

A new subgenus and a remarkable new species of *Domene* from South China, with additional records of the genus from China, Taiwan, and Vietnam (Coleoptera: Staphylinidae: Paederinae)

With 5 figures

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Abstract

Domene hybrida spec. nov. (China: Guizhou) is described, illustrated, and distinguished from other species of the genus known from China. The species is peculiar in that it combines morphological characters found in *Domene* FAUVEL, 1873 with characters observed in other genera of Lathrobiina, particularly *Lobrathium* MULSANT & REY, 1878 and *Pseudobium* MULSANT & REY, 1878. Unlike all other congeners previously recorded from China, it does not belong to the subgenus *Macromene* COIFFAIT, 1982, which is why it is assigned to a subgenus of its own, *Lobramene* subgen. nov. Additional records of six *Domene* species are reported from China, Taiwan, and North Vietnam. Including two species of doubtful generic affiliations, the genus now includes 86 named species, 22 of which have been recorded from China, three from Taiwan, and two from Vietnam.

Taxonomic acts

Lobramene subgen. nov. – urn:lsid:zoobank.org:act:CFC20457-493D-4034-B935-D604A6BA2340

Domene hybrida spec. nov. – urn:lsid:zoobank.org:act:14A1FF54-AB49-4398-A450-AFE78E46105C

Key words

Coleoptera, Staphylinidae, Paederinae, Lathrobiina, *Domene*, Palearctic region, China, Vietnam, taxonomy, new species, new subgenus, additional records

Zusammenfassung

Domene hybrida spec. nov. (China: Guizhou) wird beschrieben, abgebildet und von anderen aus China bekannten Arten unterschieden. Die Art ist insofern bemerkenswert, als sie durch eine Kombination morphologischer Merkmale von *Domene* FAUVEL, 1873 und anderer Gattungen der Lathrobiina, insbesondere *Lobrathium* MULSANT & REY, 1878 und *Pseudobium* MULSANT & REY, 1878, charakterisiert ist. Im Gegensatz zu allen anderen aus China bekannten *Domene*-Arten gehört die neue Art nicht in die Untergattung *Macromene* COIFFAIT, 1982. Sie wird daher einer eigenen Untergattung zugeordnet: *Lobramene* subgen. nov. Weitere Nachweise von sechs *Domene*-Arten werden aus China, Taiwan und Nordvietnam gemeldet. Einschließlich zweier Arten von zweifelhafter Gattungszugehörigkeit enthält *Domene* derzeit 86 Arten, von denen 22 aus China, drei von Taiwan, und zwei aus Nordvietnam nachgewiesen wurden.

Schlüsselwörter

Coleoptera, Staphylinidae, Paederinae, Lathrobiina, *Domene*, Paläarktis, China, Taiwan, Vietnam, Taxonomie, neue Art, neue Untergattung, weitere Nachweise

Introduction

According NEWTON (2019), *Domene* FAUVEL, 1873 previously included a total of 86 named species in six subgenera, with some of these species listed as incertae sedis. In the meantime, one name was synonymized by ASSING (2019). In view of the essentially Palaearctic distribution of the genus, the generic affiliations of *Domene javana* CAMERON, 1936 (Indonesia: Java) and probably also *D. (Neodomene) indica* CAMERON, 1924 (India: Uttar Pradesh) must be considered doubtful. The remaining species are distributed on the West Palaearctic (49 species) and East Palaearctic regions, including North Vietnam (34 species).

Prior to the present study, the *Domene* fauna of China, Taiwan, and North Vietnam was represented by 25 species, all of them assigned to the subgenus *Macromene* COIFFAIT, 1982, with 21 species (two doubtful records omitted) reported from China (17 exclusive), two (both exclusive) from Taiwan, and two (one exclusive) from North Vietnam (KOCH 1939, ROUGEMONT 1995, ASSING & FELDMANN 2014, FELDMANN et al. 2014, ASSING 2015, 2016, PENG et al. 2015, 2017).

Material recently made available to me by Harald Schillhammer included five specimens of an undescribed species of *Domene*. This species is remarkable in that it differs from *Macromene* species in various morphological characters, some of them somewhat resembling the condition observed species of the genus *Lobrathium* MULSANT & REY, 1878 and *Pseudobium* MULSANT & REY, 1878.

Material and methods

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

CNC	Canadian National Collection of Insects, Arachnids, and Nematodes, Ottawa (A. Brunke)
NHMW	Naturhistorisches Museum Wien (H. Schillhammer)
NMP	National Museum of Natural History, Praha (J. Hájek)
cAss	author's private collection
cFel	private collection Benedikt Feldmann, Münster

The morphological studies were conducted using Stemi SV 11 (Zeiss) and Discovery V12 (Zeiss) microscopes, and a Jenalab compound microscope (Carl Zeiss Jena). The images were created using digital cameras (Axiocam ERc 5s, Nikon Coolpix 995), as well as Labscope and Picolay software.

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.

Results

Domene (Macromene) reitteri KOCH, 1939

Material examined: China Zhejiang: 1 ex., Lin'an Co., West Tianmu Shan Nat. Res., 100 m SE below top of Immortal Peak, 30.349°N, 119.424°E, 1470 m, dwarf forest, litter under bamboo and shrubs sifted, 5.VII.2017, leg. Růžička & Hájek (NMP); 2 exs., Lin'an Co., West Tianmu Shan Nat. Res., WNW Original Temple of Lion Sect, 30.343°N, 119.430°E, 1190 m, broad-leaved deciduous forest, sifted, 6.VII.2017, leg. Růžička & Hájek (NMP); 1 ex., West Tianmu Shan Nat. Res., Chayuan temple, 30°19.5–7'N, 119°26.5'E, 400–470 m, mixed forest, 23.VI.–4.VII.2017, leg. Růžička & Hájek (cAss); 1 ex., West Tianmu Shan Nat. Res., above Chayuan temple, 30.326°N, 119.441°E, 430 m, bamboo bushes, 24.VI.2017, leg. Růžička & Hájek (NMP); 1 ex., West Tianmu Shan Nat. Res., Three Li Pavillion, 30°20'03"N, 119°26'11"E, 670 m, 26.VI.–1.VII.2017, leg. Růžička & Hájek (cAss).

Comment: *Domene reitteri* was redescribed and illustrated by FELDMANN et al. (2014). The species has been recorded from the Tianmu Shan range in Zhejiang, the Wuyi Shan range in Jiangxi, and from Guniujiang in Anhui (FELDMANN et al. 2014, PENG et al. 2017).

Domene (Macromene) firmicornis ASSING & FELDMANN, 2014

Material examined: China: 1 ♀, Zhejiang, Lin'an Co., West Tianmu Shan Nat. Res., Chayuan temple, 30°19.5–7'N, 119°26.5'E, 400–470 m, mixed forest, 23.VI.–4.VII.2017, leg. Růžička & Hájek (NMP); 1 ♂,

Zhejiang, Caoyutang, 27°55'N, 119°39'E, 1100–1300 m, forest park, V.2010, leg. Turna (NHMW).

Comment: The known distribution of *D. firmicornis* is confined to Zhejiang and Anhui provinces (ASSING & FELDMANN 2014, PENG et al. 2017).

Domene (Macromene) cuspidata FELDMANN & PENG, 2014

Material examined: China: 1 ♀, Sichuan, Micang Shan, Liping forest park, 32°43'N, 106°34'E, 1700–1850 m, 9–10.VI.2009, leg. Turna (NHMW).

Comment: This species has been reported from Shaanxi, Sichuan, Gansu provinces, China (FELDMANN et al. 2014, PENG et al. 2017).

Domene (Macromene) affimbriata ASSING, 2015

Material examined: Vietnam: 1 ♂, WNW Sa Pa, Tram Ton Pass, Fan Si Pan trail, 22°21'N, 103°47'E, ca. 2030 m, sifted, 26–28.VII.2017, leg. Schillhammer et al. (NHMW); 1 ♀, WNW Sa Pa, Tran Ton Pass, Fan Si Pan trail, 22°21'N, 103°47'E, 1920 m, leaf litter sifted, 25.VII.2017, leg. Schillhammer et al. (NHMW).

Comment: *Domene affimbriata* was originally described based on type material from the southeast of Yunnan province, China, and subsequently reported also from North Vietnam (ASSING 2015, 2016).

Domene (Macromene) sagittata ASSING & FELDMANN, 2014

Material examined: Vietnam: 2 ♂♂, 2 ♀♀, Pia Ouac Nat. Park, main road, below 'salmon station', small hillock, 22.595°N, 105.881°E, 1270 m, mature secondary forest, sifted, 7–17.V.2019, leg. Brunke & Schillhammer (CNC, cAss); 6 ♂♂, 1 ♀, Cao Bang Prov., Pia Ouac Nat. Park, below Salmon Station, 22°35'43"N, 105°52'52"E, 1270 m, sifted, 12–18.V.2019, leg. Brunke & Schillhammer (NHMW, cAss); 3 ♂♂, same data, but pitfall traps (NHMW, cAss).

Comment: The above material represents the first records since the original description, which is based on a unique male holotype from North Vietnam (ASSING & FELDMANN 2014).

Domene (Macromene) cultrata FELDMANN & PENG, 2014

Material examined: Taiwan: 1 ♂, 2 ♀♀ [identified by B. Feldmann], Nantou, Lu Shan Hot Spring, 24°01'19"N,

121°11'45"E, 1340 m, coniferous forest, 25.VII.2018, leg. Hetzel (cFel).

Comment: This species was previously known only from Hubei, Shaanxi, Gansu, Sichuan, and the border region between Shaanxi and Chongqing (FELDMANN et al. 2014, ASSING 2016). The above first record from Taiwan considerably expands the known distribution. *Domene cultrata* is the first species to be recorded from both mainland China and Taiwan.

Lobramene subgen. nov.

Type species: *Domene hybrida* spec. nov.; gender feminine.

Etymology: The name is composed of Lobra- (first part of the generic name *Lobrathium*) and -mene (last part of the generic name *Domene*). It alludes to the fact that the sole representative of the subgenus combines characters of *Domene* with those of *Lobrathium*. The gender is feminine.

Description: Head of oval shape (as is typical of *Domene*) and oblong; posterior angles obsolete; posterior constriction less than half as broad as head. Interstices without microsculpture and glossy. Antenna very long and moderately massive; all antennomeres distinctly oblong.

Pronotum slender, distinctly oblong, and narrower than head; punctuation moderately dense and moderately coarse; midline with narrow impunctate band; interstices without microsculpture and glossy.

Elytra long and with parallel lateral margins; punctuation rather dense and coarse; interstices without microsculpture. Protarsomeres I–IV moderately dilated, without apparent sexual dimorphism.

Abdomen slightly narrower than elytra; tergites III–VI with distinct, tergite VII with indistinct anterior impressions.

♂: sternite VIII with modified chaetotaxy; posterior margin produced, without median excision; aedeagus relatively small; ventral process weakly pronounced and weakly sclerotized.

Comparative notes: *Lobramene* is distinguished from *Macromene* by a more glossy and more oblong head, a much more slender, more oblong, and glossy pronotum with less dense punctuation and with a narrowly impunctate midline, more slender and more glossy elytra with more parallel lateral margins, and by a smaller aedeagus of different morphology. Regarding the shapes of the aedeagus, the pronotum, and the elytra, *Lobramene* somewhat resembles the genus *Pseudobium*, from which it differs particularly by larger body size and a different morphology of the head. Similarly, it is distinguished from *Lobrathium*, with which it shares a similar punctuation and similar shapes of the pronotum and the elytra, by

an oval and distinctly oblong head, longer antennae, and the aedeagal morphology.

Domene (Lobramene) hybrida spec. nov.

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(Figs 1–5)

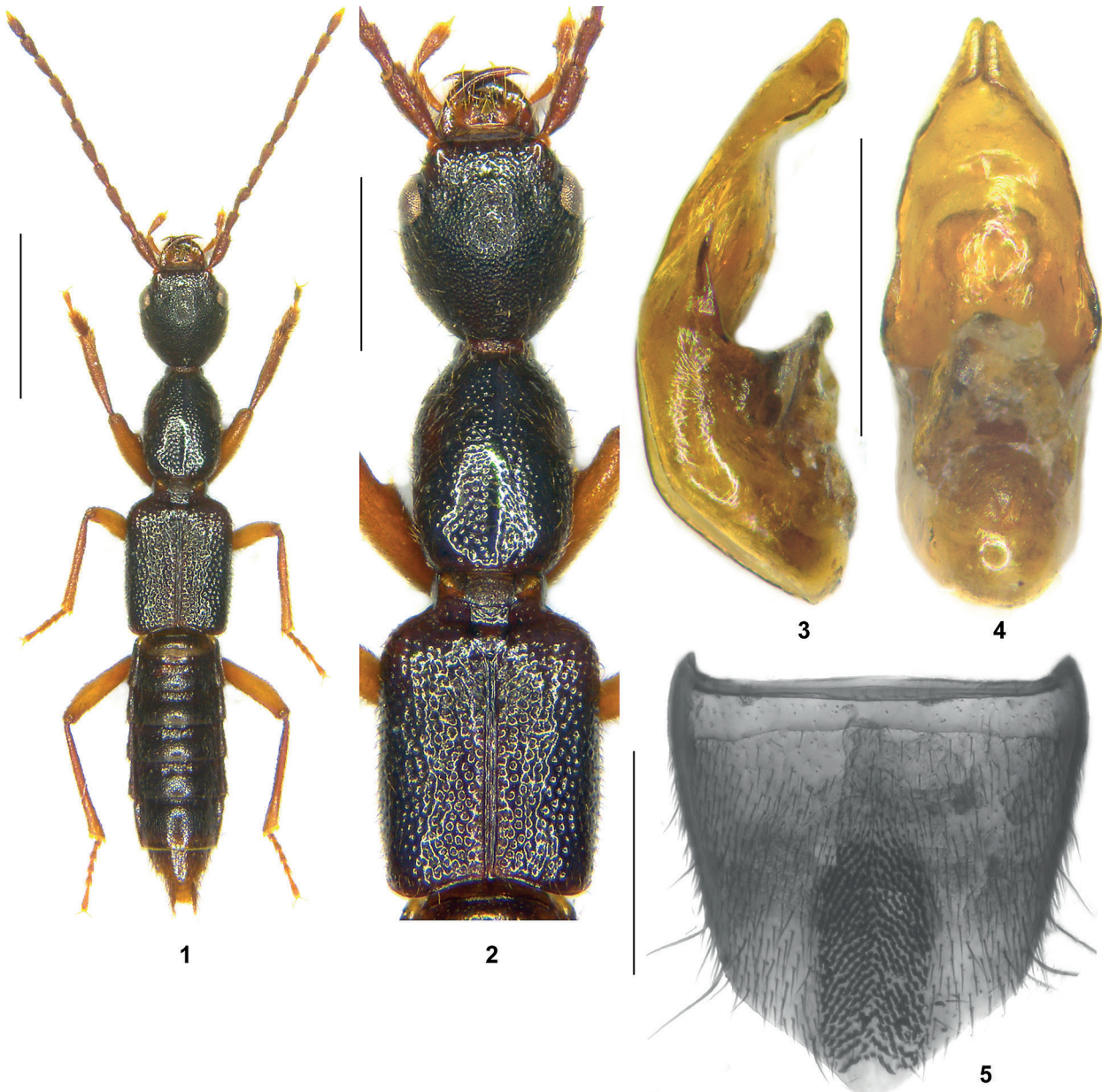
Type material: Holotype ♂: “CHINA: Guizhou, Leishan Co., SE Kaili, NE Leishan, Leigong Shan, E-slope, 26°22.56'N 108°13.40'E / ca. 300 m S of pass, 14./16.6.2001, ca. 1700 m, leg. Schillhammer (5) / Holotypus ♂ *Domene hybrida* spec. nov., det. V. Assing 2021” (NHMW). Paratypes: 4 ♀ ♀: same data as holotype (NHMW, cAss).

Etymology: The specific epithet is a noun in apposition and alludes to the fact that this species combines char-

acters of *Domene* with those of other paederine genera, particularly *Lobrathium*.

Description: Body length 8.3–9.0 mm; length of forebody 4.8–5.2 mm. Habitus as in Fig. 1. Coloration: body brown to blackish-brown; legs dark-yellow to pale-brown with the forelegs somewhat darker; antennae dark-brown to blackish-brown.

Head (Fig. 2) of oblong oval shape, approximately 1.2 times as long as broad; punctation dense and umbilicate; interstices without microsculpture. Eyes small and weakly convex in cross-section, approximately one fourth as long as distance from posterior margin of eye to posterior constriction of head in dorsal view. Antennae 3.5–3.7 mm long and slender, but rather massive; all antennomeres distinctly oblong.



Figs 1–5: *Domene hybrida* spec. nov.: habitus (1); forebody (2); aedeagus in lateral and in ventral view (3–4); male sternite VIII (5). Scale bars: 1: 2.0 mm; 2: 1.0 mm; 3–5: 0.5 mm.

Pronotum (Fig. 2) conspicuously oblong and slender, approximately 1.4 times as long as broad and only 0.85–0.90 times as broad as head; lateral margins only weakly convex in dorsal view, nearly parallel; punctation coarser and less dense than that of head; midline narrowly impunctate; interstices without microsculpture; disc on the whole more glossy than the nearly matt head.

Elytra (Fig. 2) nearly as long as pronotum, with marked humeral angles, and parallel lateral margins; punctation dense, much coarser than that of pronotum; interstices without microsculpture.

Hind wings probably present.

Abdomen: punctation fine and dense; interstices with fine transverse microsculpture; tergite VII with palisade fringe; posterior margin of tergite VIII angularly produced in the middle.

♂: sternite VII with unmodified chaetotaxy, posterior margin broadly concave; sternite VIII with an oblong cluster of numerous dense peg-setae; posterior margin strongly produced in the middle; aedeagus small, only 1.0 mm long, somewhat dorso-ventrally depressed, strongly curved in lateral view, and apically bifid.

♀: posterior margin of sternite VIII broadly convex.

Comparative notes: This species is remarkable in many ways. Unlike other *Domene* species recorded from China, it does not belong to the subgenus *Macromene* COIFFAIT, 1982, which is why it is assigned to a subgenus of its own. While the head shape resembles that of many other *Domene* species, the same does not apply to the pronotum and the elytra, which are somewhat reminiscent of *Lobrathium* or *Pseudobium*. Characters suggesting a closer relationship to the species groups known from the West Palaearctic region were not found either. *Domene hybrida* may even represent a genus of its own. However, in view of the unclarified subgeneric concept of *Domene* currently in use (see ASSING & FELDMANN 2014) and also the somewhat unresolved generic status and limits of *Domene* and *Lobrathium* (see ASSING 2010), the species is tentatively assigned to *Domene* for the time being.

Domene hybrida is easily distinguished from other *Domene* species known from China not only by the distinctive male sexual characters (shapes of sternite VIII and aedeagus), but also by external characters such as a distinctly oblong head, a more slender pronotum, and the shape of the elytra.

Distribution and natural history: The type locality is situated in Leigong Shan, Guizhou province, South China. The specimens were collected in a narrow dark gorge with dense vegetation at an altitude of approximately 1700 m by sifting accumulated debris of leaves, twigs, and soil (Schillhammer pers. comm.).

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care. Benedikt Feldmann (Münster) communicated the record of *Domene cultrata* from Taiwan and proof-read the manuscript.

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