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| Linzer biol. Beitr. | 44/2 | 1017-1034 | 28.12.2012 |
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On the taxonomy of *Masuria*. IV. Four new species from China and Nepal, and additional records (Coleoptera: Staphylinidae: Aleocharinae)

V. ASSING

Abstract: *Masuria* (*Masuria*) *extensa* nov.sp. (eastern Nepal), *M. (Oncosomechusa) subnitens* nov.sp. (China: Yunnan), *M. (O.) appendiculata* (nov.sp. (China: N-Sichuan), and *M. (O.) schuelkei* nov.sp. (China: N-Sichuan) are described, illustrated, and distinguished from similar congeners. The systematic status of *Oncosomechusa* PACE 1982 is discussed. A supplement to a recent key to the species of *Masuria* CAMERON 1928 is provided. Additional records of ten species of *Masuria* (three of them undescribed) are reported. *Masuria* is distributed in the Himalaya and China; the genus now includes 28 described species, 19 in the nominate subgenus and nine in *Oncosomechusa*. A catalogue of the *Masuria* species is compiled. The distribution of the genus in China is mapped.

Key words: Coleoptera, Staphylinidae, Aleocharinae, Masuriini, *Masuria*, *Oncosomechusa*, East Palaearctic region, China, Nepal, new species, new records, catalogue, key to species, distribution.

Introduction

The taxonomy of *Masuria* CAMERON 1928, the sole representative of the tribe Masuriini, has been addressed in four revisionary studies by PACE (1989) and ASSING (1998, 2004, 2006). The genus previously comprised 24 species in two subgenera, the nominate subgenus (18 species) and *Oncosomechusa* PACE 1982 (six species); its distribution is confined to the Himalaya and China. A key to all 24 species was provided by ASSING (2006).

PACE (1982) originally described *Oncosomechusa* as a genus, but subsequently assigned the taxon to *Masuria* as a subgenus based on the similar mouthparts and the similar morphology of the aedeagus (PACE 1989).

An examination of material that has become available since the latest contribution yielded three new species from China, one from Nepal, and additional records of ten species from Nepal and China.

Material and methods

The material treated in this paper is deposited in the following collections:

- NME Naturkundemuseum Erfurt (M. Hartmann)
 OÖLL..... Biologiezentrum Oberösterreichisches Landesmuseum Linz (F. Gusenleitner)
 SMNS..... Staatliches Museum für Naturkunde, Stuttgart (W. Schawaller, K. Wolf-Schwenninger)
 SNSD Senckenberg Naturhistorische Sammlungen Dresden (O. Jäger)
 cAss..... author's private collection
 cPüt private collection Andreas Pütz, Eisenhüttenstadt
 cSch..... private collection Michael Schülke, Berlin
 cSme..... private collection Aleš Smetana, Ottawa

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

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

The map was created using MapCreator 2.0 (primap) software.

The systematic status of *Oncosomechusa* PACE

Based on an examination of nearly all known species of *Masuria*, the status and phylogenetic validity of *Oncosomechusa* appear most doubtful. As already observed by PACE (1989), the mouthparts and the primary sexual characters are of very similar general morphology.

Species of the nominate subgenus are typically characterised by the larger (length > 2.7 mm) and more slender body, larger (at least as long as postocular region) and distinctly convex eyes, the distinct, often coarse, dense, and sometimes even more or less confluent punctation of the forebody, the shape of the pronotum (less transverse, widest in anterior half, more strongly narrowed posteriad than anterior, posterior angles marked, lateral margins often more or less flattened, anteriorly often more or less angled, in posterior half at least straight, often sinuate), the longer elytra (approximately as long as pronotum or nearly so) with subparallel and somewhat convex lateral margins (dorsal view) and pronounced humeral angles, the distinctly sinuate posterior margins (near postero-lateral angles), the presence of hind wings, the shape of the abdomen (slender and distinctly narrower than elytra; widest at base and narrowed posteriad), the presence of a palisade fringe at the posterior margin of tergite VII, and by the internal structures of the aedeagus (flagellum long, strongly curved in lateral view, and basally distinctly dilated, often more or less anchor-shaped).

In species of *Oncosomechusa*, on the other hand, the body is usually smaller (< 3.0 mm, usually < 2.7 mm) and of stout habitus, the eyes are smaller (shorter than postocular region in dorsal view) and less convex, the punctation of the forebody is fine (often barely noticeable), the pronotum is of different shape (strongly transverse, approximately 1.3 times as broad as long, widest in the middle, posterior angles not marked, more or less rounded, lateral margins broadly convex, neither angled nor sinuate), the elytra are

extremely short (0.6 times as long as pronotum at most) and widened posteriorly, the humeral angles are obsolete or weakly marked, the posterior margin of the elytra is straight, not sinuate near posterior angles, the hind wings are completely reduced, the abdomen is broad (approximately as broad as elytra or even broader) and widest at segment V, the palisade fringe at the posterior margin of tergite VII is absent, and in most species the internal flagellum of the aedeagus is shorter, less strongly curved in lateral view, and not, or only weakly dilated basally.

However, the character combinations outlined above are linked by transitional conditions. In *M. smetanai*, a species currently attributed to the nominate subgenus, for instance, the eyes are small (shorter than postocular region in dorsal view) though still strongly convex, the pronotum has obtusely marked posterior angles, the lateral margins of the pronotum are not sinuate posteriorly, the elytra are short (0.70-0.75 times as long as pronotum) but not widened posteriorly, the hind wings are completely reduced, the pronotum is subparallel from segment III to segment VI, and the palisade fringe at the posterior margin of tergite VII is partly or completely reduced.

The limits between *Masuria* and *Oncosomechusa* are even more blurred by *M. yunnanica*, which on the one hand shares the habitus (stout body, broad abdomen), the reduced hind wings and palisade fringe, the posteriorly widened elytra, and the shape of the flagellum of the aedeagus with species of *Oncosomechusa*. On the other hand, the shape of the pronotum (widest in anterior half), the punctuation, and the pubescence (relatively long and suberect) resemble those of species of the nominate subgenus. Moreover, the eyes are large (longer than postocular region in dorsal view) though not strongly convex, the elytra are of intermediate length (0.7 times as long as pronotum), and the posterior margin of the elytra is moderately sinuate near the postero-lateral angles.

Whether or not all the species currently in *Oncosomechusa* and those in *Masuria* form monophyletic groups and two distinct lineages requires clarification. In the meantime *Oncosomechusa* is retained as a valid taxon, and the currently doubtful subgeneric assignment of *M. yunnanica* remains unchanged.

Catalogue of the species of *Masuria*

The species are listed in alphabetical order. The subgeneric assignment of *M. yunnanica* is doubtful (see discussion in the preceding section). Articles in the references column that provide descriptions and/or illustrations are given in bold print. They are abbreviated as follows: A98 = ASSING (1998); A04 = ASSING (2004); A06 = ASSING (2006); App = ASSING (present paper); C28 = CAMERON (1928); C39 = CAMERON (1939); P82 = PACE (1982); P87 = PACE (1987); P88 = PACE (1988); P89 = PACE 1989; P98 = PACE (1998).

| Taxon | Distribution | References |
|---|---------------------------------|----------------------------|
| Subgenus <i>Masuria</i> CAMERON 1928 | | |
| <i>ancoriformis</i> ASSING 1998 | central Nepal: Rasuwa Distr. | A98 , A04, A06, App |
| <i>annapurnae</i> ASSING 2004 | central Nepal | A04 , A06 |
| <i>daliensis</i> ASSING 2004 | China: Yunnan (Dali env.) | A04 , A06, App |
| <i>extensa</i> nov.sp. | eastern Nepal: Khandbari Distr. | App |

| Taxon | Distribution | References |
|--|---------------------------------|-----------------------------------|
| <i>ferruginea</i> CAMERON 1928 | North India | A06, C28, C39, P89 |
| <i>follita</i> ASSING 2006 | eastern Nepal | A06, App |
| <i>kali</i> PACE 1989 | eastern Nepal | A04, A06, P89 |
| <i>kleebergi</i> ASSING 2006 | Nepal: Rolwaling | A06, App |
| <i>loebli</i> PACE 1989 | central and eastern Nepal | A98, A04, A06, App, P89 |
| <i>longicornis</i> ASSING 1998 | eastern Nepal | A98, A04, A06 |
| <i>parva</i> CAMERON 1939 | North India: Ghum Distr. | A06, C39, P89 |
| <i>picipes</i> CAMERON 1928 | Nepal, North India | A98, A06, App, C28, C39, P89 |
| <i>plumbea</i> CAMERON 1928 = <i>nepalensis</i> PACE 1988 | Nepal, North India | A98, A06, App, C28, C39, P88, P89 |
| <i>rubida</i> CAMERON 1939 | North India: Ghum Distr. | A06, C39, P89 |
| <i>rufescens</i> CAMERON 1939 | North India: Ghum Distr. | A06, C39, P89 |
| <i>rugosepunctata</i> ASSING 1998 | eastern Nepal: Khandbari Distr. | A98, A04, A06 |
| <i>sculpticollis</i> ASSING 2006 | eastern Nepal: Rolwaling | A06 |
| <i>smetanai</i> PACE 1989 | eastern Nepal | A04, A06, App, P89 |
| <i>spectata</i> PACE 1989 | central Nepal | A06, P89 |
| Subgenus <i>Oncosomechusa</i> PACE 1982 | | |
| <i>appendiculata</i> nov.sp. | China: N-Sichuan | App |
| <i>besucheti</i> PACE 1982 | North India: Darjeeling | A06, P89 |
| <i>brevipennis</i> (ASSING 2006) | China: N-Yunnan | A06 |
| <i>chinensis</i> (PACE 1998) | China: Gansu: Xinlong Shan | A06, P98 |
| <i>martensi</i> PACE 1987 | central Nepal | A04, App, P87, P89 |
| <i>schuelkei</i> nov.sp. | China: N-Sichuan: Min Shan | App |
| <i>subnitens</i> nov.sp. | China: Yunnan: Gaoligong Shan | App |
| <i>tashigaonensis</i> (PACE 1989) | eastern Nepal: Khandbari Distr. | A06, P89 |
| <i>yunnanica</i> (ASSING 2004) | China: N-Yunnan | A04, A06 |

Additional records and species descriptions

Masuria plumbea CAMERON 1928

Material examined: Nepal: 1 ex., Gandaki prov., Manaslu range, Bara Pokhari Lekh, Chhandi Kholo, 2000-2300 m, 11.-12.IV.2003, leg. Schmidt (NME).

Comment: The species is widespread in northern India and Nepal (ASSING 1998, 2006). The above specimen represents the first record from the Manaslu range.

***Masuria picipes* CAMERON 1928**

M a t e r i a l e x a m i n e d : Nepal: 3 exs., 32 km NE Taplejung, Gyabla env., 27°35'N, 87°52'E, 2410 m, waterfall, 8.V.2003, leg. Weigel (NME, cAss); 4 exs., Annapurna, Lamjung Himal, Taunja Danda, NW-slope, 6.V.1996, leg. Jäger (SNSD, cAss).

C o m m e n t : *Masuria picipes* is widespread in northern India and Nepal (ASSING 1998, 2006).

***Masuria smetanai* PACE 1989 and *M. ancoriformis* ASSING 2004**

C o m m e n t : A revision of all the material previously identified as *A. smetanai* and *M. ancoriformis* in the author's collection revealed that these two species are in fact representatives of a complex of at least four species with highly similar male sexual characters. Only material from Sankhuvasabha District (previously reported as Khandbari District or Kosi) proved to be true *M. smetanai*, suggesting that even the paratypes of this species from Bagmati Province belong to a different species. Similarly, only specimens from Rasuwa District proved to be true *M. ancoriformis*. More material will have to be revised to clarify the identity of the material from other regions.

Masuria smetanai is best distinguished from the closely related described and undescribed species by the conspicuously dense punctation of the abdomen (including tergite VII), by the absence of hind wings, by the shorter elytra, and by the larger crista apicalis. Moreover, most specimens lack a palisade fringe at the posterior margin of tergite VII; in the remainder, only a rudiment of a palisade fringe is present. *Masuria ancoriformis* is characterised particularly by the broader pronotum with somewhat flattened, posteriorly sinuate lateral margins and sharper posterior angles, by the shorter lateral setae on the pronotum and the abdomen, as well as by the longer and more conspicuous pubescence on the abdomen.

Masuria* spp. aff. *ancoriformis

M a t e r i a l e x a m i n e d : Nepal: 4 exs., Mechi prov., between Amjilosa and Gyabla, 2400-2700 m, 4.IV.2003, leg. Weipert (NME, cAss); 4 exs., Taplejung district, Omje Kharka NW Yamputhin, 2300-2500 m, 1.-6.V.1988, leg. Schawaller (SMNS, cAss); 2 exs., Solukhumbu district, Hinku Drangka Khola bridge, 2000 m, 18.-19.V.1997, leg. Schawaller (SMNS).

C o m m e n t : The above material is apparently composed of at least two undescribed species (see comment in the preceding section).

***Masuria follita* ASSING 2006**

M a t e r i a l e x a m i n e d : Nepal: 5 exs., 32 km NE Taplejung, Gyabla env., 27°35'N, 87°52'E, 2410 m, waterfall, 8.V.2003, leg. Weigel (NME, cAss).

C o m m e n t : The previously known distribution of *M. follita* was confined to the Rolwaling Himal (ASSING 2006).

***Masuria kleebergi* ASSING 2006**

M a t e r i a l e x a m i n e d : Nepal: 1 ex., Rolwaling valley, Dugong Kharka, 2700-2800 m, 17.V.2000, leg Schmidt (cAss).

C o m m e n t : This recently described species is apparently endemic to the Rolwaling range (ASSING 2006).

***Masuria loebli* PACE 1989**

Material examined: Nepal: 1 ex., Dolakha District, SW Kalinchok Mt., 3100 m, 19-23.IV.1995, leg. Martens & Schawaller (SMNS).

Comment: The known distribution of *M. loebli* ranges from central to eastern Nepal (ASSING 2006).

***Masuria daliensis* ASSING 2004 (Map 1)**

Material examined: China: 3 exs., Yunnan, Dali Bai Auton. Pref., Diancang Shan W Dali, 25°42'N, 100°07'E, 2930 m, 28.V.2007, leg. Schülke (cSch, cAss).

Comment: The known distribution of *M. daliensis* is confined to the environs of Dali, Yunnan (Map 1). The above specimens were collected close to the type locality.

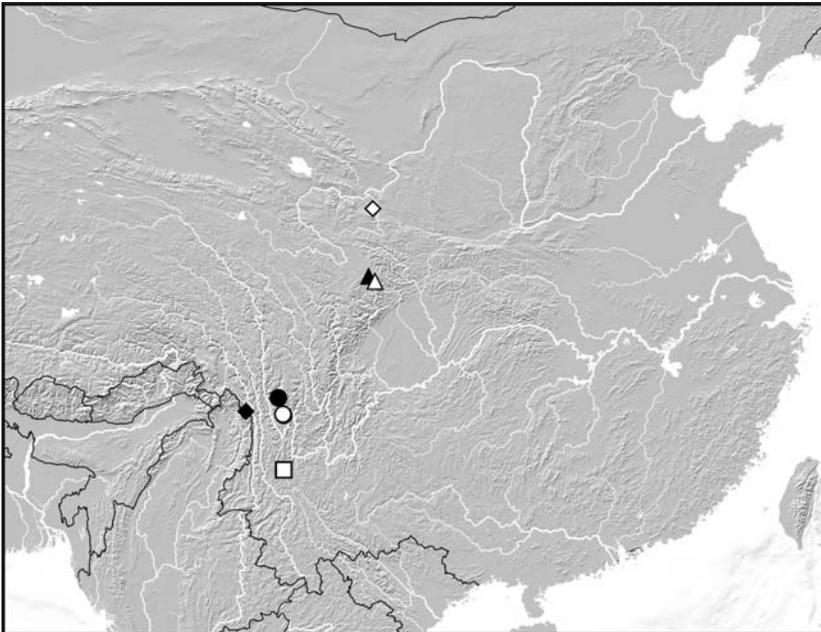
***Masuria martensi* PACE 1987**

Material examined: Nepal: 5 exs., Parbat District, between Deorali and Chitre, 2700 m, 1-2.V.1995, leg. Martens & Schawaller (SMNS, cAss).

Comment: The above specimens were collected close to the type locality.

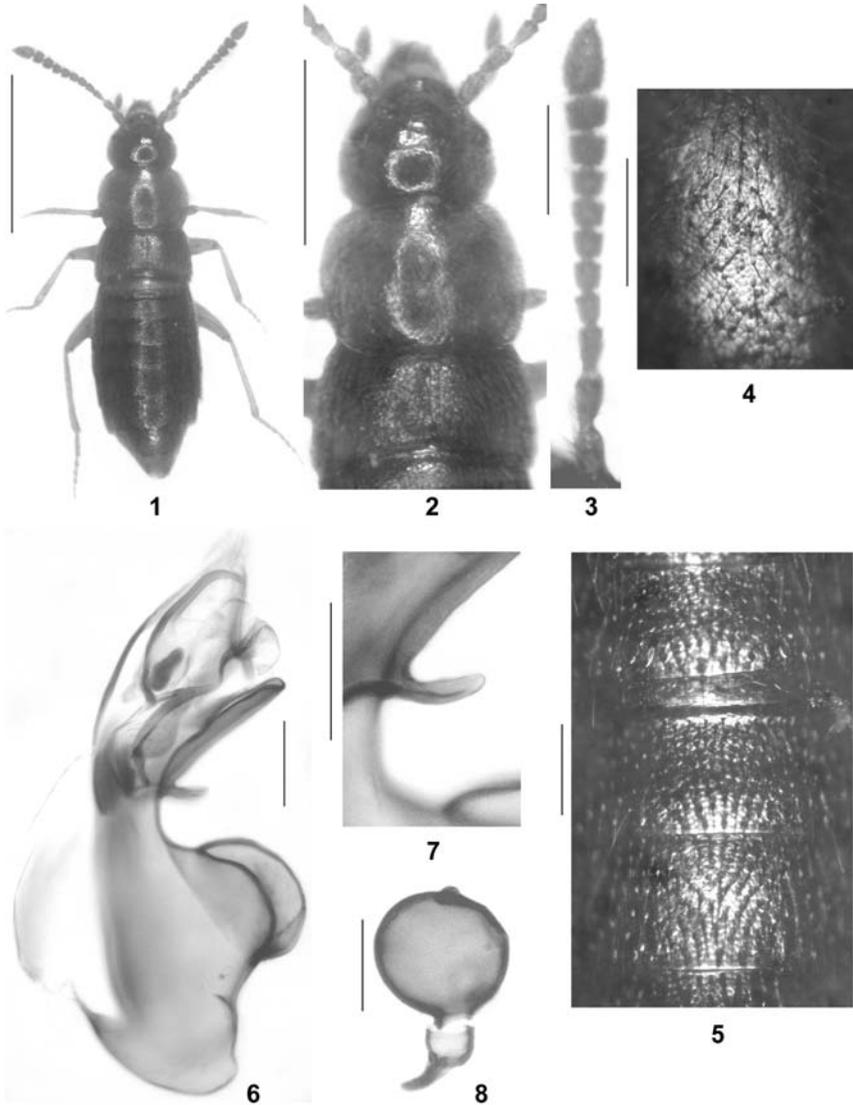
***Masuria* sp.**

Material examined: China: 1♀: "China: N-Yunnan, Diqing Tibet Aut. Pr., Bitai Hai Lake area, 29 km ESE Zhongdian, 27°43.65'N, 99°58.97'E, 3540 m, 1.VI.2005, A. Smetana [C147]" (cSme).



Map 1: Distribution of *Masuria* species in China: *M. chinensis* PACE (white diamond); *M. appendiculata* nov.sp. (black triangle); *M. schuelkei* nov.sp. (white triangle); *M. brevipennis* ASSING (black circle); *M. yunnanica* ASSING (white circles); *M. subnitens* nov.sp. (black diamond); *M. daliensis* ASSING (white square).

C o m m e n t : The specimen belongs to the subgenus *Oncosomechusa* and undoubtedly represents an undescribed species. Unfortunately, it is a female, so that a description is not advisable.



Figs 1-8: *Masuria appendiculata* nov.sp.: (1) habitus; (2) forebody; (3) antenna; (4) median dorsal portion of pronotum; (5) tergites IV-VI of abdomen; (6) median lobe of aedeagus in lateral view; (7) base of ventral process of median lobe in lateral view; (8) spermatheca. Scale bars: 1: 1.0 mm; 2: 0.5 mm; 3: 0.2 mm; 4-6: 0.1 mm; 7-8: 0.05 mm.

Masuria (Oncosomechusa) appendiculata nov.sp. (Figs 1-9, Map 1)

Type material: Holotype ♂: "China: N-Sichuan [CH12-24], pass 35 km NNW Songpan, 32°55'32"N, 103°25'56"E, 3600 m, moist N-slope with Salix and other shrubs, litter, grass roots & moss sifted, 11.VIII.2012, leg. M. Schülke / Holotypus ♂ *Masuria appendiculata* sp. n. det. V. Assing 2012" (cAss). Paratypes: 14 exs.: same data as holotype (cSch, cAss, OÖLL); 1♂, 7♀♀: "China [24] - N-Sichuan, pass NW Songpan, 3600 m, 32°55'32"N, 103°25'56"E, sifted, 11.VIII.2012, V. Assing" (cAss).

Etymology: The specific epithet (Latin, adjective) alludes to the pair of conspicuous appendages at the base of the ventral process of the aedeagus.

Description: Body length 2.0-2.6 mm; length of forebody 1.0-1.1 mm. Habitus as in Fig. 1. Coloration: forebody yellowish-red to reddish, often with the head slightly darker; abdomen dark-brown with the base and the apex reddish to variable extent; legs yellowish; antennae brown to dark-brown, with the basal 2-4 antennomeres reddish-yellow.

Head (Fig. 2) distinctly transverse; punctuation extremely fine, barely noticeable; interstices with shallow microreticulation; eyes relatively small and weakly projecting from lateral contours of head, shorter than postocular region in dorsal view. Antenna (Fig. 3) 0.85-0.90 mm long, relatively slender and moderately incrassate apically; antennomere III slightly shorter than II; IV weakly oblong, V approximately as wide as long, VI weakly transverse, VI-X of gradually increasing width and increasingly transverse, X less than twice as wide as long.

Pronotum (Figs 2, 4) relatively large and distinctly convex in cross-section, approximately 1.3 times as wide as long and 1.3 times as wide as head; maximal width approximately in the middle; posterior angles rounded, weakly marked; punctuation usually extremely fine and shallow, barely noticeable; microsculpture more pronounced than that of head; integument only with subdued shine; pubescence of midline directed caudad.

Elytra (Fig. 2) at posterior margin approximately as broad as pronotum, posteriorly distinctly widened, and very short, 0.50-0.55 times as long as pronotum; punctuation slightly more distinct than that of pronotum; microsculpture pronounced, more so than that of pronotum. Hind wings completely reduced. Legs slender; metatarsomere I approximately as long as the combined length of II-IV or slightly shorter.

Abdomen (Fig. 5) broad, widest at segment V; punctuation rather dense, fine, but more distinct than that of forebody, somewhat sparser on tergites VII and VIII than on anterior tergites; microsculpture pronounced, more so than that of forebody, particularly on anterior tergites; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII convex, in the middle sometimes weakly concave; posterior margin of sternite VIII strongly convex; median lobe of aedeagus (Figs 6-7) 0.5 mm long, at base of ventral process with pair of conspicuous appendages.

♀: tergite VIII of similar shape as that of male; sternite VIII posteriorly produced, in the middle moderately concave and with fringe of long, stout, pale-coloured marginal setae; spermatheca as in Fig. 8.

Comparative notes: *Masuria appendiculata* is characterised particularly by the pair of conspicuous appendages at the base of the ventral process of the aedeagus, a character separating it from all other species of the genus. It is additionally distinguished from the geographically close *M. schuelkei* and *M. chinensis* by the presence of distinct

microsculpture on the forebody and by the much finer punctation of the head and pronotum.

Distribution and natural history: The type locality is situated some 35 km to the northwest of Songpan in northern Sichuan (Map 1). The specimens were sifted from leaf litter, grass roots, and moss on a moist subalpine north slope with *Salix* and other shrubs at an altitude of 3600 m (Fig. 9).



Fig. 9: Type locality of *Masuria appendiculata* nov.sp..

***Masuria (Oncosomechusa) schuelkei* nov.sp.** (Figs 10-16, Map 1)

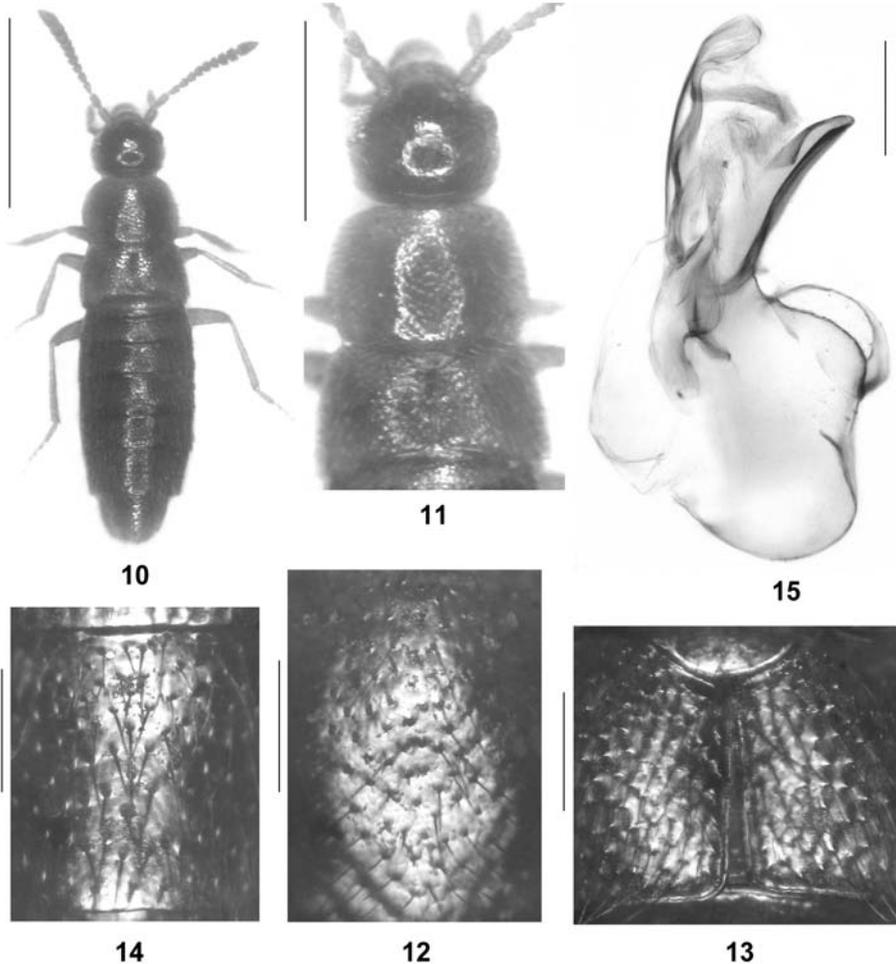
Type material: Holotype ♂: "China: N-Sichuan [CH12-22], Min Shan, pass 17 km NE Songpan, 32°44'54"N, 103°43'43"E, 4080 m, W-slope with scree and shrubs, litter and moss sifted, 10.VIII.2012, leg. M. Schülke / Holotypus ♂ *Masuria schuelkei* sp.n. det. V. Assing 2012" (cAss).

Etymology: The species is dedicated to my friend and colleague Michael Schülke, who collected the holotype.

Description: Body length 2.3 mm; length of forebody 1.0 mm. Habitus as in Fig. 10. Coloration: head brown; pronotum and elytra reddish-yellow; abdomen dark-brown with indistinctly paler apex; legs yellowish; antennae pale-brown, with the basal 3 antennomeres reddish-yellow.

Head (Fig. 11) distinctly transverse; punctation sparse and fine, but noticeable; interstices without microreticulation; eyes relatively small and weakly projecting from lateral contours of head, shorter than postocular region in dorsal view. Antenna relatively short, 0.75 mm long, moderately slender, and moderately incrassate apically; antennomere III distinctly shorter than II; IV indistinctly oblong, V weakly transverse, VI-X of gradually increasing width and increasingly transverse, X less than twice as wide as long.

Pronotum (Figs 11-12) relatively large and distinctly convex in cross-section, approximately 1.35 times as wide as long and 1.3 times as wide as head; maximal width approximately in the middle; posterior angles rounded, weakly marked; punctation moderately fine and distinct; interstices with traces of microsculpture visible only at high magnification, glossy; pubescence of midline directed caudad.



Figs 10-15: *Masuria schuelkei* nov.sp.: (10) habitus; (11) forebody; (12) median dorsal portion of pronotum; (13) median portion of elytra; (14) median portion of abdominal tergite VII; (15) median lobe of aedeagus in lateral view. Scale bars: 10: 1.0 mm; 11: 0.5 mm; 13: 0.2 mm; 12-15: 0.1 mm.

Elytra (Figs 11, 13) at posterior margin approximately as broad as pronotum, posteriorly distinctly widened, and very short, 0.50 times as long as pronotum; punctation somewhat granulose and slightly more distinct than that of pronotum; microsculpture absent. Hind wings completely reduced. Legs moderately slender; metatarsomere I nearly as long as the combined length of II-IV.

Abdomen broad, widest at segment V; punctation rather dense, moderately fine, and distinct; microsculpture absent (Fig. 14); posterior margin of tergite VII without palisade fringe.

♂: posterior margins of tergite and sternite VIII strongly convex; median lobe of aedeagus (Fig. 15) 0.4 mm long, at base of ventral process with pair of carinae.

♀: unknown.

Comparative notes: *Masuria schuelkei* is readily distinguished from *M. appendiculata*, its geographically closest congener, by the near absence of microsculpture on the whole body, by the much more distinct punctation of the forebody, by the shorter and less slender antennae and legs, as well as by the different morphology of the aedeagus. It is separated from *M. chinensis* from Gansu by smaller body size (*M. chinensis*: length of forebody approximately 1.2 mm), the more slender body, particularly the more slender abdomen (*M. chinensis*: abdomen broader than elytra), by the absence of microsculpture on the abdomen, and by the different shape of the median lobe of the aedeagus (ventral process less strongly bent, carinae instead of appendages at base of ventral process, crista apicalis of different shape).

Distribution and natural history: The type locality is situated 17 km to the northeast of Songpan in northern Sichuan (Map 1). The specimens were sifted from shrub litter and moss in a subalpine shrub habitat at an altitude of 4080 m (Fig. 16).

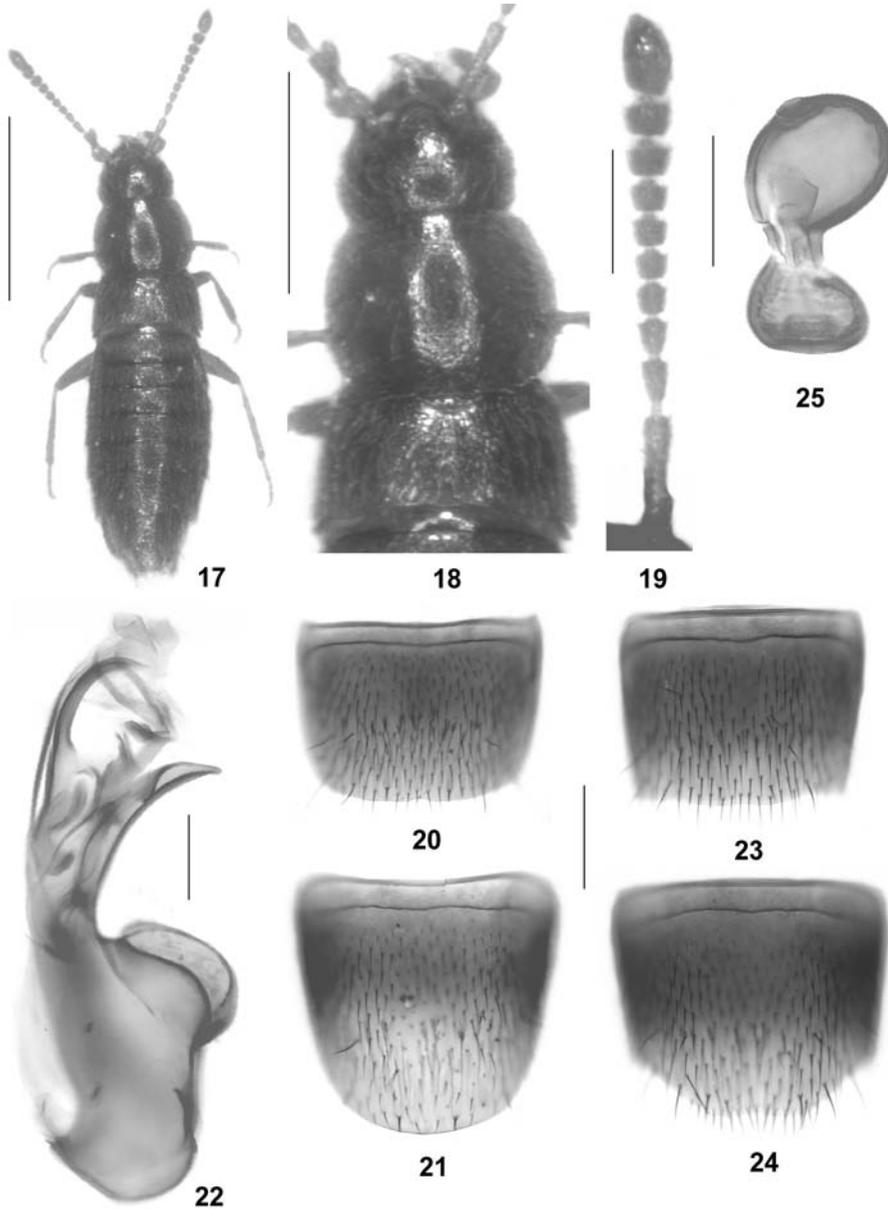


Fig. 16: Type locality of *Masuria schuelkei* nov.sp..

***Masuria (Oncosomechusa) subnitens* nov.sp.** (Figs 17-25, Map 1)

Type material: Holotype ♂: "China: Yunnan [CH07-21], Nujiang Lisu Auton. Pref., Gaoligong Shan, pass 22 km W Gongshan, N slope, 3350-3400 m, 27°46'27"N, 98°26'50"E, fern, moss, litter, sifted, 6.VI.2007, M. Schülke / Holotypus ♂ *Masuria subnitens* sp.n. det. V. Assing 2007" (cAss). Paratypes: 16 exs.: same data as holotype (cSch, cAss); 3 exs., same data as holotype, but leg. A. Pütz (cPüt, cAss).

E t y m o l o g y : The specific epithet (Latin, adjective) refers to the subdued shine of the forebody, one of the characters separating this species from other consubgenera known from Yunnan.



Figs 17-25: *Masuria subnitens* nov.sp.: (17) habitus; (18) forebody; (19) antenna; (20) male tergite VIII; (21) male sternite VIII; (22) median lobe of aedeagus in lateral view; (23) female tergite VIII; (24) female sternite VIII; (25) spermatheca. Scale bars: 17: 1.0 mm; 18: 0.5 mm; 19-21, 23-24: 0.2 mm; 22: 0.1 mm; 25: 0.05 mm.

Description: Body length 2.2-2.6 mm; length of forebody 1.0-1.2 mm. Habitus as in Fig. 17. Coloration: head and abdomen blackish, except for the dark-brown posterior part of segment VIII and the following segments; pronotum and elytra brown to dark-brown; legs dark-reddish; antennae dark-brown with the basal 3-4 antennomeres reddish.

Head (Fig. 18) with extremely fine, barely noticeable punctation and with distinct microreticulation; eyes relatively small and weakly projecting from lateral contours of head, approximately as long as postocular region in dorsal view or slightly shorter. Antenna (Fig. 19) 0.8-1.0 mm long, relatively slender and moderately incrassate apically; antennomere IV weakly oblong, V approximately as wide as long, VI weakly transverse, VI-X of gradually increasing width and increasingly transverse, X less than twice as wide as long.

Pronotum (Fig. 18) relatively large and distinctly convex in cross-section, 1.25-1.30 times as wide as long and approximately 1.3 times as wide as head; maximal width approximately in the middle; posterior angles rounded, weakly marked; punctation usually extremely fine and shallow, barely noticeable, rarely more distinct; microsculpture similar to that of head, usually pronounced, rarely very shallow; integument usually with weak shine; pubescence of midline directed caudad.

Elytra (Fig. 18) only indistinctly wider than pronotum and very short, at suture approximately 0.5 times as long as pronotum; punctation as fine as that of pronotum or slightly more distinct; microsculpture usually shallower than that of pronotum. Hind wings reduced. Legs relatively short; metatarsomere I elongated, slightly longer than the combined length of II-IV.

Abdomen broad, approximately 1.1 times as wide as elytra and widest at segment V; punctation rather dense, fine, and weakly granulose; microsculpture somewhat variable, but usually pronounced; posterior margin of tergite VII without palisade fringe.

♂: posterior margin of tergite VIII broadly and weakly convex, in the middle weakly concave (Fig. 20); sternite VIII distinctly longer than tergite VIII, its posterior margin broadly convex (Fig. 21); median lobe of aedeagus (Fig. 22) approximately 0.55 mm long.

♀: tergite VIII of similar shape as that of male (Fig. 23); sternite VIII longer than tergite VIII, but shorter than male sternite VIII, posteriorly produced, in the middle weakly concave, almost truncate, and with row of stout pale-coloured marginal setae (Fig. 24); spermatheca as in Fig. 25.

Comparative notes: *Masuria subnitens* is separated from all its congeners by the morphology of the aedeagus. From *M. brevipennis* and *M. yunnanica*, its geographically closest congeners, it is additionally distinguished as follows:

from *M. brevipennis* by the presence of distinct microsculpture on the head and pronotum, the extremely fine punctation on the head and pronotum, and by the more slender antennae with antennomere IV not transverse;

from *M. yunnanica* by the much shorter elytra (*M. yunnanica*: approximately 0.7 times as long as pronotum), the differently shaped pronotum (*M. yunnanica*: widest in anterior half), the weakly marked posterior angles of the pronotum (obtusely marked in *M. yunnanica*), the much finer punctation and shorter pubescence of the forebody, the much smaller eyes (*M. yunnanica*: eyes more convex and slightly longer than postocular region

in dorsal view), the straight posterior margins of the elytra (*M. yunnanica*: sinuate near posterior angles), and by the distinctly finer and shorter antennae.

Distribution and natural history: The type locality is situated in the Gaoligong Shan, western Yunnan province (Map 1). The types were collected by sifting litter, moss, and fern at an altitude of approximately 3400 m.

***Masuria (Masuria) extensa* nov.sp.** (Figs 26-31)

Type material: Holotype ♂: "Nepal Khandbari Distr. Pass NE Mangmaya 2300 m 6.IV.84 Smetana & Löbl / Holotypus ♂ *Masuria extensa* sp.n. det. V. Assing 2012" (cAss).

Etymology: The specific epithet (Latin, adjective: stretched) refers to the conspicuously long and slender antennae.

Description: Body length 3.1 mm; length of forebody 1.5 mm. Habitus (Fig. 26) similar to that of some species of *Leptusa* KRAATZ. Coloration: body reddish, with the head and the abdominal segment VI indistinctly and diffusely darker; legs and antennae reddish-yellow.

Head (Fig. 27) approximately as long as broad; punctation dense, distinct, moderately coarse, and well-defined; interstices glossy, without microsculpture, narrower than diameter of punctures. Eyes of moderate size, approximately as long as postocular region in dorsal view. Antenna (Fig. 28) conspicuously long (1.3 mm) and slender; antennomere II approximately 3 times as long as broad, slightly longer than I; III of similar shape as II, but slightly shorter; IV nearly 3 times as long as broad, slightly shorter than III; V approximately twice as long as broad, somewhat shorter than IV; VI distinctly oblong; VII approximately as long as broad; VIII-X of increasing width and increasingly transverse; X nearly 1.5 times as broad as long.

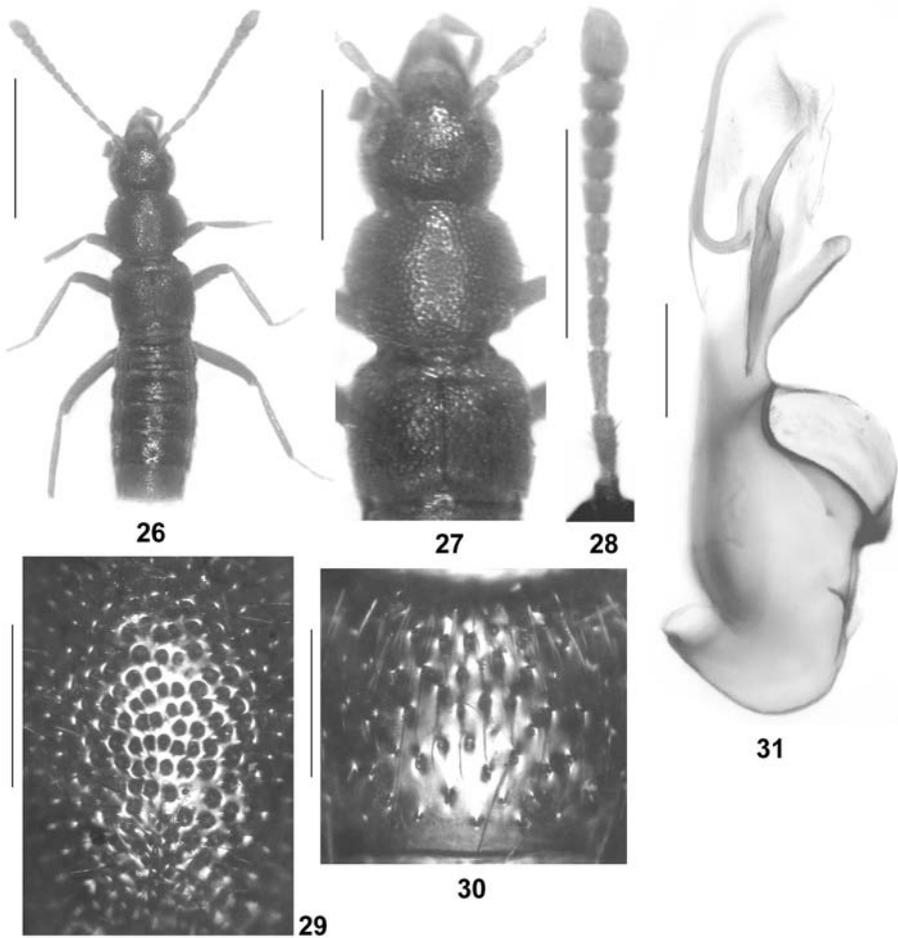
Pronotum (Figs 27, 29) approximately 1.2 times as broad as long, 1.2 times as broad as head, and as broad as elytra; lateral margins not angled, in posterior half straight in dorsal view; posterior angles obtusely marked; punctation dense, slightly coarser than that of head, and defined; interstices narrower than diameter of punctures and without microsculpture; lateral setae very long.

Elytra (Fig. 27) relatively short, 0.70-0.75 times as long as pronotum; humeral angles marked; lateral margins weakly convex and subparallel in dorsal view; near lateral margins somewhat impressed and at suture somewhat elevated; punctation distinct and granulose, less dense than that of head and pronotum; interstices without microsculpture and glossy. Hind wings completely reduced. Legs slender; metatarsomere I approximately as long as the combined length of II and III.

Abdomen almost as broad as elytra, widest at segment V; tergites III-V with distinct, moderately coarsely and densely punctate anterior impressions; remainder of tergal surfaces with very fine and rather sparse punctation (Fig. 30); interstices without microsculpture and glossy; posterior margin of tergite VII with palisade fringe.

♂: posterior margin of tergite VIII broadly convex; sternite VIII longer than tergite VIII, its posterior margin strongly convex; median lobe of aedeagus (Fig. 31) 0.43 mm long, base of flagellum moderately dilated, not anchor-shaped.

♀: unknown.



Figs 26-31: *Masuria extensa* nov.sp.: (26) habitus; (27) forebody; (28) antenna; (29) median portion of pronotum; (30) median portion of abdominal tergite V; (31) median lobe of aedeagus in lateral view. Scale bars: 26: 1.0 mm; 27-28: 0.5 mm; 29-31: 0.1 mm.

Comparative notes: Among its consubgenera, *M. extensa* is characterised by the morphology of the aedeagus, the conspicuously slender antennae and by the following characters combination: reddish coloration, forebody with distinct, defined, and dense punctation; whole body without microsculpture, short elytra, and completely reduced hind wings. In some external (habitus, punctation, coloration) and sexual characters (shape of flagellum in internal sac) *M. extensa* is similar to *M. ferruginea* from North India, which has less elongated antennae, a narrower pronotum, and a differently shaped median lobe of the aedeagus (see figures 30-32 in PACE 1989).

Distribution and natural history: The type locality is situated in eastern Nepal at an altitude of 2300 m. Additional data are not available.

Supplement to the key to species in ASSING (2006)

- 1 Elytra widened posteriad; mostly < 0.6 times as long as pronotum, only in one species from Yunnan approximately 0.7 times as long as pronotum; humeral angles weakly marked or obsolete. Tergite VII without palisade fringe. Hind wings completely reduced. Body stout, body length usually < 3.0 mm (in most species 2.7 mm at most); abdomen stout and approximately as broad as elytra. ♂: flagellum in internal sac of aedeagus in most species shorter, moderately curved at most, and basally weakly dilated. Subgenus *Oncosomechusa* 2
- Elytra with weakly convex, subparallel lateral margins in dorsal view, not dilated posteriad, at least 0.7 times as long as pronotum, mostly longer; humeral angles marked. Tergite VII usually with, only in one species from eastern Nepal often without palisade fringe. Hind wings in most species present. Body more slender, body length at least 2.8 mm, in most species > 3.0 mm; abdomen more slender and in most species narrower than elytra. ♂: flagellum in internal sac of aedeagus usually longer, strongly curved in lateral view, and basally distinctly dilated, often somewhat anchor-shaped. Subgenus *Masuria* 7
- 5 Elytra approximately 0.7 times as long as pronotum. Pronotum distinctly dilated in anterior half (ASSING 2004: figure 19). Punctuation of forebody distinct and well-defined. Eyes longer than postocular region in dorsal view (ASSING 2004: figure 19). Antennomere IV distinctly oblong, approximately 1.5 times as long as broad. Legs, especially metatarsus, long and slender. Abdomen without microsculpture. Aedeagus as in ASSING (2004: figure 20). China: N-Yunnan (Map 1) *M. yunnanica* (ASSING)
- Elytra shorter, 0.50-0.55 times as long as pronotum. Pronotum widest in the middle. Eyes shorter than postocular region in dorsal view 6
- 6 Species from northern Sichuan and Gansu. ♂: median lobe of aedeagus at base of ventral process at least with pair of carinae or distinct appendages 6a
- Species from Yunnan. ♂: median lobe of aedeagus at base of ventral process not even with rudimentary appendages 6c
- 6a Whole forebody with distinct microsculpture (Fig. 4). Head and pronotum with extremely fine punctuation (Figs 2, 4). ♂: median lobe of aedeagus at base of ventral process with pair of distinct appendages (Figs 6-7). ♀: spermatheca as in Fig. 8. N-Sichuan (Map 1) *M. appendiculata* nov.sp.
- Forebody glossy, with indistinct traces of microsculpture at most (Figs 12-13). Head and pronotum with moderately fine and distinct punctuation. ♂: median lobe of aedeagus at base of ventral process only with pair of carinae 6b
- 6b Body larger and broader. Abdomen with microreticulation. ♂: aedeagus shaped as in PACE (1998: figures 2-3). Gansu: Xinlong Shan (Map 1) *M. chinensis* (PACE)
- Body smaller and more slender (Fig. 10). Abdomen without microreticulation (Fig. 14). ♂: aedeagus shaped as in Fig. 15. N-Sichuan: Min Shan (Map 1). *M. schuelkei* nov.sp.
- 6c Head and pronotum without distinct microsculpture and with distinct punctuation. Antennae less slender and more strongly incrassate apically; antennomere IV weakly transverse, V distinctly transverse, VII approximately twice as wide as long, and X more than twice as wide as long. Metatarsomere I shorter than the combined length of II-IV. Spermatheca as shaped as in ASSING (2006: figure 38) (♂ unknown). N-Yunnan: surroundings of Zhongdian (Map 1) *M. brevipennis* (ASSING)
- Head and pronotum with usually distinct microsculpture, punctuation (usually) extremely fine and barely noticeable in the microsculpture (Fig. 18). Antennae more slender; antennomere IV approximately as wide as long, V weakly transverse, and X less than twice as wide as long (Fig. 19). Aedeagus and spermatheca as in Figs 22 and 25. W-Yunnan: Gaoligong Shan (Map 1) *M. subnitens* nov.sp.

- 11 Species from China. Flagellum in internal sac of aedeagus long and with small base (ASSING 2004: figures 14-15). Yunnan: Dali (Map 1).....*M. daliensis* ASSING
- Species from the Himalaya. Flagellum in internal sac of aedeagus usually shorter and with larger and often more or less anchor-shaped base. For a reliable identification of the following species, an examination of the aedeagus is usually essential 11a
- 11a Antenna conspicuously long and slender (Fig. 28); antennomere IV approximately 3 times as long as broad, V twice as long as broad, and VI distinctly oblong. Elytra short, < 0.75 times as long as pronotum. Hind wings completely reduced. ♂: aedeagus as in Fig. 31. Eastern Nepal.....*M. extensa* nov.sp.
- Antenna relatively shorter and less slender. Elytra in most species > 0.75 times as long as pronotum. Hind wings in most species present.....12

Acknowledgements

My thanks are extended to the colleagues indicated in the material section for the loan of material under their care, in particular to Michael Schülke and Aleš Smetana for the generous gift of the holotypes of the new species described in this paper.

Zusammenfassung

Masuria (Masuria) extensa nov.sp. (Ost-Nepal), *M. (Oncosomechusa) subnitens* nov.sp. (China: Yunnan), *M. appendiculata (O.)* nov.sp. (China: N-Sichuan) und *M. (O.) schuelkei* nov.sp. (China: N-Sichuan) werden beschrieben und von anderen Arten der Gattung unterschieden. Der systematische Status der Untergattung *Oncosomechusa* PACE 1982 wird diskutiert. Eine kürzlich publizierte Bestimmungstabelle der *Masuria*-Arten wird ergänzt. Weitere Nachweise von zehn Arten, davon drei unbeschrieben, werden gemeldet. *Masuria* ist im Himalaya und China verbreitet; die Gattung enthält derzeit 28 beschriebene Arten, 19 in der Untergattung *Masuria* und neun in *Oncosomechusa*. Ein Katalog der *Masuria*-Arten wird erstellt. Die Verbreitung der Gattung in China wird anhand einer Verbreitungskarte illustriert.

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Author's address:

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

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

Jahr/Year: 2012

Band/Volume: [0044_2](#)

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

Artikel/Article: [On the taxonomy of Masuria. IV. Four new species from China and Nepal, and additional records \(Coleoptera: Staphylinidae: Aleocharinae\) 1017-1034](#)