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A new species and new combinations of *Danielithosia* from eastern China and Indochina, with check-list of the genus (Lepidoptera: Arctiidae: Lithosiinae)

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Abstract. A new species of lichen-moth, *Danielithosia hoenei* sp. nov., is described from eastern China (Fujian and Hunan), Cambodia, Thailand, and Vietnam. An apical bifurcation of sacculus and a short and stout apical process of juxta characterize the new species. Two additional species are transferred into *Danielithosia*, resulting in the following new combinations: *Danielithosia mesospila* (Fang, 2000) comb. nov. (for *Eilema mesospila* Fang, 2000), and *D. milina* (Fang, 1982) comb. nov. (for *Eilema milina* Fang, 1982).

Key words. Lepidoptera, Arctiidae, Lithosiini, new species, China, Thailand, Cambodia, Vietnam, Oriental Region.

Introduction

The genus *Danielithosia* Dubatolov & Kishida, 2012 was described for a group of *Eilema*-like lichen-moths formerly classified within the genus *Tigrioides* Butler, 1877 (Dubatolov et al. 2012). Two clear autapomorphies of the male genitalia characterize *Danielithosia* species: the juxta apically with a long sclerotized bifurcated process and the sacculus with a characteristic broadening subapically. Four species were placed in the genus originally: the type-species, *D. aureolata* (Daniel, 1954) from eastern China, *D. limayca* (Daniel, 1954) from southern China, *D. immaculata* (Butler, 1880) from Japan, and *D. pallens* Inoue, 1980 from Ryukyu Islands (Japan). Three species were described as new within the genus from Nanling Mts. in Guangdong: *D. fuscipennis* Dubatolov, Kishida & Wang, 2012, *D. consimilis* Dubatolov, Kishida & Wang, 2012, and *D. difficilis* Dubatolov, Kishida & Wang, 2012 (Dubatolov et al. 2012).

Two additional species described within *Eilema* Hübner, 1819 [1820], *E. mesospila* Fang, 2000 and *E. milina* Fang, 1982, are transferred to *Danielithosia* here.

Daniel (1954) figured the male genitalia of one more species from East China (Hunan and Fujian), clearly of the *Danielithosia* type but incorrectly identified it as '*Tigrioides immacula-*

ta'. Inoue (1980) studied the male genitalia of a true *Danielithosia immaculata* (Butler, 1880) from Japan and found that they are very different from Daniel's figure. So, he claimed that '*Tigrioides immaculata*' of Daniel 'is apparently a misidentification, being quite distinct from the Japanese and Taiwanese *immaculata* in the male genitalia.' As there is no known species with male genitalia fitting the figure by Daniel (1954), it is described below as new.

Material and methods

The material examined is deposited in the following collections:

SZMN Siberian Zoological Museum of the Institute of Systematics and Ecology of Animals, SB RAS, Novosibirsk, Russia;

ZFMK Zoologisches Forschungsmuseum Alexander Koenig, Bonn, Germany.

Description of new species

Danielithosia hoenei sp. nov.

(Figs 1–6)

Tigrioides immaculata (misidentification): Daniel (1954): 134–135, fig. 96 (original description).

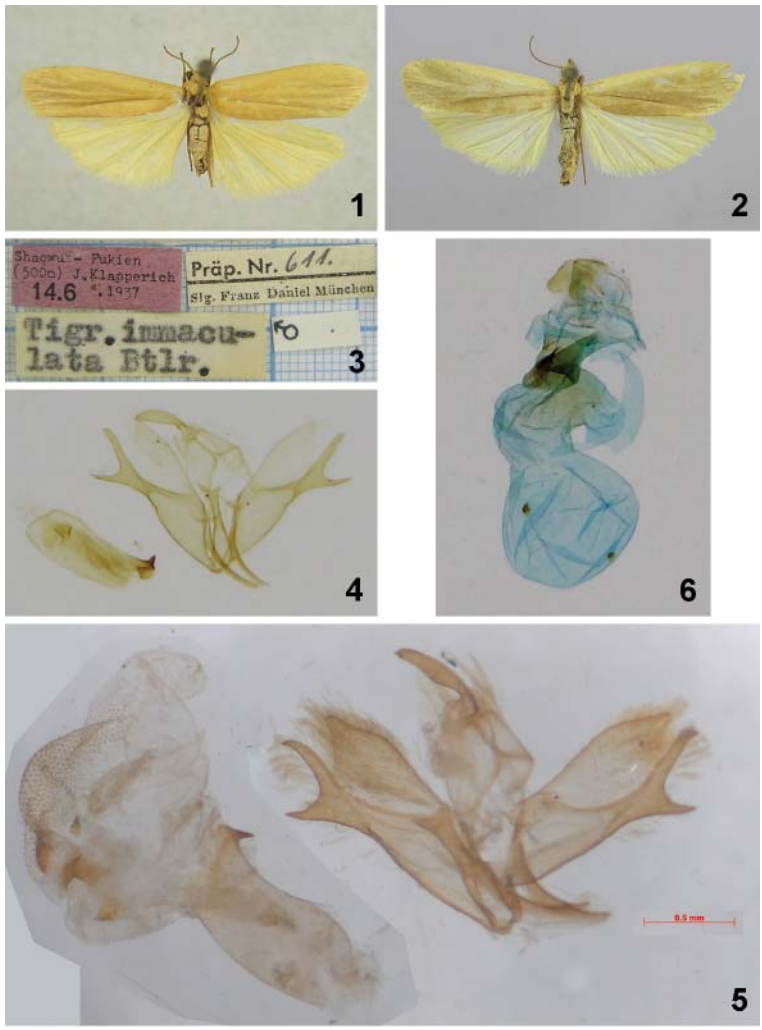
Type locality. China, north-western Fujian, Shaowu.

Type material. Holotype: ♂, **CHINA: Fujian:** 'Shaowu – Fukien / (500m) J.Klapperich / 14.6.1937', 'Präp. Nr. 611 / Slg. Franz Daniel München', 'Tigr. Immacu- / lata Btlr. ' (ZFMK). Paratypes: **CHINA: Fujian:** 5 ♀♀, the same locality as in the holotype except of dates, '4.6.1937, 15.6.1937, 1.7.1937, 2.7.1937, 30.7.1937' (ZFMK); 1 ♂, 'Kwangtseh–Fukien / J. Klapperich / 30.7.1937', 'Präp. Nr. 621 / Slg. Franz Daniel München' (ZFMK). **Hunan:** 1 ♂, 'Hoengshan / Prov. Hunan / 13.5.1933. Höne', 'Präp. Nr. 614 / Slg. Franz Daniel München' (ZFMK), 1 ♂, 'Hoengshan / Prov. Hunan / 18.5.1933. Höne'; 1 ♀, 'Hoengshan / Prov. Hunan / 23.6.1933. Höne' (ZFMK). **VIETNAM:** 1 ♂ 1 ♀, 'Vietnam, Dong Nai / Vin Cuu Nat. Res. / Phu Ly, Dakinde / 11.41203°N, 107.10508°E / h=106 m, 26-29.vi.2011 / leg. S.Nedoshivina, / S. Pugaev, A.Solovyev' (SZMN). **THAILAND:** 1 ♂, 'Thailand, prov. Nakhon / Ratchasima (Korat), Wat / Soeng Sang, near Non / Sambun Vil., h=260м [m], / 14º 16,5' N, 102º 23,3' E, / пойма реки, на свет [= river bottomland, by light] // V.K. Zinchenko leg. // 3-4.08.2009'. (SZMN). **CAMBODIA:** 1 ♂ 1 ♀, 'CAMBODIA / Koh Kong Prov. / Tatai vill., h=1030 m / 11º 33'50" N, 103º 07'29" E / O.E. Kosterin leg. // 17-18.IV.2010' (SZMN).

Description. Forewing length 7–9 mm in males, 8–10.5 mm in females. Forewing (Figs 1–2) narrow, with rounded apex and skewed outer edge; light buff or yellow in males, grey or yellow with lighter costal margin in females. Hindwing with an acute apex, light yellow in males, noticeably lighter than forewing; whitish or yellowish in females.

Male genitalia (Figs 4–5). Uncus moderate in width, slightly curved. Cucullus tapering towards apex. Sacculus strongly bifurcated apically, costal branch twice as long as ventral one; foundation of this fork as long as the ventral apical branch length. Apical process of juxta stout; apical bifurcation asymmetrical: right branch of bifurcation small, three times shorter than left branch. Aedeagus stout, with strong apical spine; vesica was not everted in all slides; without any strong cornuti but with spiniculi.

Female genitalia (Fig. 6). Ductus bursae sclerotized. Bursae with smaller basal and larger apical spherical parts. Apical part with two small round signa bearing small spines.



Figs 1–6. *Danielithosia hoenei* sp. nov. 1 – male, holotype; 2 – female, paratype; 3 – holotype labels; 4 – male genitalia, holotype, Shaowu, Fujian, China; 5 – male genitalia, paratype, Vietnam, Dong Nai, Vin Cuu Nat. Res., Phu Ly; 6 – female genitalia, paratype, Shaowu, Fujian, China.

Differential diagnosis. *Danielithosia hoenei* sp. nov. differs significantly from all other known species of the genus in bifurcation of the apical process of the sacculus and the apical process of the juxta being shorter and less asymmetrical.

Etymology. The new species is dedicated to Dr. Hermann Höne (1883–1963), a German entomologist, who extensively collected in China and Japan in 1910–1938 (Niethammer 1963), including a part of the *Danielithosia hoenei* sp. nov. type series.

Check-list of *Danielithosia* Dubatolov & Kishida, 2012

Danielithosia aureolata (Daniel, 1954)

Tigrioides aureolata Daniel, 1954: 133–134, Fig. 94 (male genitalia). Type locality: China, Zhejiang and Fujian: 'Chekiang: West-Tien-Mu-Shan, 1600 m, … Fukien: Kuatun, 2300 m'.

Distribution. China (Fujian, Sichuan, Zhejiang) (Daniel 1954).

Danielithosia consimilis Dubatolov, Kishida & Wang, 2012

Danielithosia consimilis Dubatolov, Kishida & Wang, 2012: 37, Figs 45 (moth), 95 (male genitalia). Type locality: 'China, Guangdong, Yingde, Shimentai, 200 m'.

Distribution. China (Guangdong) (Dubatolov et al. 2012).

Danielithosia difficilis Dubatolov, Kishida & Wang, 2012

Danielithosia difficilis Dubatolov, Kishida & Wang, 2012: 37–39, Figs 46 (moth), 93 (male genitalia). Type locality: 'China, Guangdong, Shaoguan, Nanling'.

Distribution. China (Guangdong) (Dubatolov et al. 2012).

Danielithosia fuscipennis Dubatolov, Kishida & Wang, 2012

Danielithosia fuscipennis Dubatolov, Kishida & Wang, 2012: 37, Figs 44 (moth), 91 (male genitalia). Type locality: 'China, Guangdong, Shaoguan, Nanling'.

Distribution. China (Guangdong) (Dubatolov et al. 2012).

Danielithosia hoenei sp. nov.

Danielithosia hoenei sp. nov. Type locality: 'China, north-western Fujian, Shaowu'.
= *Tigrioides immaculata* (misidentification): Daniel (1954): 134–135, Fig. 96 (male genitalia).

Distribution. Cambodia, China (Hunan, Fujian), Thailand, Vietnam (Daniel 1954; this paper).

Danielithosia immaculata (Butler, 1880)

Katha immaculata Butler, 1880: 671. Type locality: 'Formosa' (= Taiwan).
= *Tigrioides kobayashi* Inoue, 1961: 626, 681 (synonymized by Inoue 1980: 160). Type locality: Japan.

Distribution. Japan (Honshu, Kyushu, Shikoku, Ryukyus), Taiwan (Inoue 1980).
Note. The holotype of *Katha immaculata*, ♀, was studied by Inoue (1980: 161).

Danielithosia limayca (Daniel, 1954)

Tigriodes limayca Daniel, 1954: 134, Fig. 95 (male genitalia). Type locality: 'Südchina [= South China]: Limay'.

Distribution. China (Guangdong) (Daniel 1954).

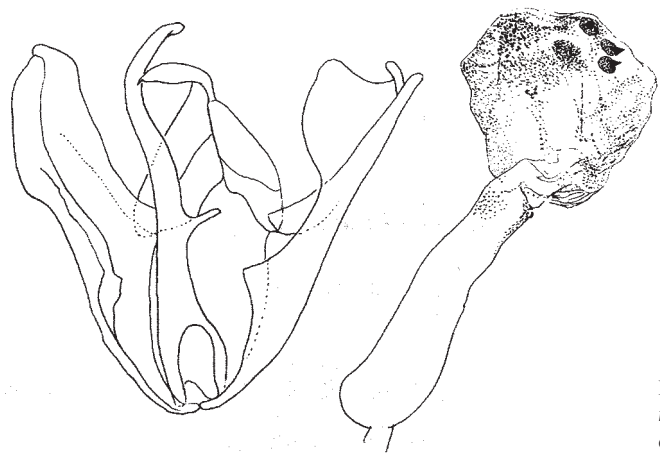


Fig. 7. Male genitalia of *Danielithosia milina* (Fang, 1982), from the original description.

***Danielithosia mesospila* (Fang, 2000) comb. nov.**

Eilema mesospila Fang, 2000: 263, 540, Pl. XII, Figs 25 (moth), 182 (male genitalia). Type locality: China: 'Shichuan, Emeishan'.

Taxonomy. Male genitalia of this species has structure (Fig. 7) typical for the genus *Danielithosia*: a very long apical process of juxta that is asymmetrically bifurcated at apex and a peculiar broadening of the apical part of the sacculus. Therefore, its generic placement is reconsidered here.
Distribution. China (Sichuan) (Fang 2000).

***Danielithosia milina* (Fang, 1982) comb. nov.**

Eilema milina Fang, 1982: 50–51, 60, Fig. 4 (moth). Type locality: China, Xizang: 'Mainling, 2950 m'.

Taxonomy. The original description of *E. milina* contains characters typical for the genus *Danielithosia*: '♂ genitalia juxta very long, term forked, aedeague [sic!] with four cornutus [sic!] on middle' (Fang 1982). These characters are sufficient to transfer the species from *Eilema* to *Danielithosia*.
Distribution. China (Xizang = Tibet) (Fang 1982).

***Danielithosia pallens* (Inoue, 1980)**

Tigrioides pallens Inoue, 1980: 161, Figs 4 (male genitalia), 5 (female genitalia). Type locality: Japan: 'Iriomote Is. '

Distribution: Japan (Ryukyus) (Inoue 1980).

***Danielithosia zolotuhini* Dubatolov, 2012**

Danielithosia zolotuhini Dubatolov, 2012: 510, Fig. 4 (male genitalia), Pl. III, Fig. 5 (moth). Type locality: 'Vietnam, Ngoc Linh, Kon Tum Prov., 14°45′–15°15′N, 107°21′–108°20′E'.

Distribution. Vietnam (DUBATOLOV 2012).

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