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Studies on the systematics and taxonomy of the genus *Hylaeus* F. (10) New descriptions and records of Asian *Hylaeus* species (Hymenoptera: Anthophila, Colletidae)

With 30 figures

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Summary

One new species from the Sinai Peninsula, *Hylaeus* (*Hylaeus*) *oliviae* spec. nov., and four new species from China are described: *Hylaeus* (*Hylaeus*) *ascheri* spec. nov., *Hylaeus* (*Hylaeus*) *maoxianus* spec. nov., *Hylaeus* (*Hylaeus*) *rozenius* spec. nov. and *Hylaeus* (*Paraprosopis*) *lushanicus* spec. nov. New data are presented on the distribution of further species, *Hylaeus* (*Hylaeus*) *bimaculatus* Chen & Xu, *Hylaeus* (*Hylaeus*) *sibiricus* (Strand), *Hylaeus* (*Hylaeus*) *tsingtauensis* (Strand), *Hylaeus* (*Nesoprosopis*) *floralis* (Smith), *Hylaeus* (*Nesoprosopis*) *transversalis* Cockerell, *Hylaeus* (*Patagiata*) *nigrocuneatus* Cockerell and *Hylaeus* (*Prosopis*) *ikudomei* Chen & Xu. *Hylaeus* (*Nesoprosopis*) *dathei* Chen & Xu is recognised as a new synonym of *Hylaeus* (*Nesoprosopis*) *transversalis* Cockerell.

Key words

China, Sinai, bee taxonomy, new species, synonymy, distribution

Zusammenfassung

Es werden ein Art von der Sinai-Halbinsel, *Hylaeus* (*Hylaeus*) *oliviae* spec. nov., sowie vier Arten aus China neu beschrieben: *Hylaeus* (*Hylaeus*) *ascheri* spec. nov., *Hylaeus* (*Hylaeus*) *maoxianus* spec. nov., *Hylaeus* (*Hylaeus*) *rozenius* spec. nov. und *Hylaeus* (*Paraprosopis*) *lushanicus* spec. nov. Für weitere Arten, *Hylaeus* (*Hylaeus*) *bimaculatus* Chen & Xu, *Hylaeus* (*Hylaeus*) *sibiricus* (Strand), *Hylaeus* (*Hylaeus*) *tsingtauensis* (Strand), *Hylaeus* (*Nesoprosopis*) *floralis* (Smith), *Hylaeus* (*Nesoprosopis*) *transversalis* Cockerell, *Hylaeus* (*Patagiata*) *nigrocuneatus* Cockerell und *Hylaeus* (*Prosopis*) *ikudomei* Chen & Xu, liegen neue Erkenntnisse zur Verbreitung vor. *Hylaeus* (*Nesoprosopis*) *dathei* Chen & Xu wird als Synonym von *Hylaeus* (*Nesoprosopis*) *transversalis* Cockerell festgestellt.

Introduction

The time is becoming ripe for a well-grounded review of the species of *Hylaeus* Fabricius, 1793 present in the West Palaearctic, and their distribution. An example of a work that partly meets this need is the Red Data Book of the IUCN (Dathe 2014). Substantial advances in this direction have also been made during recent years for northern regions of the East Palaearctic. Particularly the systematic studies conducted by Institute of Biology and Soil Science of the Russian Academy of Sciences, Far Eastern Branch, in Vladivostok, have covered the

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apifauna of large areas of Asiatic Russia (PROSHCHALYKIN 2003a, b, 2004, 2007a, b, 2008, 2010, 2012, 2014). In contrast, research in the southern parts of the East Palaearctic seems likely to remain based, for some time to come, mainly on smaller scale, selective collection of material and data. Recent studies by Chinese entomologists already indicate, that especially in China a greater richness and diversity of bee species can be expected than is at present known, and that this also applies to *Hylaeus* (CHEN & XU 2009, 2013, CHEN et al. 2010).

Currently, an important part of these initial studies is the critical assessment of data and names. When Cockerell collected in the Far East – 1923 in the Primorskiy Kray and 1927 around Lake Baikal – he was fairly sure that all species which he collected were unknown and that they required description as new species. Today we know that even the small Masked Bees may be distributed over huge ranges, and that great distances do not provide immunity from synonymy. The distribution limits of the described species are practically unknown: we only have occasional samples from what is undoubtedly an exceedingly rich fauna. The associated types have never been revised, so that even small contributions such as this may be justified, which is based on material collected during several joint expeditions by Chinese and American entomologists. The material was kindly made available by the American Museum of Natural History, New York. Simultaneously, it was possible to examine types deposited in the collections at Beijing, Washington and Müncheberg.

Methods and terminology

For the participating museums, the following abbreviations are used in the text:

AMNH American Museum of Natural History, New York, USA
CAU China Agricultural University, Entomological Museum, Beijing, China
IZCAS Chinese Academy of Sciences, Institute of Zoology, Beijing, China
MLU Martin-Luther-Universität Halle-Wittenberg, Zentralmagazin Naturwissenschaftlicher Sammlungen, Halle (Saale), Germany
MNHU Museum für Naturkunde, Leibniz-Institut für Evolutions- und Biodiversitätsforschung, Berlin, Germany
NHRS Naturhistoriska Riksmuseet, Stockholm, Sweden
NMNH National Museum of Natural History, Smithsonian Institution (formerly US National Museum, USNM), Washington, USA
SDEI Senckenberg Deutsches Entomologisches Institut, Müncheberg, Germany

Terminology generally follows the usage most recently employed by DATHE (2015).

CL Clypeal length. The median length of the clypeus from the basal to the apical margin.
CW Clypeal width. The distance between the clypeal margins at the level of the tentorial pits.
HL Head length. The maximum midline distance between the occipital margin and the apical margin of the clypeus in frontal view.
HW Head width. The maximum breadth of the head in frontal view, across the eyes.
LFW Lower facial width. The minimum distance between the eyes at their lower ends.
UFW Upper facial width. The maximum distance between the eyes at their point of greatest width. The relationship UFW:LFW is used to express the degree of convergence of the inner eye margins.
SL Scapus length. Maximum length of the scapus without the basal condylus.
SW Scapus width. Width of the scapus at its broadest point.
TL Total length.
WL Wing length. The length of the anterior wing, from the tegular margin to the forewing tip.

The structure of the integument surface, especially the gradation of punctation, is standardised in the following manner:

Punctation strength (without discrete measure in mm)	Punctation relative density (interspace distance *d* relative to puncture diameter)	
minute	contiguous	$d = 0$
fine	subcontiguous	$d = 0.25$
moderate	dense	$d = 0.3–0.7\ (0.5)$
strong	close	$d = 0.7–1.5$
coarse	sparse	$d = 2–3$
very coarse	scattered	$d =$ ca. 3–6

These terms are used as a pair in the descriptions to describe strength and density of the punctation, the two qualities being separated by a comma, e.g. "Frons and vertex with dense, strong punctation" (in *H. oliviae* spec. nov. male).

An Olympus SZX12 microscope was available for examination of specimens. The photos were taken with a system comprising a Leica Z6APO microscope, a DFC 450 camera and the Application Suite LAS Version 4.3.0. Composite images with an extended depth of field were created using the software CombineZ5 by Alan Hadley.

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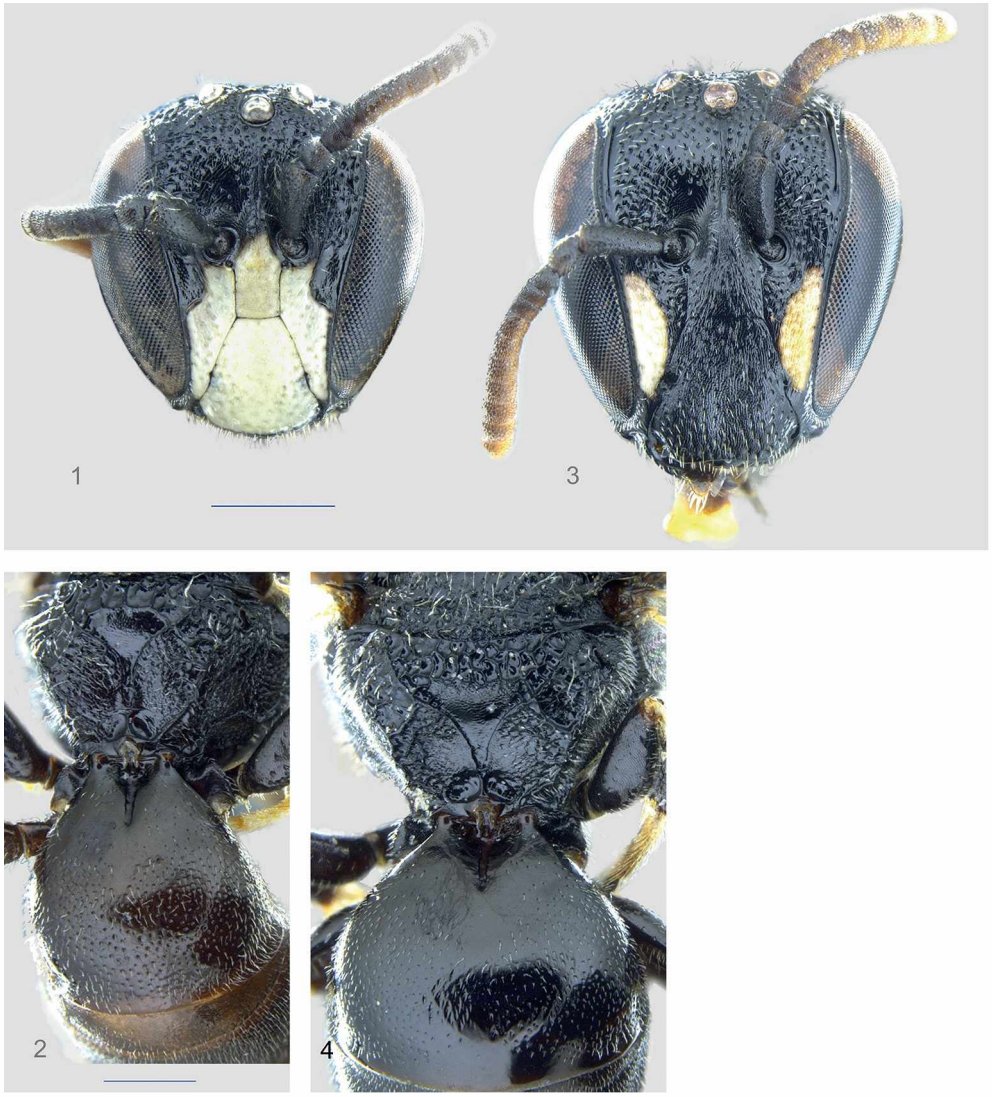
Taxonomy and distribution

Hylaeus (*Hylaeus*) *oliviae* spec. nov.
Figures 1–4, 27

Diagnosis: This species is evidently allied to *H. trifidus* (Alfken). Both forms are clearly recognisable in males by the smooth oval impressions between scapus bases and orbits. But *H. oliviae* spec. nov. differs in some important characters that are obviously associated with features of its lifestyle: Particularly in females, the lower part of the head is significantly longer and narrower, similar to the female of *H. moricei*.

Description: **Male**. TL 4.00 mm, WL 2,80 mm.
Head. Proportions HL:HW 1.07, UHW:LHW 1.55, outline elongate trapezoid. Scapi black with white spot at top, short, outline conical, SL:SW 2.53, barely wider than flagella width; flagella of medium length, black, yellow below. Mask complete, ivory white, side patches expanded to lower margin of scapi bases, dorsolaterally restricted by oval impressions with smooth sculpture. Foveae faciales form indistinct ridges at upper margin of compound eyes. Clypeus CL:CW 1.24, shagreen, matt, with low shallow punctation, anterior margin black. Supraclypeal area prolonged, narrow above, surface structure as clypeus, with gentle transition to the frons. Frons and vertex with dense, strong punctation, arranged on the frons in curved rows; interspaces shiny; vertex with moderately dense erect pilosity. Genae normal, with elongated punctation; occiput rounded; malae narrow. Labrum and the bifid mandibles black.
Mesosoma compact; pilosity white, sparse, partly erect. Coloration black, pronotum laterally with two short white stripes, calli and tegulae with white spot each. Pronotum narrow in the middle, laterally somewhat expanded, anterior margin and dorsolateral angles edged. Mesonotum and scutellum finely shagreen, shiny, punctation coarse, close; metanotum rugose, matt; mesopleurae with punctation close, coarse to very coarse, anterior margin rounded. Legs black, white are anterior surface of foretibiae, base and tip of other tibiae and whole tarsi, their ends



Figs 1–4: *Hylaeus* (*Hylaeus*) *oliviae* spec. nov.: head in frontal view; surface structure of propodeum and basal terga in dorsal view. – **1**, **2** Holotypus male. **3**, **4** Paratypus female. – Scale 0.5 mm.

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partially blackened; wings hyaline, venation light brown. Propodeum egded, rugose sculptured by shining wrinkled meshes; areal parts delimited by sharp ridges; basal area at its base with a row of small meshes, behind longitudinal meshes, the vertical part separated by transverse edge, this finely shagreen, the margins tapering to the medial furrow; terminal area coarsely wrinkled, sharply edged around.
Metasoma stocky, coloration black. T1 smooth and shiny, punctation moderate, sparse; T2 and following terga somewhat more finely and densely punctate; margins without distinct fringes. Terminalia (Fig. 27): genital capsule distinctly shorter and more compact than in *H. trifidus*, gonoforcipes short; S8 and S7 shaped similarly to *H. trifidus*.

Female. TL 4.1–4.8 (4.35) mm, WL 3.3–3.5 (3.40) mm.
Head. Proportions HL:HW 1.07, UHW:LHW 1.45, outline elongate trapezoid. Scapi black, flagella short, black, undersides yellow. Face with long white side spots at the orbits up to scapus bases. Foveae faciales long, reaching upper eye border, somewhat converging. Clypeus CL:CW 1.24, longitudinally striate, with indistinct shallow punctation, silkily shining; supraclypeal area not separated from clypeus by seam, with surface sculpture similar to clypeus, with a gradual transition to the frons. Frons and vertex with close, moderate streaky punctation. Genae regular, in outline sloping below; occiput rounded; malae distinct. Labrum and the bifid mandibles black.
Mesosoma compact, edged; pilosity sparse, thorax and propodeum with scattered white hairs, ventrally somewhat longer. Coloration black, pronotum laterally with two white stripes, tegulae and calli each with a white spot. Pronotum in the middle narrow, laterally somewhat expanded, anterior margin and dorsolateral angles edged. Mesonotum and scutellum finely shagreen, shining, punctation strong, dense; metanotum rugose, matt; mesopleurae with dense punctation close, strong, less coarse than in the male, anterior margin rounded. Legs black, white are bases of tibiae and basitarses, otherwise all parts black; wings hyaline, venation brown. Propodeum shaped similarly to male: edged, rugosely sculptured with shiny wrinkled meshes; areal parts delimited by sharp ridges; basal area basally with a row of small meshes, behind longitudinal meshes, the vertical part separated by transverse edge, this finely shagreen, the margins tapering to the medial furrow; terminal area coarsely wrinkled, sharply margined around.
Metasoma compact spindle-shaped, coloration black. T1 smooth and shiny, punctation scattered, fine, more coarse than in *H. trifidus,* caudal margin in the middle without punctation; following terga finely shagreen, with finer and denser shallow punctation; terga without fringes; fringe of last sternum bright.

Types: 1 ♂, 2 ♀.
Holotypus: ♂ EGYPT. Sinai: St. Katharine, 28°33'36.10"N 33°56'57.42"E, ca. 1600 m, 01–30.06.2013, leg. O. Norfolk. – In coll. SDEI Müncheberg.
Paratypes: 2 ♀ EGYPT, same location data as holotypus; 01.06–31.07.2013. – In coll. SDEI Müncheberg.

Discussion: This new taxon is closely related to *Hylaeus trifidus* (ALFKEN, 1936), but it is clearly separated by its

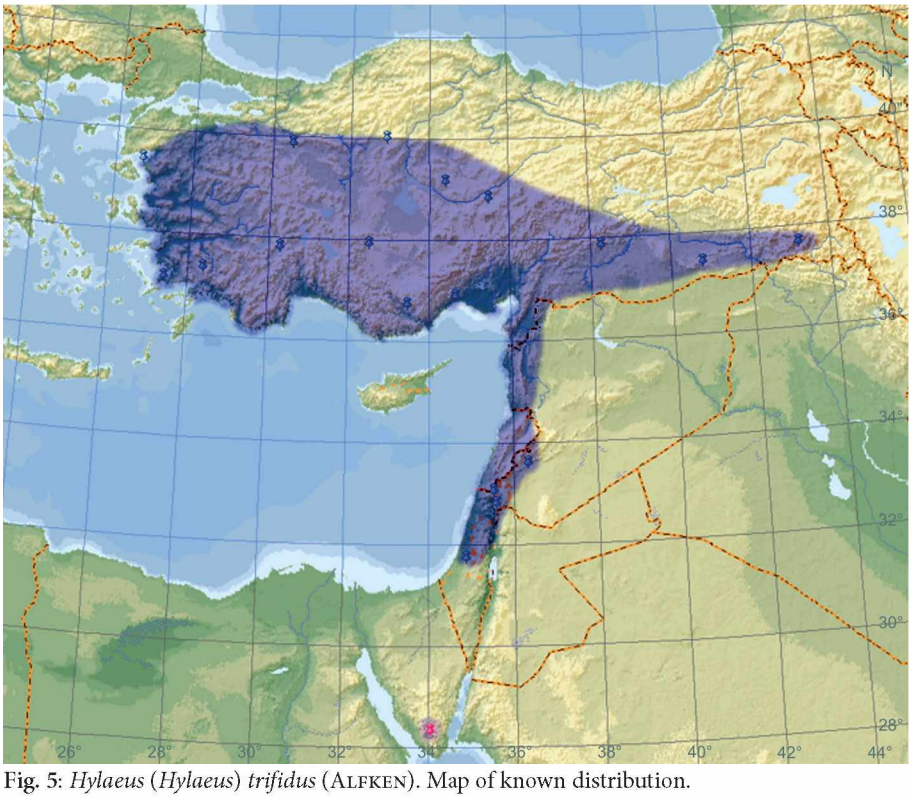

Fig. 5: *Hylaeus* (*Hylaeus*) *trifidus* (ALFKEN). Map of known distribution.

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occurrence outside the distribution area of *H. trifidus* (Fig. 5) and by significant morphological differences.
H. trifidus occurs between the Greek Aegean Islands (Lesvos, Chios) and the Hakkari Mountains mainly in the southern half of Turkey. The mark by Ascher & Pickering (2014) on the Greek mainland is a centroid point for Greece, not to be interpreted as local specimen record (Ascher, personal communication). The species is not distributed north of latitude 40°N. To the South, the species occurs along the eastern Mediterranean coastal region of Palestine and reaches the northern part of the Negev desert in Israel at approximately 31°N, but is not found further south in Egypt. A record from Iran ("Ispahan", Warncke 1972: 753) has been corrected (Warncke 1981: 191, "Isfahan"). However, it can be assumed that there was once a larger common area of distribution of *H. trifidus* populations, of which the southern ones became isolated (perhaps by desert conditions), and that it survived only on the mountainous "island" of Mt Katharine in the Sinai.
Morphologically, the head of *H. oliviae* females is much longer and narrower than that of *H. trifidus*; this points to a special adaptation to a different flower shape, i.e. an independent, divergent evolution. Norfolk et al. (in preparation) report flower visiting on *Foeniculum vulgare* Mill. (60 %) and *Anarrhinum pubescens* Fresen (40 %) in June and July.

Derivatio nominis: The new species is dedicated to the enthusiastic ecologist Olivia Norfolk (Nottingham).

Hylaeus (*Hylaeus*) *ascheri* spec. nov.
Figures 6–8, 28

Diagnosis: The new species *H. ascheri*, *H. rozenius* and *H. maoxianus* are very similar to each other. In males of *H. ascheri* the penis valves are constricted, as in the other species, and both sexes are remarkably setose. But *H. ascheri* differs in its ivory white face coloration and especially in the different shape of the male genital capsule. The clypeus in females is black without a spot.

Description: **Male**. TL 4.2–4.7 (4.38) mm, WL 3.3–3.7 (3.47) mm.
Head. Proportions HL:HW 0.89, UHW:LHW 1.79, profile transverse trapezoid. Scapi black, elongate, slender conoid, not wider than flagella, SL:SW 2.50; flagella of medium length, black, yellow below. Mask complete, ivory white, side patches expanded to upper margin of scapi bases, connect straight to orbits or pointed towards them. Foveae faciales indistinct. Clypeus CL:CW 1.32, smooth and shiny, with only a few scattered punctures, anterior margin brown. Supraclypeal area in the middle striate, above with moderate punctation along a short median groove, lateral edges sharp, with gentle transition to the frons. Frons and vertex with subcontiguous, strong punctation, on the frons arranged in curved rows; intervals shiny; vertex with moderately dense erect pilosity. Genae normal, with elongated punctation; occiput rounded; malae narrow. Labrum and the bifid mandibles black.
Mesosoma long-oval, rounded; pilosity conspicuous, thorax and propodeum covered with protruding long white hairs, dorsally somewhat shorter. Coloration black, pronotum laterally with two short light yellow stripes, calli with light yellow spot; tegulae horn brown. Pronotum narrow, only laterally somewhat expanded, anterior margin in the middle sharp, dorsolateral angles blunt. Mesonotum finely shagreen, silkily shiny, punctation strong, close; scutellum with somewhat larger and more scattered punctation, more shiny; metanotum matt, punctate; mesopleurae with punctation similar to mesonotum, anterior margin rounded. Legs black, yellow are anterior surface of foretibiae, base of other tibiae and proximal parts of basitarsi, other tarsi partially blackened; wings slightly brown, venation brown. Propodeum totally rounded, its surface finely reticulately wrinkled, slightly shiny; areal parts not delimited from one another; basal area basally with short, rugose longitudinal wrinkles which merge caudally; propodeal furrow deep, margined.
Metasoma narrow spindle-shaped, coloration black. T1 smooth and shiny, punctation moderate, close to sparse; surface with short erect hairs; T2 and following terga somewhat more finely and densely punctate; lateral parts of terga with indistinct sparse ciliary fringes. Terminalia (Fig. 28): genital capsule compact, long-oval, with enlarged gonobase and gonocoxites, gonoforcipes short and pointed; penis valves (in dorsal view) basolaterally constricted, arrow-shaped; S8 with apical lobus preapically constricted, ending in rounded lobes; S7 with proximal lobes compact, distal lobes formed as short wide flags.

Female. TL 4.2–4.4 (4.32) mm, WL 3.5–3.9 (3.72) mm.
Head. Proportions HL:HW 0.93, UHW:LHW 1.56, outline transverse elliptic. Scapi black, flagella short, black, undersides brown. Face with yellowish-white side spots, filling paraocular area up to middle of scapus bases. Foveae faciales long, reaching upper eye border. Clypeus CL:CW 1.21, longitudinally striate, matt, anteriorly with scattered shallow punctation; supraclypeal area separated from clypeus by fine seam, lower part with a similar structure, upper part with deep median sulcus, laterally punctate, with a gradual transition to the frons. Frons and vertex with subcontiguous, strong streaky punctation. Genae regular, in outline sloping below; occiput rounded; malae narrow. Labrum and the bifid mandibles black.
Mesosoma long-oval, rounded; pilosity conspicuous, thorax and propodeum covered with protruding long white hairs, dorsally somewhat shorter. Coloration black, pronotum laterally with two light yellow stripes, tegulae and calli each with a light yellow spot. Pronotum slightly expanded anteriorly, anterior margin sharp in the middle,

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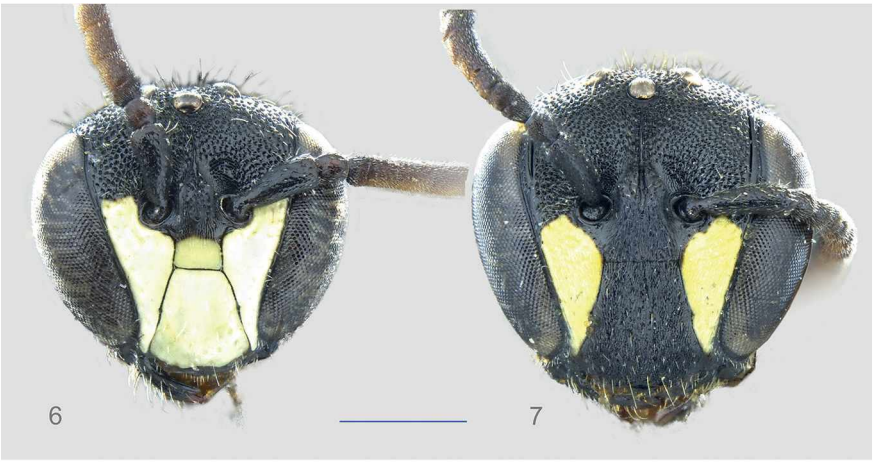

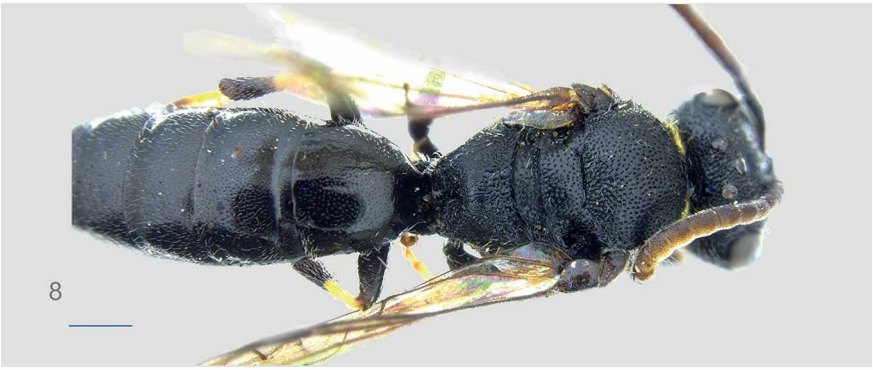

Figs 6–8: *Hylaeus* (*Hylaeus*) *ascheri* spec. nov.: head in frontal view; total view from dorsal. – **6, 7** Holotypus male. **8** Paratypus female. – Scale 0.5 mm.

dorsolateral angles blunt. Mesonotum and scutellum finely shagreen, silkily shiny, punctation strong, close; metanotum matt, more finely punctate; mesopleurae with punctation similar to mesonotum, anterior margin rounded. Legs black, yellow are bases of tibiae II and III; wings slightly brown, venation brown. Propodeum rounded, surface finely reticulately wrinkled, slightly shiny; basal area basally with short meshes, posteriorly with rugose longitudinal wrinkles which merge caudally; basal area marked by a series of pits which run into a funnel-shaped propodeal furrow, upper triangular part with fine shagreen.

Metasoma slender spindle-shaped, coloration black. T1 smooth and shiny, punctation sparse, fine; following terga finely shagreen, with shallow punctation; terga without fringes; fringe of last sternum bright.

Types: 4 ♂, 2 ♀.

Holotypus: ♂ CHINA. Sichuan Province: Lushan Mt. above Qionghai Lake, pine forest, 27°44.351N 102°20.517E, 6976 ft, 05.06.2011, leg. J.S. Ascher, L. Ding, Z. Niu & J.G. Rozen. – In coll. IZCAS Beijing.

Paratypes: 3 ♂, 2 ♀ CHINA, same collecting data. – In coll. IZCAS Beijing, AMNH New York, SDEI Müncheberg.

Derivatio nominis: The new species is dedicated to one of its collectors, Dr JOHN S. ASCHER (Singapore and New York).

Hylaeus (*Hylaeus*) *bimaculatus* CHEN & XU, 2013

Hylaeus (*Hylaeus*) *bimaculatus* CHEN & XU, 2013: 341–344, ♂, ♀. Holotypus ♂ coll. CAU, Beijing. Type locality: China, Yunnan Province, Zhongdian County, Napa Lake.

The species was hitherto known from the Yunnan Province only. New to Beijing and Sichuan Province.

New records:

CHINA. Beijing: Beijing Botanical Garden, 39°996'N 116°206'E, 77 m; 19.05.2011, 1 ♂. – Sichuan Province: above Baoxing, ca. 3200 m, 01.06.2011, 2 ♂ leg. J.S. Ascher, L. Ding, Z. Niu.

Hylaeus (*Hylaeus*) *maoxianus* spec. nov.

Figures 9–12, 29

Diagnosis: This species is characterised by the rounded propodeum with weak sculpture. A special feature of the males is the shape of the penis valves, that in dorsal view are strikingly constricted in the middle. Also in the other terminalia, the ground plan morphology of the subgenus *Hylaeus* is modified in a specific manner. The females can be easily recognised by the fungiform spot on the anterior margin of the clypeus. Both sexes are remarkably pilose.

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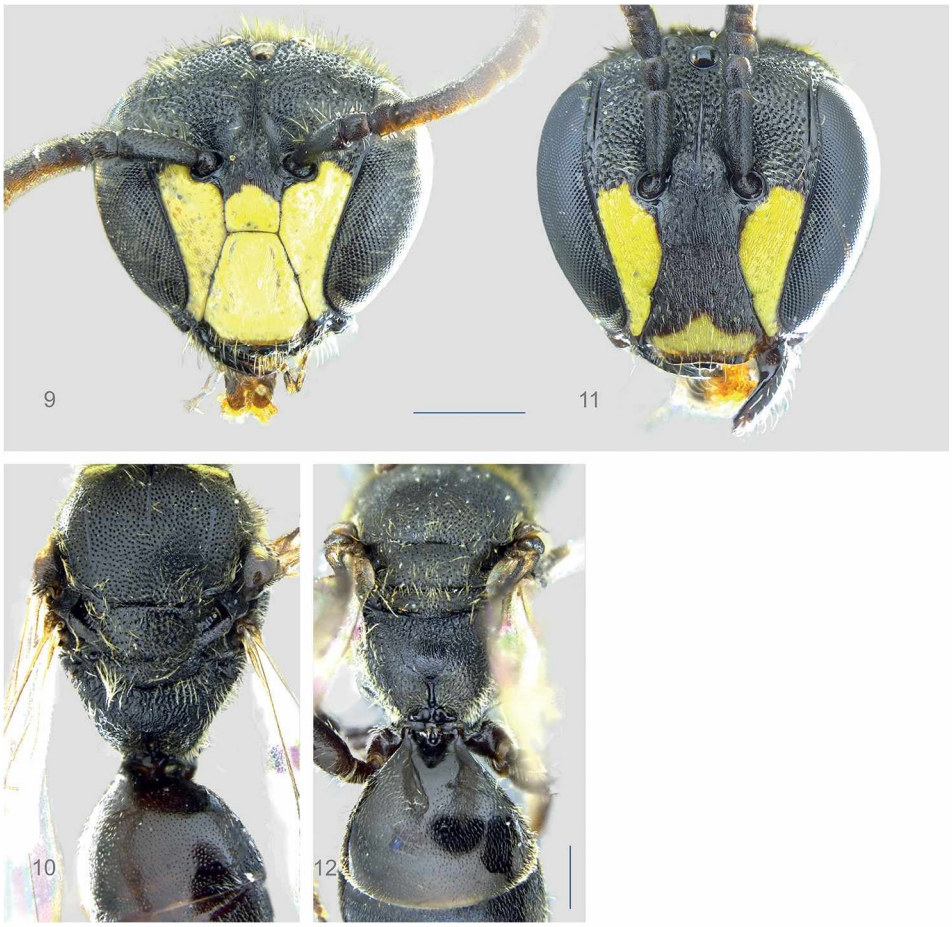

Figs 9–12: *Hylaeus* (*Hylaeus*) *maoxianus* spec. nov.: head in frontal view; surface structure of mesonotum, propodeum and basal terga in dorsal view. – **9**, **10** Holotypus male. **11**, **12** Paratypus female. – Scale 0.5 mm.

Description: **Male**. TL 3.5–5.1 (4.34) mm, WL 3.2–3.9 (3.51) mm.

Head. Proportions HL:HW 0.91, UHW:LHW 1.77, profile short trapezoid. Scapi black, elongate, slender, not wider than flagella, SL:SW 2.68; flagella long, black, yellow below. Mask complete, light yellow, side patches expanded to upper margin of scapi bases, declining to orbits. Foveae faciales short, indistinct, formed as short ridges at upper margin of complex eye. Supraclypeal area little vaulted, its lateral profile follows the curvature of the face with gentle transition to the frons; upper half of the supraclypeal area with shallow median sulcus. Clypeus CL:CW 1.29, finely shagreen with only few scattered punctures, shiny, anterior margin light brown. Frons and vertex with subcontiguous, strong punctation, on the frons arranged in curved rows; vertex with moderately dense erect pilosity. Genae normal, with elongated punctuation; occiput edged in the middle, laterally rounded; malae narrow. Labrum and mandibles black, the latter bifid.

Mesosoma normally formed, overall rounded; pilosity conspicuous, thorax and propodeum entirely with protruding long white hairs, dorsally somewhat shorter. Coloration black, only pronotum laterally with two short yellow stripes, tegulae and calli with yellow spot. Pronotum very narrow, anterior margin sharp in the middle, dorsolateral angles little expanded, blunt-edged. Mesonotum and scutellum finely shagreen, silkily shiny, punctation moderate, close; scutellum with somewhat larger and more scattered punctation, more shiny; metanotum matt, finely punctate; mesopleurae shiny, with somewhat coarser and more scattered punctation than mesonotum, anterior margin rounded. Legs black, anterior surface of foretibiae, base of other tibiae and basitarsi yellow; wings hyaline, venation dark brown. Propodeum totally rounded, its surface weakly sculptured, slightly shiny; basal area bounded laterally by fine carinae only, other areas not otherwise delimited; propodeal furrow deep, parallel-sided.

Metasoma narrow spindle-shaped, coloration black. T1 smooth and shiny, punctation sparse, moderate; surface with short erect hairs; T2 and following terga with fine shagreen and shallow, close punctation; T1 and T2 with indistinct white lateral fringe, interrupted white ciliary bands on depression of the following terga. Terminalia (Fig. 29): genital capsule short, compact, characterised by laterally deeply constricted penis valves (in dorsal view); the shaft of apical lobus of S8 appears preapically constricted and ends in rounded two-part lobe without bristles; S7 wide at the central part, proximal lobes short, with more pronounced distal lobes ("flags").

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Female. TL 4.7–5.2 (4.82) mm, WL 3.9–4.2 (4.02) mm.
Head. Proportions HL:HW 0.93, UHW:LHW 1.58, outline transverse elliptic. Scapi black, flagella short, black, undersides yellow. Face with yellow side spots filling paraocular area below foveae. Foveae faciales long, reaching upper eye border. Clypeus CL:CW 1.23, longitudinally finely striated, matt, without punctation; supraclypeal area with the same structure, indistinctly separated from clypeus, with a gradual transition to the frons. Frons and vertex with subcontiguous, strong punctation. Genae normal, in outline sloping below. Labrum and bifid mandibles black.
Mesosoma normally formed, rounded; pilosity conspicuous, entire thorax and propodeum with protruding long white hairs, dorsally somewhat shorter. Coloration black, pronotum laterally with two yellow stripes, tegulae and calli each with a yellow spot. Pronotum barely expanded anteriorly, anterior margin narrow in the middle, dorsolateral angles little expanded with blunt edges. Mesonotum and scutellum finely shagreen, silkily shiny, punctation moderate, close; scutellum with somewhat larger scattered punctation, glossy; metanotum matt, finely punctate; mesopleurae shiny, with somewhat coarser and more scattered punctation than mesonotum, anterior margin rounded. Legs black, only base of tibiae and basitarsi yellow; wings hyaline, venation dark brown. Propodeum totally rounded, its surface weakly sculptured, slightly shiny; basal area not bounded laterally, with short wrinkled longitudinal ridges at its base; other propodeal areas not marked or otherwise delimited; propodeal furrow deep.
Metasoma stocky spindle-shaped, black. T1 smooth and shiny, punctation sparse, strong; following terga finely shagreen, with moderate shallow punctation, depressions not separate; T1 with sparse white ciliary flecks; fringe of last sternum bright.

Types: 10 ♂, 4 ♀.
Holotypus: ♂ CHINA. Sichuan Province: Ngawa pref., nr Maoxian, stream, 31°45.111N 104°00.021E, 4265 ft, 25.05.2011 leg. J.S. Ascher, L. Ding, Z. Niu & J.G. Rozen. – In coll. IZCAS Beijing.
Paratypes: 9 ♂, 4 ♀ CHINA, same collecting data. – In coll. IZCAS Beijing, AMNH New York, SDEI Müncheberg.

Derivatio nominis: The name refers to the type locality of the new species; it is an adjective.

Hylaeus (*Hylaeus*) *rozenius* spec. nov.
Figures 13–18, 30

Diagnosis: Compared to the related species *H. maoxianus* and *H. ascheri* spec. nov., *H. rozenius* spec. nov. is distinguished primarily by characters of the head, the propodeum and male terminalia. Special character states exist in the complex of supraclypeal area and frons, by which this species can be immediately recognised.

Description: **Male**. TL 4.7–5.1 (4.89) mm, WL 3.9–4.0 (3.97) mm.
Head. Proportions HL:HW 0.91, UHW:LHW 1.70, outline transverse trapezoid. Scapi black, elongate, slender conoid, barely wider than flagella width, SL:SW 2.64; flagella long, black, yellow below, segments slightly nodular. Mask ivory white, side patches expanded to upper margin of scapi bases, contracted towards orbits; supraclypeal area black. Foveae faciales absent. Clypeus CL:CW 1.34, finely vertically striate, silkily shiny, with scattered shallow punctation at anterior margin. Supraclypeal area striate below, with moderate punctation above, lateral margins sharp, additionally the upper half is split as by a deep medial furrow, with abrupt right angled transition to the frons (Fig. 14). Frons and vertex with subcontiguous, strong punctation, on the frons arranged in curved rows; interspaces shiny; vertex with moderately dense erect pilosity. Genae normal, with elongated punctation; occiput rounded; malae narrow. Labrum and the bifid mandibles black.
Mesosoma long-oval, rounded; pilosity conspicuous, thorax and propodeum covered with protruding long white hairs, dorsally somewhat shorter. Coloration black, pronotum black, calli with white spot; tegulae horn brown. Pronotum narrow, laterally somewhat expanded, anterior margin edged, dorsolateral angles blunt. Mesonotum and scutellum finely shagreen, silkily shiny, punctation strong, sparse; metanotum matt, finely punctate; mesopleurae with similar but somewhat more dense punctation than mesonotum, anterior margin rounded. Legs black, white are anterior surface of foretibiae, base of other tibiae and proximal parts of basitarsi, other tarsi partly brownish; wings slightly brown, venation brown. Propodeum totally rounded, its surface finely wrinkled-striate, matt; basal area indistinctly defined by a row of fine pits, at its base with irregular longitudinal wrinkles which merge caudally; terminal area not delimited, propodeal furrow deep, margined.
Metasoma slender spindle-shaped, coloration black. T1 smooth and shiny, punctation moderate, sparse; surface pits with short erect setae; T2 and following terga shagreen and somewhat more finely and densely punctate; lateral parts of terga without fringes. Terminalia (Fig. 30): genital capsule compact, long-oval, with enlarged gonobase and gonocoxites, gonoforcipes short and pointed; penis valves (in dorsal view) basolaterally constricted, arrow-shaped; S7 and S8 similar to *H. ascheri* spec. nov. but deviating in detail: S8 with apical lobus preapically constricted, ending in smaller lobes; S7 with proximal and distal lobes more expanded.

Female. TL 4.8–5.2 (5.00) mm, WL 4.0–4.4 (4.15) mm.
Head. Proportions HL:HW 0.96, UHW:LHW 1.52, outline trapezoid. Scapi black, flagella short, black, undersides brown. Face with white to yellowish-white side spots, filling paraocular area nearly up to scapus bases. Foveae faciales long, reaching upper compound eye border. Clypeus CL:CW 1.24, longitudinally striate, matt,

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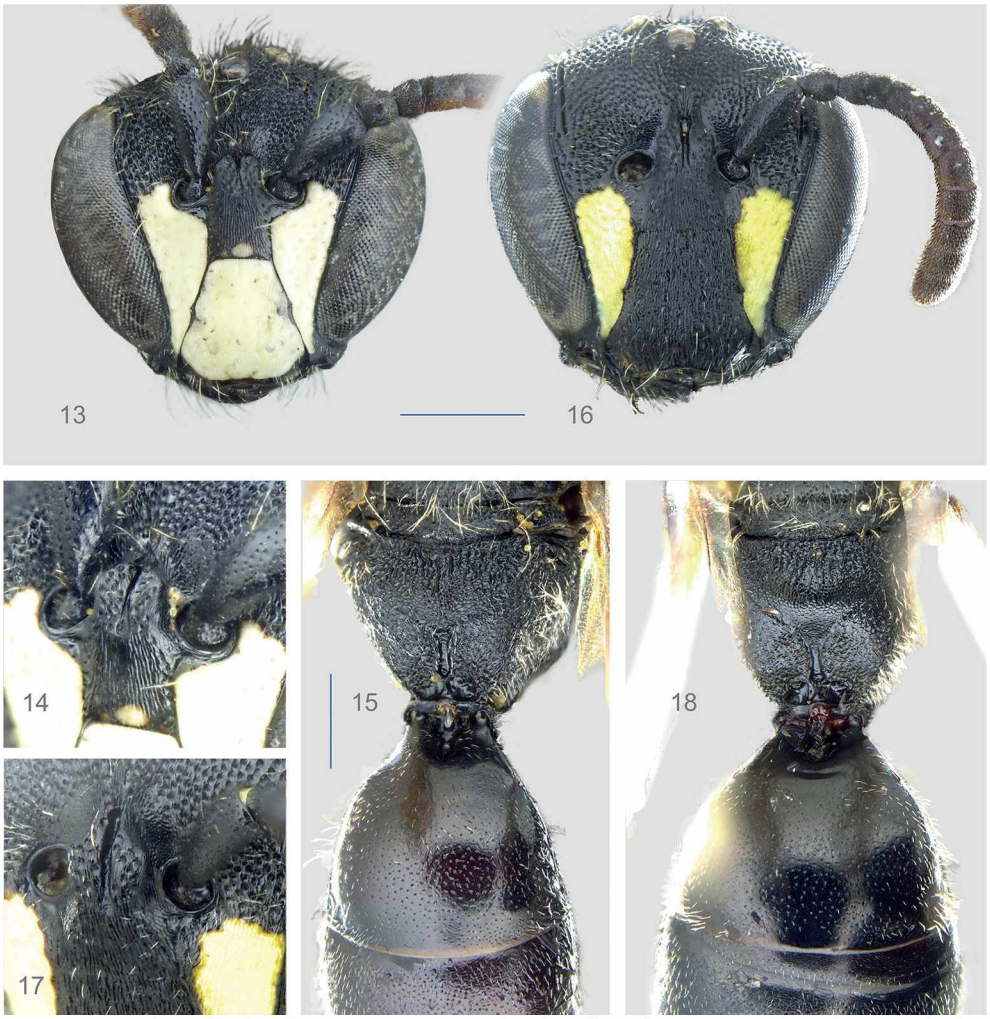

Figs 13–18: *Hylaeus* (*Hylaeus*) *rozenius* spec. nov.: head in frontal view; supraclypeal area in higher magnification; surface structure of propodeum and basal terga in dorsal view. – **13–15** Holotypus male. **16–18** Paratypus female. – Scale 0.5 mm.

without punctation; supraclypeal area separated from clypeus by fine seam, lower part with a similar structure, upper part with deep middle furrow that widens up to a small pit at the transition to frons (where pollen is regularly found), surface laterally punctate, transition to the frons steep but not as right angled as in the male (Fig. 17). Frons and vertex with subcontiguous, strong punctation. Genae regular, in profile sloping below; occiput rounded; malae narrow. Labrum and the bifid mandibles black.

Mesosoma rounded oval, somewhat flattened; pilosity conspicuous, thorax and propodeum covered with protruding long white hairs, dorsally somewhat shorter. Coloration black, pronotum and tegulae black, calli with yellow spot. Pronotum slightly expanded anteriorly, anterior margin edged, dorsolateral angles blunt. Mesonotum and scutellum finely shagreen, silkily shiny, punctation strong, close; metanotum matt, finely punctate; mesopleurae with similar but somewhat more dense punctation than mesonotum, anterior margin rounded. Legs black, yellow are only bases of tibiae; wings slightly brown, venation brown. Propodeum rounded, its surface finely wrinkled-striate, matt; basal area indistinctly defined by a furrow, basally with meshes and irregular longitudinal wrinkles which merge caudally; terminal area not delimited, propodeal furrow deep, edged laterally.

Metasoma slender spindle-shaped, coloration black. T1 smooth and shiny, punctation moderate, sparse to scattered; following terga finely shagreen, with shallow punctation; terga without fringes; fringe of last sternum bright.

Types: 3 ♂, 4 ♀.

Holotypus: ♂ CHINA. Sichuan Province: Lushan Mt. above Qionghai Lake, pine forest, 27°44.351N 102°20.517E, 6976 ft, 05.06.2011, leg. J.S. Ascher, L. Ding, Z. Niu & J.G. Rozen. – In coll. IZCAS Beijing.

Paratypes: 2 ♂, 4 ♀ CHINA, same collecting data as holotypus. – In coll. IZCAS Beijing, AMNH New York, SDEI Müncheberg.

Derivatio nominis: The new species is dedicated to one of its collectors, the meritorious hymenopterist Dr Jerome G. Rozen (Washington).

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Hylaeus (*Hylaeus*) *sibiricus* (STRAND, 1909)

~~*Hylaeus* (*Hylaeus*) *bimaculatus* CHEN & XU, 2013: 341–344, ♂, ♀. Holotypus ♂ coll. CAU, Beijing. Type locality: China, Yunnan Province, Zhongdian County, Napa Lake.~~

Prosopis sibirica STRAND 1909: 74–75, 1 ♂. Holotypus coll. MNHU Berlin. Type locality: "Siberia, Smolenschina" [near Irkutsk, Irkutsk Prov., Russia].

Prosopis sjoestedti ALFKEN 1936: 9–10, ♀, ♂. Holotypus ♀ coll. NHRS Stockholm. Type locality: China, South Kansu. Synonymised by DATHE 1986a: 287.

Hylaeus sibiricus: COCKERELL 1937: 5; DATHE 1986a: 287; 1986b: 37; QUEST 2009: 134; PROSHCHALYKIN & QUEST 2009: 239; PROSHCHALYKIN & DATHE 2012: 17.

?*Hylaeus communis excurrens* COCKERELL 1937: 5–6, ♀. Holotypus ♀ coll. AMNH New York. Type locality: "Siberia: Smolenschia, near Irkutsk" [Irkutsk Prov., Russia]; DATHE 1986b: 38.

Distribution: China, Mongolia, Asian part of Russia. In China, this species had been found hitherto only in the Jilin and Gansu provinces, records from Beijing and Henan Province are new.

New records:

CHINA. Beijing: Changping, Liucan, 07.08.2009, 1 ♂ leg. J.S. Ascher, H. Xu, C.D. Zhou; Beijing Botanical Garden, 39°996'N 116°206'E, 77 m; 19.05.2011, 3 ♂ 5 ♀; Huyu Natural Scenic Area, 40°275'N 116°146'E, 243 m, 19.05.2011, 1 ♂ 3 ♀; Jiu Feng, 19.05.2011, 6 ♂ 2 ♀ leg. J.S. Ascher, L. Ding, Z. Niu. – Henan Province: Shaolin Temple, 12.08.2009, 2 ♂ leg. J.S. Ascher, C. Dong.

Hylaeus (*Hylaeus*) *tsingtauensis* (STRAND, 1915)

Figures 19, 20

Prosopis tsingtauensis STRAND, 1915: 62-63. 1 ♀. Holotypus coll. SDEI Müncheberg (Fig. 20). Type locality: China, Tsingtau [Dsingdao, Shandong Prov.]. – IKUDOME 2013: 4.

Hylaeus pallescens COCKERELL, 1924a: 279–280. 1 ♀. Holotypus coll. NMNH Washington. Type locality: Russia: "Okeanskaja, Siberia" (Vladivostok, Primorskiy Territory). Synonymised by IKUDOME 2013: 4. – PROSHCHALYKIN & DATHE 2012: 16. PROSHCHALYKIN 2014a: 484; PROSHCHALYKIN 2015: 7.

Hylaeus (*Hylaeus*) *stentoriscapus* DATHE, 1986a: 271–273. ♀, ♂. Holotypus ♂ coll. MLU Halle (Saale). Type locality: Mongolia: "Charchiraa uul, Ulaangom Umgebung". Synonymised by PROSHCHALYKIN & DATHE 2012: 16. – KONUSOVA & YANUSHKIN 2000: 284; PROSHCHALYKIN 2003a: 26; 2004: 3; 2007a: 882; 2007b: 89; 2008: 6; 2010: 509; IGNATENKO 2004: 112; IGNATENKO & PROSHCHALYKIN 2005: 244; EREMEEVA et al. 2006: 26; KONUSOVA et al. 2007: 213; QUEST 2009: 123; EBMER 2011: 13.

Prosopis stentoriscapus: OSYTSHNJUK & ROMANKOVA 1995: 486.

Discussion: This species is also apparently considerably more widely distributed than previously thought (DATHE 1986a: 273, PROSHCHALYKIN & DATHE 2012: 17, PROSHCHALYKIN 2014a: 484). It was first described by STRAND (1915) from China (Dsingdao, Shandong Province), as *Prosopis tsingtauensis* (IKUDOME 2013).

A further form is now known from Sichuan Province, which however is slightly different. This is represented by four males, which although slightly smaller than the previously known specimens, are otherwise morphologically very similar, especially with respect to the male terminalia. However, these specimens differ by being clearly darker, having conspicuously large scapi that are completely dark except for a small white fleck at the tip (Fig. 19), and their mandibles and mostly also the pronotum are black. The mesosoma is conspicuously hairy. These characters are presumably a result of the higher altitude (1300 m) at which the specimens were collected.

Distribution: Mongolia; Asian part of Russia (Tomsk Province, Kemerovo Province, Khakasia Republic, Altai Republic, Irkutsk Province, Buryatia, Zabaikalskiy Territory, Amurskaya Province, Jewish Autonomic Province, Primorskiy Territory, Khabarovsk Territory (PROSHCHALYKIN & DATHE 2012); China (Beijing, Shandong Province, Sichuan Province, Henan Province). The records from Beijing and the Henan Province are new.

New records:

CHINA. Sichuan Province: nr Maoxian, 31°45.111N 104°00.021E, stream, 4265 ft, 25.05.2011, leg. J.S. Ascher, L. Ding, Z. Niu, J.G. Rozen. – Henan Province: Luoyang, Longmen Grottoes, 10.08.2009 1 ♂ 2 ♀, 14.08.2009, 1 ♀ leg. J.S. Ascher, C. Dong; Mt. Song, San Huang Zhai, 12.08.2009, 1 ♂ 1 ♀ leg. J.S. Ascher, C. Dong; Pro Shaolin Temple, 12.08.2009, 7 ♂ 2 ♀ leg. J.S. Ascher, C. Dong. – Beijing: Beihai Park, 08.08.2009, 2 ♀ leg. J.S. Ascher, C. Dong; Beijing Botanical Garden, 39°996'N 116°206'E, 77 m, 19.05.2011, 3 ♂ 2 ♀ leg. J.S. Ascher, F. Yuan; Huyu Natural Scenic Area, 40°275'N 116°146'E, 243 m, 19.05.2011. 1 ♀ leg. J.S. Ascher, L. Ding, X. Niu; Chaoyang Park, West Gate, 18.06.2011, 11 ♂ 11 ♀ leg. J.S. Ascher, C. Dong.

Hylaeus (*Nesoprosopis*) *floralis* (SMITH, 1873)

Figures 21–23

Prosopis floralis SMITH, 1873: 199. ♀, ♂. Holotypus ♀ coll. NHM London no. Hym 17.a.10. Type locality: Japan: Honshu, Hyōgo Prefecture.

Hylaeus (*Nesoprosopis*) *floralis*: IKUDOME 1989: 205; PROSHCHALYKIN 2003b: 5; 2004: 3; 2007a: 883; PROSHCHALYKIN et al. 2004: 158; CHEN & XU 2009: 49; PROSHCHALYKIN & DATHE 2012: 20.

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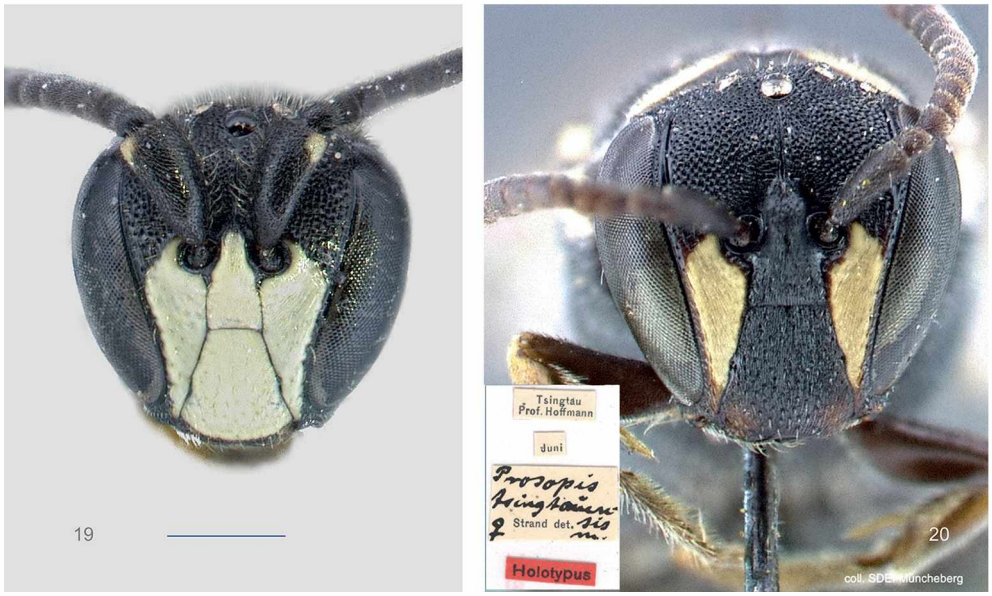
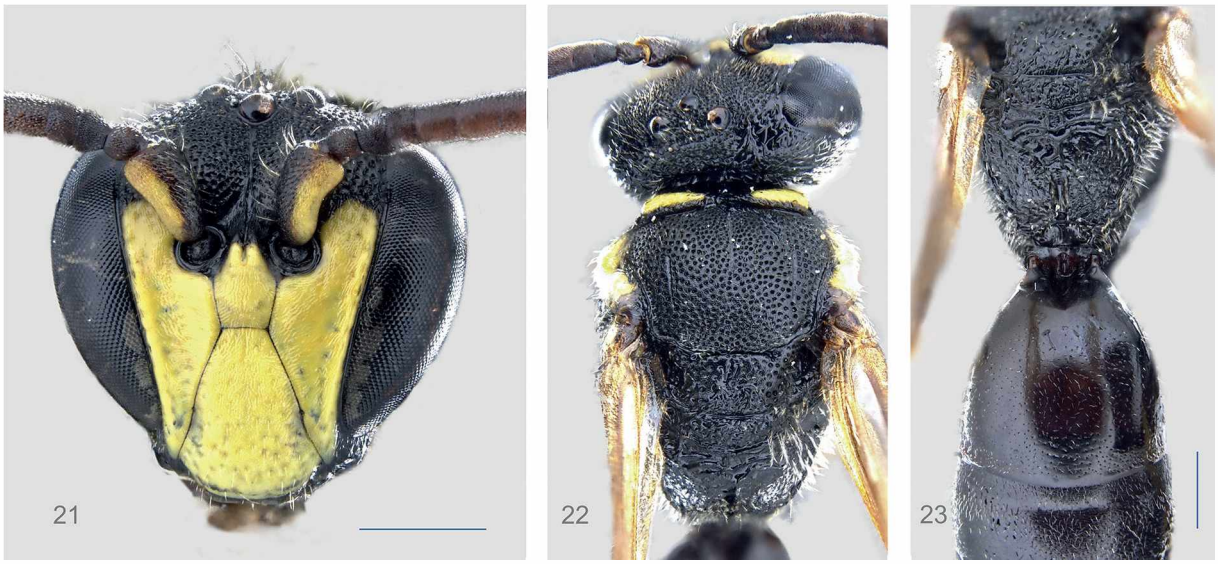


Figs 19, 20: *Hylaeus* (*Hylaeus*) *tsingtauensis* (STRAND): head in frontal view. – **19** Male from Sichuan, near Maoxian, China. – **20** Holotypus female from Qingdao ("Tsingtau"), China, coll. SDEI. – Scale 0.5 mm.



Figs 21–23: *Hylaeus* (*Nesoprosopis*) *floralis* (SMITH): male from Sichuan, Qionghai Lake, China. – **21** Head in frontal view. **22** Head and mesosoma, **23** Propodeum and basal terga in dorsal view. – Scale 0.5 mm.

Distribution: Japan (Hokkaido, Honshu, Shikoku, Kyushu), China (Anhui, Jiangsu, Zhejiang, Jiangxi, Fujian, Guangdong, Guangxi, Yunnan, Sichuan), Russia (Sakhalin), new to Vietnam (Quang Binh).

New records:

Material examined: 4 ♂. – CHINA. Sichuan Province: Qionghai Lake, Wetland Park, 27°51.204N 102°15.915E, 5156 ft, 06.06.2011, 1 ♂ leg. J.S. Ascher, L. Ding, Z. Niu, J.G. Rozen. – VIETNAM. Quang Binh Province: Cha Lo, 17°42N 105°46E, 298 m, 14–17.04.1998, 3 ♂ leg. J.M. Carpenter.

Discussion: The range of variability in characters of this widely distributed species has not previously been investigated. Specimens examined from China (Sichuan) and Vietnam differ from the better studied Japanese specimens in that the structure of the integument is coarser. In particular, the punctation on the mesopleurae are clearly larger and tergum 1 is sparsely, finely punctate (Fig. 23).

Hylaeus (*Nesoprosopis*) *transversalis* COCKERELL, 1924

Hylaeus transversalis COCKERELL, 1924a: 275. 1 ♂. Holotypus ♂ NMNH Washington, Catalog no. 28008. Type locality: Russia, Okeanskaya, Siberia [Vladivostok, Primorskiy Terr.]. – PROSHCHALYKIN & DATHE 2012: 23; PROSHCHALYKIN 2015: 7.

Prosopis transversalis GUSSAKOVSKIJ, 1932: 65. ♂. Holotypus ♂ NHRM Stockholm. Type locality: Russia, Vladivostok, Sedanka [Primorskiy Terr.]. Synonymised

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by Proshchalykin & Dathe 2012: 23. – Osytshnjuk & Romankova 1995: 487; Proshchalykin 2003b: 4.

Prosopis sericata Warncke, 1972: 748 (nomen novum for *Prosopis transversalis* Gussakovskij, 1932, nec Cockerell 1924a). Synonymised by Proshchalykin & Dathe 2012: 23.

Hylaeus nippon Hirashima, 1977: 29–32. ♀ ♂. Holotypus ♀, coll. Kyushu University, Fukuoka No. 2062. Type locality: Japan, Tsushima, Sumo. Synonymised by Osytshnjuk & Romankova 1995: 486.

Hylaeus sericatus: Quest 2009: 133; Proshchalykin & Quest 2009: 239.

Hylaeus (*Nesoprosopis*) *dathei* Chen & Xu, 2012: 63-64, 68. ♂. Holotypus coll. CAU Beijing. Type locality: South Korea: Jirisan. **New synonym.**

Discussion: The species is apparently widely distributed, although not mentioned from mainland China by Chen & Xu (2009). *H. transversalis* is easily recognisable in the male sex by its transversely ribbed basal area of the propodeum, and the structure of sternum 8 of its terminalia, comprising simple, narrow distal lobe with a few very fine bristles only. One of the males mentioned below from Beijing Botanical Garden has a reticulately sculptured propodeum similar to the females. Huanli Xu observed numerous specimens on flowers of *Solidago decurrens* Loureiro and *Sorbaria kirilowii* (Regel & Tiling) in the Olympic Forest Park in Beijing (personal communication).

H. transversicostatus (Strand 1913) from Taiwan also belongs to the group, but in this the distal lobe of sternum 8 is clearly longer and has apically a tuft of short bristles; St7 bears some bristles medially, and the genital capsule has elongated and narrowed gonoforcipes.

The subgenus *Nesoprosopis* is widely distributed in the southern Palaearctic and seems also here to have developed considerable species richness. About 15 names have been given, but with the exception of the five species occurring on the Japanese Islands, the nominal species have not been sufficiently compared with each other. Are they all valid species? This is certainly possible, if one considers the 60 species that document an unusual diversification of the subgenus in the Hawaii Islands (Daly & Magnacca 2003). On the other hand, the colonisation of archipelagos of volcanic origin follows its own rules. In any case, this group requires a comprehensive revision in the south-east Palaearctic.

Distribution: Japan (Hokkaido, Honshu, Shikoku, Kyushu, Tsushima); Russia (Primorskiy Territory, Kuril Islands); South Korea (Chen & Xu 2012); new to China (Beijing, Henan Province).

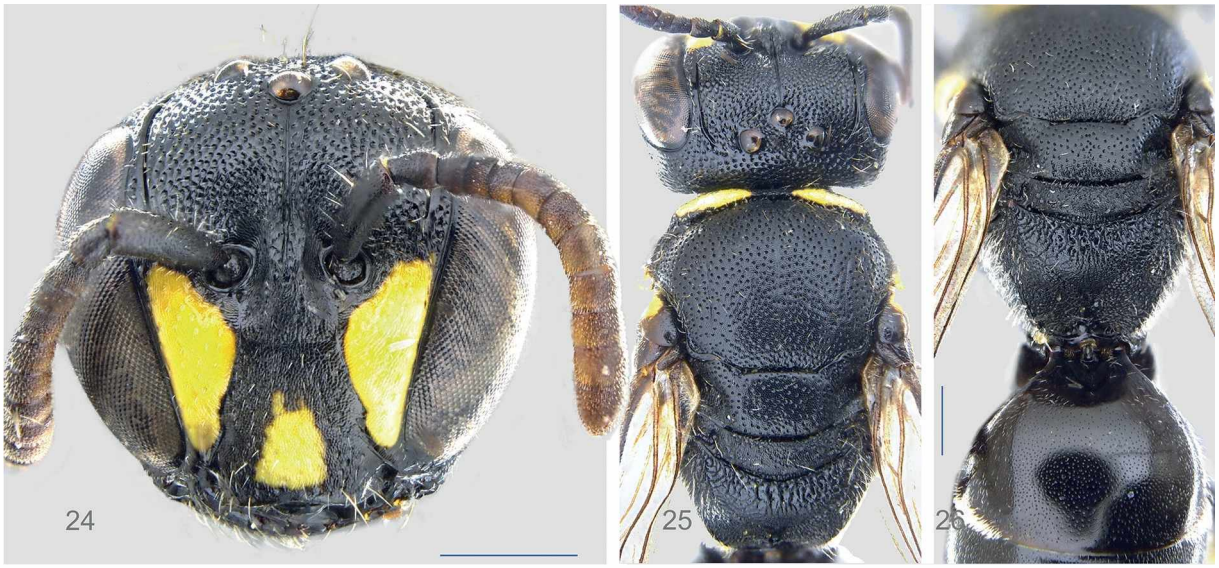
New records:

Material examined: 8 ♂, 1 ♀. – CHINA. Beijing: Fragrant Hills, 16./19.05.2011, 1 ♀, 1 ♂ leg. J.S. Ascher, L. Ding, C. Dong; Huyu Natural Scenic Area, 40.275N 116.146E, 243 m, 19.05.2011, 1 ♂ leg. J.S. Ascher, L. Ding, J.G. Rozen, F. Yuan; Chaoyang Park, West Gate, 18.06.2011, 3 ♂ leg. J.S. Ascher, C. Dong; Jiu Feng, 19.05.2011, 1 ♂ leg. J.S. Ascher, L. Ding, J.G. Rozen, F. Yuan; Beijing Botanical Garden, 39.996N 116.206E, 77 m, 16.05.2011, 1 ♂ leg. J.S. Ascher, L. Ding, Z. Niu, J.G. Rozen; Olympic Forest Park, 03.07.2015, 10 ♂, 24 ♀ leg. H. Xu. – Henan Province: Mt. Song, Sao djang Zhai, 12.08.2009, 1 ♂ leg. J.S. Ascher, C. Dong.

Hylaeus (*Paraprosopis*) *lushanicus* spec. nov.

Figures 24–26

Diagnosis: The new species differs from the two previously known species of the subgenus *Paraprosopis* in this region, *Hylaeus concinnus* and *H. nigrocallosus*, by the coarser and sparser punctation of the metasoma and the shagreen tergum 1. The part of the frons near the scape is without a smooth area. The male is unknown.



Figs 24–26: *Hylaeus* (*Paraprosopis*) *lushanicus* spec. nov.: Holotypus female. – **24** Head in frontal view. **25** Head and mesosoma, **26** propodeum and basal terga in dorsal view. – Scale 0.5 mm.

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Description: **Female**. TL 5.3–5.5 (5.37) mm, WL 4.1–4.2 (4.13) mm.

Head. Proportions HL:HW 0.94, UHW:LHW 1.56, outline nearly circular (Fig. 24). Scapi black, flagella short, black, below brownish. Face marks yellow: paraocular areas filled up to mid of scapus bases, clypeus with spot. Foveae faciales long, converging on vertex, ending closer to ocelli than to compound eye margin.

Clypeus CL:CW 1.24, shagreen, matt, with scattered shallow punctation; border to supraclypeal area indistinct. Supraclypeal area with subtriangular lower portion, upper part narrow, with marked medial furrow, gradually merging to the frons. Frons and vertex shiny, with strong, dense punctation; scapus area streaky, matt; vertex sparsely hairy. Genae widened, in outline sloping below, with tapering punctation; occiput rounded; malae narrow. Labrum and the bifid mandibles black.

Mesosoma prolonged, somewhat depress; pilosity of thorax and propodeum inconspicuous, with sparse white hairs, ventrally somewhat longer. Coloration black, pronotum laterally with two yellow stripes, tegulae and calli with a yellow spot each. Pronotum rounded, anterior margin in the middle line-like narrow, slightly carved, dorsolateral angles blunt. Mesonotum and scutellum shagreen, silkily shiny, punctation moderate, sparse (Fig. 25); metanotum rugose punctate, matt; mesopleurae with similar punctation as mesonotum, a little more scattered and shinier; anterior margin rounded. Legs black, yellow are anterior part of tibiae I and bases of other tibiae; wings lightly browned, venation dark brown. Propodeum rounded, with short horizontal part; basal area at its base with a row of meshes, followed by short longitudinal wrinkles which merge caudally; propodeal furrow broad and shallow, upper triangular part with fine shagreen; terminal area not demarcated, a sharp ridge only very below, surface grid wrinkled, matt.

Metasoma stocky spindle-shaped, coloration black. Tergum 1 finely striated, silkily shiny, punctation scattered, fine; following terga finely shagreen, with fine shallow punctation; tergum 1 apicolaterally with narrow white fringes, depressions without ciliary bands; fringe of last sternum bright.

Types: 4 ♀.

Holotypus: ♀ CHINA. Sichuan Province: Lushan above Qionghai Lake, 27°44.351N 102°20.517E, 6976 ft, pine forest, 05.06.2011, J.S. Ascher, L. Ding, Z. Niu, J.G. Rozen. In coll IZCAS Beijing.

Paratypes: 3 ♀, same data as holotypus. In coll. IZCAS Beijing, AMNH New York, SDEI Müncheberg.

Derivatio nominis: The name is an adjective; it refers to the collecting locality Lushan, Sichuan Province.

Remark: It is difficult to reach Lushan Mt. above Qionghai Lake. This site has open, mature pine forest which is a very different habitat than is generally found further north in Sichuan. It is at the northern limit of species more characteristic of Yunnan, e.g. among birds the Yunnan Nuthatch (*Sitta yunnanensis*). Thus, the *Hylaeus* species at that Lushan Mt. site would be expected to be distinctive, and further samples would more likely come from dry areas of Yunnan (pine forest) then from well-known mesic sites in Sichuan (Ascher, personal communication).

Hylaeus (*Patagiata*) *nigrocuneatus* Cockerell, 1924

Hylaeus nigrocuneatus Cockerell, 1924a: 277. ♀, ♂. Holotypus ♂ coll. NHM London, no. Hym. 17.a.4. Type locality: Russia, Primorskiy Territory, "Kudia-River, Siberia".

Hylaeus nigrocuneatus var. *rufipennis* Cockerell, 1924a: 278. ♀, ♂. Holotypus ♂ coll. NHM London, no. Hym. 17.a.5. Type locality: Russia, Okeanskaya, Vladivostok, Primorskiy Territory. Synonymised by Dathe 1986b: 35.

Hylaeus brevicuneatus Cockerell, 1924b: 579. 1 ♀. Holotypus coll. NMNH Washington, Catalog no. 28003. Type locality: Russia, "Kongaus, Siberia" (Anisimovka, Primorskiy Territory). Synonymised by Proshchalykin & Dathe 2012: 25.

Hylaeus lavrushini Cockerell, 1924b: 579, ♀. Holotypus coll. NMNH Washington, Catalog 28004. Type locality: Russia, "Kongaus, Siberia" (Anisimovka, Primorskiy Territory). Synonymised by Proshchalykin & Dathe 2012: 25.

Prosopis communis (Nylander): Warncke 1981: 157, erroneously synonymised.

Hylaeus (*Patagiata*) *difformis nigricuneatus* Cockerell, 1924b: Dathe 1986b: 33–35, emend.

Hylaeus nigricuneatus var. *rufipennis*: Dathe 1986b: 35, emend.

Hylaeus (*Patagiata*) *paradifformis* Ikudome, 1989: 224–233. ♀, ♂. Holotypus ♀ coll. Kyushu University, Fukuoka. Type locality: Japan: Ashoro, Hokkaido. Synonymised by Proshchalykin & Dathe 2012: 25.

Prosopis paradifformis: Osytshnjuk & Romankova 1995: 486.

Hylaeus paradifformis: Davydova 2002: 94; Davydova & Pesenko 2002: 583; Proshchalykin 2003a: 26; 2004: 3; 2007a: 882; 2007b: 89; 2008: 6; 2010: 509; Proshchalykin et al. 2004: 157; Ignatenko & Proshchalykin 2005: 244; Proshchalykin & Quest 2009: 239.

Hylaeus (*Patagiata*) *nigrocuneatus*: Proshchalykin & Dathe 2012: 25; Proshchalykin 2012: 451; 2014: 483.

New records:

CHINA. Beijing: Fragrant Hills, 16.05.2011, 2 ♂, 17.05.2011, 2 ♀ leg. J.S. Ascher, H. Xu, C.D. Zhou, L. Ding, C. Dong; – Sichuan Province: Chengdu, Huan Huaxl Park, 10.06.2011, 8 ♂ 1 ♀, Chengdu nr Sichuan, 10.06.2011, 3 ♀, Chengdu, near Sichuan University, 11.06.2011, 1 ♀ leg. J.S. Ascher, C. Dong; Qionghai Lake, Hotel near Xichang, 27°832'N 102°244'E, 1519 m, 05.06.2011, 2 ♀; Xichang, Qionghai Lake, 27°51.766'N 102°15.742'E, 4993 ft, 06.06.2011, 2 ♂; Qionghai Lake, Aquatic Plants Reserve, 27°48.207'N 102°17.723'E, 5062 ft, 06.06.2011, 3 ♂ leg. J.S. Ascher, L. Ding, Z. Niu.

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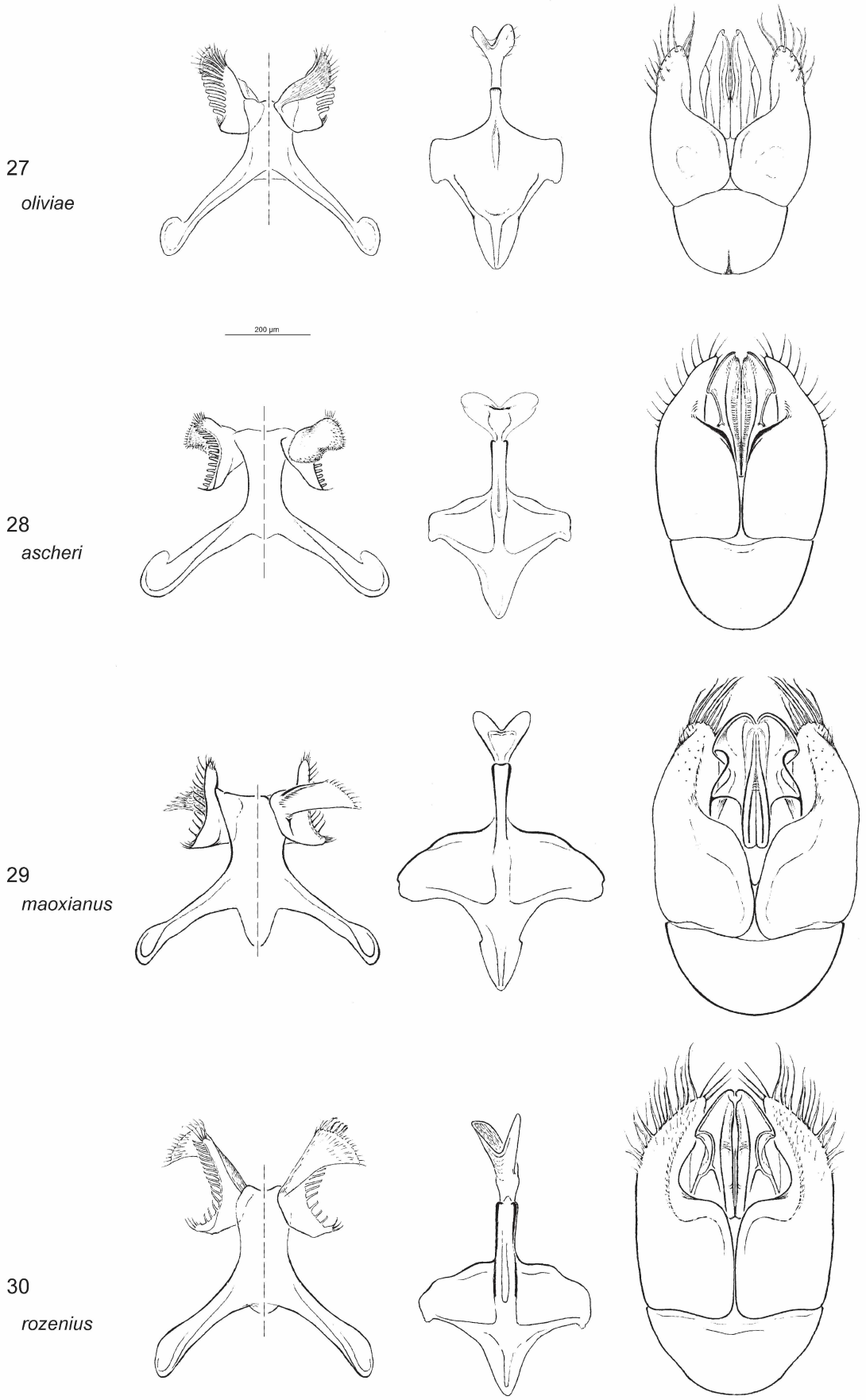

Figs 27–30: Male terminalia: metasomal sterna 7 and 8 (S7 left ventral view, right dorsal view), genital capsule. – **27** *H.* (*Hylaeus*) *oliviae* spec. nov. – **28** *H.* (*Hylaeus*) *ascheri* spec. nov.– **29** *H.* (*Hylaeus*) *maoxianus* spec. nov. – **30** *H.* (*Hylaeus*) *rozenius* spec. nov. – Scale 0.2 mm.

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Distribution: Japan (Hokkaido, Honshu, Kyushu); Russia (Irkutsk Province, Zabaikalskiy Territory, Yakutia; Amurskaya Province, Jewish Autonomic Province, Primorskiy Territory, Khabarovsk Territory, Sakhalin); China (Beijing, Jilin, Shandong, Shanghai, Sichuan), new to Beijing and Sichuan Province.

Hylaeus (*Prosopis*) *ikudomei* Chen & Xu, 2013

Hylaeus (*Prosopis*) *ikudomei* Chen & Xu, 2013: 344–348, ♂, ♀. Holotypus ♂ coll. CAU, Beijing. Type locality: China, Yunnan Province, Zhongdian County, Napa Lake.

The species was hitherto known from the Yunnan Province only. New to Sichuan Province.

New record:

CHINA. Sichuan Province: road to Wanglang Reserve, nest wall, 32°45.350N 104°17.616E, 29.05.2011, 6 ♂ 1 ♀ leg. J.S. Ascher, L. Ding, Z. Niu.

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