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A new genus of Galleriinae from South-East Asia (Lepidoptera, Pyralidae)

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Abstract

The genus *Joelminetia* **gen.n.** (Lepidoptera, Pyralidae) is described and attributed to the subfamily Galleriinae. It deserves a new tribe Joelminetiini **trib.n.** So far, the genus contains three species, which are also described as new. The type species of the genus *Joelminetia kostjuki* **sp.n.** comes from Vietnam, whereas *J. latimedia* **sp.n.** is distributed in Thailand and *J. michaelshafferi* **sp.n.** in Myanmar (Burma).

Zusammenfassung

Die Gattung *Joelminetia* **gen.n.** (Lepidoptera, Pyralidae) wird beschrieben und der Unterfamilie Galleriinae zugeordnet. Sie bedarf einer neuen Tribus Joelminetiini **trib.n.** Die Gattung enthält bislang drei Arten, die ebenfalls neu beschrieben werden. Die Typus-Art der Gattung *Joelminetia kostjuki* **sp.n.** stammt aus Vietnam, während *J. latimedia* **sp.n.** in Thailand und *J. michaelshafferi* **sp.n.** in Myanmar (Burma) verbreitet ist.

Introduction

When studying the Arctiidae (Lithosiinae) in the Museum WITT, we found three conspicuous misplaced Pyralidae species which are apparently closely related, two of them superficially very similar, but fundamentally different in the genitalia. These species could not be placed in any reasonable genus, and even a suitable subfamily was unclear. We decided to describe this highly specialized genus and to place it in the subfamily Galleriinae although we failed to find very close relatives within this subfamily. No tribe exists for a reasonable placement, and therefore a new tribe Joelminetiini **trib.n.** is created.

Joelminetia gen.n.

Type species: *Joelminetia kostjuki* **sp.n.** by present designation.

Ocelli present, though hidden in strong scaling. No distinct chaetosema recognizable. Proboscis basally scaled. Labial palpi large, measuring about 2 times the eye-diameter, moderately upturned in both sexes. Maxillary palpi small, but distinct, upturned, scaling different in species.

Scapus of male antennae elongate, with a tooth-like projection at the end. Antennal flagellum (incl. the pedicel), which originates laterally from the apex of the scapus, with a projection opposite the end of the scapular tooth, ciliate. Tibial spur formula 0-2-4.

Hamus of male forewing (= retinaculum) elongate, bar-shaped. Female frenulum consisting of 3 bristles.

Wing venation (fig. 1): Forewing with only 4 radial veins, the missing vein is probably r_1 or r_2 (not r_4 or r_5 like in Phycitinae), r_3 stalked with r_4, r_{3+4} stalked with r_5. M_3 shortly stalked with cua_1. Hindwing quadrifine, with m_2 present. $Sc+r_1$ separated from rs. No clear cubital pecten present.

Male genitalia (figs 9-12): The uncus is different in the individual species, narrower or broader, always more or less bilobed, but not densely covered by hairs or spines. The tegumen is rather large, with no clear separation towards the uncus, the vinculum is provided only with a small saccus. In most species, there are two large processes with a broad base inserting in the region where tegumen and uncus meet, in one species there is only an unpaired process. The homologisation of these normally paired processes associated with the uncus-tegumen-complex is difficult: They are possibly not homologous with the uncus arms described in the Pyralinae (SOLIS & SHAFFER, 1999) and indicated to be present also in the Chrysauginae by MUNROE & SOLIS (1999). They may represent a highly specialized gnathos (which is normally an unpaired structure) or are perhaps best named socii (socii are anyway structures which are certainly not homologous in the different lepidopterous groups). We may only note the unusually large size of these paired processes. The valvae are deeply cleft into a costal and ventral arm, the ventral arm can possibly be interpreted as saccular process. Such a highly specialised valval structure is not known to occur in other genera of the Galleriinae. The valva in Galleriinae is simple and unmodified, except in *Palmia* WHALLEY, 1964 (WHALLEY, 1964). The modifications in *Palmia* are, however, by far not so distinctive. The structure of the juxta is not easily recognizable in conventional genitalia slides, it is different, however, in the species, dorsally rounded or bifurcate, and the aedeagus is

simple, without specialisation. The long bulbus ejaculatorius inserts in the inner dorsal end of the aedeagus (phallus), one long aedeagus-fold is traced which gives the impression of a cornutus.

Female genitalia (figs 13, 14): Ovipositor strongly sclerotized, neither specialised nor telescope-like. Corpus bursae is a simple oval sac, ductus seminalis originating from the posterior region of the ductus bursae in *J. kostjuki*, in *J. latimedia* these structures cannot be described with certainty due to the damage.

Tympanal organ (fig. 2): Rather small and reduced. Paraspinae absent. Linea tympani between conjunctiva and tympanum not very clearly recognizable posteriorly. Post-tympanal area: venulae secundae present, of the convergent type (MINET, 1982: 266). This latter character has only been checked in *J. kostjuki*.

Systematic position of the genus

The only subfamilies in Pyralidae with 3 female frenular bristles are the Chrysauginae and Galleriinae. The new genus does not show the forewing modifications of the typical south-american Chrysauginae which are defined by HAMPSON (1897) by the atrophy of the maxillary palpi (present and conspicuous in the new genus). The maxillary palpi are always inconspicuous (reduced, though 3-segmented, in *Parachma rufoflavalis* HAMPSON, 1906 and possibly never completely absent in this subfamily; MINET 1985). Moreover, most Chrysauginae species (except for only two genera, MUNROE & SOLIS, 1999) have a normal gnathos which is absent in the present genus. The monophyly of the Chrysauginae in the wide sense is not ascertained by autapomorphies; the sexually dimorphic forewings with strong modifications in the males are found only in Neotropical genera and, within this group, no genera are known to have small / reduced tympanal organs or reduced paraspinae. The reduced paraspinae of *Joelminetia* **gen.n.** indicate a relationship with the Galleriinae. Moreover, the gnathos is absent in Galleriinae (WHALLEY, 1964) and in the new genus it is strongly modified or absent which does not contradict a position in the Galleriinae. However, the valva is unmodified in the Galleriinae, except in *Palmia* (WHALLEY, 1964) which is in strong contrast to the modified valva in the new genus. Moreover, all other Galleriinae known to us have the hindwing vein $sc+r_1$ fused with rs, whereas this vein is free and not connected with rs in Pyralinae and *Joelminetia*.

Anyway, we provisionally place the new genus in the Galleriinae, but it is impossible to place it with certainty in an existing tribe of that subfamily. The Neotropical tribe Cacotherapiini MUNROE, 1995 (replacement name for Macrothecini BARNES & MCDUNNOUGH, 1912, authors of this tribe name according to FLETCHER & NYE, 1984) shows cubital pecten (WHALLEY, 1964) and seems to be unrelated. Among the remaining tribes, the presence of ocelli would only allow to place the new genus in the Megarthridiini WHALLEY, 1964 (WHALLEY, 1964, MUNROE & SOLIS, 1999), but this is a plesiomorphic character and the male genitalia thus far known in this tribe are very different. The process of the male 2nd antennal segment found in *Megarthridia* MARTIN, 1956 (WHALLEY, 1964) may indicate that *Megarthridia* and *Joelminetia* **gen.n.** could be related. For the sake of stability in the tribal division of the Galleriinae, we propose a new tribe Joelminetiini **trib.n.** for the present genus, though there is at present no comprehensive phylogenetic analysis of the relationship of galleriine genera.

It is also possible that the new genus may need a subfamily of its own (if reduction of paraspinae is found to be convergent) or may be a primitive member of other Galleriinae tribes, e.g. Galleriini (in the wide sense of MINET, 1982), or Tirathabini WHALLEY, 1964, if the latter is regarded as distinct from the Galleriini ZELLER, 1848 (MUNROE & SOLIS, 1999). A closer relationship with Pyralinae must only be taken in consideration, if the presence of 3 female frenular bristles (MUNROE & SOLIS, 1999) is regarded as the plesiomorphic character state which would only allow a very basal position within that subfamily.

E t y m o l o g y : Named in honour of Prof. Dr Joël MINET (Paris) who wrote the fundamental papers on the higher systematics in Pyraloidea.

Joelminetia latimedia **sp.n.** (Plate 2, fig. 4, 5)

M a t e r i a l : Holotype ♂: Thailand, Changwat Chiang Mai, 3 km S of Kop Dong, 1550 m, 1.iv.1998, leg. Tibor Csövári & Pál Stéger, Museum Witt. The holotype will be deposited in the Zoologische Staatssammlungen, Munich. Paratypes: 1♂ with same data as the holotype, coll. Speidel; 2♂♂: Thailand, Changwat Nan, 30 km E of Pua, 1700 m, 31.iii.1998, leg. Tibor Csövári & Pál Stéger, Museum Witt (one of them with genitalia slide No. 3415 Museum Witt München); 1♂: Thailand, Changwat Nan, 30 km E of Pua, 1700 m, 6.iv.1998, leg. Tibor Csövári & Pál Stéger, Museum Witt; 1♂ N. Thailand, Chiang Mai-prov. Fang distr., Doi Pha Hom Pok, 2050 m, 20°07'30''N, 99°08'49''E, 21.iv.2006, leg. K. Cerný. Coll. SPEIDEL.

Excluded from type-material: 1♀ Chiang Mai, N.-Thailand, Exp. Lehmann 1986 (genitalia slide 647 SPEIDEL), coll. SPEIDEL.

D e s c r i p t i o n :

Wingspan 40-43 mm (♂), 45 mm (♀)

Forewing: Black inner area separated in a dorsal and ventral part by a yellow line, an indistinct curved yellow subbasal line separates the inner area about in middle. Costa of inner area pink. Proximal line straight, black, outwardly oblique from costa to inner margin, bordered yellow inside. Medial area broad, pink, more or less yellow along costa with a dark comma-shaped black discoidal spot and a further black point inside of it. Distal line straight, black, slightly inwardly oblique from costa to inner margin, with traces of a yellow border outside. Outer area dark grey, with a very narrow black border on costa, and a narrow yellow costal stripe which is dorsally bordered by a pink stripe.

Hindwing: Grey, much paler towards its base. Female (if correctly associated with the present species) with the marginal grey area broader than in the males, with discoidal spot present.

Male genitalia (figure 9, genitalia slide 3415 Mus. WITT): Uncus stout, cone-shaped, not bilobed. Socii slender and long, gnathos absent. Valvae deeply cleft in a dorsal and ventral branch, the ventral branch is however more slender than in *J. kostjuki*. Aedeagus larger than in *J. kostjuki*, with an elongate fold which is acute at both sides.

Female genitalia (figure 11, genitalia slide 647 SPEIDEL): Abdomen of the single female covered by an inflexible glue; genitalia additionally damaged by gluing the posterior part of the abdomen to the thorax. Anal papillae slightly larger and more slender than in *J. kostjuki* **sp.n.**, ovipositor short and stout, strongly sclerotized, posterior apophyses

present, medium long, apophyses anteriores reduced, very small, ostium region sclerotized. Corpus and ductus not reconstructed with certainty, corpus bursae with a signum which is a round scobinate patch.

D i f f e r e n t i a l d i a g n o s i s : The difference from *J. kostjuki* **sp.n.** is amply demonstrated by reference to the figures of both superficial appearance of the moths and structure of the genitalia. The present new species is characterised by a wide medial area of the forewing. The ventral branch of the valvae is more slender than in *J. kostjuki* **sp.n.** and corpus bursae is provided with signum. *J. michaelshafferi* **sp.n.** is hardly separable in superficial appearance; it has a broader dark grey margin of the hindwing and a clearly visible discoidal spot.

D i s t r i b u t i o n : As far as known confined to N. and NE. Thailand.

B i o n o m i c s : Adults were found in March and April in elevations from 1700 to about 2000 m in mountain deciduous rain forests.

E t y m o l o g y : Named because of the wide medial area which is characteristic for this species (latin latus, wide; media, middle).

Joelminetia michaelshafferi **sp.n.** (Plate 2, fig. 3)

M a t e r i a l : Holotype ♂: Burma [Myanmar], Dawna Range, 10.vi.1995, P.G. Haynes collection, BMNH (E) 1996-226, Pyralidae Brit. Mus. slide no. 20771 male. The Natural History Museum London. Paratypes: 1♂: Süd-Burma [Myanmar], Tenasserim, Khao Yai, 1000 m, April-Mai 1995, leg. Steinke & Lehmann, Museum WITT, München; Genitalia Slide No. ♂ 654 Wolfgang SPEIDEL. 1♂: Süd-Burma [Myanmar], Tenasserim, Khao Yai, 1000 m, März 1995, leg. Steincke [sic] & Lehmann, Museum WITT. Coll. SPEIDEL.

D e s c r i p t i o n :

Wingspan 45 (♂) mm.

Forewing: Very similar to preceding species, no clear difference traced, except slightly darker, more intensive colouration.

Hindwing: Grey, much paler towards its base. Dark grey discoidal spot present. The dark grey marginal area of the hindwing is broader than in *J. latimedia* **sp.n.** and includes also the anal area.

Male genitalia (figure 11, genitalia slide 654): Uncus stout, cone-shaped. Sclerotized, stout unpaired gnathos-like structure present. Valvae not cleft into two branches, with only a stout costal finger-shaped process and a ventral, sclerotized and acute spine originating in the saccular region. Aedeagus larger than in *J. kostjuki*, with an elongate fold which is acute at both sides.

D i f f e r e n t i a l d i a g n o s i s *J. latimedia* **sp.n.** is hardly separable in superficial appearance; it has a narrower dark grey margin of the hindwing and a weakly defined or absent discoidal spot. The male genitalia, however, are distinctive.

D i s t r i b u t i o n : Apparently confined to the Dawna Range in Tenasserim (Myanmar). The indication "Khao Yai" for the specimen from Tenasserim in the Museum WITT is erroneous; Khao Yai is situated in Thailand and is another locality where LEHMANN-material originated. The specimen was probably also collected in the Dawna Range.

B i o n o m i c s : Adults were found in April-May and June in elevations of about 1000 m in deciduous rain forests.

E t y m o l o g y : Named in honour of Michael SHAFFER (The Natural History Museum London) who noticed that this species must be separated from *J. latimedia*.

***Joelminetia kostjuki* sp.n.** (Plate 2, fig. 6, 8)

M a t e r i a l : Holotype ♂: Vietnam, Mai Chau, 20°50'N 104°50' E, 40 km SE Moc-chau, 1400m, 7.-15.iv.1995, Urwald, leg. V. Siniaev. Museum für Naturkunde, Berlin. Paratypes: 1♂, 2♀♀: Vietnam, Mai Chau, 20°5''N 104°50' E, 40 km SE Moc-chau, 1400m, 7.-15.iv.1995, Urwald, leg. V. Siniaev. Museum für Naturkunde, Berlin (1♀ of them with genitalia slide 648); 7♂♂ 1♀: N. Vietnam, Mai-chau, 20,50°N 104,50°E, 40 km SE Moc-chau, 1400 m, 7.-15.iv.1995, Urwald, leg. Sinjaev & einh. Sammler, ex coll. A. SCHINTLMEISTER, Museum WITT München and coll. SPEIDEL; 1♂: N. Vietnam, Cuc Phuong, 120 km SW Hanoi, 20, 15°N 105, 20°E, 1./2.iv.1995, 400 m, Nat. P., leg. Sinajev & Schintlm., ex coll. SCHINTLMEISTER, genitalia slide No. 307 Igor KOSTJUK, Zoological Museum, Kiev University; 1♂: Vietnam (N), Mts Fan-si-pan, N-Side, Chapa, 22°17'N, 103°44'E, 1600 m, 20-30. xi. 1995, leg. Sinjaev & loc. coll., Museum WITT; 5♂♂ 1♀: N. Vietnam, Mts Fan-si-pan, N-Seite, Cha-pa (=Sapa), 1600 m, 22,17°N, 103,44°E, 20.-30.iv.1995, leg. Sinjaev & einh. Sammler, ex coll. A. SCHINTLMEISTER, Museum WITT München; 1♂: N. Vietnam, Mt. Fan-si-pan, W-Seite, Cha-pa (=Sapa), 1000 -1000 m, 22,20°N, 103,40°E, Sek. Wald/Kulturland, April 1995, leg. Sinjaev & einh. Sammler, ex coll. A. SCHINTLMEISTER, Museum WITT München; 1♂ Vietnam, Tam Dao, 800-1100 m, 21°28'N, 105°38'E GPS, 19.v.-13.vi.1995, Malicky. Coll. SPEIDEL; 1♂: S. Vietnam, Bach-ma Nat. Park, 1200 m, 16°10'N, 107°54'E, 26. 07.-6. 08. 1996, leg. Sinjaev & Afonin, ex coll. A. SCHINTLMEISTER, Museum WITT, genitalia slide No. 3369 Museum WITT München.

D e s c r i p t i o n :

Wingspan 34-39 (♂) mm, 45-46 mm (♀)

Forewing: Inner and medial area separated in a dorsal and ventral part by a horizontal pink line which is furcated in the outer area; the ventral branch reaches the inner margin of the wing, the dorsal branch first follows the distal line upwards and then borders a narrow costal stripe of the ground-colour. Proximal line straight, black, outwardly oblique from costa to inner margin. The two halves of the inner area almost completely filled with black, leaving only a narrow stripe of the ground-colour at the inner side of the proximal line. Discoidal spot black, punctiform. Distal line black, inwardly angled, separated by the pink line at inner angle. Dorsal part of the distal line with a yellowish-white border outside. Outer area dark grey below the narrow yellowish-white costal stripe; grey and yellowish-white areas separated by the pink stripe. Fringes pink in medial area of termen.

Hindwing: The hindwing is uniformly grey.

Male genitalia (fig. 10, genitalia slide 3369 Mus. WITT): Uncus slender, apically bilobed. Socii large, stout, especially towards base, gnathos absent. Valvae deeply cleft in a dorsal and ventral branch, the ventral branch is however much wider than in *J. latimedia* **sp.n.** Aedeagus smaller than in *J. latimedia* **sp.n.**, with an elongate fold which is broad and apically blunt.

Female genitalia (fig. 12, genitalia slide 648 SPEIDEL): Anal papillae slightly smaller than in *J. latimedia* **sp.n.**, but stouter. Ovipositor short, posterior apophyses present, medium long, apophyses anteriores not traced, ostium membranous. Ductus bursae not distinctly separated from corpus, with a continuous transition. Ductus seminalis originates from ductus bursae near the ostial region; corpus bursae without distinct signum.

D i f f e r e n t i a l d i a g n o s i s : The difference from the other species in the genus can easily be seen in the figures of the moths and genitalia. The present new species is characterised by a narrow medial area of the forewing. The ventral branch of the valvae is much wider than in *J. latimedia* **sp.n.** and corpus bursae is without distinct signum.

D i s t r i b u t i o n : Only known from N. and S. Vietnam.

B i o n o m i c s : Adults were found in April, June, August, November in elevations from 1000 to 1600 m in deciduous rain forests.

E t y m o l o g y : Named in honour of Igor KOSTJUK (Zoological Museum, Kiev University, Ukraine) for his valuable help in the preparation of this paper.

R e m a r k : There are specimens from Thailand which are similar to *J. kostjuki* **sp.n.** and probably represent a further undescribed taxon. (pl. 2, fig. 7):

M a t e r i a l : 1♂: Thailand, Changwat Chiang Mai, 6 km SE of Pang Faen, 1100 m, 16.ix.1999, leg. A. Szabó & Z. Czere, Museum WITT, Genitalia Slide No. ♂ 653 Wolfgang SPEIDEL; 1♂: N. Thailand, Nan Prov., Pua, Doi Phu Kha, km 35, 1680 m, 23.02.1993, leg. D. Stüning, Zoologisches Forschungsinstitut und Museum KOENIG, Bonn.

The male genitalia (pl. 3, fig. 12) are basically very similar, but the dorsal part of the valva is shorter and more stout than in Vietnamese specimens.

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References

FLETCHER, D.S. & I.W.B. NYE (1984): The generic names of moths of the world. **5**. Pyraloidea. – London, xv + 185 pp.

HAMPSON, G.F. (1897): On the classification of the Chrysauginae, a subfamily of moths of the family Pyralidae. – Proc. zool. Soc. Lond. **1897**: 633-692.

MINET, J. (1982): Les Pyraloidea et leurs principales divisions systématiques. – Bull. Soc. ent. Fr. **86** (9-10): 262-280.

MINET, J. (1985): Étude morphologique et phylogénetique des organes tympaniques des Pyraloidea. 2 – Pyralidae; Crambidae, première partie. (Lepidoptera, Glossata). – Annls Soc. ent. Fr. (N. S.) **21** (1): 69-86.

MUNROE, E. & M.A. SOLIS (1999): The Pyraloidea. – In FISCHER, M. (ed.), Handbuch der Zoologie. **4** (35). – In: KRISTENSEN, N.P. (ed.), Lepidoptera, Moths and Butterflies. **1**. Evolution, Systematics and Biogeography. Berlin, New York, p. 233-256.

SOLIS, M. A. & M. SHAFFER (1999): Contribution towards the study of the Pyralinae (Pyralidae): Historical review, morphology, and nomenclature. – J. Lepid. Soc. **53**: 1-10.

WHALLEY, P.E.S. (1964): Catalogue of the Galleriinae (Lepidoptera, Pyralidae) with descriptions of new genera and species. – Acta zool. cracov. **9** (10): 561-658.

Legend

Plate 1

Fig. 1: *Joelminetia latimedia* **sp.n.** ♀. Wing venation (Chiang Mai, N.-Thailand, Exp. LEHMANN 1986).

Fig. 2: *Joelminetia kostjuki* **sp.n.** Sternal region of abdominal base to show tympanal organs (Slide 648)

Plate 2. Adults.

Fig. 3: *Joelminetia michaelshafferi* **sp.n.** ♂: Süd-Burma, Tenasserim, Khao Yai, 1000 m, März 1995, leg. Steincke & Lehmann, Museum WITT, München. Paratype. Foto: Igor KOSTJUK.

Fig. 4: *Joelminetia latimedia* **sp.n.** ♂: Thailand, Changwat Nan, 30 km E of Pua, 1700 m, 6.iv.1998, leg. Tibor Csövári & Pál Stéger, Museum WITT. Paratype. Foto: Igor KOSTJUK.

Fig. 5: *Joelminetia latimedia* **sp.n.** ♀. Chiang Mai, N.-Thailand, Exp. Lehmann 1986. genitalia slide 647 (W. Speidel). Coll. W. SPEIDEL. Foto: Igor KOSTJUK.

Fig. 6: *Joelminetia kostjuki* **sp.n.** ♀: Vietnam, Mai Chau, 20°50'N 104°50' E, 40 km SE Moc-chau, 1400m, 7.-15.4.1995, Urwald, leg. V. Siniaev. Museum für Naturkunde, Berlin. Paratype. Foto: Dr. Wolfram MEY.

Fig. 7: *Joelminetia* sp. ♂: Thailand, Changwat Chiang Mai, 6 km SE of Pang Faen, 1100 m, 16. ix. 1999, leg. A. Szabó & Z. Czere. Museum WITT. Foto: Igor KOSTJUK.

Fig. 8: *Joelminetia kostjuki* **sp.n.** ♂: S. Vietnam, Bach-ma Nat. Park, 1200 m, 16°10'N, 107°54'E, 26. 07.-6. 08. 1996, leg. Sinjaev & Afonin, ex coll. A. SCHINTLMEISTER, Museum WITT. Paratype. Foto: Igor KOSTJUK.

Plate 3. Genitalia.

Fig. 9: *Joelminetia latimedia* **sp.n.** Male genitalia (genitalia slide 3415 Museum WITT)

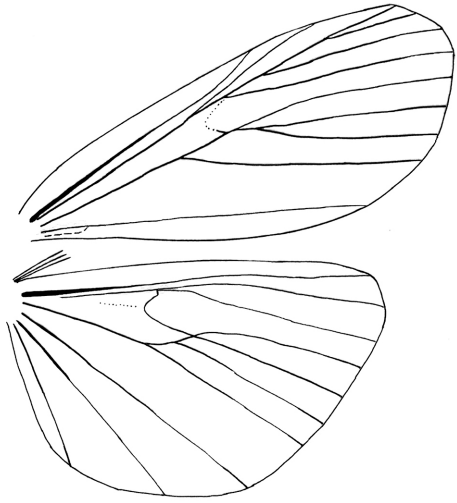
Fig. 10: *Joelminetia kostjuki* **sp.n.** Male genitalia (genitalia slide 3369 Museum WITT)

Fig. 11: *Joelminetia michaelshafferi* **sp.n.** Male genitalia (genitalia slide 654 SPEIDEL)

Fig. 12: *Joelminetia* sp. Male genitalia (genitalia slide 653 SPEIDEL)

Fig. 13: *Joelminetia latimedia* **sp.n.** Female genitalia (genitalia slide 647 SPEIDEL)

Fig. 14: *Joelminetia kostjuki* **sp.n.** Female genitalia (genitalia slide 648 SPEIDEL)



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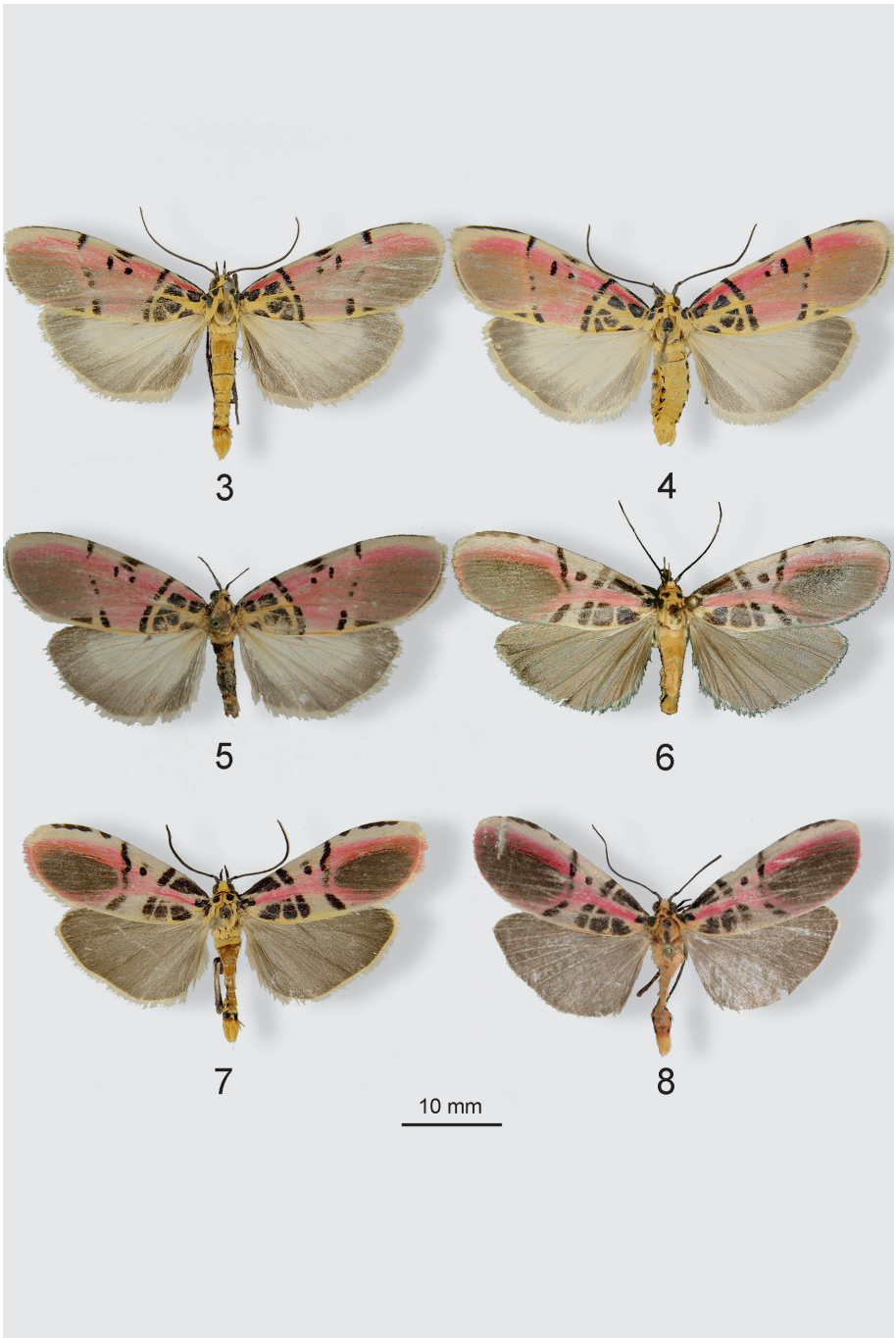

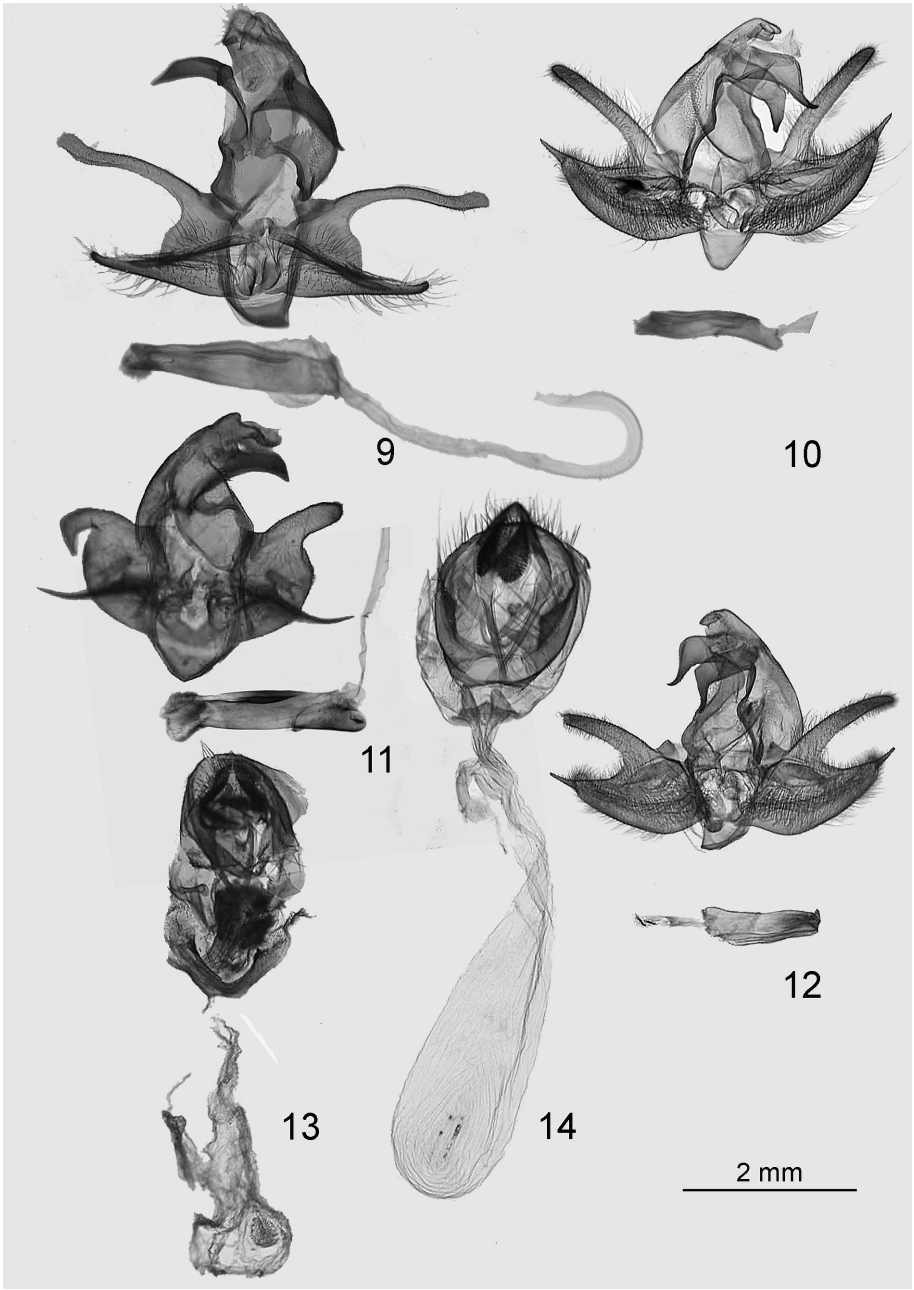

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