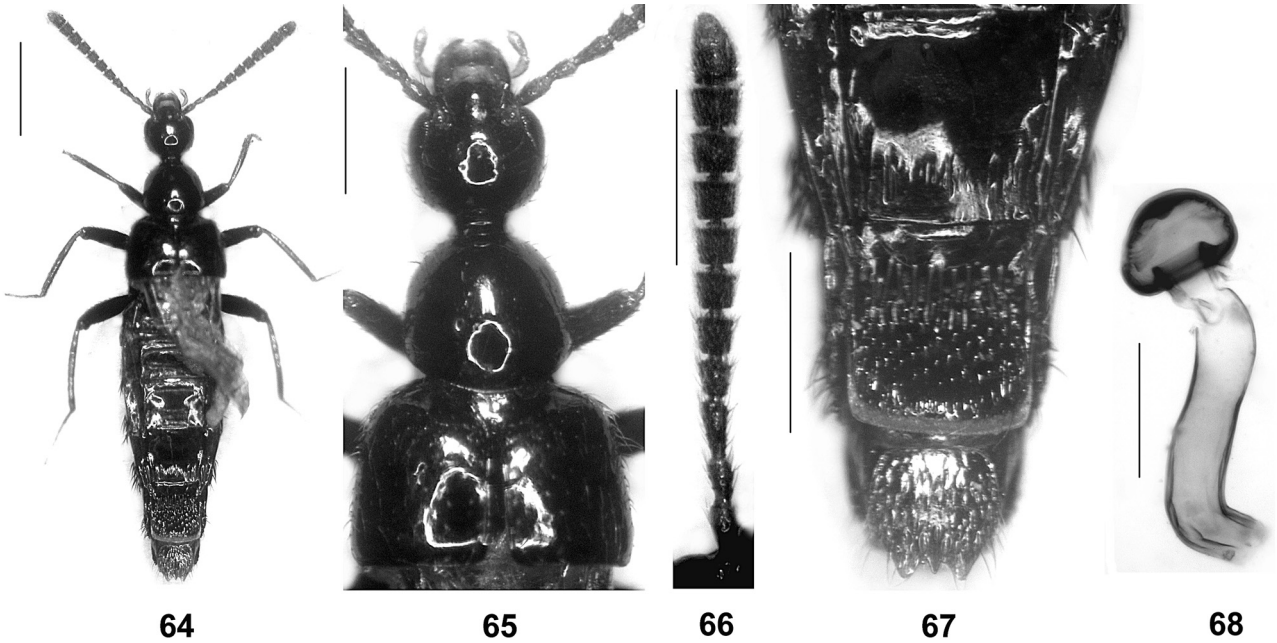
The name (Latin, adjective) refers to the three processes at the posterior margin of the abdominal tergite VIII.

Description

Body length: 5.3 mm. Habitus as in Fig. 64. Coloration: forebody black; abdominal segments III–VI reddish, segment VII dark brown, segment VIII reddish-brown; legs bicoloured, with the femora blackish, tibiae and tarsi reddish-brown; antennae dark brown, with antennomeres I–II and apex of XI paler; mouthparts reddish.

Head approximately as long as wide; neck approximately 0.4 times as wide as maximal head width; integument with sparse and very fine punctation, without microsculpture, and distinctly glossy. Eyes large and almost as long as postocular region (Fig. 65). Antennae not distinctly asymmetric, relatively massive, apically gradually incrassate (Fig. 66).

Pronotum (Fig. 65) very weakly transverse, approximately 1.03 times as wide as long and 1.25 times as wide as head; maximal width in posterior half, strongly convex



Figs. 64–68. *Orphnebius tricuspis* n. sp., holotype. – **64**. Habitus. **65**. Forebody. **66**. Antenna. **67**. Abdominal segments V–VII in dorsal view. **68**. Spermatheca. – Scale bars: 1.0 mm (64), 0.5 mm (65–67), 0.1 mm (68).

in cross-section; punctation fine and very sparse; surface without microsculpture and with distinct luster.

Elytra 1.55 times as wide and at suture 0.80 times as long as pronotum (Fig. 65); punctation very sparse and fine, but less so than that of head and pronotum; microsculpture absent; pubescence suberect, long, and brownish. Hind wings fully developed. Legs of moderate length; metatibia curved; metatarsus 0.8 times as long as metatibia; metatarsomere I approximately as long as combined length of II–III.

Abdomen widest at segment IV, segments V–VIII distinctly and gradually tapering posteriad; integument without microsculpture; paratergites of segments IV–VI broad, those of segment VI distinctly less elevated than those of segment IV; tergites III–VI with four setiferous punctures at posterior margin and one lateral setiferous puncture on either side, otherwise impunctate; tergite VI in posterior half laterally with distinct keel, between these keels with three shorter and distinctly finer keels and with some indistinct striae; tergite VII with pronounced longitudinal ridges separating series of shorter ridges (at lower magnification appearing like coarse punctation), central area without pubescence, posterior margin with pronounced palisade fringe; tergite VIII distinctly punctate and with pubescence, posterior margin with three tooth-like processes (Fig. 67).

♂: unknown.

♀: sternite VIII distinctly convex posteriorly; segments IX–X without pronounced modifications; spermatheca as in Fig. 68.

Comparative notes

Among all its Palaearctic congeners, *O. tricuspis* is similar only to *O. nanlingensis* Pace, evidently its closest known relative, as can be inferred from the synapomorphic derived morphology of the abdominal tergites VI–VIII. All other Palaearctic species lack the longitudinal keels on tergite VI, have a differently sculptured tergite VII, and a tergite VIII without posterior processes. The new species is distinguished from *O. nanlingensis*, whose female sexual characters are unknown, by numerous external characters alone, especially the larger body size, the distinctive coloration (*O. nanlingensis*: head, pronotum, and abdomen more or less uniformly dark brownish; elytra yellowish-brown; legs reddish-brown, not distinctly bicoloured; antennae reddish-brown with antennomeres I–III pale reddish), the completely different head shape (in *O. nanlingensis* distinctly transversely rectangular and with more pronounced posterior angles); the distinctly longer antennae (in *O. nanlingensis* antennomeres VI–X distinctly transverse), the sparser and shorter pubescence of the pronotum, and by the longer legs with much longer tarsi. For illustrations of the external and sexual characters of *O. nanlingensis* see Assing (2006d).

Distribution and bionomics

The type locality is situated near Tengchong (China: W-Yunnan). The holotype was sifted from the leaf litter of a deciduous forest at an altitude of 2110 m.

3.8 Genus *Lomechusa* Gravenhorst, 1806

According to a recent revision (Hlaváč 2005a), *Lomechusa* has a Palaearctic distribution and currently includes 13 species. Five species are distributed in the Western Palaearctic and eight in the Eastern Palaearctic (including Middle Asia). One species, *L. malaisei* (Scheerpeltz, 1965) was originally described from Myanmar, which is usually attributed to the Oriental region, but the type locality is a pass directly at the border between Myanmar and Yunnan province, China. As far as is currently known, all the species are strictly myrmecophilous. Most, if not all of the species are associated with ants of the genus *Formica* Linnaeus in summer and with *Myrmica* Latreille species in the winter. Some species, however, have also – perhaps accidentally – been found with ants of the genus *Lasius* Fabricius.

The primary genitalia are remarkably uniform and consequently of little use for taxonomic and identification purposes. The species are reliably separated only based on external characters (Hlaváč 2005a).

Lomechusa gerardiphila **n. sp.**
(Figs. 69–78)

Type material

Holotype ♂ [with worker of *Formica gerardi* attached to the same pin]: "E – Andalucía [15], Sierra de los Filabres, S Serón, 1800 m, grassland, 37°15'44N, 02°30'30W, 19.III.2008, V. Assing / Holotypus ♂ *Lomechusa gerardiphila* sp. n. det. V. Assing 2008" (cAss).

Paratypes: 2 ♂♂, 1 ♀: same data as holotype (cAss).

Etymology

The name (adjective) refers to the fact that the species is associated with the ant *Formica gerardi*.

Description

Body length: 4.8–5.5 mm. Habitus as in Fig. 69. Coloration: head dark brown to blackish-brown; pronotum dark reddish; elytra pale reddish; abdomen reddish, with segments V–VI and sometimes also anterior part of VII blackish; legs and antennae dark reddish.

Head 1.05–1.10 times as long as wide; width approximately 0.7 mm; median dorsal area shallowly, but distinctly impressed; integument with pronounced microreticulation and completely matt; punctation fine, indistinct, barely noticeable at magnification of 50×; pubescence extremely short, depressed, and sparse. Eyes moderately bulging, slightly shorter than postocular region in dorsal view (Fig. 70). Antennae moderately long and not conspicuously massive; antennomere I large and oval in cross-section; antennomere II much shorter than I, almost twice as long as wide; III approximately 1.4 times as long as II; IV–V approximately as wide as long (IV sometimes weakly transverse and X sometimes weakly oblong); XI elongated, longer than combined length of IX–X, but distinctly shorter than combined length of VIII–X (Figs. 71, 72).

Pronotum approximately 1.20–1.25 mm wide, 0.85–0.90 mm long, 1.45 times as wide as long, and 1.8 times as wide as head; postero-lateral angles marked, but not distinctly projecting latero-caudad, lateral and posterior margins meeting approximately at angle of 90° in dorsal view; lateral margins weakly concave in dorsal view; posterior margin distinctly projecting caudad in the middle; disc anteriorly on either side of midline with pronounced subcircular impression; microsculpture similar to that of head; pubescence not discernible (Fig. 70).

Elytra approximately 1.2 times as wide and at suture 0.9 times as long as pronotum (Fig. 70); whole surface with pronounced, but not distinctly isodiametric microsculpture, slightly less matt than head and pronotum, with dense, fine, and indistinct punctation and with extremely short and depressed pubescence. Hind wings apparently fully developed. Legs slender; metatarsomere I longer than II and slightly shorter than the combined length of II–III.

Abdomen approximately as wide as elytra, widest at segment V; tergites II–IV each with 1–2 macrosetae in postero-lateral angles; microsculpture very shallow, almost indistinct; tergites II–VI with dense fine punctation and with dense short pubescence; tergites VII–VIII with much sparser and even finer punctation, without appreciable pubescence; posterior margin of tergite VII with very fine, possibly incomplete palisade fringe (Fig. 73); tergite VIII broadly excavate, this excavation of almost trapezoid shape, posterior margin in the middle very weakly concave, almost truncate (Fig. 74).

♂: sternite VIII strongly convex posteriorly; median lobe of aedeagus as in Figs. 76, 77.

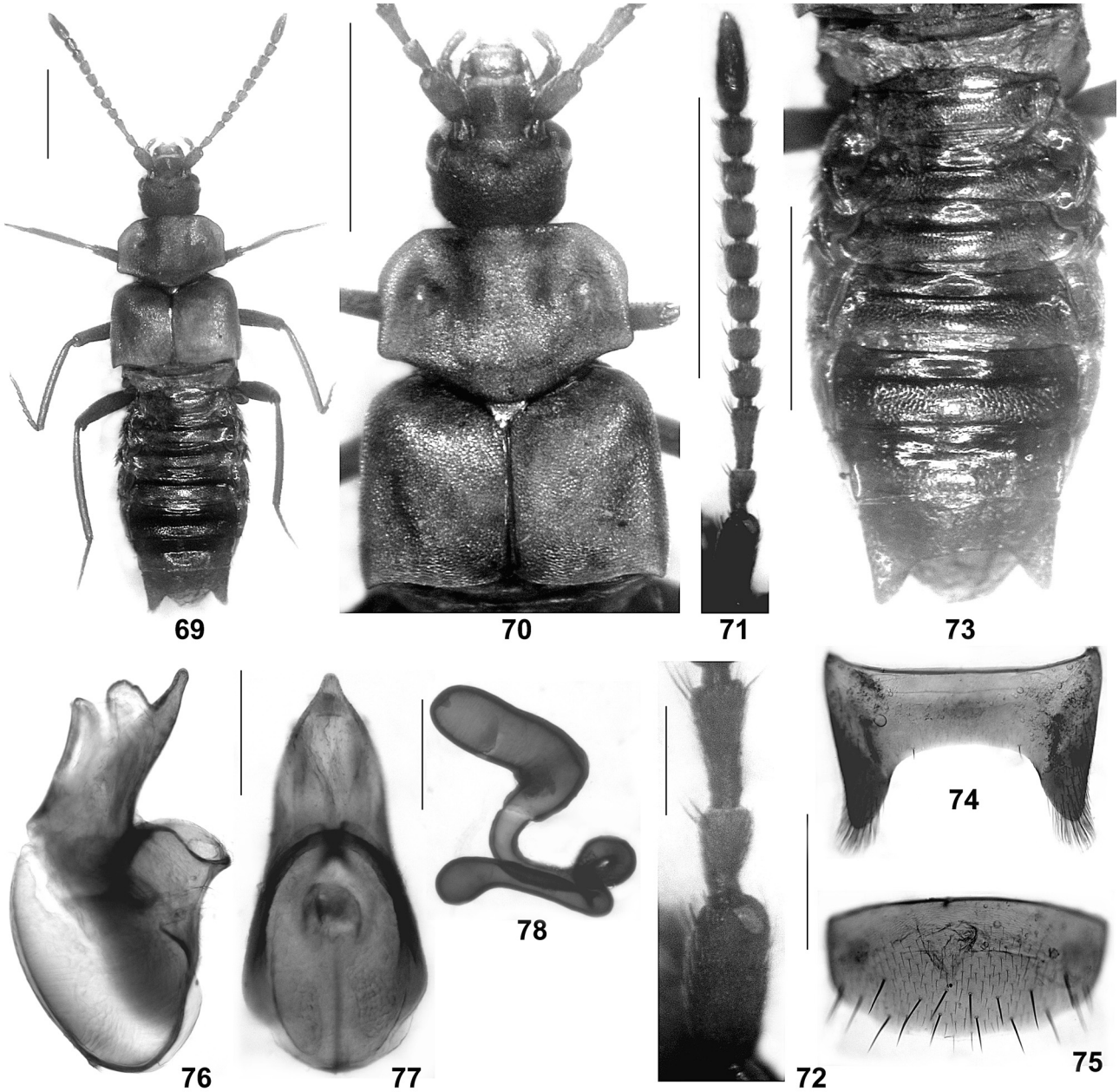
♀: sternite VIII broadly and very weakly convex posteriorly (Fig. 75); spermatheca as in Fig. 78.

Comparative notes

Based on the shape of the pronotum, the elytra, and the antennae, Hlaváč (2005a) distinguishes three species groups. According to this typological concept, the new species belongs to the *paradoxa* group. From the geographically close representatives of this group, *L. gerardiphila* is distinguished as follows:

from *L. bifoveolata* Brisout de Barneville, 1860 (Spain, France) by the less flattened antennomere I, the more slender antennomere II, the presence of macrosetae on the abdominal tergites II–IV, the much sparser and finer punctation of tergite VII, the slightly less broad posterior excavation of tergite VIII, and the posteriorly less convex female sternite VIII;

from *L. paradoxa* Gravenhorst, 1806 (Europe) by the distinctly less massive antennae (with more slender anten-



Figs. 69–78. *Lomechusa gerardiphila* n. sp. (70, 71, 73, 76, 77: holotype). – **69**. Habitus. **70**. Forebody. **71**. Antenna. **72**. Antennomeres I–III. **73**. Male abdomen. **74**. Female tergite VIII. **75**. Female sternite VIII. **76**, **77**. Median lobe of aedeagus in lateral and in ventral view. **78**. Spermatheca. – Scale bars: 1.0 mm (69–71, 73), 0.5 mm (74–75), 0.1 mm (72, 76–78).

nomeres I and II and much less transverse antennomeres IV–X), by the different morphology of the pronotum (more marked antero-lateral projections, much deeper anterior impressions, more strongly projecting posterior margin), by the presence of only 1–2 macrosetae in the posterior angles of tergites II–IV (in *L. paradoxa* usually 3–4), by the much finer and sparser punctation of tergite VII, and by the almost trapezoid posterior excavation of tergite VIII;

from *L. atlantica* (Koch, 1937) (Morocco) by distinctly shorter and less massive antennae, different morphology of the pronotum (less pronounced and less acute posterior angles), sparser and finer punctation of tergite VII, and by the almost trapezoid posterior excavation of tergite VIII;

from *L. pubicollis* Brisout de Barneville, 1860 (Europe) by much smaller and more slender body, distinctly less massive antennae, completely different shape of the pronotum, much fewer macrosetae on the anterior ab-

dominal tergites, the distinctly denser punctation and pubescence of tergites II–VI, and by the less broadly excavated tergite VIII;

from *L. bordonii* Hlaváč, 2005 (Sicily) by smaller size, different coloration (*L. bordonii*: pronotum dark, abdomen uniformly dark brown to black), and much shorter antennae.

For a key to the species of *Lomechusa*, including colour habitus photographs, see Hlaváč (2005a).

Distribution and bionomics

The type locality is situated in the Sierra de los Filabres, a mountain range to the northeast of the Sierra Nevada in Andalucía, southern Spain. It is a patch of occasionally grazed grassland with shrubs and trees in a valley at an altitude of 1800 m; for a photograph see Assing (2008c: fig. 19). The type specimens were collected from a small nest (effect of presence of *Lomechusa*?) of *Formica (Serviformica) gerardi* Bondroit, 1917 (det. B. Seifert) under a stone.

3.9 Genus *Zyras* Stephens, 1835

According to Smetana (2004) and an updated version of the catalogue (Schülke unpubl.), the genus is represented in the Palaearctic region by more than 80 species and eight subgenera; seven species are listed as incertae sedis. The vast majority of species have not been revised and the systematic status of at least some of the subgenera is doubtful.

Zyras (Termidonia) nepalensis Pace, 1992

Additional material examined (total: 4 exs.)

Nepal: 19 exs., Manaslu, Meme Pokhari Lekh, Taksar village, 1700 m, 30.VIII.1995, leg. Schmidt (DEI, cAss).

Comment

The known distribution of this conspicuous species is confined to Nepal (Smetana 2004). The original description is based on a single specimen collected near Pokhara in cattle dung (Pace 1992b).

Zyras (Termidonia) viti **n. sp.**
(Figs. 79–90)

Type material

Holotype ♂ [with worker of unidentified termite attached to the pin]: "Taiwan – Taitung Co., road no. 20, km 184, 600 m, 10.IV.2007, S. Vit / Holotypus ♂ *Zyras viti* sp. n. det. V. Assing 2008" (cAss).

Paratypes: 5 ♂♂, 14 ♀♀ [2 ♀♀ slightly teneral]: same data as holotype (MHNG, cAss).

Etymology

The species is dedicated to the coleopterist Stanislav Vit, Genève, who collected the type series.

Description

Body length: 9.0–11.5 mm. Coloration: head blackish; pronotum dark reddish; elytra dark brown; abdomen blackish, with the posterior margins of the segments reddish-brown; legs and antennae reddish to reddish-brown.

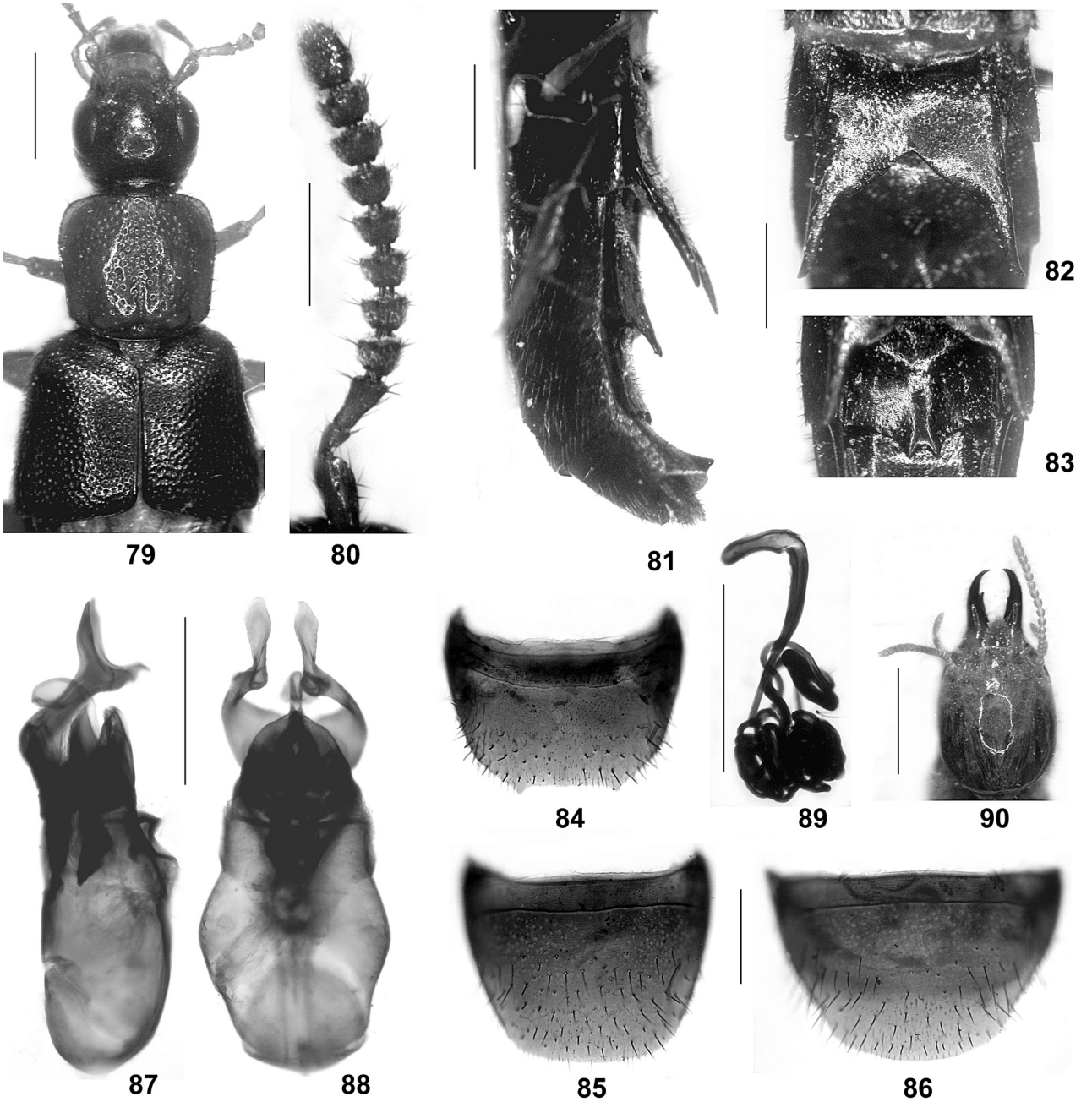
Head (Fig. 79) approximately as long as wide or weakly oblong (length measured from anterior margin of anteclypeus); punctation sparse in median dorsal area, moderately sparse in lateral and posterior dorsal areas (interstices on average approximately as wide as punctures), and rather shallow; microsculpture subject to sexual dimorphism; eyes large and bulging, more than twice as long as postocular region in dorsal view; anteclypeus strongly developed, almost as long as labrum; maxillary palpus elongate, palpomere III approximately 6 times as long as wide. Antennae not distinctly flattened and short, barely reaching posterior margin of pronotum when directed caudad; antennomere III distinctly dilated apically, nearly twice as long as wide; IV–X slightly asymmetric, of similar width, approximately 1.5 times as wide as long or nearly so (Fig. 80).

Pronotum (Fig. 79) slender, approximately 1.2 times as wide as head and 1.05–1.10 times as wide as long, laterally, anteriorly, and posteriorly finely margined; maximal width near anterior angles; posterior angles marked; posterior ½–⅔ of midline narrowly impressed; margins with numerous long, erect, brownish setae; disc with sparse, short, fine, suberect, whitish pubescence; punctation distinctly denser and coarser than that of head.

Elytra dilated posteriad, at posterior margin approximately 1.5 times as wide, and at suture almost as long as pronotum (Fig. 79); punctation conspicuously dense and defined, but finer than that of pronotum. Hind wings fully developed. Mesofemur and -tibia, and especially metafemur and -tibia somewhat flattened.

Abdomen approximately as wide as elytra at posterior margin, widest at segment V; microsculpture present, but mostly shallow; punctation fine and moderately dense; tergites IV, V, and VII with pronounced sexual dimorphism.

♂: head dorsally with pronounced, finely isodiametric microsculpture and matt; tergite IV conspicuously modified, posterior margin elongated, suberect, and on either side with long and acute process (Figs. 81, 82); posterior margin of tergite V in the middle produced and with bifurcate suberect process (Figs. 81, 83); tergite VII at posterior margin with pronounced tubercle (Fig. 81); posterior margin of tergite VIII in the middle truncate and on either side



Figs. 79–90. *Zyras viti* n. sp. (81–83: holotype). – **79**. Female forebody. **80**. Antenna. **81**. Male abdomen in lateral view. **82**. Male tergite IV in dorsal view. **83**. Male tergite V in dorsal view. **84**. Male tergite VIII. **85**. Male sternite VIII. **86**. Female sternite VIII. **87**, **88**. Median lobe of aedeagus in lateral and in ventral view. **89**. Spermatheca. **90**. Head of host termite. – Scale bars: 1.0 mm (79, 81–83, 90), 0.5 mm (80, 84–89).

dentate (Fig. 84); sternite VIII with weakly convex posterior margin (Fig. 85); aedeagus with conspicuous processes (Figs. 87, 88).

♀: head with very shallow microsculpture and somewhat shiny (Fig. 79); tergites IV, V, and VII unmodified; tergite VIII similar to that of male; sternite VIII with moderately convex posterior margin (Fig. 86); spermatheca as in Fig. 89.

Intraspecific variation

The process of the male tergite V is subject to some intraspecific variation. In one of the male type specimens it is almost completely reduced.

Comparative notes

Zyras viti shares various evident synapomorphies (sexual dimorphism of the microsculpture of the head, modifi-

cations of the male abdomen, median lobe of the aedeagus with conspicuous apico-lateral processes) with species of the subgenus *Termidonia* Motschulsky, 1860. According to SMETANA (2004), this subgenus is represented in the Palaearctic region by nine species, only one of which, *Z. abbreviatus* Fenyes, 1914, has been reported from Taiwan (FENYES 1914); another species, *Z. longwangmontis* Pace, 1998, has been recorded from Zhejiang and Hongkong. According to the original description of *Z. abbreviatus*, which is based on a single female, the species is readily distinguished from *Z. viti* by smaller size (body length 5.5 mm), much more transverse pronotum (approximately 1.5 times as wide as long), and numerous other characters. From *Z. longwangmontis*, the new species is separated by shorter antennae, darker abdomen (in *Z. longwangmontis* reddish-brown with reddish base), different modifications of the male abdomen, and different shape of the aedeagus. For illustrations of the male habitus and the aedeagus of *Z. longwangmontis* see PACE (1998b). From *Z. nepalensis*, which is of similar size and coloration, *Z. viti* differs by not distinctly flattened antennae, much coarser and sparser punctation of the pronotum, a more slender pronotum, completely different and more conspicuous modifications of the male abdomen, and by the different shape of the median lobe of the aedeagus; for illustrations of *Z. nepalensis* see PACE (1992b).

Four of the species listed as incertae sedis by SMETANA (2004) are from Taiwan. All of them were described by BERNHAUER (1914) based on material from Taiwan (*Z. formosae*, *Z. roepkei*, *Z. sauteri*) and Myanmar (*Z. bidentatus*). The details indicated in the original descriptions suggest that these four species refer to *Termidonia*, too; all of them are particularly distinguished from *Z. viti* by the modifications of the male abdomen.

Distribution and bionomics

The species is known only from the type locality, which is situated in Taitung County, Taiwan. The specimens were collected from a decaying tree trunk inhabited by termites of an unidentified species (Fig. 90). Two of the female paratypes are slightly teneral.

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