Zootaxa 5154 (3): 289–304
https://www.mapress.com/zt/

Article

ISSN 1175-5326 (print edition)
ZOOTAXA
ISSN 1175-5334 (online edition)

https://doi.org/10.11646/zootaxa.5154.3.3
http://zoobank.org/urn:lsid:zoobank.org:pub:8C917E95-AA00-4043-9EA3-A2A4FE4E333C

New species of the genus *Eupithecia* (Lepidoptera, Geometridae) from China. Part VII

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Abstract

In this seventh part of this series, 8 new species of *Eupithecia* Curtis, 1825 are described from China: *Eupithecia prochazkai* **sp. n.**, *Eupithecia anickae* **sp. n.**, *Eupithecia divertenta* **sp. n.**, *Eupithecia saldaitisi* **sp. n.**, *Eupithecia ludificata* **sp. n.**, *Eupithecia butvilai* **sp. n.**, *Eupithecia ursina* **sp. n.** and *Eupithecia nesciaria* **sp. n.** Three previously described species are recorded in China for the first time: *Eupithecia oxycedrata* (Rambur, 1833), *Eupithecia phulchokiana* Herbulot, 1984, and a range extension is given for a fourth, *Eupithecia pannosa* Mironov & Galsworthy, 2008, and *Eupithecia matrona* Mironov & Galsworthy, 2004. Adults and genitalia are illustrated for all species.

Key words: taxonomy, distribution, genitalia, morphology

Introduction

The genus *Eupithecia* Curtis, 1825 is one of the most species-rich genera of the family Geometridae, and is particularly rich in China, especially in montane areas (Mironov & Galsworthy 2014). This is the seventh in a series of papers describing new species of Chinese *Eupithecia* (Mironov *et al*. 2004a, b, c, d, 2006, 2011). This paper is based on material from the collection of Ing. Josef Procházka † (Nižbor, Czech Republic). Mr. J. Procházka died in December 2020 after a serious illness. His collection is now deposited in the Natural History Museum, Prague, Czech Republic.

Abbreviations:

BMNH	The Natural History Museum, London, United Kingdom;
Gen. prep.	genitalia preparation;
NMPC	National museum, Natural History Museum, Prague, Czech Republic;
MNHN	Museum National d'Histoire Naturelle, Paris, France;
MNHU	Museum für Naturkunde, Zentralinstitut der Humboldt-Universität zu Berlin, Germany;
SMNK	Staatliches Museum für Naturkunde Karlsruhe, Germany;
TTM	Termeszettudomanyi Muzeum Allattara (Hungarian Natural History Museum), Budapest, Hungary;
ZFMK	Zoologisches Forschungsinstitut und Museum Alexander Koenig, Bonn, Germany;
ZSM	Zoologisches Staatssammlung München, Germany.

Accepted by S. Erlacher: 1 Jun. 2022; published: 15 Jun. 2022

New species

***Eupithecia prochazkai* sp. n.**
(Figs 1–4, 20, 28, 37)

Type material: Holotype, ♂, **China,** NW. Yunnan, Nu Jiang valley, Road Lushui/Gulang, 25°58,15″ N, 98°47,40 ″ E, 4.iii.2019, H—2000 m, leg. A. Saldaitis. Gen. prep. J. Procházka 20045, Photo J. Šumpich 21404 (NMPC). Paratypes 5 ♂, 2 ♀, same data as holotype, 3 ♂, 1 ♀, same locality and collector but date 10.iii.2019. Gen. prep. J. Procházka 20154 (♂) and 20044 (♀), Photo J. Šumpich 21406, 21405 and 21410 (NMPC).

Diagnosis. This species belongs to the *fletcherata* species-group (Bolte 1990) on the basis of the structure of the male and female genitalia. It is externally most similar to the female of Chinese species *E. amandae* Galsworthy & Mironov, 2011 (Mironov & Galsworthy 2014). The male and female genitalia of this new species are very characteristic. The combination of the shape of the valves, the cornuti on the vesica and the shape of eighth sternite in the male, and the shape of the bursa copulatrix and unique disposition of the spines in the bursa in the female distinguish *E. prochazkai* **sp. n.** from all other allied species.

Description. Adults. (Figs 1–4, 20). Male and female. A relatively small, broad-winged species, wingspan 16.5-17.0 mm, fore wing 9.5 mm. Head and notum covered with yellowish scales. Fore wing elongate, rather narrow; costal margin slightly bowed; apex narrowly rounded. Ground colour pale brownish grey; transverse lines not well visible but marked by blackish costal blotches: elongate basal, antemedial, medial and postmedial lines; costa in apical part brown; terminal area blackish with two brown blotches, medial and subtornal, and tornal white spot; discal dot black, narrow, ovoid-acuminate; terminal line narrow, brown, interrupted by veins. Hind wing ovoid, pale grey, with traces of dark transverse lines along anal margin; terminal line as on forewing; discal dot well visible, narrow, elongate, and paler than on the forewing. Fringe chequered with brownish and pale dirty whitish.

Male genitalia (Fig. 28). Uncus narrow, elongate, biapical. Valve broadened at the middle; dorsal margin straight; ventral margin with prominent sclerotized process in the middle, slightly asymmetrical on left and right valvae; apex of valve rounded; sacculus heavily sclerotized from base of valve to process. Vinculum rather short, semicircular. Papillae on anterior arms of labides elongate, narrow, covered with normal-sized setae. Aedeagus short, thick, stout. Vesica multiply granulate, armed with two stout, horn-like apical cornuti, one of which is curved near apex, and with one folded, irregular cornutus near ductus ejaculatorius base. Sternite A8 peg-like, elongate, broadened basally, with two short, blunt, sclerotized apical horns; basal hollow broad and shallow.

Female genitalia (Fig. 37). Bursa copulatrix almost pouch-like, sclerotized, about 2/3 covered with spines in posterior part; anterior end of bursae blunt; in the middle of one side there is a broad, sclerotized diverticulum with a patch of large and heavily sclerotized spines at the base. Colliculum membranous. Antrum short and broad. Tergite A8 square. Anterior and posterior apophyses rather narrow. Papillae anales slightly elongate, narrowly rounded at apices, covered with long setae.

Bionomy. Host plant unknown. Type material was collected by light in early March at an elevation of 2000 m (Fig. 42).

Distribution. China. Known only from Yunnan province.

Etymology. This species is named in honour of the Czech lepidopterist Ing. Josef Procházka (Nižbor, Czech Republic) who was interested in Geometridae and built a large collection of Palaearctic species.

***Eupithecia anickae* sp. n.**
(Figs 5–6, 21, 38)

Type material: Holotype, ♀, **China,** N. Yunnan, North from Yongseng, 26°31,14′ N, 100°44,52′ E, 11.v.2018, H—2050 m, lgt. Butvila & Saldaitis. Gen. prep. J. Procházka 20134, photo J. Šumpich 22001 (NMPC). Paratypes 2 ♀, the same locality, date and collectors. Photo J. Šumpich 22002 and 22003 (NMPC).

Diagnosis. This species possibly belongs to the *lanceata* species-group (Mironov 2003). The pattern on the fore wings is typical for many other species of this group, such as *E. lanceata* (Hübner, [1825]), *E. kudoi* Inoue, 1983; *E. habermani* Viidalepp & Mironov, 1988; *E. dolichoptera* Galsworthy & Mironov, 2013; *E. fortis* Mironov & Galsworthy, 2004 and others. The female genitalia of *E. anickae* **sp. n.** are however not similar to the genitalia of other

species in this group. It's genitalia rather similar to those of *E. selinata* Herrich-Schäffer, 1861 in the disposition of spines in the bursa copulatrix, and especially the long longitudinal row of large spines on one side.

Description. Adult. (Figs 5–6, 21). Female. Relatively small, narrowed winged species. Wingspan 17 mm, fore wing 9 mm. Head and notum covered with brown scales. Fore wing elongated, narrow; costal margin evenly convex; apex pointed. Ground colour brown, medial area slightly darker than rest of wing; basal transverse line evenly curved; antemedial oblique, sharply angled from discal dot on to costa; postmedial line curved under discal dot and almost perpendicular to costal margin; terminal area darker, blackish brown, especially near apical half; discal dot large, ovoid, black. Hind wing ovoid, pale brown, paler than fore wing; two transverse lines: basal and medial well visible; terminal area slightly darker; discal dot small, rounded, dark brown. Terminal lines narrow, blackish, interrupted on all wings.

Female genitalia (Fig. 38). Bursa copulatrix elongate, pouch-like, sclerotized; approximately ½ covered with spines, with longitudinal row of large, stout spines from spiniferous area to colliculum on opposite of ductus seminalis, and also with numerous scattered small spines in the ductus bursae between base of ductus seminalis and colliculum. Ductus seminalis thick, sclerotized at base. Colliculum collar-like, short and broad, slightly inclined to ductus seminalis. Antrum membranous, widely tapering anteriorly. Tergite A8 square. Anterior and posterior apophyses relatively narrow. Papillae anales rounded, covered with rather long setae.

Male. Unknown.

Bionomy. Host plant unknown. Type material were collected by light in May in dry steppe slopes with sparse vegetation at an elevation of 2050 m (Fig. 43).

Distribution. China. Known from Yunnan province.

Etymology. This species is named in honour of Anna Kvardová (Nižbor, Czech Republic), familiarly Anička—wife of Mr Josef Procházka.

***Eupithecia divertenta* sp. n.**
(Figs 7, 22, 29)

Type material: Holotype, ♂, **China,** NW. Sichuan, near Derge, 31°49′12″ N, 098°34′59″ E, 4.7.2019, H—3400 m, leg. Butvila & Saldaitis. Gen. prep. J. Procházka 20055, photo J. Šumpich 22013 (NMPC).

Diagnosis. This species belongs to the *fletcherata* species-group. Distinguished from other allied species by the shape of valve with a broadly rounded ventral angle, very broad vinculum with a broad and shallow hollow, and large, elongate and broad cornutus with rounded apex in the male genitalia.

Description. Adult. (Figs 7, 22). Male. Wingspan 24 mm; fore wing 12 mm. Head and notum covered with ochreous scales. Fore wing rather elongate, with costal margin slightly convex near base, and apex relatively narrow. Ground colour brownish; antemedial line angled near discal dot; postmedial line oblique, curved near costal margin; terminal area brown, slightly darker; discal dot large, ovoid, black. Hind wing ovoid, pale brownish with visible small, black discal dot.

Male genitalia (Fig. 29). Uncus short, stout, biapical with wide heart-shaped base. Valve rather short and broad with broadly rounded apex; dorsal margin slightly concave; ventral margin sclerotized, broadened at the middle with a broadly rounded angle. Vinculum short and very broad with a broad and shallow medial hollow. Papillae on the anterior arms of the labides rather short and broad, covered with normal-sized setae in apical half. Aedeagus large, stout with slightly broadened anterior end. Vesica with large, long and broad cornutus with rounded apex and one smaller folded, irregular cornutus at ductus ejaculatorius base. Sternite A8 narrowly rectangular, broadened and bilobed at base with two narrow, pointed, sclerotized apical horns and a very deep basal hollow.

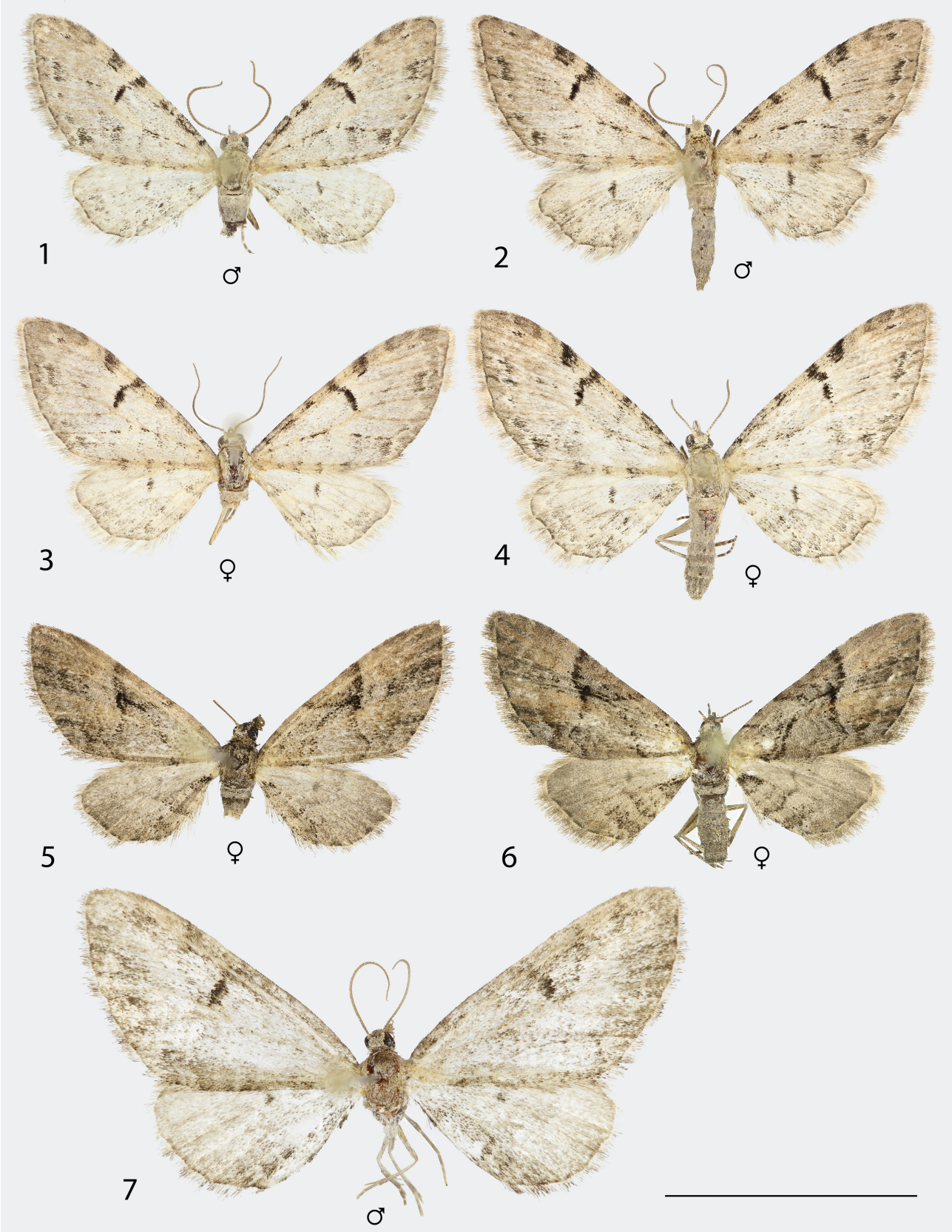
Female. Unknown.

Bionomy. Host plant unknown. Type material was collected by light in early July at an elevation of 3400 m (Fig. 44).

Distribution. China (Sichuan province).

Note. The single type specimen is worn.

Etymology. From Italian word "divertente" – "funny" in English.



FIGURES 1–7. *Eupithecia* adults, China (scale bar = 10 mm). 1–4. *E. prochazkai* **sp. n.** 1. Holotype. 2–4. Paratypes; 5–6. *E. anickae* **sp. n.** 5. Holotype. 6. Paratype; 7. *E. divertenta* **sp. n.** (holotype).

***Eupithecia saldaitisi* sp. n.**
(Figs 8–9, 23, 30)

Type material: Holotype, ♂, **China,** SW. Gansu, near Xiahe (Labramg), H—2900 m, 35°11,968′ N, 102°33,545′ E, 23.v.2017, leg. A. Saldaitis. Gen. prep. J. Procházka 20040, photo J. Šumpich 22009 (NMPC). Paratype 1 ♂, the same locality, data and collector. Photo J. Šumpich 22011 (NMPC).

Diagnosis. This species may belong to the *innotata* species-group. Externally it is most similar to *E. paupera* Dietze, 1910 (Mironov & Galsworthy 2014). However, the transverse lines are not visible on the wings of the new species and the fore wings are unicolorous rusty ochreous. The combination of the shape of the valves and vinculum, the cornuti on the vesica of the aedeagus in the male genitalia, as well as the shape of the eighth sternite distinguish this species from any other.

Description. Adult. (Figs 8–9, 23). Male. A relatively large narrow-winged species, wingspan 24.5 mm, fore wing 13.5 mm. Head and notum covered with ochreous scales. Fore wing narrow, elongate; costal margin slightly curved; apex narrow; unicolorous, pale rusty ochreous; transverse lines not visible; terminal line narrow, brownish; discal dot narrow, elongate, blackish. Hind wing ovoid, unicolorous pale rusty ochreous, paler than fore wing; transverse lines absent, terminal line as on the fore wing; discal dot small, rounded, brownish. Fringe relatively long, unicolorous rusty ochreous.

Male genitalia (Fig. 30). Uncus elongate, narrow, biapical. Valva shaped like an orange segment, relatively elongate, narrow, sharply narrowed from middle to apex; sacculus parallel to dorsal margin, lightly sclerotized; apex very narrow, rounded. Vinculum relatively short, narrow, slightly pointed at apex. Papillae on the anterior arms of the labides elongate, curved, covered with normal-sized setae at apices. Aedeagus rather broad and short. Vesica armed with one sharp cornutus with a broad base and one smaller apical cornutus, and also two smaller irregular cornuti near ductus ejaculatorius base. Sternite A8 short, peg-like with two very short, pointed and inwardly curved apical arms; basal hollow narrow and shallow.

Female. Unknown.

Bionomy. Host plant unknown. Holotype was collected by light in late May at an elevation of 2900 m (Fig. 45).

Distribution. China. Known from Gansu province.

Etymology. This species is named in honour of the Lithuanian entomologist Aidas Saldaitis (Vilnius, Lithuania) who collected many Chinese moths.

***Eupithecia ludificata* sp. n.**
(Figs 10, 24, 31)

Type material: Holotype, ♂, **China,** NW. Sichuan, near Maniganggo, 31°47′22″ N, 099°23′27″ E, 3.7.2019, H—3860 m, leg. Butvila & Saldaitis. Gen. prep. J. Procházka 20062, photo J. Šumpich 22007 (NMPC).

Diagnosis. This species is very similar to *Eupithecia saldaitisi* **sp. n.** but slightly darker, with the costal margin of the fore wing straight, and the discal dots smaller and rounded. The male genitalia are distinguished from those of allied species by the different shape of the valve and papillae on the anterior arms of the labides, and also the shape of the horn-like cornuti on the vesica of the aedeagus.

Description. Adult. (Figs 10, 24). Male. A relatively large, narrow-winged species. Wingspan 23 mm; fore wing 13 mm. Head and notum covered with brown scales. Fore wing elongate and narrow; costal margin straight; terminal margin almost straight also; apex very narrow, rather pointed; wings unicolorous brownish ochreous; transverse lines not visible; discal dots very small, rounded, dark brown; terminal lines narrow, dark brown. Hind wing ovoid, unicolorous, slightly paler than fore wing with traces of two dark transverse lines along anal margin; terminal line dark brownish. Fringe relatively long, unicolorous, brownish.

Male genitalia (Fig. 31). Uncus short, stout, biapical. Valve relatively elongate, slightly broader at base; dorsal margin slightly curved in apical part; sacculus narrowly sclerotized. Vinculum semirounded. Papillae on the anterior arms of the labides elongate, tapered to apices, covered with normal-sized setae. Aedeagus stout. Vesica multiply granulate in apical half, armed with two horn-like apical cornuti (one larger than the other) and two plate-like cor-

nuti at ductus ejaculatorius base. Sternite A8 peg-like, short with obtuse apex near very small, shallow and narrow basal hollow.

Female. Unknown.

Bionomy. Host plant unknown. Holotype was collected by light in early July at an elevation of 3860 m (Figs 46–47).

Distribution. China. Known from province Sichuan.

Note. This species possibly belongs to the *innotata* species-group.

Etymology. From Latin word "ludificatus" – "mocked" in English.

***Eupithecia butvilai* sp. n.**
(Figs 11, 25, 32)

Type material: Holotype, ♂, **China,** NW. Yunnan, Nu Jiang valley, H—2100-2400 m, S. from Gongshan, 27°43,42′ N, 098°45,15′ E, 15-16.v.2018, lgt. Butvila & Saldaitis. Gen. prep. J. Procházka 20146, photo J. Šumpich 22004 (NMPC).

Diagnosis. This species belongs to the *fletcherata* species-group and is externally similar to the east Asian *E. quadripunctata* Warren, 1888 because of its grey colour and large, black discal dots on the fore wings. The shape of the valve and vinculum are very characteristic in this species. The horn-like cornuti on the vesica of the aedeagus are similar to those of *E. kobayashii* Inoue, 1958, but the larger cornutus is thicker and more sharply curved in the new species. The shape of the eighth abdominal sternite is rather similar to that of *E. jinboi* Inoue, 1976, but the pointed apical horns are not asymmetrical.

Description. Adult. (Figs 11, 25). Male. Narrowed winged species. Wingspan 18 mm; fore wing 9.5 mm. Head and notum covered with brown scales. Labial palpi very short, triangular. Fore wing narrow, elongate, with straight costal margin and rather pointed apex. Ground colour ash grey; costal margin darker with traces of dark transverse lines; terminal line continuous, narrow, brownish; discal dot relatively large, ovoid, black. Hind wing pale grey, lighter than fore wing, with small, ovoid, pale brown discal dot, terminal line as on the forewing.

Male genitalia (Fig. 32). Uncus relatively short, stout, biapical. Valve elongate, with slightly concave dorsal margin and evenly curved ventral margin; apex narrowly rounded; ventral margin with small, mammillary process at the middle, which is symmetrical in both valvae; sacculus narrowly sclerotized from base to ventral process. Vinculum relatively elongate, rounded. Papillae on the anterior arms of the labides narrow, elongate, covered with normal-sized setae at apices. Aedeagus large, stout, broadened to the anterior end. Vesica armed with three long, horn-like cornuti: two relatively narrow, almost straight (one larger than the other) and one large, stout, broader, evenly curved, and also one small, elongate plate-like cornutus and one folded, irregular cornutus at ductus ejaculatorius base. Sternite A8 peg-like, with broad bilobed base and two narrow, pointed, symmetrical, heavily sclerotized apical horns; basal hollow very deep.

Female. Unknown.

Bionomy. Host plant unknown. Holotype was collected by light in May at an elevation of 2100–2400 m (Fig. 48).

Distribution. China. Known from Yunnan province.

Note. The holotype specimen (male) of this species is worn.

Etymology. This species is named in honour of Lithuanian entomologist Rimantas Butvila (Joniškis, Lithuania) who collected moths in China.

***Eupithecia ursina* sp. n.**
(Figs 12, 26, 33)

Type material: Holotype, ♂, **China,** W. Sichuan, 25 km N. from Batang, H—3100 m, dry valley, 30°12.049′ N, 099°14.078′ E, 19-20.ix.2017, leg. Saldaitis. Gen. prep. J. Procházka 20148, photo J. Šumpich 22006 (NMPC).

Diagnosis. This species is externally similar to *E. satyrata* (Hübner, [1813]). However, the male genitalia are distinguished by the absence of dentate cornuti on the vesica of the aedeagus and especially, by the different shape of the eighth sternite, which is more similar to that of *E. sophia* Butler, 1878 (Mironov & Galsworthy 2014).

Description. Adult. (Figs 12, 26). Male. Wingspan 21 mm; fore wing 12 mm. Head and notum covered with brown and whitish scales. Fore wing with straight costal margin; ground colour brownish grey, transverse lines not well visible, but broadened at costa; subterminal line with white tornal spot; terminal line blackish, interrupted by vein ends; discal dot small, rounded, black. Hind wing ovoid, pale grey, with five conspicuous, evenly curved dark transverse lines and small, blackish, ovoid discal dots. Fringe chequered with pale and dark grey.

Male genitalia (Fig. 33). Uncus stout, biapical. Valve shaped like an orange segment, unmodified, tapered distally; dorsal margin concave; ventral margin evenly curved; apex narrowly rounded; sacculus lightly sclerotized. Vinculum rather short, semicircular. Papillae on the anterior arms of the labides elongate, narrow, covered with short setae at apices. Aedeagus elongate, broadened to posterior end. Vesica multiply granulate, armed with one narrow, elongate, apically pointed cornutus, and one small, folded, irregular cornutus at ductus ejaculatorius base. Sternite A8 relatively short and broad, U-shaped, with two narrow, tapered and sclerotized apical rods connected by a narrow basal band.

Female. Unknown.

Bionomy. Host plant unknown. The holotype was collected by light in September at an elevation of 3100 m (Fig. 49).

Distribution. China. Known from Sichuan province.

Note. We do not know to which group this species belongs.

Etymology. From Latin "ursina" – "bearish" in English.

***Eupithecia nesciaria* sp. n.**
(Figs 13, 27, 34)

Type material: Holotype, ♂, **China,** NW. Sichuan, near Maniganggo, 31°47′22″ N, 099°23′27″ E, 30.6.2019, H—3860 m, leg. Butvila & Saldaitis. Gen. prep. J. Procházka 20063, photo J. Šumpich 22005 (NMPC).

Diagnosis. This species is not externally similar to any other Asian species of the genus. According to the structure of the male genitalia it belongs to the *satyrata* species-group (McDunnough 1949). The uncus, shape of valve and vinculum in the male genitalia, as well as the shape of the eighth sternite are similar to those of *E. kurilensis* Bryk, 1942 (Mironov & Galsworthy 2014). However, the vesica in the aedeagus is armed with different cornuti from those in the compared species.

Description. Adult. (Figs 13, 27). Male. Wingspan 20.5 mm; fore wing 12 mm. Head and notum covered with whitish scales. Fore wing rather broad, with slightly bowed costal margin near base; apex narrowly rounded. Ground colour brownish with an olive tinge; all transverse lines clear, fine, blackish; basal line sharply curved and broadened near costa; antemedial line indented, sharply angled in areole onto costa and broadened; medial line sharply angled onto costa behind discal dot; postmedial line right angled onto costa behind discal dot and forming a large black costal blotch; subterminal line indented with blackish inner shadow; terminal line dark brown, broad, interrupted by veins; discal dot relatively large, black, ovoid-acuminate. Hind wing broad, pale grey, paler than fore wing, with traces of dark basal and medial transverse lines; terminal line as on the forewing; discal dot well visible, small, rounded, blackish; terminal area slightly darker than the rest of the wing. Fringe spotted with olive brown and paler, dirty white.

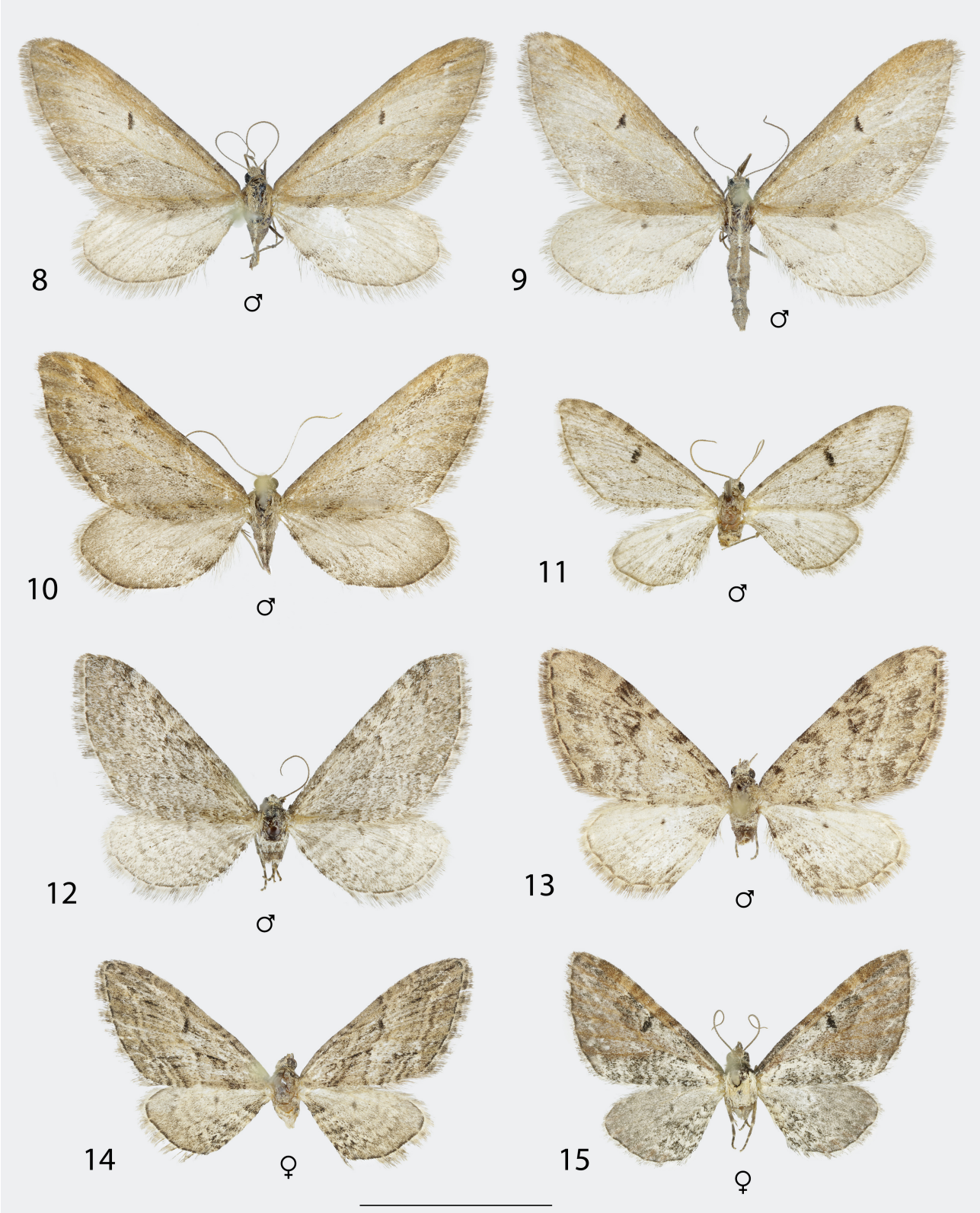
Male genitalia (Fig. 34). Uncus stout, biapical. Valve shaped like an orange segment, unmodified, with slightly concave dorsal margin and evenly curved ventral margin; apex of valve narrowly rounded; sacculus lightly sclerotized. Vinculum relatively short and narrow, semicircular. Papillae on the anterior arms of the labides comparatively short, narrow, rounded apically, with a group of short setae. Aedeagus broadened near ductus ejaculatorius base. Vesica armed with one elongate and narrow horn-like apical cornutus, one elongate apical cornutus, an elongate V-shaped cornutus and one folded, irregular smaller cornutus near ductus ejaculatorius base. Sternite A8 peg-like, narrow and elongate, broadly bilobed at base; apex narrowly rounded without apical horns; basal hollow relatively deep.

Female. Unknown.

Bionomy. Host plant unknown. Holotype was collected by light in late June at an elevation of 3860 m (Figs 46–47).

Distribution. China. Known from Sichuan province.

Etymology. From Latin word "nesciar" – "not known" in English.



FIGURES 8–15. *Eupithecia* adults, China (scale bar = 10 mm). 8–9. *E. saldaitisi* **sp. n.** 8. Holotype. 9. Paratype; 10. *E. ludificata* **sp. n.** (holotype); 11. *E. butvilai* **sp. n.** (holotype); 12. *E. ursina* **sp. n.** (holotype); 13. *E. nesciaria* **sp. n.** (holotype); 14. *E. oxycedrata* (Rambur, 1833); 15. *E. phulchokiana* Herbulot, 1984.

Previously described species

***Eupithecia oxycedrata* (Rambur, 1833)**
(Figs 14, 39)

Larentia oxycedrata Rambur, 1833, *Annales de la Société Entomologique de France* 2 (1): 47, pl. 2: 12. Syntype(s) (MNHN?), France, Corsica, Corté.

Examined material: 1 ♀, **China,** W. Yunnan, Salween Valley mt., 1500, 5 km West Fugong, 26°54′59″ N, 098°51′44″ E, 17. Novembre 2017, leg. A. Floriani. Gen. prep. J. Procházka 20161, photo J. Šumpich 22015 (NMPC).

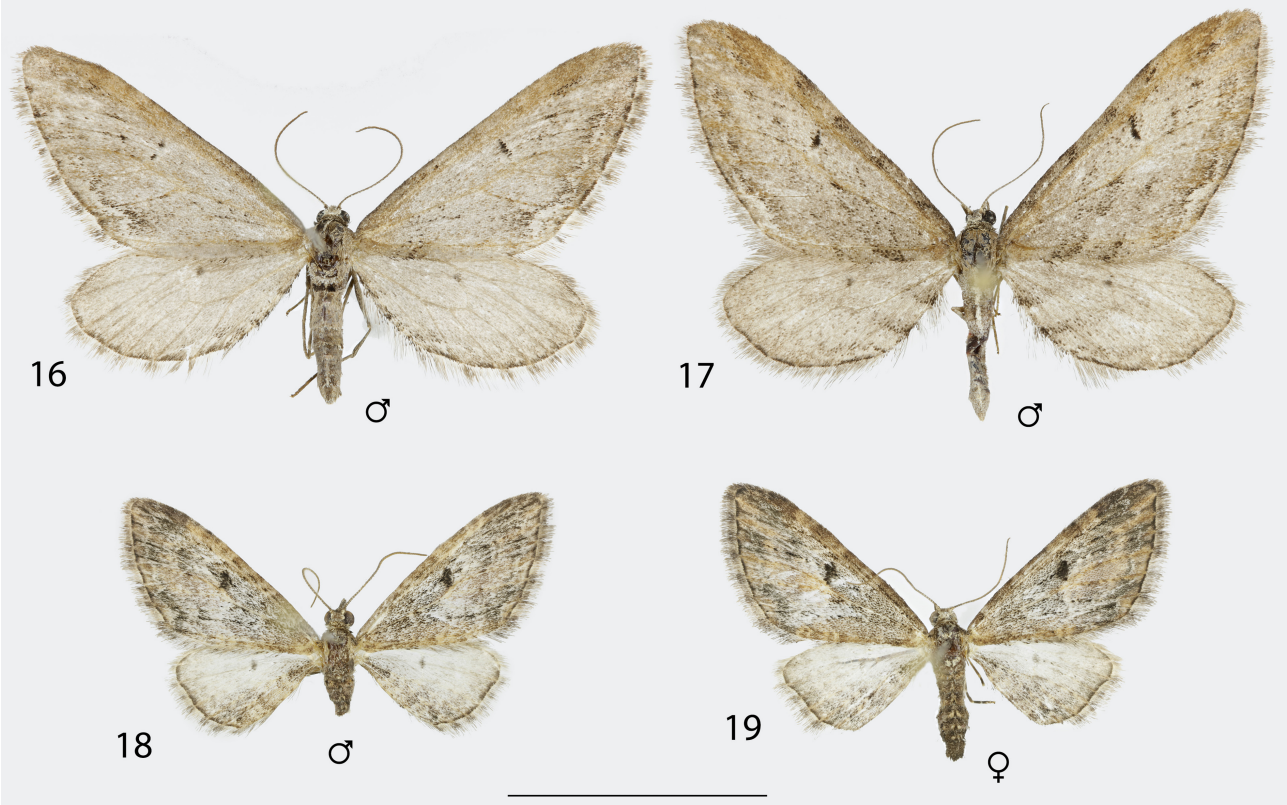
Note. A Mediterranean species from the *interruptofasciata* species-group. The distribution map of this species is illustrated in the fourth volume of "The Geometrid Moths of Europe" (Mironov, 2003). This surprising record is the only one of this species in the territory of China. The single known Chinese specimen (female) has a wingspan 19.5 mm, fore wing 10.7 mm. The female genitalia of the Chinese specimen are illustrated (Fig. 39).

Eupithecia phulchokiana Herbulot, 1984
(Figs 15, 40)

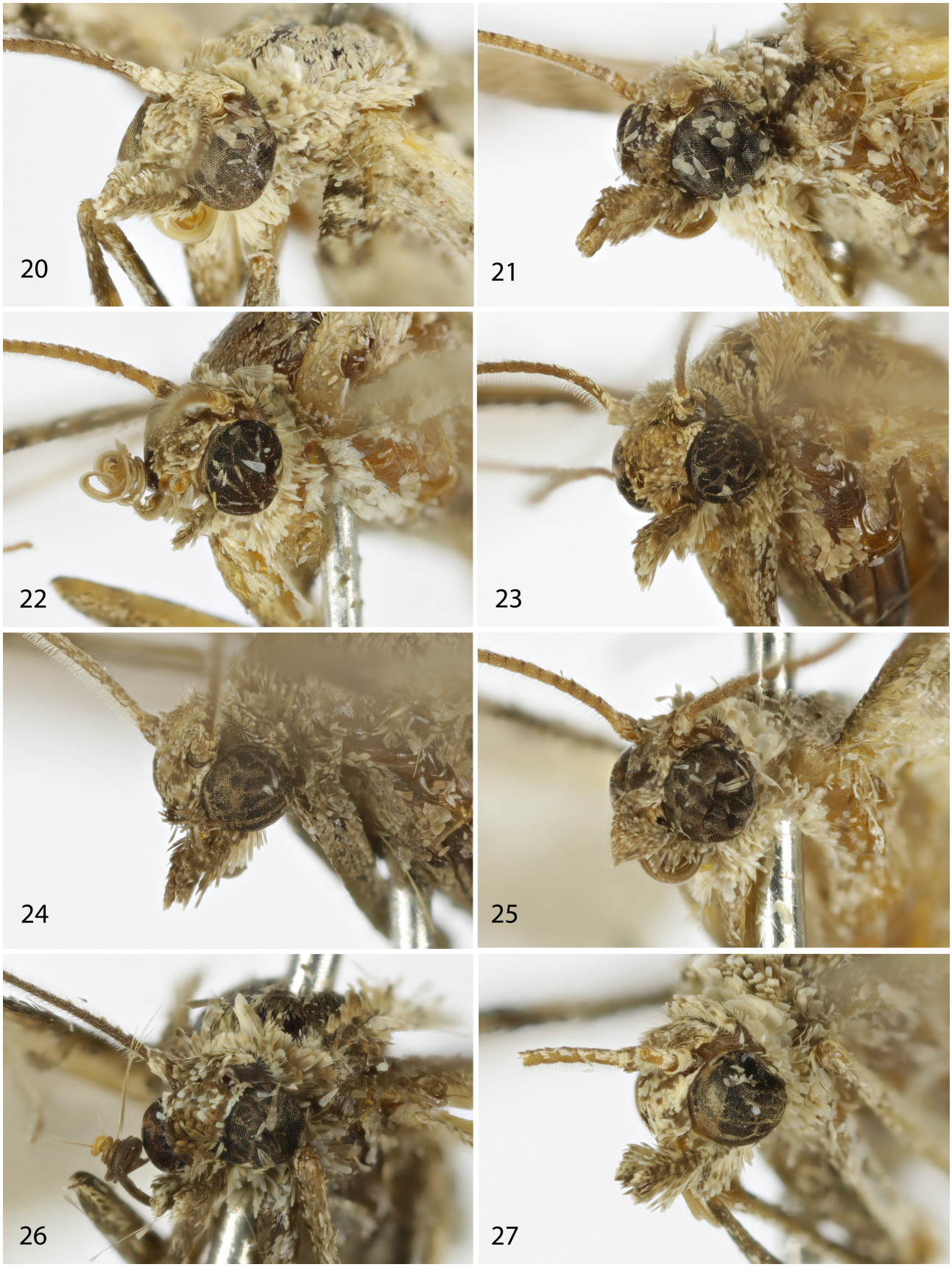
Eupithecia phulchokiana Herbulot, 1984, *Miscellanea entomologica* 50 (2): 45, figs 6, 13. Holotype ♂ (ZSM), Nepal, 20 km SSE of Katmandu, Phulchoki road, 2400 m.

Examined material: 1 ♀, **China,** W. Yunnan, Salween Valley, 1750 m, 5 km Nord Gongshan, 27°50′18″ N, 098°40′21″ E, 20. Novembre 2017, leg. A. Floriani. Gen. prep. J. Procházka 20162, photo J. Šumpich 22016 (NMPC).

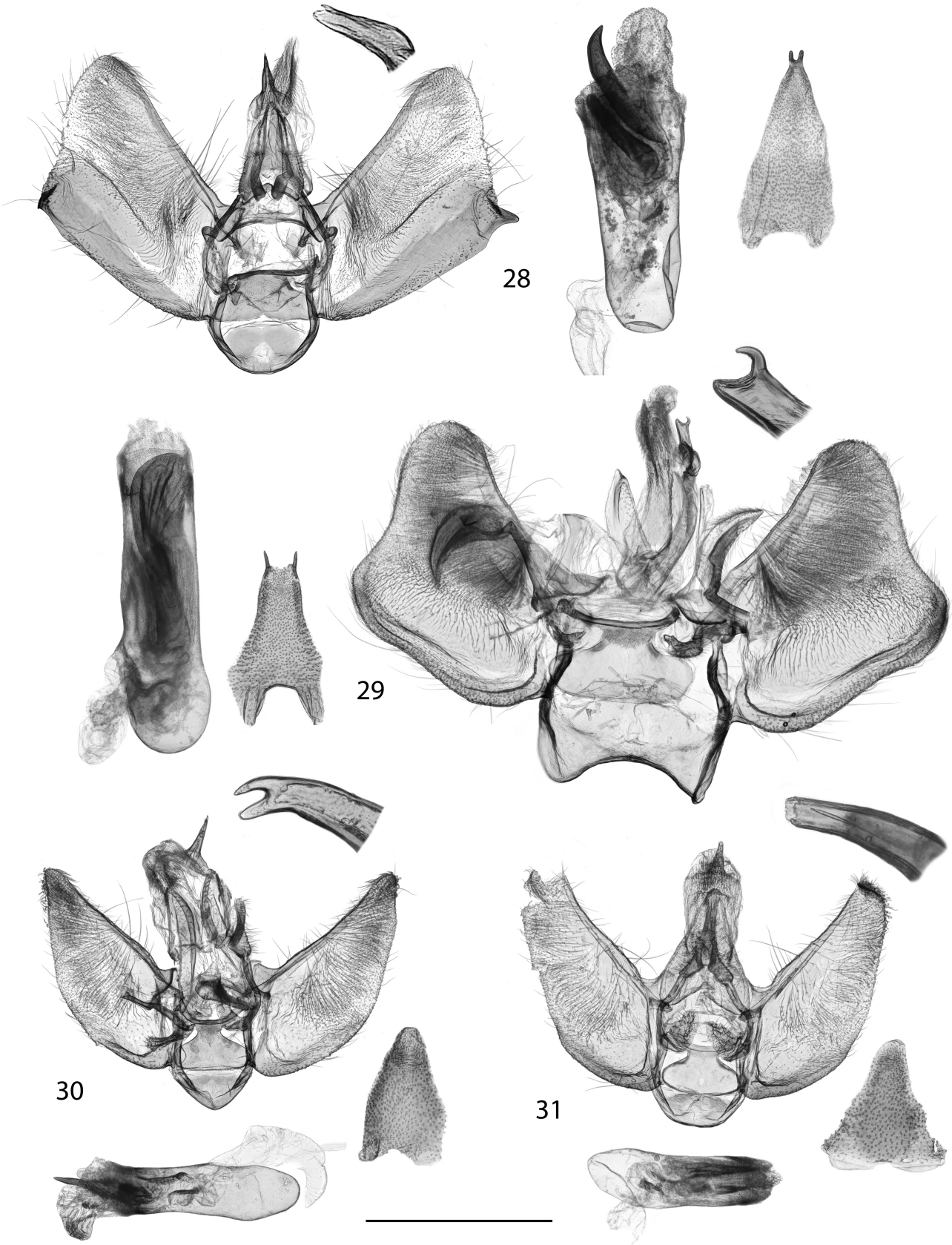
Note. This is a new species for the fauna of China. It was described from Nepal, and later, recorded from northern Thailand, northern and eastern Indian provinces Uttar Pradesh and Assam (Mironov & Galsworthy 2009, 2014). According to the structure of the male and female genitalia this species belongs to the *subfuscata* species-group (Mironov & Galsworthy, 2014). The female genitalia of the Chinese specimen are illustrated (Fig. 40).



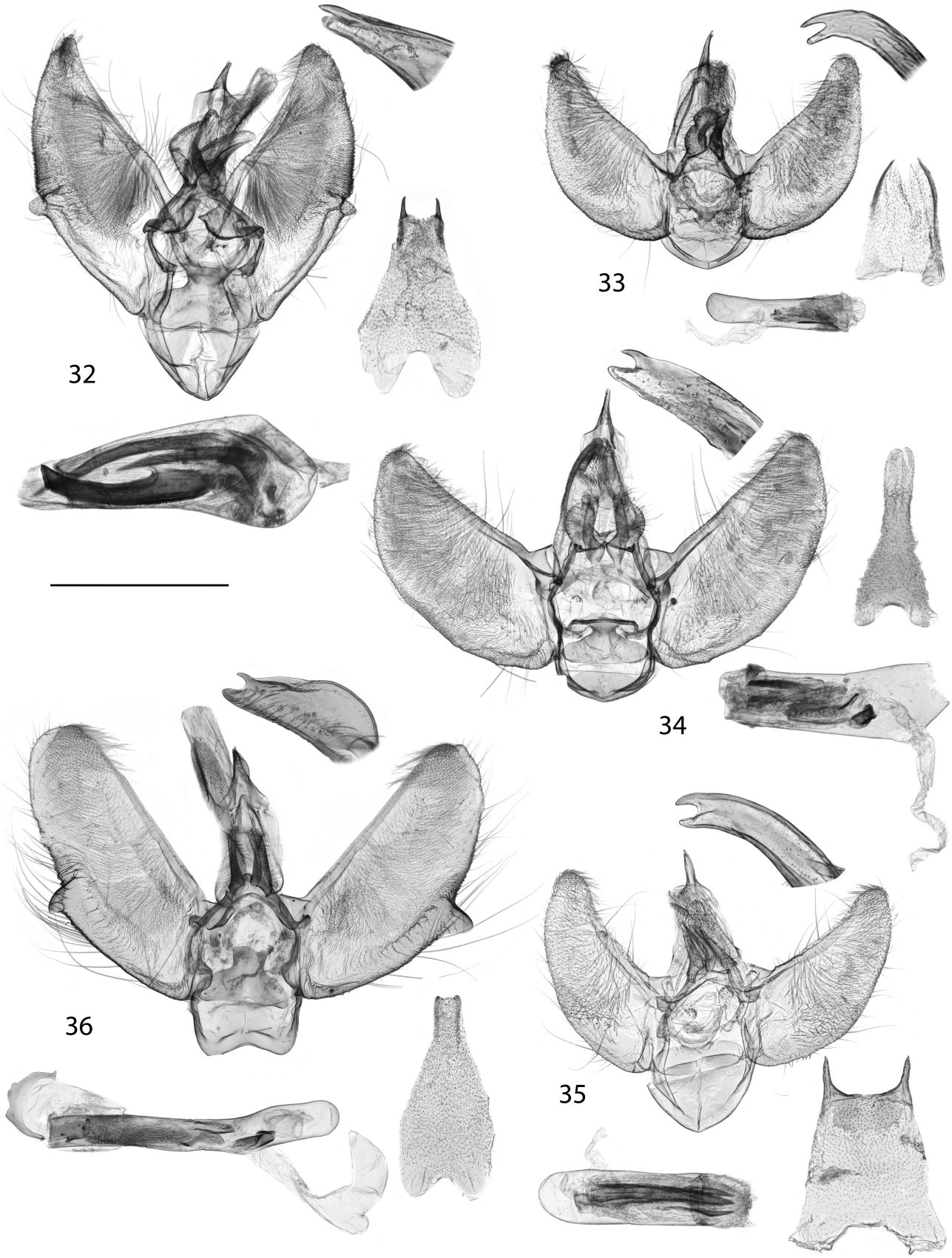
FIGURES 16–19. *Eupithecia* adults, China (scale bar = 10 mm). 16–17. *E. matrona* Mironov & Galsworthy, 2004; 18–19. *E. pannosa* Mironov & Galsworthy, 2008.



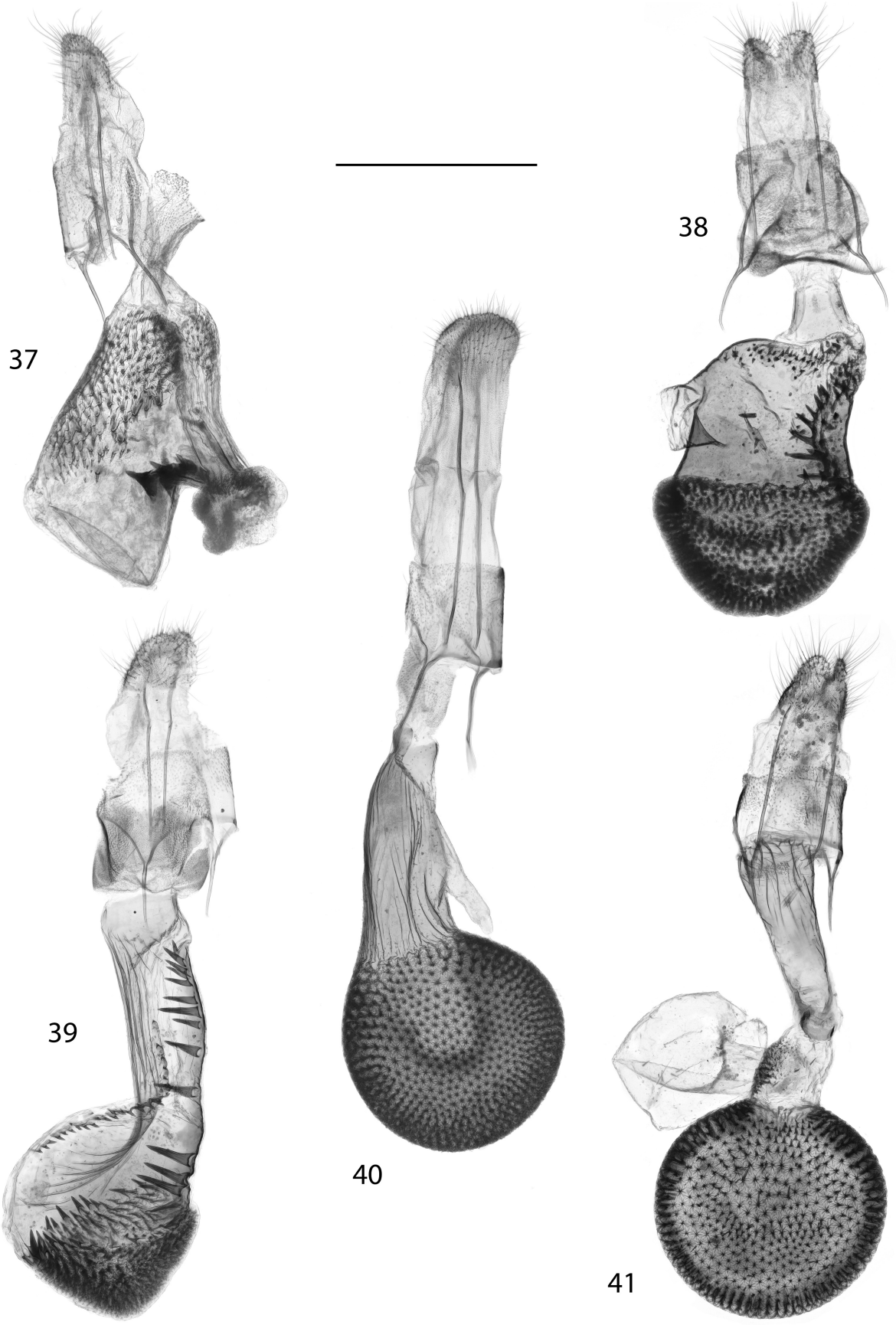
FIGURES 20–27. Heads of *Eupithecia* species, China, holotypes. 20. *E. prochazkai* **sp. n.**; 21. *E. anickae* **sp. n.**; 22. *E. divertenta* **sp. n.**; 23. *E. saldaitisi* **sp. n.**; 24. *E. ludificata* **sp. n.**; 25. *E. butvilai* **sp. n.**; 26. *E. ursina* **sp. n.**; 27. *E. nesciaria* **sp. n.**



FIGURES 28–31. Male genitalia and sternite A8 of *Eupithecia* species (scale bar = 1 mm; detail of uncus enlarged). 28. *E. prochazkai* **sp. n.** (holotype); 29. *E. divertenta* **sp. n.** (holotype); 30. *E. saldaitisi* **sp. n.** (holotype); 31. *E. ludificata* **sp. n.** (holotype).



FIGURES 32–36. Male genitalia and sternite A8 of *Eupithecia* species (scale bar = 1 mm; detail of uncus enlarged). 32. *E. butvilai* **sp. n.** (holotype); 33. *E. ursina* **sp. n.** (holotype); 34. *E. nesciaria* **sp. n.** (holotype); 35. *E. matrona* Mironov & Galsworthy, 2004. 36. *E. pannosa* Mironov & Galsworthy, 2008.



FIGURES 37–41. Female genitalia of *Eupithecia* species (scale bar = 1mm). 37. *E. prochazkai* **sp. n.** (paratype); 38. *E. anickae* **sp. n.** (holotype). 39. *E. oxycedrata* (Rambur, 1833); 40. *E. phulchokiana* Herbulot, 1984. 41. *E. pannosa* Mironov & Galsworthy, 2008.

FIGURES 42–49. Habitats of newly described *Eupithecia* species, China. 42. Yunnan, Nu Jiang valley, 9.iii.2019, locality of *E. prochazkai* **sp. n.**; 43. Yunnan, surroundings of Yongseng, 11.v.2018, locality of *E. anickae* **sp. n.**; 44. Sichuan, surroundings of Derge, 15.viii.2009, locality of *E. divertenta* **sp. n.**; 45. Gansu, near surroundings of Xiahe, 4.x.2013, locality of *E. saldaitisi* **sp. n.**; 46–47. Sichuan, surroundings of Maniganggo, 16.viii.2009, locality of *E. ludificata* **sp. n.** and *E. nesciaria* **sp. n.**; 48. Yunnan, surroundings of Gongshan, 2.vii.2008, locality of *E. butvilai* **sp. n.**; 49. Sichuan, surroundings of Batang, 19.ix.2019, locality of *E. ursina* **sp. n.**

Eupithecia matrona Mironov & Galsworthy, 2004
(Figs 16–17, 35)

Eupithecia matrona Mironov & Galsworthy, 2004, *Transactions lepidopterological Society of Japan* 55 (4): 291, figs 6, 19. Holotype ♂ (ZFMK), China, Gansu, Xiahe, 2600-3000 m.

Examined material: 2 ♂, **China,** NW. Sichuan, Chola Shan, Cho La pass, 4450 m, 31°55′07″ N, 098°57′11″ E, 1.vii.2019, leg. Butvila & Saldaitis. Gen. prep. J. Procházka 20058; **China,** SW. Gansu, near Xiahe (Labramg), 2900 m, 35°11,968′ N, 102°33,545′ E, 23.v.2017, leg. A. Saldaitis. Gen. prep. and photo J. Šumpich 22010; **China,** Qinghai, South from Xining, Laji Shan Mt., 3070 m, 36°22,614′ N, 101°33,644′ E, 26.–29.v.2017, A. Saldaitis leg. Photo J. Šumpich 22019 (NMPC).

Note. This species had been previously recorded in Gansu and Qinghai provinces (Mironov & Galsworthy 2014). A new species for Sichuan province. The male genitalia of a new specimen are illustrated (Fig. 35).

Eupithecia pannosa **Mironov & Galsworthy, 2008**
(Figs 18–19, 36, 41)

Eupithecia pannosa Mironov & Galsworthy, 2008, *Transactions lepidopterological Society of Japan* **59** (2): 126, figs 3, 19, 20. Holotype ♀ (TTM), **Pakistan,** Kashmir, Himalaya Mts., Deosai Mts., Bubin village, 74°59′E, 35°12.6′N, 3,150 m.

Examined material: 1 ♂, **China,** NW. Yunnan, Nu Jiang valley, Road Lushui/Gulang, 25°58.15″ N, 98°47.40″ E, 4.iii.2019, H—2000 m, leg. A. Saldaitis. Gen. prep. J. Procházka 20046, Photo/Prep. Procházka J. (NMPC); 4 ♂, 3 ♀, **China,** NW. Yunnan, Nu Jiang valley, near Fugong, 5.iii.2019, H—1800 m, leg. A. Saldaitis (NMPC); 1 ♂, **China,** NW. Yunnan, Nu Jiang valley, 42 km S. from Fugong Zhi Zi Luo city, H—2100 m, 26°32.29″ N, 98°55.25″ E, 9.iii.2019, leg. A. Saldaitis (NMPC).

Note. A widespread species from the *lariciata* species-group (Bolte 1990) which has been found in north-east Pakistan, northern India, Nepal, northern Thailand and northern Vietnam (Mironov & Galsworthy 2009, 2014). It is a new species for the fauna of China.

Acknowledgements

We are grateful to Dieter Stüning (Bonn) and Wolfram Mey (Berlin) for kind support of the first author when visiting respectively the Zoologische Museum Alexander Koenig, Bonn and Museum für Naturkunde, Humboldt-Universität, Berlin. We should also like to thank Robert Trusch (SMNK, Karlsruhe) and Ulrich Ratzel (Karlsruhe, Germany) for kind support on visits of the first author to Staatliches Museum für Naturkunde Karlsruhe and for the loan of material in the private collection of Ulrich Ratzel. We are grateful also to Axel Hausmann for kind support on visits of the first author to Zoologisches Staatssammlung München (Germany). Thank are also due to the Deutsche Forschung Gemeinschaft (DFG; grants 436 RUS 17/99/02 and STU 498/2-1) that enabled V. Mironov to do extensive studies on Asian *Eupitheciini* in ZFMK (Bonn), SMNK (Karlsruhe) and MNHU (Berlin) in 2003 and 2009, and to the Royal Society, London, who provided a grant to enable V. Mironov to work for three months in London in 2006. We express our thanks to Aidas Saldaitis (Nature Research Centre, Vilnius) for providing photos of habitats of described species. We are thankful to the subject editor of Zootaxa, Sven Erlacher (Chemnitz), Sir Anthony Galsworthy (London), Claudio Flamigni (Bologna) and Hongxiang Han (Beijing) for critical review, constructive comments, suggestions to the submitted version of this paper and correction English. The study of the first author was performed in the frames of the state research project no. 122031100272-3 "Systematics, morphology, ecophysiology and evolution of insects". J. Šumpich carried out his part of the work on this article with support from the Ministry of Culture Czech Republic (DKRVO 2019–2023 / 5.I.d, National Museum, 00023272).

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