

**A revision of Palaearctic and Oriental *Rugilus* VII.  
Two new species from China and Laos, and additional records  
(Coleoptera: Staphylinidae: Paederinae)**

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ASSING V. 2020: A revision of Palaearctic and Oriental *Rugilus*. VII. Two new species from China and Laos, and additional records (Coleoptera: Staphylinidae: Paederinae). *Acta Musei Moraviae, Scientiae biologicae* **105(2)**: 145–152. – Two species of *Rugilus* Leach, 1819 are described and illustrated: *Rugilus* (*Rugilus*) *biapicalis* sp. nov. (China: Yunnan); *Rugilus* (*Eurystilicus*) *laoticus* sp. nov. (North Laos: Bokeo province). Additional records of five species of the subgenus *Eurystilicus* Fagel, 1953 are reported, among them two first records from Vietnam. The genus now includes a total of 255 species worldwide, 104 of which are distributed in the Palaearctic and Oriental regions. As many as 36 species, most of them endemic, have been reported from China.

**Keywords.** Coleoptera, Staphylinidae, Paederinae, *Rugilus*, taxonomy, new species, new records, Palaearctic region, Oriental region, China, Laos

### Introduction

The paederine genus *Rugilus* Leach, 1819 previously included 253 species, 104 of them (plus eight subspecies) distributed in the Afrotropical, 38 in the Neotropical, nine in the Nearctic, 85 (plus one subspecies) in the Palaearctic, eight in the Oriental, seven in both the Oriental and southern East Palaearctic regions, one in the Oriental region and New Guinea, and one with an almost Cosmopolitan distribution. Three of the Palaearctic species are adventive also in other zoogeographic regions, particularly in North America (ASSING 2019, NEWTON 2019). A total of 102 species and one subspecies has been recorded from the Palaearctic and Oriental regions combined. They are assigned to two subgenera, the nominal subgenus and *Eurystilicus* Fagel, 1953, with three species not assigned to a subgenus. As many as 35 of these species have been reported from China (ASSING 2019). Only six species, five of *Eurystilicus* and one without subgeneric assignment, have been recorded from Laos (ASSING 2012a, 2013, 2014).

Since the latest supplement to the revision of Palaearctic and Oriental *Rugilus* (ASSING 2019), additional material has been examined, this material including two undescribed species, as well as additional records of five previously described species of the subgenus *Eurystilicus*, among them two first records from Vietnam.

### 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)

MNB	.....	Museum für Naturkunde Berlin (J. Frisch)
MNHW	.....	Museum of Natural History, University of Wrocław (P. Jałoszyński)
NHMB	.....	Naturhistorisches Museum Basel (M. Borer)
NHMW	.....	Naturhistorisches Museum Wien (H. Schillhammer)
NMP	.....	National Museum of Natural History, Prague (J. Hájek)
cAss	.....	author's private collection

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 apex of the abdomen, the length of the forebody from the mandibles to the posterior margin of the elytra, head length from the anterior margin of the frons 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 median lobe 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.

The limits of the zoogeographic regions are in agreement with those illustrated by SCHÜLKE & SMETANA (2015).

## Results

### *Rugilus (Rugilus) biapicalis* sp. nov.

(Figs 1–7)

**Type material examined.** Holotype ♂: “CHINA, W-Yunnan, Nujiang Massiv [recte: Nu Shan], NE Fugong, 14.6.2017, leg. Reuter / Holotypus ♂ *Rugilus biapicalis* sp. n., det. V. Assing 2019” (NHMW). Paratype ♂: same data as holotype (cAss).

**Description.** Body length 6.3–6.5 mm; length of forebody 3.9–4.0 mm. Habitus as in Fig. 1. Coloration: body blackish, elytra with weak metallic hue; legs with blackish-brown femora, brown tibiae, and pale-brown tarsi; antennae reddish-brown with antennomere I somewhat darker.

Head (Fig. 2) approximately 1.05 times as long as broad, broadest across eyes; lateral margins behind eyes convexly converging towards posterior constriction of head in dorsal view, posterior angles obsolete; punctuation coarse, very dense, and partly longitudinally confluent. Eyes moderately large and bulging, approximately 0.6–0.7 times as long as distance from posterior margin of eyes to posterior constriction. Anterior margin of labrum with two basally fused teeth on either side of the narrow median incision.

Pronotum (Fig. 2) 1.11–1.14 times as long as broad and approximately 0.75 times as wide as head; punctuation similar to that of head, impunctate median band absent.

Elytra (Fig. 2) with dense, moderately fine, and defined punctuation; interstices without microsculpture. Metatarsomere I approximately as long as the combined length of metatarsomeres II and III.

Abdomen: tergites III–VI with moderately pronounced impressions anteriorly, these impressions with coarse, dense, and irregular sculpture; punctation of remaining tergal surfaces fine and dense; interstices without distinct microsculpture.

♂: elytra long, approximately 1.1 times as long as pronotum; hind wings fully developed; posterior margin of tergite VII with palisade fringe; sternite VII (Fig. 3) with a transverse median elevation, posterior margin weakly concave in the middle; sternite VIII (Fig. 4) with a moderately deep posterior excision; aedeagus (Figs 5–7) 0.85 mm long and of very distinctive shape; ventral process with a pronounced ventral projection; internal sac with a pair of large apical sclerotized structures.

♀: unknown.

**Comment.** *Rugilus biapicalis* belongs to a group including several several species with a sexual wing dimorphism (fully developed in males; strongly reduced in females). The same may apply to this species, too.

**Comparative notes.** This species is characterized particularly by the conspicuous shape of the ventral process of the aedeagus. There is not a single described species in the Palearctic region with an aedeagus even faintly resembling that of *R. biapicalis*. For illustrations of the aedeagi of the species previously known from China see ASSING (2012a, b, 2013, 2015, 2019) and HU *et al.* (2015).

**Distribution and natural history.** The type locality is situated in Northwest Yunnan, China, to the northeast of Fugong. The specimens were collected at an altitude of 2300 m.

**Etymology.** The specific epithet (Latin, adjective: with two apices) alludes to the distinctive shape of the ventral process of the aedeagus.

#### ***Rugilus (Eurystilicus) ceylanensis* (Kraatz, 1859)**

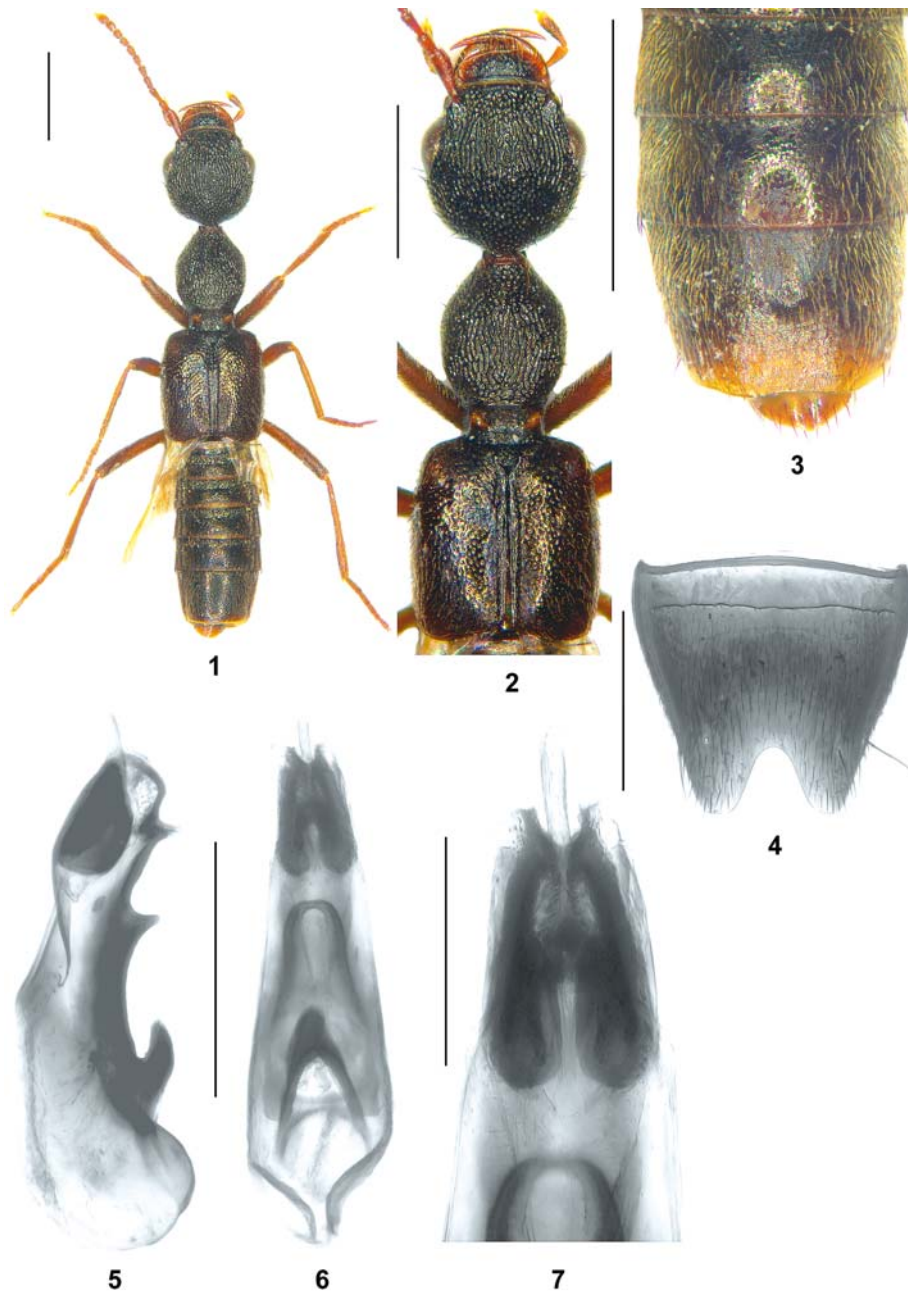
**Material examined: Vietnam:** 2 exs., Bac Kan, BaBe National Park, 22.413°N, 105.632°E, 280–600 m, slightly disturbed primary forest on karst slopes, flight interception trap, 19–23.V.2019, leg. Brunke & Schillhammer (CNC).

Most likely of Oriental origin, this species has a nearly Cosmpolitan distribution today. It has been recorded from Asia (from Pakistan to Japan and the Philippines), New Guinea, Australia, the Pacific, and the Nearctic regions (ASSING 2012a, 2019).

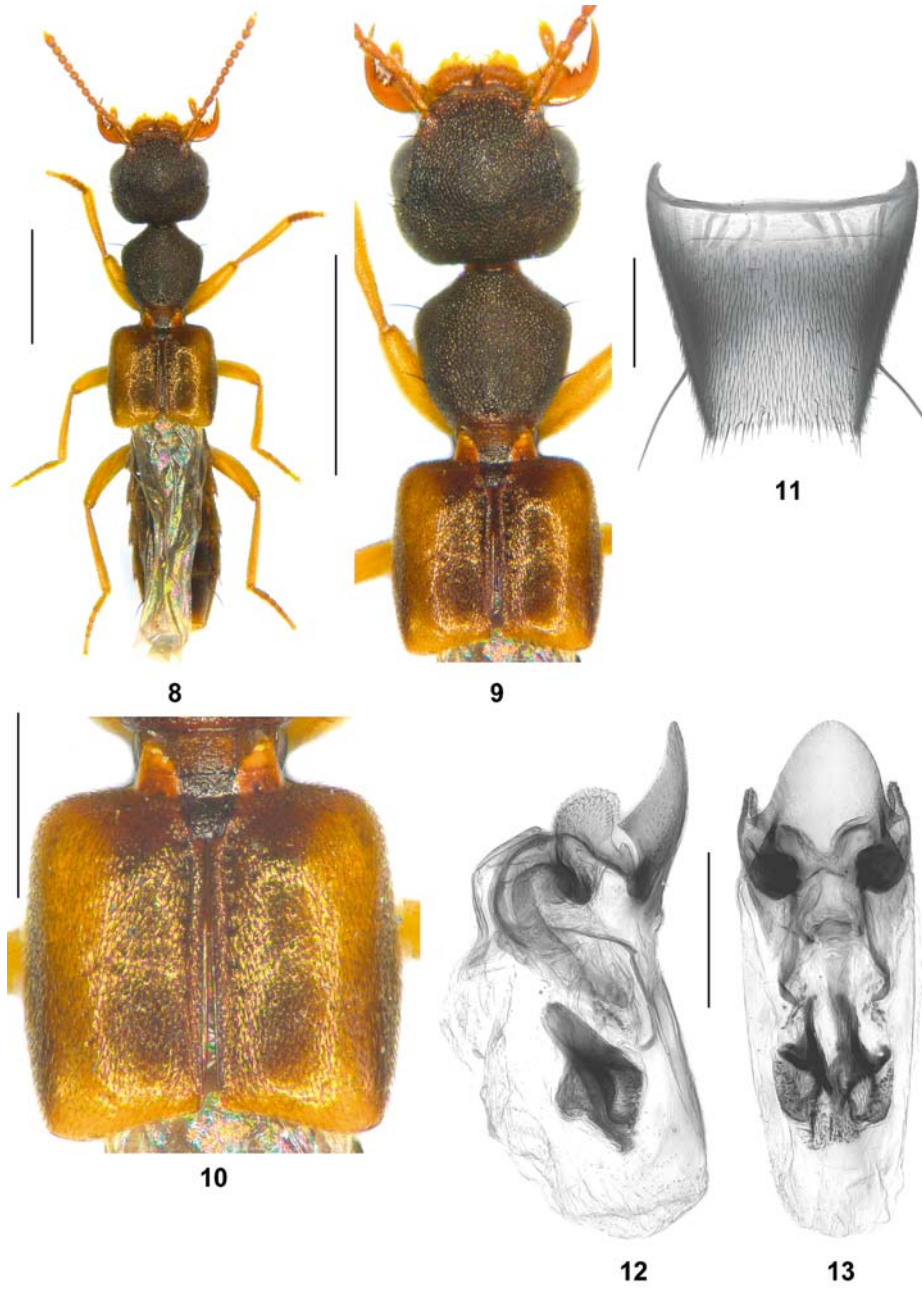
#### ***Rugilus (Eurystilicus) simlaensis* (Cameron, 1931)**

**Material examined: Laos:** 3 exs., Houa Phan prov., Phu Phan Mt., 20°12'N, 104°01'E, ca. 1750 m, 17.V.–3.VI.2007, leg. Kubán (cAss, MNB); 1♀, Houa Phan prov., Phou Pane Mt., 20°13'N, 104°00'E, 1480–1510 m, 22.IV.–14.V.2008, leg. Kubán (cAss). **Vietnam:** 1 ex., Pia Ouac Nat. Park, ca. 500 m E main road, 22.594°N, 105.889°E, 1350 m, mature secondary forest, flight interception trap, 9–18.V.2019, leg. Brunke & Schillhammer (CNC).

The distribution of *R. simlaensis* ranges from the Himalaya across China to Laos, Thailand, and Taiwan. For previous records see ASSING (2012a, 2012b, 2013, 2014, 2015, 2019). The above specimen from Vietnam represents a new country record.



**Figs 1–7.** *Rugilus biapicalis* sp. nov. 1 – male habitus; 2 – male forebody; 3 – male abdominal sternites V–VII; 4 – male sternite VIII; 5–6 – aedeagus in lateral and in ventral view; 7 – apical portion of aedeagus in ventral view. Scale bars: 1–3: 1.0 mm; 4–6: 0.5 mm; 7: 0.2 mm.



**Figs 8–13.** *Rugilus laoticus* sp. nov. 8 –habitus; 9 –forebody; 10 – elytra; 11 – male sternite VIII; 12–13 – aedeagus in lateral and in ventral view. Scale bars: 8–9: 1.0 mm; 10: 0.5 mm; 11–13: 0.2 mm.

***Rugilus (Eurystilicus) velutinus (Fauvel, 1895)***

**Material examined:** **China:** 1 ex., Fujian, Wuyishan NNR, 1.4 km E Legaduc, 27°44'N, 117°43', 660 m, 2.VI.2018, leg. Chen & Růžička (NMP). **Laos:** 3♂♂, 10♀♀, Xieng Khouang, 30 km NE Phonsavan, Phou Sane Mt., 19°38.2'N, 103°20.2'E, 1420 m, 10–30.V.2009, leg. Hauck (cAss). **Vietnam:** 2 exs., Pia Ouac Nat. Park, Phia Den vill., Kolia Organic Farm, 22.56°N, 105.86°E, 1000 m, at light, 7–17.V.2019, leg. Brunke & Schillhammer (CNC); 1 ex., Pia Ouac Nat. Park, ca. 500 m E main road, 22.594°N, 105.889°E, 1350 m, mature secondary forest, flight interception trap, 9–18.V.2019, leg. Brunke & Schillhammer (CNC).

*Rugilus velutinus* is one of the most common and widespread species in the southern East Palaearctic and Oriental regions. For a distribution map see ASSING (2013).

***Rugilus (Eurystilicus) rufescens (Sharp, 1874)***

**Material examined:** **Japan:** 6 exs., Ibaraki Pref., Tsukuba env., banks of Kokaigawa river, 2.VIII.2003, leg. Jąłoszyński (MNHW, cAss); 1 ex., Ibaraki Pref., Tsukuba env., 13.I.2002, leg. Jąłoszyński (cAss). **Vietnam:** 1 ex., SW-slope of Phia Ouac, trout farm, 22.594°N, 105.858°E, 1050–1100 m, 10.V.2019, leg. Brunke & Schillhammer (CNC); 1 ex., Bac Kan, BaBe National Park, 22.413°N, 105.632°E, 280–600 m, slightly disturbed primary forest on karst slopes, flight interception trap, 19–23.V.2019, leg. Brunke & Schillhammer (CNC).

*Rugilus rufescens* is nearly as widespread as the preceding species, but it was previously unknown from Vietnam.

***Rugilus (Eurystilicus) japonicus Watanabe, 1961***

**Material examined:** **Japan:** 2♀♀, Okinawa Pref., Ishigaki Island, Mt. Omoto-dake, 20.IX.2003, leg. Jąłoszyński (MNHW, cAss).

The distribution of *R. japonicus* ranges from Sri Lanka across most of the Oriental and southern East Palaearctic regions eastwards to South Japan and the Philippines (ASSING 2012a, 2015, 2019).

***Rugilus (Eurystilicus) laoticus sp. nov.***

(Figs 8–13)

**Type material examined.** Holotype ♂: “LAOS – Bokeo prov., 5 km W Ban Toup, Bokeo Nature Reserve, 20°27'–28'N, 100°45'E, 500–700 m, 4–18.V.2011, leg. Brancucci et al. / Holotypus ♂ *Rugilus laoticus* sp. n., det. V. Assing 2020” (NHMB). Paratypes: 19 exs.: same data as holotype (NHMB, cAss).

**Description.** Body length 4.3–5.5 mm; length of forebody 2.4–2.9 mm. Habitus as in Fig. 8. Coloration: head and pronotum dark-brown to blackish-brown; elytra yellow to dark-yellow with a more or less broad dark-brown band on either side of the suture; abdomen dark-brown to blackish-brown with the posterior margins of segments VII and VIII reddish-yellow to reddish; legs yellow; antennae reddish.

Head (Fig. 9) approximately 1.1 times as long as broad, posterior angles broadly convex, weakly marked; punctation umbilicate, extremely dense, but not very coarse. Eyes slightly longer than postocular region in dorsal view. Antenna 1.2–1.3 mm long.

Pronotum (Fig. 9) approximately as long as broad or weakly transverse and approximately 0.80–0.85 times as broad as head; punctation similar to that of head, impunctate median band absent.

Elytra (Fig. 10) approximately as long as pronotum, with pronounced humeral angles; elytra with dense and very fine ground punctation, on either side of suture with narrow sulcus with coarse macropunctures, these punctures coarser anteriorly than posteriorly, discs of elytra with additional irregularly distributed, non-setiferous coarser punctures. Hind wings fully developed. Metatarsomere I approximately as long as the combined length of metatarsomeres II–IV.

Abdomen with very fine and extremely dense punctation; posterior margin of tergite VII with palisade fringe.

♂: sternite VIII (Fig. 11) with broadly concave posterior margin; aedeagus (Figs 12–13) 0.65–0.70 mm long and of distinctive shape.

**Comparative notes.** Based on the general morphology of the aedeagus and the presence of additional larger, non-setiferous punctures on the elytra, *R. laoticus* is closely allied to *R. chinensis* (BERNHAEUER, 1938) (China: Hubei, Fujian, Guangxi, Jiangsu), together with which it would key out in the key to species provided by ASSING (2012a) and from which it is distinguished by the coloration of the elytra (*R. chinensis*: elytra blackish-brown with the humeral and the postero-lateral portions reddish-yellow), much finer and less dense ground punctation of the elytra (*R. chinensis*: ground punctation very dense and somewhat granulose), and by a significantly larger and more robust aedeagus with larger and more strongly sclerotized internal structures (*R. chinensis*: aedeagus approximately 0.5 mm long). For illustrations of *R. chinensis* see ASSING (2012a).

**Distribution and natural history.** The type locality is situated in Bokeo province, Northwest Laos. The specimens were collected on the wing, probably with a Malaise trap, at an altitude of 500–700 m.

**Etymology.** The specific epithet is an adjective derived from Laos.

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