

## Two new species and additional records of *Domene* from China and Vietnam (Coleoptera: Staphylinidae: Paederinae)

With 22 figures

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### Summary

Two species of *Domene* FAUVEL, 1873 from China are described and illustrated: *Domene (Macromene) contiger* spec. nov. (Guangxi) and *D. (M.) exicta* spec. nov. (Hubei). Additional records of three species are reported from China (Hebei, Hubei, Shaanxi, Sichuan) and North Vietnam. Including the new species, *Domene* now includes 67 named species, 16 of which have been recorded from China, two from Taiwan, and two from Vietnam.

### Key words

Coleoptera, Staphylinidae, Paederinae, Lathrobiina, *Domene*, Palaearctic region, China, Vietnam, taxonomy, new species, additional records.

### Zusammenfassung

Zwei Arten der Gattung *Domene* FAUVEL, 1873 aus China werden beschrieben und abgebildet: *Domene (Macromene) contiger* spec. nov. (Guangxi) und *D. (M.) exicta* spec. nov. (Hubei). Weitere Nachweise von drei Arten werden aus China (Hebei, Hubei, Shaanxi, Sichuan) und Nordvietnam gemeldet. *Domene* enthält damit derzeit 67 beschriebene Arten, von denen 16 aus China, zwei aus Taiwan, und zwei aus Vietnam bekannt sind.

### Introduction

According to ASSING (2015), the Palaearctic lathrobiine genus *Domene* FAUVEL, 1873 was previously represented by 64 described species. An additional species was described by PENG et al. (2015). The *Domene* fauna of China and Taiwan was studied and revised by KOCH (1939), ROUGEMONT (1995), ASSING & FELDMANN (2014), FELDMANN et al. (2014), ASSING (2015), and PENG et al. (2015). Prior to the present study, 16 species

had been recorded from China and Taiwan, all of them assigned to the subgenus *Macromene* COIFFAIT, 1982.

The present study is based primarily on material made available to me by Harald Schillhammer (Naturhistorisches Museum Wien). In addition, a specimen recently collected in North Vietnam by Paul Wunderle is included.

## 2. Material and methods

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

NHMW	Naturhistorisches Museum Wien (H. Schilhammer)
cAss	author's private collection
cWun	private collection Paul Wunderle, Mönchengladbach

The morphological studies were conducted using a Stemi SV 11 microscope (Zeiss Germany) and a Jenalab compound microscope (Carl Zeiss Jena). The images of external characters (except Fig. 12 and the secondary sexual characters) and of the aedeagi in dry preparation were created using a photographing device constructed by Arved Lompe (Nienburg) and CombineZ software. A digital camera (Nikon Coolpix 995) was used for the remaining photographs.

Body length was measured from the anterior margin of the mandibles (in resting position) to the abdominal apex, the length of the forebody from the anterior margin of the mandibles to the posterior margin of the elytra, head length from the anterior margin of the frons to the posterior constriction of the head, elytral length at the suture from the apex of the scutellum to the posterior margin of the elytra (at the suture), and the length of the aedeagus from the apex of the ventral process to the base of the aedeagal capsule. The “parameral” side (i.e., the side where the sperm duct enters) is referred to as the ventral, the opposite side as the dorsal aspect.

### Descriptions of new species and additional records

#### *Domene (Macromene) procera* EPPELSHEIM, 1886

**Material examined:** China: 1 ♂, N-Hebei, 20 km NNE Qijia, “41.6N, 118.15E”, 13.VI.2005, leg. Turna (NHMW).

**Comment:** The previously known distribution of *D. procera* included Russia (East Siberia and Far East), Korea, and the Chinese Northeast Territory (FELDMANN et al. 2014). The above male represents the first record from Hebei.

#### *Domene (Macromene) cultrata* FELDMANN & PENG, 2014

**Material examined:** China: 1 ♂, W-Hubei, S Muyuping, 31.45°N, 110.6°E [“31.45N, 110.6E”], 1300 m, 16.V.–12.VI.2004, leg. Turna (NHMW); 1 ♀, W-Hubei, S Muyuping, 31.45°N, 110.4°E [“31.45N, 110.4E”], 1300 m, 20.VI.–12.VII.2003, leg. Turna (NHMW); 1 ♀, W-Hubei, S Muyuping, 31.45°N, 110.4°E [“31.45N, 110.4E”],

1100 m, 8./15.–17.VI.2002, leg. Turna (NHMW); 1 ♀, W-Hubei, road Xingshan–Badon, 5 km N Gauchou, 31.2°N, 110.5°E [“31.2N, 110.5E”], 19.V.–12.VI.2004, leg. Turna (NHMW); 1 ♂, Shaanxi, 6 km E Xunyangba, 1000–1300 m, 23.V.–13.VI.2000, leg. Holzschuh (cAss); 1 ♂, Sichuan, road from Pingwu to Nanping, Beima Fenxigya env., 1770 m, 29.V.–5.VI.2006, leg. Puchner (cAss).

**Comment:** The distribution of *D. cultrata* is confined to the Daba Shan, the Qinling Shan, and adjacent mountain ranges. The above male from Sichuan represents a new province record.

#### *Domene (Macromene) affimbriata* ASSING, 2015

**Material examined:** Vietnam: 1 ♂, ca. 7 km WNW Sa Pa, 22°21'N, 103°47'E, 2000 m, degraded primary subtropical cloud forest, litter sifted, 29.VII.2015, leg. Wunderle (cWun).

**Comment:** The type locality of this recently described species is situated to the southeast of Pingbian in the southeast of the Chinese province Yunnan, not far from the border with Vietnam (ASSING 2015) and approximately 60 km away from the locality where the above male was collected. *Domene affimbriata* is the second species of the genus to be recorded from Vietnam.

#### *Domene (Macromene) contiger* spec. nov.

(Figs 1–11)

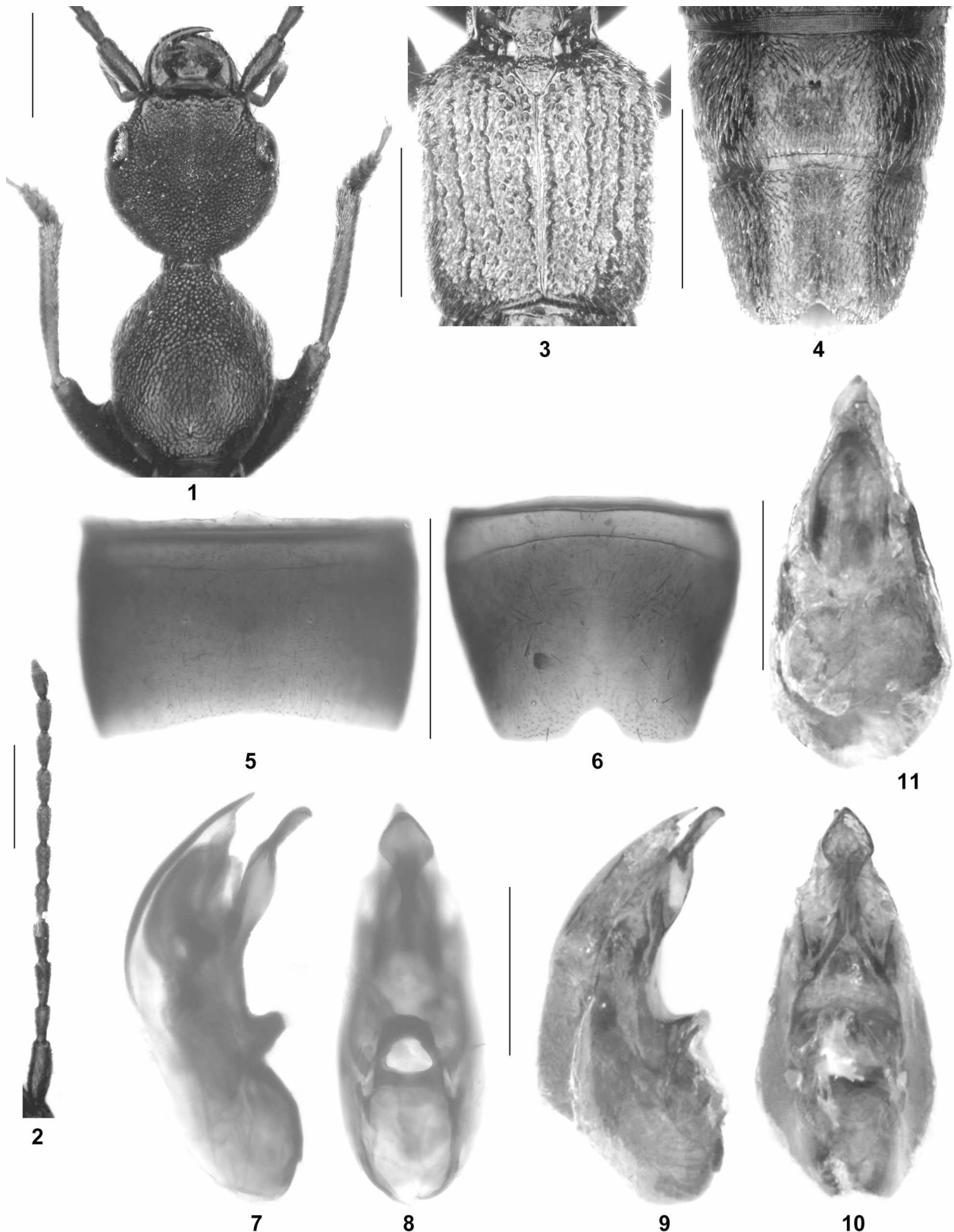
**Type material:** Holotype ♂: “China, NW Guangxi, Cenwangaoshan, 1850–2000 m, 24°29–30'N, 106°24'E, Jatua leg., 28.V.–25.VI.2013 / Holotypus ♂ *Domene contiger* sp. n., det. V. Assing 2015” (NHMW).

Paratypes: 3 ♂♂: same data as holotype (NHMW, cAss).

**Etymology:** The specific epithet (Latin, noun in apposition: spearman) alludes to spear-shaped ventral process of the aedeagus.

**Description:** Body length 10.0–11.5 mm; length of forebody 5.9–6.3 mm. Coloration: body black, except for the reddish posterior margins of the abdominal segments VII and VIII; legs with the femora (except for the dark-reddish bases of the metafemora) blackish, the protibiae dark-brown to blackish-brown, the meso- and metatibiae dark-reddish to reddish-brown, protarsomeres I–IV dark-brown, and the remainder of the tarsi reddish; antennae dark-brown to blackish-brown, with the apical antennomeres slightly paler than the basal ones.

Head (Fig. 1) approximately as broad as long and of suborbicular shape, widest behind eyes; posterior angles obsolete; punctation rather fine, umbilicate, and very dense, rendering the surface rather matt. Eyes



Figs 1–11: *Domene contiger* spec. nov.: head and pronotum (1); antenna (2); elytra (3); male sternites VII and VIII (4); male sternite VII (5); male sternite VIII (6); aedeagus in transparent light in lateral and in ventral view (7–8); aedeagus in dry preparation in lateral, ventral, and dorsal view (9–11). Scale bars: 1–6: 1.0 mm; 7–11: 0.5 mm.

approximately one-third as long as temples from posterior margin of eye to posterior constriction in dorsal view. Antenna (Fig. 2) 4.1–4.4 mm long and rather slender.

Pronotum (Fig. 1) 1.17–1.22 times as long as broad and 0.92–0.95 times as broad as head; median portion of lateral margins weakly converging posteriad in dorsal

view; punctation coarser than that of head and partly somewhat confluent; midline with or without very narrow and short rudiments of a glossy line or ridge.

Elytra (Fig. 3) 0.70–0.75 times as long as pronotum, each elytron with three more or less distinct and more or less irregular, longitudinal, narrowly elevated ridges directed obliquely postero-mediad; disc shallowly impressed in the middle; suture elevated; macropunctation coarse, irregular, partly confluent, and partly somewhat seriate; interstices with irregular micropunctation, otherwise not microsculptured. Hind wings reduced. Protarsomeres I–IV moderately dilated (Fig. 1).

Abdomen approximately as broad as elytra; punctation extremely fine and dense; anterior impressions of tergites III–VI with coarse and somewhat irregular punctation and sculpture; microreticulation distinct on tergites III–VI, shallow on tergites VII–VIII; posterior margin of tergite VII without palisade fringe; tergite VIII with truncate to indistinctly convex posterior margin.

♂: sternite VII (Figs 4–5) strongly transverse and with broadly and weakly concave posterior margin, in antero-median portion with a median tubercle, behind this tubercle with a depression, pubescence unmodified; sternite VIII (Figs 4, 6) approximately 1.2 times as broad as long, postero-median portion depressed, but not distinctly impressed, posterior excision relatively small, on either side of this excision with a rather sparse cluster of weakly modified black setae; aedeagus (Figs 7–11) approximately 1.2 mm long; ventral process somewhat shaped like a spear-head in ventral view; dorsal plate lamellate, moderately sclerotized, and apically acute; internal sac with several moderately sclerotized structures and with additional membranous structures.

♀: unknown.

**Comparative notes:** Regarding its male sexual characters (sternite VII with median tubercle; spear-shaped ventral process of the aedeagus), *D. contiger* is most similar to *D. sagittata* ASSING & FELDMANN, 2014 from North Vietnam, from which it is easily distinguished by the much shorter elytra (*D. sagittata*: elytra approximately as long as pronotum), the absence of a palisade fringe at the posterior margin of tergite VII (present in *D. sagittata*), more transverse male sternites VII and VIII, and by the shape of the ventral process particularly in lateral view. For illustrations of other species recorded from China and adjacent regions see ASSING (2015), ASSING & FELDMANN (2014), FELDMANN et al. (2014), and PENG et al. (2015).

**Distribution and natural history:** The type locality is situated in the Cenwanglao Shan in the northwest of Guangxi province, South China. The specimens were collected at an altitude of 1850 m. Additional data are not available.

*Domene (Macromene) exicta* spec. nov.

(Figs 12–22)

**Type material:** Holotype ♂: “CHINA: W-Hubei, 2003, Guanmenshan, 21.6.–13.7., 31.45 N 110.4 E, – 1500 m, leg. J. Turna / Holotypus ♂ *Domene exicta* sp. n., det. V. Assing 2015” (cAss).

Paratypes: 11 ♀♀: same data as holotype (NHMW, cAss).

**Etymology:** The specific epithet is the past participle of the Latin verb *exicare* (to cut out) and alludes to the posteriorly excised female sternite VIII.

**Description:** Very large species; body length 11.0–12.5 mm; length of forebody 6.5–7.3 mm. Forebody as in Fig. 12. Coloration: body black, except for the reddish posterior margins of the abdominal tergites VII and VIII and the dark-reddish posterior portions of tergites IX and X; legs blackish-brown to blackish with dark-reddish tarsi; antennae blackish, with the apical 4–5 antennomeres gradually becoming paler, antennomere XI dark-brown with dark-reddish apical portion; maxillary palpi dark-reddish to reddish-brown, with palpomere III sometimes partly somewhat infuscate and palpomere IV yellowish.

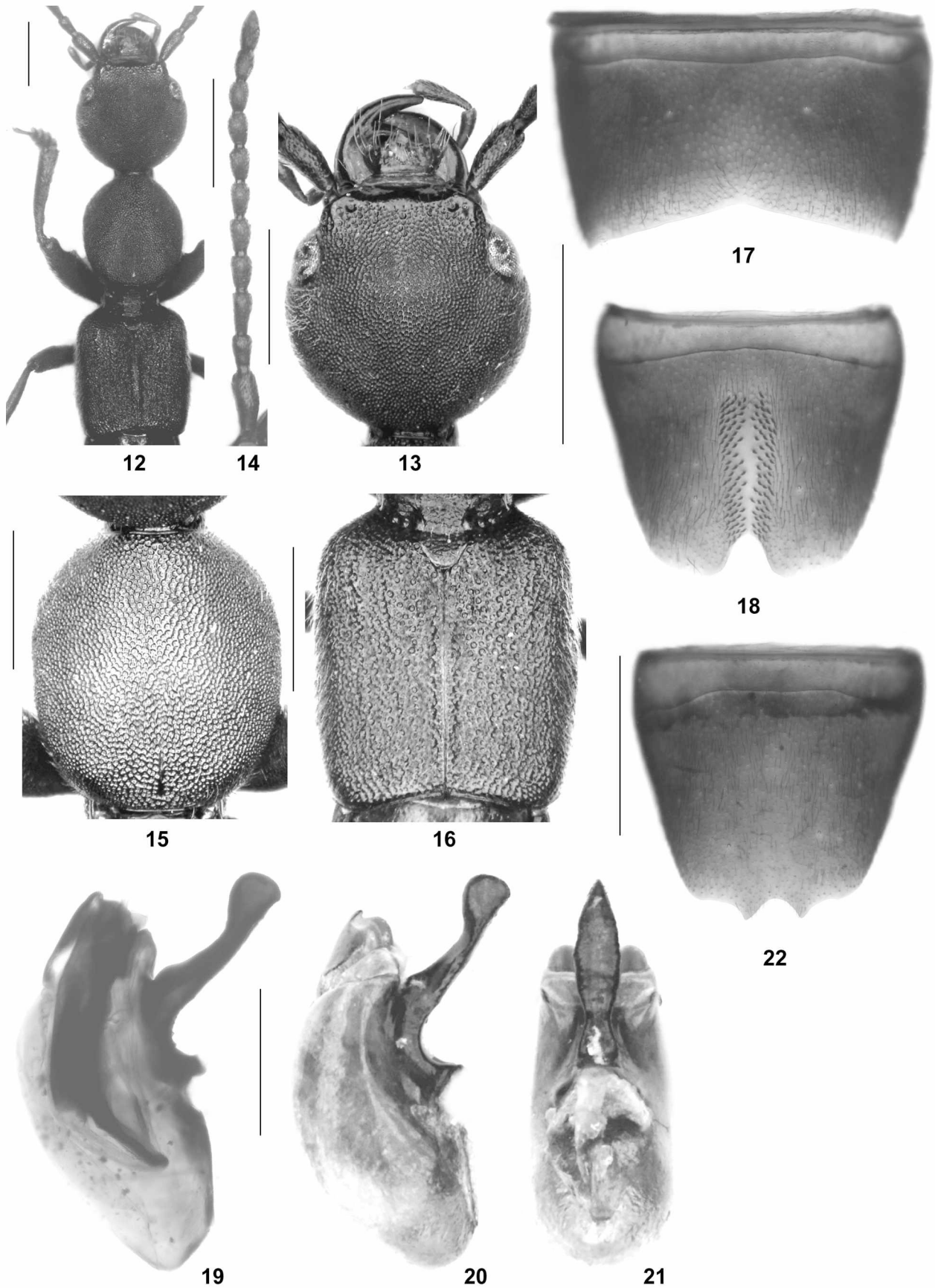
Head (Fig. 13) 1.00–1.05 times as long as broad and of orbicular shape, broadest behind eyes, and with weakly convex dorsal surface (cross-section); punctation rather fine, umbilicate, and very dense, rendering the surface rather matt. Eyes approximately one-third as long as distance from posterior margin of eye to posterior constriction in dorsal view, or slightly shorter. Antenna (Fig. 14) 4.0–4.2 mm long and stout.

Pronotum (Fig. 15) 1.12–1.15 times as long as broad and 0.91–0.95 times as broad as head, widest anteriorly and weakly tapering posteriorly; punctation similar to that of head, but slightly coarser; midline with or without short and very narrow rudiment of a glossy line posteriorly.

Elytra (Fig. 16) 0.81–0.85 times as long as pronotum; disc without longitudinal ridges, but somewhat uneven, usually shallowly transversely impressed in the middle; punctation dense, somewhat irregular, and somewhat coarser than that of pronotum; interstices narrow and glossy. Hind wings not examined. Protarsomeres I–IV (Fig. 12) without sexual dimorphism, distinctly dilated in male and female.

Abdomen approximately as broad as, or slightly narrower than, elytra; punctation extremely fine and dense, denser and less fine on anterior than on posterior tergites; anterior impressions of tergites III–VI somewhat rugosely sculptured; interstices with distinct microsculpture; posterior margin of tergite VII with palisade fringe; tergite VIII with posterior margin indistinctly angled or weakly convex in the middle.

♂: sternite VII (Fig. 17) strongly transverse, nearly twice as broad as long (length measured along the middle), with shallow postero-median impression, with dense and unmodified pubescence, posterior margin broadly



Figs 12–22: *Domene exicta* spec. nov.: forebody (12); head (13); antenna (14); pronotum (15); clytra (16); male sternite VII (17); male sternite VIII (18); aedeagus in transparent light in lateral view (19); aedeagus in dry preparation in lateral and in ventral view (20–21); female sternite VIII (22). Scale bars: 12–18, 22: 1.0 mm; 19–21: 0.5 mm.

and deeply concave; sternite VIII (Fig. 18) weakly transverse and with pronounced oblong median impression, this impression on either side of middle with numerous modified short and stout black setae, posterior excision small, approximately one-seventh as deep as length of sternite; aedeagus (Figs 19–21) 1.4 mm long; ventral process long, stout, strongly sclerotized, and of highly distinctive shape; dorsal plate lamellate and short, much broader than long, apically truncate with pointed middle in dorsal view.

♀: sternite VIII (Fig. 22) weakly transverse and of characteristic shape; posterior margin convex, in the middle concavely excised, and on either side of this excision with an acute projection; postero-lateral processes of tergite IX apically acute and extending beyond apex of tergite X; tergite X convex in cross-section and slightly longer than antero-median portion of tergite IX.

**Comparative notes:** As can be inferred from the similarly stout antennae and the similar modifications of the female sternite VIII, both of which undoubtedly represent derived conditions, as well as from the similar head shape, punctation, and male secondary sexual characters, *D. exicta* is most closely allied to *D. firmicornis* ASSING & FELDMANN, 2014 from the Tianmu Shan in Zhejiang, together with which it would key out in the key provided by FELDMANN et al. (2014). Both species are reliably distinguished only by the sexual characters, i.e., the shapes and chaetotaxy of the male sternites VII and VIII (*D. firmicornis*: sternite VII less strongly transverse and less strongly concave posteriorly; sternite VIII with deeper posterior excision, with less narrow median impression, and with a cluster of modified setae of different shape), the completely different shape of the ventral process of the aedeagus, as well as by the deeper and broader posterior excision of the female sternite VIII. For illustrations of *D. firmicornis* see ASSING & FELDMANN (2014) and FELDMANN et al. (2014).

**Distribution and natural history:** The type locality is situated in the eastern Daba Shan, West Hubei. The specimens were collected at an altitude of approximately 1500 m.

## Acknowledgements

I am indebted to Harald Schillhammer (NHMW) and Paul Wunderle (Mönchengladbach) for making their material available for study, to the former also for the permission to retain the holotype of *D. exicta* in exchange for a holotype of *Philonthina*. Benedikt Feldmann (Münster) proof-read the manuscript.

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