

CORRESPONDENCE

A supplemental description of the genus *Lista* Walker from China (Lepidoptera: Pyralidae), with two new and a newly record species

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Abstract Three species of the genus *Lista* Walker are recognized from China, as a supplement of the former work. Among them, two species are described as new to science, namely *L. furcillatus* Wang, Chen & Wu **sp. nov.** and *L. menglaensis* Wang, Chen & Wu **sp. nov.** One species, *L. monticola* Yamanaka, 2000, is reported from China for the first time. Adults and genitalia of the three species are illustrated. Moreover, a key to the Chinese species and an updated checklist of the genus are provided.

Key words Pyraloidea, Epipaschiinae, snout moth, taxonomy, China.

The genus *Lista* Walker is distinguished from its congeners of Epipaschiinae by its brighter and conspicuous wing pattern. It was established for *L. genisusalis* Walker, 1859 from Borneo, distributed from the Far East (Russia) to Southeast Asia and totally 13 species worldwide (Walker, 1859; Hampson, 1896; Solis, 1992; Yamanaka, 2000; Wang *et al.*, 2017). The Chinese *Lista* was revised to include 10 species (Wang *et al.*, 2017). However, more individuals were found recently from Tibet and Yunnan, China. Among them, two species, *L. furcillatus* Wang, Chen & Wu **sp. nov.** and *L. menglaensis* Wang, Chen & Wu **sp. nov.**, are described as new to science, while *L. monticola* Yamanaka, 2000 is newly recorded from China.

The specimens examined and the types of the new species are deposited in the collection of the Institute of Zoology, Chinese Academy of Sciences (IZCAS), Beijing, P. R. China. Specimens examined were collected by light trap in this study. The photographs of the moths and their genitalia were taken with a NIKON D7000 digital camera connected to a NIKON SMZ 1500 stereomicroscope. The images were adjusted by Adobe Photoshop CS5 and Adobe Illustrator CS6 software. Methods of dissection, morphometrics and terminology follow Wang *et al.* (2003) and Slamka (2006).

Lista Walker, 1896

Lista Walker, 1859, 19: 877. Type species: *Lista genisusalis* Walker, 1859.

Paracme Lederer, 1863, 7: 338. Type species: *Paracme insulsalis* Lederer, 1863.

Craneophora Christoph, 1881, 56: 1. Type species: *Craneophora ficki* Christoph, 1881.

Belonepholis Butler, 1889, 7: 17, 89. Type species: *Belonepholis striata* Butler, 1889.

Description. See Wang *et al.* (2017).

Discussion. The members of the genus *Lista* have colorful unique scales on both pair wings among the subfamily of Epipaschiinae. This was recognized as a key synapomorphy to the group (Wang *et al.*, 2017). This genus was understudied before our taxonomic review (Wang *et al.*, 2017), and only 8 species are recognized worldwide. To date, we already reported

urn:lsid:zoobank.org:pub:3518095B-189A-4088-A1DF-47E68C3B180B

Received 17 July 2018, accepted 10 October 2018

Executive editor: Fuqiang Chen

7 new species and 3 newly record species to China. Thus, totally 15 species were reported under the genus *Lista* worldwide, of which 13 species are from China. Thus, to improve the classification of species included in *Lista*, two new and a new record species are reported from China in time. This is a supplemental study for our former work (Wang *et al.*, 2017). In addition, we can deduce that there are more unknown species of genus *Lista* to describe in the future.

Key to the species of *Lista* based on male genitalia in China.

1. Uncus with two lateral or medial arms.....2
 Uncus without lateral or medial arms.....7
2. Uncus with lateral arms; hindwing with pink-fuscous scales.....3
 Uncus with medial arms; hindwing with pale-yellow scales.....*L. variegata*
3. Lateral arms bifurcated, fork-like (Fig. 6).....*L. furcillatus* Wang, Chen & Wu sp. nov.
 Lateral arms spine-like.....4
4. Lateral arms nearly as long as uncus; forewing covered with more fuscous scales than yellow.....*L. insulsalis*
 Lateral arms no more than length of uncus; forewing with more yellow scales than fuscous.....5
5. Juxta with apical spines about half length of juxta.....*L. longifundamena*
 Juxta with apical spines about 1/3 length of juxta.....6
6. Forewing with postmedial fascia slightly curved; in male genitalia, medial sacculus with inner larger process serrated.....*L. haraldusalis*
 Forewing with postmedial fascia straight; in male genitalia, medial sacculus with inner larger process spine-like.....*L. gilvasa*
7. Gnathos with two spine-like processes laterally.....8
 Gnathos without spine-like process laterally.....9
8. Medial sacculus with inner larger process serrated and outer smaller process thorn-like.....*L. angustusa*
 Medial sacculus with a single spine-like process.....*L. sichuanensis*
9. Juxta with apex rounded.....10
 Juxta with apex pointed.....11
10. Medial sacculus with inner larger process spine-like.....*L. plinthochroa*
 Medial sacculus with inner larger process serrated.....*L. menghaiensis*
11. Medial sacculus with two spine-like process nearly same length (Fig. 8).....*L. menglaensis* Wang, Chen & Wu sp. nov.
 Medial sacculus with inner spine-like process obviously larger than outer one.....12
12. Juxta rounded, apex slightly bifurcated.....*L. ficki*
 Juxta elongated, apex deeply bifurcated.....*L. monticola*

Lista furcillatus Wang, Chen & Wu sp. nov. (Figs 2–3, 6–7)

Diagnosis. The new species is similar to *L. haraldusalis* (Walker, 1859) with a broad and serrated apex on the gnathos in the male genitalia, which is unique in the genus. But the new species has the fork-like lateral arms on the uncus, while spine-like ones in *L. haraldusalis*, which also distinguish this species from others of the genus.

Description. Adult male. Forewing length 9.0–10.0 mm ($n=3$). Head mixed with fuscous and yellow; first and second segments of labial palpus with fuscous scales on outer side and yellow scales on inner side; third segment with pale brown scale; maxillary palpus yellow; antenna brown, scape extension yellow, mixed with more black scales on outer side. Thorax mixed with fuscous and yellow scales. Forewing covered with yellow, fuscous black and pink scales; central area mixed with pink and fuscous scales, postmedial fascia straight, yellow with black edge on inner side and brown edge on outer side, respectively, outer area covered with fuscous and pink scales; cilia brown. Hindwing with similar pattern as forewing.

Male genitalia. Uncus broad, suffused with dense setae, two fork-like lateral arms located. Gnathos broad and strongly sclerotized, apex serrated. Valva nearly same width from base to apex, terminal margin arc-shaped; costa slightly sclerotized; sacculus with two processes in middle, the inner one strong with apex serrated, the outer one small, thorn-like, a broad sclerotized plate from sacculus to center of valva. Juxta swollen, bifurcated with two pointed spines at apex. Phallus slender, slightly curved in middle, with a sclerotized plate-like cornutus.

Female genitalia. Unknown.

Material examined. Holotype ♂, China, Tibet, Medog, Beibeng (29.2486°N, 95.1751°E; elev. 1453 m), 11.VIII.2017, leg. Yi Li (gen. slide no. Ep740). Paratypes. 2♂, China, Tibet, Medog, Beibeng (29.3431°N, 95.1700°E; elev. 799 m), 20.VIII.2015, leg. Mingqiang Wang (gen. slide no. Ep750, Ep752).

Distribution. China (Tibet).

Etymology. The specific name is derived from the Latin “*furcillatus*” (= fork) in accordance with the fork-like processes located at uncus laterally in the male genitalia.

***Lista menglaensis* Wang, Chen & Wu sp. nov.** (Figs 4, 8–9)

Diagnosis. The new species is similar to *L. ficki* (Christoph, 1881) and *L. monticola* Yamanaka, 2000 by their similar uncus and valva. However, the new species has the gnathos with tridentate apex and the sacculus with two equal length spines, while the latter two have the gnathos with hooked apex and the sacculus with two unequal length spines.

Description. Adult male. Forewing length 8.5–9.0 mm ($n=2$). Head yellow mixed with few fuscous scales; first and second segments of labial palpus with yellow scales on outer side and fuscous scales on inner side; third segment with pale brown scale; maxillary palpus pale yellow; antenna pale brown, scape extension golden, mixed with fuscous scales. Thorax mixed with pale brown and yellow scales. Forewing covered with yellow and fuscous scales, a black tuft located at apex of cell; postmedial fascia straight, yellow with black edge on inner side and brown edge on outer side, respectively, outer area covered with fuscous scales; cilia brown. Hindwing with similar pattern as forewing, but basal area mixed with dark-yellow and black scales, outer area covered with rufous scales.

Male genitalia. Uncus broad, suffused with dense setae. Gnathos with apex tridentate and base extended two strongly sclerotized spine-like processes laterally. Valva slowly broaden from base to apex, terminal margin truncated; a sclerotized plate from sacculus to center of valva, apex rounded; costa sclerotized; sacculus with two spine-like processes in middle, nearly same length. Juxta plate like, bifurcated at apex. Phallus slender, slightly curved in middle, with a sclerotized plate-like cornutus in middle.

Female genitalia. Unknown.

Material examined. Holotype ♂, China, Yunnan, Mengla (elev. 800m), 7.VIII.2012, leg. R. L. Kitching (gen. slide no. Ep779). Paratype ♂, China, Yunnan, Mengla (elev. 1200m), 12.VII.2012, leg. R. L. Kitching (gen. slide no. Ep777).

Distribution. China (Yunnan).

Etymology. The species is named after the type locality, Mengla, Yunnan Province.

***Lista monticola* Yamanaka, 2000** (Figs 5, 10–11)

Lista monticola Yamanaka, 2000: 63–69.



Figures 1–4. Adults of *Lista* spp. 1. *L. furciillatusa* Wang, Chen & Wu sp. nov., ♂, holotype. 2. *L. furciillatusa* Wang, Chen & Wu sp. nov., ♂, paratype. 3. *L. menglaensis* Wang, Chen & Wu sp. nov., ♂, holotype. 4. *L. monticola*, ♂. Scale bars=5.0mm.



Figures 5–10. Male genitalia of *Lista* spp. 5–6. *L. furciillatusa* Wang, Chen & Wu **sp. nov.**, ♂, paratype, gen. slide no. Ep750. 7–8. *L. menglaensis* Wang, Chen & Wu **sp. nov.**, ♂, paratype, gen. slide no. Ep779. 9–10. *L. monticola*, ♂, slide no. Ep747. 6, 8, 10. Lateral view of phallus. Scale bars=0.5 mm.

Diagnosis. The species is very similar to *L. ficki* (Christoph, 1881). In male genitalia, it can be distinguished from the latter by the sclerotized plate from sacculus to center of valva pointed and juxta elongated, with apex deeply bifurcated, while the latter has the sclerotized plate from sacculus to center of valva rounded and juxta rounded, with apex slightly bifurcated.

Description. Adult male. Forewing length 10.0–10.5 mm ($n=3$). Head yellow mixed with black scales; first and second segments of labial palpus with more black scales on outer side and yellow scales on inner side; third segment pale brown; maxillary palpus yellow; antenna brown, outer side of scape extension with more black scales, and inner side with more yellow scales. Thorax mixed with black and yellow scales. Forewing covered with yellow black, fuscous and pink scales, central area mined with black and pink scales; postmedial fascia straight, yellow with black edges on both of side, outer area covered with fuscous scales; cilia brown. Hindwing with similar pattern as forewing, but with two black line located at central area.

Male genitalia. Uncus broad, suffused with dense setae, two spine-like processes at base. Gnathos incurved apically, with 1 teeth-like spines at apex. Valva slightly constricted from middle to apex, terminal margin truncated; costa slightly

sclerotized, sacculus with two processes in middle, the outer one about 1/3 length of inner one; a sclerotized plate from sacculus to center of valva, apex pointed. Juxta bifurcated at apex and with two strongly sclerotized slender arms at both sides. Phallus slender, curved in middle, with a sclerotized plate-like cornutus.

Female genitalia. Unknown.

Material examined. China, Tibet, Beibeng, Medog (29.2486°N, 95.1751°E; elev. 1453 m), 3♂, 11.VIII.2017, leg. Yi Li (gen. slide no. Ep746, Ep747, Ep754).

Distribution. China (Tibet), Nepal.

Remarks. The species is reported in China for the first time.

Funding This research was supported by the National Key R & D Program of China (2016YFE0203100), the National Natural Science Foundation of China (31772489, 31750002) and the grant (Y229YX5105) from Key Laboratory of Zoological Systematics and Evolution, Chinese Academy of Sciences.

Acknowledgements The authors appreciate Ms. Yi Li for her field work at Tibet. We also would like to thank Dr. Akihiro Nakamura, Xishuangbanna Tropical Botanical Garden, Chinese Academy of Sciences, for providing some specimens to us. Finally, we are very grateful to Prof. Houhun Li, Nankai University, for his comments and suggestions to this study.

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