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Miltochrista taiwania, a new species from Taiwan Island (Lepidoptera: Erebidæ: Arctiinae: Lithosiini)

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Abstract

A new species of the genus *Miltochrista* Hübner, [1819], *Miltochrista taiwania* sp. n. is described from the island of Taiwan. The diagnostic comparison is made with the recently described *Miltochrista tenuiprocessa* Volynkin, Černý, S.-Y. Huang & Saldaitis, 2023 widely distributed from Northeast India to Northern Vietnam and the island of Hainan. Adults, as well as male and female genitalia of the new and similar species are illustrated.

Key words Asia, *Asura* / *Miltochrista* generic complex, endemic.

Introduction

The lichen moth genus *Miltochrista* Hübner, [1819] (subtribe Nudariina) is one of the largest groups belonging to the *Asura* / *Miltochrista* generic complex, which is widely distributed in the Oriental and Palaearctic Realms. The preliminary checklist of the genus has recently been published by Volynkin *et al.* (2019), who included in the genus (in wide sense) 206 species and 10 subspecies. Since then, 42 new species and one new subspecies of the genus were described by Bucsek (2020), Singh *et al.* (2020, 2023), Wu & Kishida (2020), Volynkin & Derzhinsky (2020), Volynkin *et al.* (2020, 2021, 2022a, 2022b, 2022c, 2022d, 2023), Volynkin & Huang (2021, 2022), Volynkin & Černý (2021, 2022, 2023). The taxonomy of this large and diverse genus is still inadequately studied, and a number of new species are awaiting descriptions. The present paper continues the series of publications resulting author's extensive studies of the genus *Miltochrista*, and is devoted to the description of a new species discovered from Taiwan Island.

Material and methods

Abbreviations of the depositories used: MWM/ZSM = Museum Witt Munich in the Bavarian State Collection of Zoology (Museum Witt München / Zoologische Staatssammlung München, Munich,

Germany); WIGJ = World Insect Gallery (Joniškis, Lithuania). Other abbreviations used: AV = genitalia slide prepared by A. Volynkin; HT = holotype; PT = paratype.

The genitalia were dissected applying standard methods of preparation (Lafontaine & Mikkola 1987; Kononenko 2010), then stained with Eosin Y and embedded in Euparal on microscope slides. The photos of adults were taken using a Nikon D3100/AF-S camera equipped with a Sigma 105 mm F2.8 EX DG Macro OS lens while the photos of genitalia were taken using the same camera attached to a microscope with an LM-scope adapter. All pictures were processed using the Adobe Photoshop CC 2018 software.

For the type label citations, information provided in quotation marks is transcribed verbatim. Different labels are separated by a slash (“/”) while the different lines of the same label are separated by a vertical bar (“|”). Any additional data are provided in square brackets.

The male and female genitalia terminology follows Volynkin (2024).

Results

Miltochrista taiwania sp. n.

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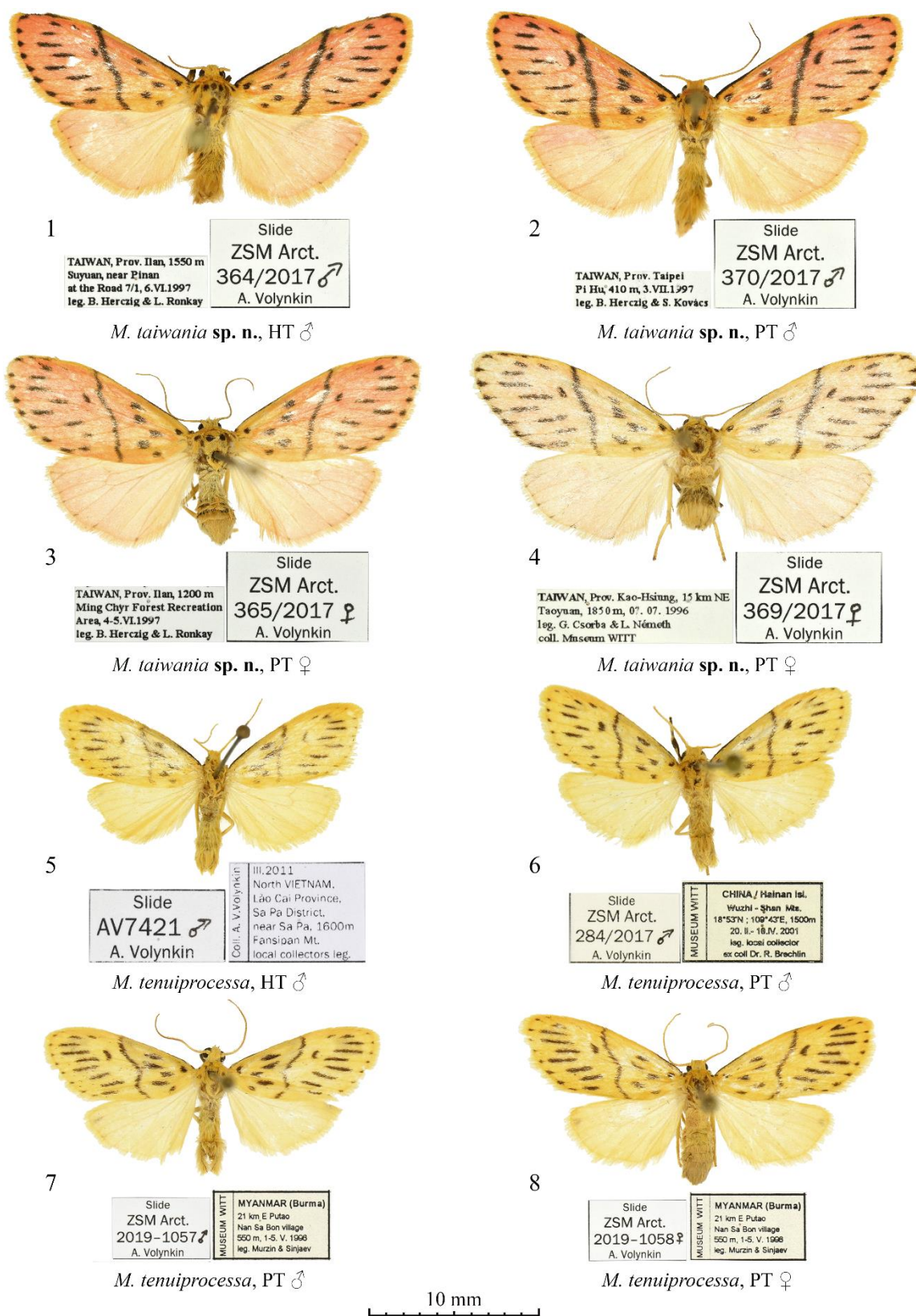
(Figs 1–4, 9, 10, 13, 14)

Type material. Holotype (Figs 1, 9): male, “Taiwan, Prov. Ilan, 1550 m | Suyuan, near Pinan | at the Road 7/1, 6.VI.1997 | leg. B. Herczig & L. Ronkay” / “Slide | ZSM Arct. | 365/2017♂ | A. Volynkin” (MWM/ZSM).

Paratypes (all in MWM/ZSM). **TAIWAN**: 1 female, Ilan Co., 1200m, Ming Chyr Forest Recreation Area, 4–5.VI.1997, B. Herczig & L. Ronkay leg., gen. prep. No.: ZSM Arct. 365/2017♀ (prepared by Volynkin); 1 male, 1 female, Kaohsiung Co., 15 km NE Taoyuan, 1850m, 07.VII.1996, G. Csorba & L. Németh leg., gen. prep. Nos.: ZSM Arct. 368/2017♂ and 369/2017♀ (prepared by Volynkin); 1 male, Taipei Co., Pi Hu, 410m, 3.VII.1997, B. Herczig & S. Kovács leg., gen. prep. No.: ZSM Arct. 370/2017♂ (prepared by Volynkin).

Diagnosis. The closest relative of the new species is the continental *M. tenuiprocessa* Volynkin, Černý, S.-Y. Huang & Saldaitis, 2023 (Figs 6–8), from which *M. taiwania* sp. n. (Figs 1–4) differs clearly in the considerably larger size, the intense salmon pink colouration of the wings (vs. maize yellow in the congener), and the somewhat straighter medial line of the forewing. The male genital capsule of the new species (Figs 9, 10) is distinguished from *M. tenuiprocessa* (Figs 11, 12) by the longer and broader uncus, the shorter and thicker distal costal process, the shorter and broader valvula, and the proximally broader and somewhat distally longer distal saccular process, which is also more strongly angled dorsad than in the congener. The phalli of the two species are very similar but the coecum in *M. taiwania* sp. n. is somewhat larger and directed more ventrad. Compared to *M. tenuiprocessa*, the vesica of *M. taiwania* sp. n. has a somewhat larger subbasal diverticulum, a longer distal diverticulum, and a markedly larger apical diverticulum. In the female genitalia, the new species (Figs 13, 14) is distinguished from *M. tenuiprocessa* (Figs 15, 16) by the shorter and narrower ductus bursae with a V-shaped medial depression (vs. narrow incision in the congener), and the markedly shorter band-like cluster of spines edging the sclerotised posterior area of the corpus bursae, which extends into the dorsal side by the 1/3 of the corpus bursae width, whereas in *M. tenuiprocessa* its dorsal section is nearly as long as the ventral one. Additionally, the lateral pockets of the 7th sternite of *M. taiwania* sp. n. are markedly larger than in *M. tenuiprocessa*.

Description. Adults (Figs 1–4). Sexual dimorphism limited. Antenna ciliate in both sexes, with sparser and shorter cilia in female. Head and thorax ochreous yellow, prothorax with three black rounded spots; tegula with elongate black spot medially. Forewing triangular with rounded apex, proximally straight costal and somewhat convex anal margins. Forewing ground colour salmon pink with ochreous yellow suffusion proximally and along costal and anal margins. Proximal third of costal margin black. Forewing markings black. subbasal spot trapezoidal. Antemedial line sinuous and interrupted into five irregular spots. Medial line thin, oblique, slightly sinuous medially. Discal spot comma-shaped. Postmedial line sinuous and interrupted into series of longitudinal dashes of various lengths on veins. Terminal line interrupted into series of small triangular spots on veins. Cilia unicolorous, ochreous



Figures 1–8. Adults of *Miltochrista* spp. Depositories of the specimens: 1–4 and 6–8 in MWM/ZSM; 5 in WIGJ.



9
M. taiwania sp. n., HT
Taiwan, Ilan Co., slide ZSM Arct. 364 / 2017



10
M. taiwania sp. n., PT
Taiwan, Taipei Co., slide ZSM Arct. 370 / 2017

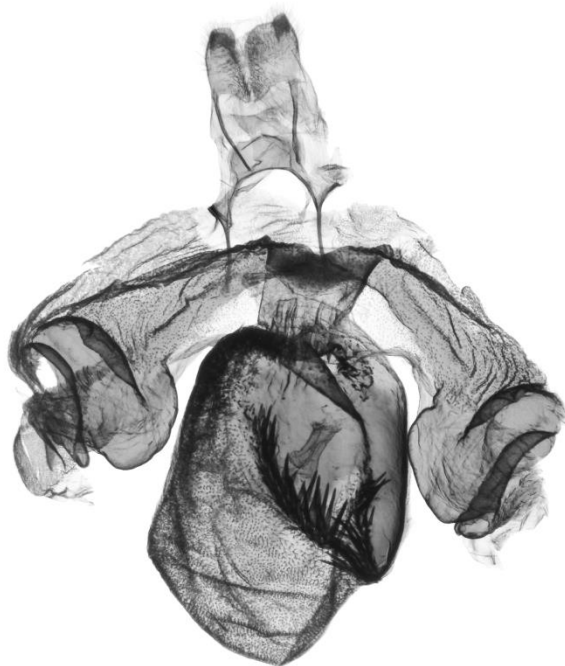


11
M. tenuiprocessa, HT
Vietnam, Lào Cai Prov., slide AV7421



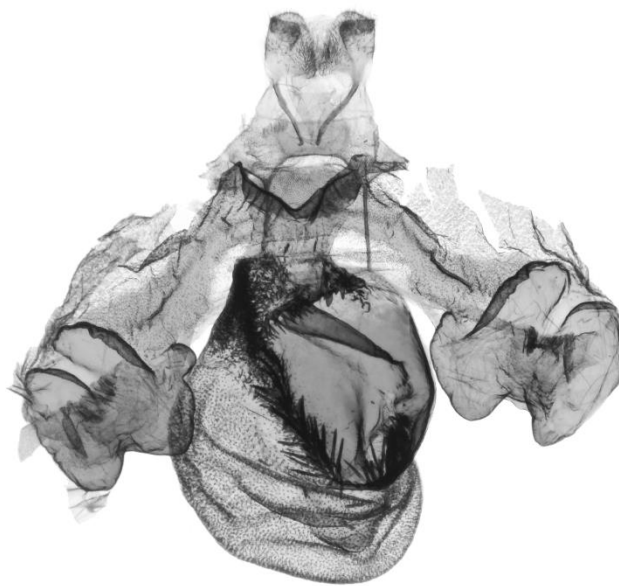
12
M. tenuiprocessa, PT
N Myanmar, Kachin State, slide ZSM Arct. 2019-1057

Figures 9–12. Male genitalia of *Miltochrista* spp. Depositories of the specimens dissected: 9, 10 and 12 in MWM/ZSM; 11 in WIGJ.



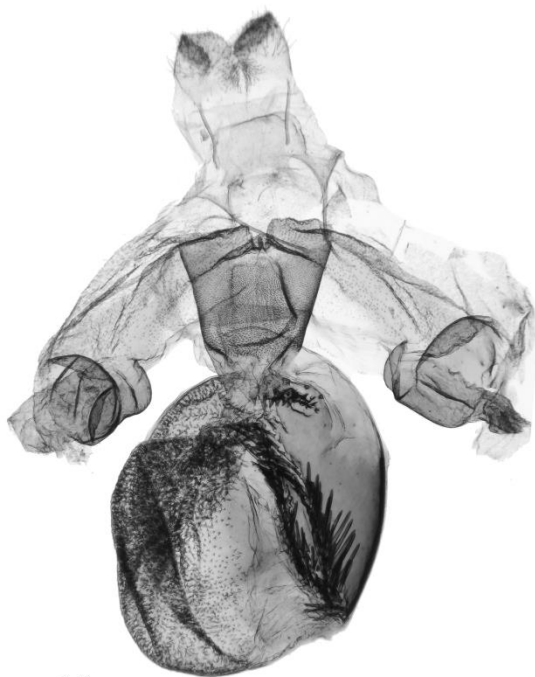
13

M. taiwania sp. n., PT
Taiwan, Ilan Co., slide ZSM Arct. 265 / 2017



14

M. taiwania sp. n., PT
Taiwan, Kaohsiung City, slide ZSM Arct. 269 / 2017



15

M. tenuiprocessa, PT
NE India, Assam, slide ZSM Arct. 2019-1031



16

M. tenuiprocessa, PT
N Myanmar, Kachin State, slide ZSM Arct. 2019-1058

Figures 13–16. Female genitalia of *Miltochrista* spp. The specimens dissected are deposited in MWM/ZSM.

yellow. Hindwing unicolorous, pale salmon pink, terminal line black, indistinct, interrupted into small spots on tips of veins. Cilia unicolorous, pale ochreous yellow. Abdomen covered with hair-shaped

scales, pale ochreous proximally and deep ochreous yellow distally. **Male genitalia** (Figs 9, 10). Uncus elongate and slender, dorso-ventrally flattened, medially downcurved, apically pointed. Tegumen somewhat longer than uncus, with narrow and moderately sclerotised arms. Vinculum somewhat shorter than the tegumen and more heavily sclerotised, U-shaped, with short pleurites fused with dorsal ends of its arms. Valva elongate, with nearly parallel margins. Editum occupies ca. proximal quarter of dorsal margin of valva, tendons well-sclerotised, ribbon-like, fused with each. Collis short, slightly protruding dorsad. Distal costal process elongate, smoothly downcurved and distally gradually tapered. Valvula broad, not reaching the tip of distal costal process. Sacculus ca. half as broad as valva, with densely setose dorsal margin. Distal saccular process flattened, strongly angled dorsad, with narrow and distally tapered distal (dorsally directed) section. Juxta shield-like with small ventral medial protrusion, weakly sclerotised. Anellus/manica region with two large, elliptical, sclerotised and serrulate plates. Phallus cylindrical, straight; coecum short, semiglobular, downcurved; ventral carinal process plate-like, apically rounded, directed distad and separated from vesica wall. Main chamber of vesica more or less globular, somewhat shorter than phallic tube, with cluster of graniculi distally, bearing blade-shaped cornutus distally-laterally. Subbasal dorsal diverticulum semiglobular. Distal diverticulum broad, nearly utricular but slightly tapered distally, bearing blade-shaped cornutus apically. Apical diverticulum short, conical. Vesica ejaculatorius with short triangular elasma basally. **Female genitalia** (Figs 13,14). Papilla analis trapezoidal with rounded corners, weakly setose. Apophyses elongate and thin, rod-like, anterior one somewhat longer. Postvaginal plate broad and weakly sclerotised. Ductus bursae well-sclerotised, broad and dorso-ventrally flattened, somewhat tapered anteriorly, ventral margin of ostium bursae with V-shaped medial depression. Corpus bursae sack-like, with broad sclerotised area postero-laterally on right side bearing short and elongate cluster of short spines posteriorly (at the base of appendix bursae) and with anterior margin edged with ribbon-like cluster of long and robust spines. Left side and anterior end of corpus bursae densely covered with spinulose scobination. Appendix bursae membranous, conical, situated postero-laterally on right side and directed to the left, covering ductus bursae from dorsal side. 7th abdominal sternite with broad, double lateral pockets to receive distal processes of costa and sacculus.

Distribution. The new species is currently known exclusively from Taiwan Island and is very probably endemic to it.

Etymology. The specific epithet is derived from the island of Taiwan, where the new species is found. The name is a noun in the genitive case in apposition.

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