

New Ethmiinae (Lepidoptera: Oecophoridae) species from Southeast Asia

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Abstract – Descriptions of five new *Ethmia* species: *E. anatiformis* sp. n. (Nepal), *E. amissus* sp. n. (Thailand, Myanmar and India), *E. szabokyi* sp. n. (Nepal, India), *E. vietmiella* sp. n. (Vietnam) and *E. yeni* sp. n. (China) are given. With 19 figures.

Key words – Ethmiinae, *Ethmia*, new species, Southeast Asia.

INTRODUCTION

The monographic work dealing with the Ethmiinae taxa of the Palaearctic Region in broad sense has been published by SATTLER (1967). The next comprehensive papers on the Ethmiinae fauna of Asia were submitted by ZAGULAJEV (1975), LIU (1980), ROBINSON *et al.* (1984), DUBATOLOV *et al.* (1997), SINEV (1997), WANG & ZHENG (1997) and KUN & SZABÓKY (2000).

The present paper is the second in my series on the SE Asian Ethmiinae based on taxonomic studies carried on new expedition materials collected lately by several professional and private collectors.

MATERIAL

Materials examined from this region are preserved in the following collections: The Natural History Museum, London (BMNH); Zoologische Staatssammlung, Munich (ZSM); Landesmuseum für Naturkunde, Karlsruhe (LNK); Witt Museum, Munich; Hungarian Natural History Museum, Budapest (HNHM), and the private collection of CSABA SZABÓKY (Budapest).

SYSTEMATIC PART

***Ethmia anatiformis* sp. n.**

(Figs 1, 8–9, 15)

Holotype – Male, “Nepal: 1750–1950 m, Phulchoki, mixed Schima-Castanopsis for., 27.V.1984, M. G. Allen, BM 1984–136”; slide No. BMNH Microlep. 29715, deposited in the BMNH.

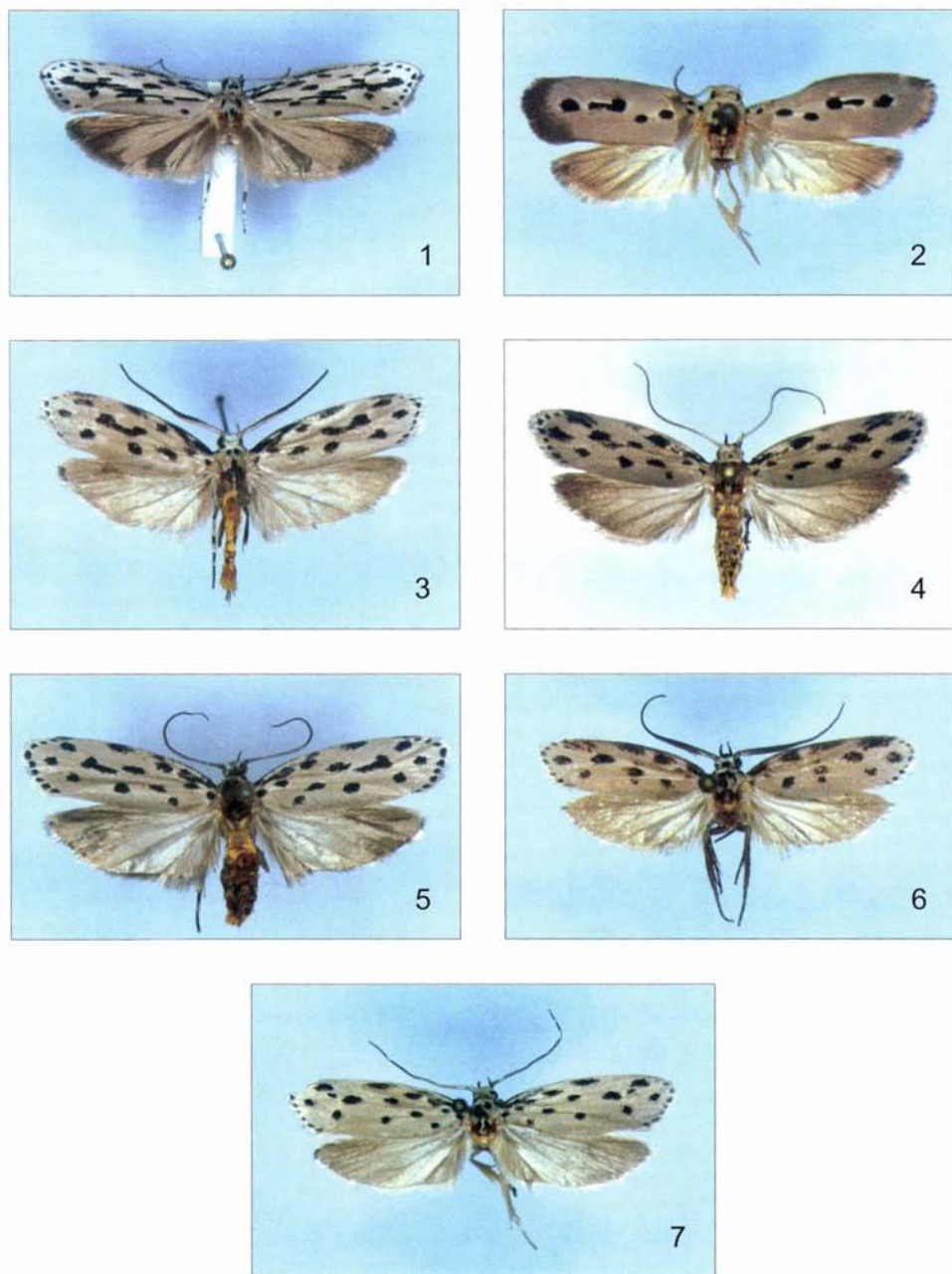
Paratypes – Nepal: 2 specimens, with the same data as the holotype; 1 female, from the same locality but from 19.VI.1984, slide No. BMNH Microlep. 29714; 1 male, Prov. Chisapani Garhi, Chisapani Garhi 1600 m, 11–15.VII.1967, leg. DIERL & SCHACHT, slide No. KUN 159; 1 male, Prov. Nr. 1 East, Pulschuk, 23–2500 m, 12.VI.1967, leg. DIERL, FORSTER & SCHACHT, slide No. KUN 158. The paratypes are deposited in the collections of the BMNH, the ZSM and the HHNM.

Diagnosis – The new species is related to *E. maculata* SATTler, 1967 and *E. hunanensis* LIU, 1980. *E. anatiformis* differs externally from *E. maculata* by its larger size (wingspan of *E. anatiformis* is 33–36 mm, that of *E. maculata* 25–27 mm) and by the long arrow-shaped forewing marking, which is almost continuous in the new species but interrupted in the middle in *E. maculata*. In addition, *E. anatiformis* has the hindlegs with black rings and the hindwing is dark grey, while they are whitish grey in *E. maculata*. The male genitalia of the two species are strongly different (see Fig. 8, and KUN & SZABÓKY 2000, Fig. 12). According to the description of *E. hunanensis*, the forewing pattern of *E. anatiformis* is simpler, consisting of fewer spots and markings. The male genitalia of the two related species differ in the shape of the cucullus (see Fig. 8, and LIU 1980, Fig. 3).

Description – (Fig. 1): Wingspan 33–36 mm. Antenna filiform, with slightly dilated basal segments; scape with black scales above and white scales below, flagellum with brown scales; maxillary palp whitish grey. Labial palp white with black scales on medial segment; base of proboscis white; frons and vertex white, similarly with black scales on top; thorax white with five black spots (Fig. 15); tegulae white with a pair of black spots at base. Forewing overlaid with black markings on whitish background; characteristic marking of forewing a long, arrow-shaped stripe running from middle of cell to termen without large significant, rest of markings consisting of elongate spots. Hindwing dark grey; without costal brushes; cilia grey. Forelegs and midlegs whitish with black rings, especially on tarsus, hindleg whitish grey with black rings. Abdomen grey, yellow from 5th to 8th segments, with two black spots on dorsal surface of each segment.

Male genitalia (Fig. 8): Uncus bifid with deep medial incision, apices rounded. Posterior part of gnathos lacking, anterior part well developed, finely dentate, hairy, fused with large, sclerotized dorsal plates on each side. Labis membranous, narrow; dorsal part of anellus sclerotized. Valva with bristles; costal margin with well-developed triangular, sclerotized basal plate. Cucullus quadratic, with triangular apical lobe and with pointed outer extension, ventral surface covered with strong bristles; vinculum without developed saccus. Aedeagus gun-shaped, cornuti long, bristle-like.

Female genitalia (Fig. 9): Ovipositor strongly sclerotized, posterior apophyses thin, longer than papillae anales, anterior apophyses absent. Antrum membranous, with a sclerotized caudal ring. Ductus bursae thin, tubular, longer than abdomen; corpus bursae spherical with large appendix;



Figs 1–7. Adults: 1 = *Ethmia anatiformis* sp. n., holotype, 2 = *Ethmia amissus* sp. n., paratype, 3 = *Ethmia szabokyi* sp. n., paratype, 4 = *Ethmia epitrocha* MEYRICK, 1914, 5 = *Ethmia crocosoma* MEYRICK, 1914, 6 = *Ethmia vietmiella* sp. n., paratype, 7 = *Ethmia yeni* sp. n., holotype

signum forming a "dentate bar" (sensu POWELL 1973, meaning a shallow crease with numerous, more or less equal-sized teeth).

Distribution – Nepal (Phulchoki, Chisapani Garhi).

Bionomics – Unknown.

Etymology – The shape of the valva resembles a sitting duck.

***Ethmia amissus* sp. n.**

(Figs 2, 10, 16)

Holotype – Female, "Thailand, Saraburi, 18.V.1960. coll. Pajszan, (?ex ovo), Capparis sp."; slide No. BMNH Microlep. 29720. The holotype is deposited in the BMNH.

Paratypes – Myanmar: 1 female, "Myingyan, Burma, Watson. 95–223. No?93.", slide No. BMNH Microlep. 29717. India: 1 female, "Sikkim, 2000ft V.1896, Pilcher, Walsingham Collection 1910–427", slide No. BMNH Microlep. 29718. The paratypes are deposited in the BMNH and the HNHM.

Diagnosis – The external appearance of the new species conspicuously differs from the other *Ethmia* species (see Fig. 2); the thoracic pattern with the six spots is also very characteristic (Fig. 16).

Description – (Fig. 2): Wingspan 20–25 mm. Antenna filiform, with slightly dilated basal segments; scape and flagellum with grey scales. Maxillary palp and labial palp whitish grey; base of proboscis white; frons and vertex whitish grey. Thorax white with six black spots (Fig. 16); prothorax with two black dots; tegulae whitish grey. Forewing overlaid with black markings on whitish background; characteristic marking of forewing consisting of three simple dots and one elongate patch; hindwing and cilia whitish. Legs whitish grey; abdomen brownish, last abdominal segment with black scales; anal tuft yellow.

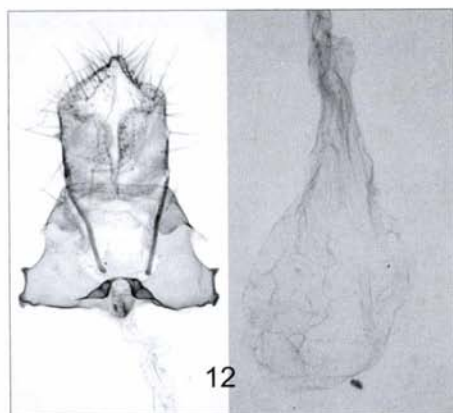
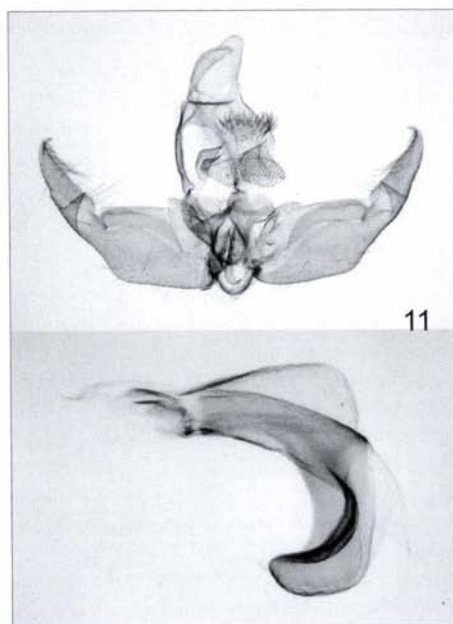
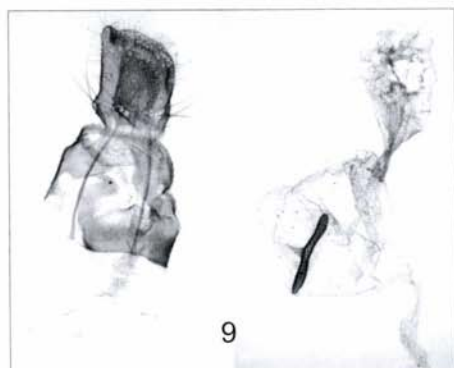
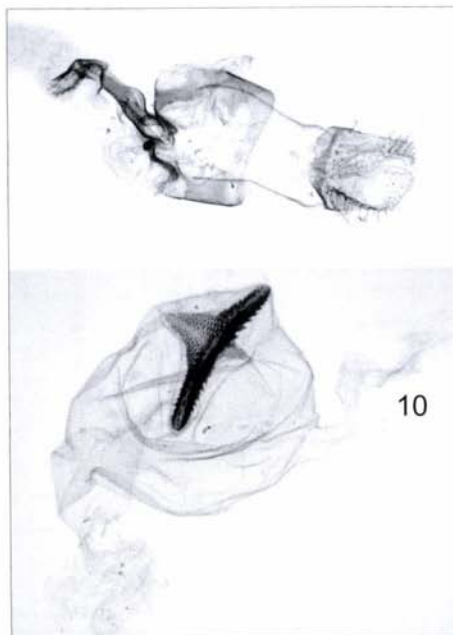
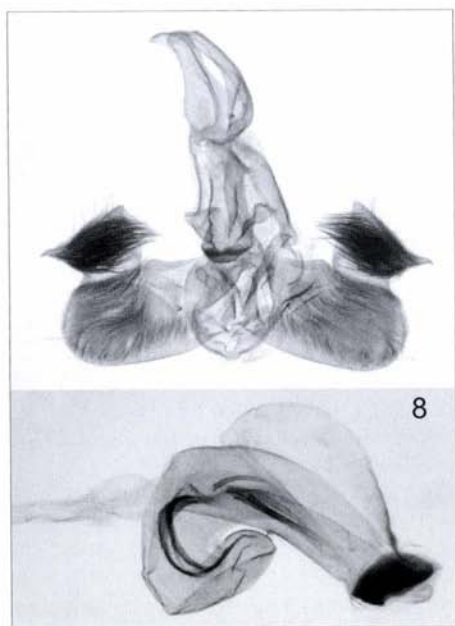
Female genitalia (Fig. 10): Ovipositor conical; posterior apophyses as long as papillae anales, anterior apophyses short, weak. Antrum membranous, with a sclerotized ring. Ductus bursae thin, as long as abdomen, its posterior part strongly sclerotized; signum forming large "dentate bar" (sensu POWELL 1973, meaning a shallow crease with numerous, more or less equal-sized teeth). Corpus bursae spherical, with large appendix.

Distribution – Thailand, Myanmar (= Burma), India (Sikkim).

Bionomics – Early stages and foodplant are undescribed, although one of the labels of the specimen mentions "Capparis sp.", "egg" (latter in Thai), thus, the specimen was probably reared from an egg found on *Capparis*.

Etymology – The species name *amissus* refers to the unidentified, old specimens in the collections.

Figs 8–12. Genitalia: 8 = *Ethmia anatiformis* sp. n. male, holotype, slide no. BMNH Microlep. 29715; 9 = *E. anatiformis* sp. n. female, paratype, slide no. BMNH Microlep. 29714; 10 = *E. amissus* sp. n. female, holotype, slide no. BMNH Microlep. 29720; 11 = *E. szaboky* sp. n. male, paratype, slide no. Kun 157; 12 = *E. szaboky* sp. n. female, paratype, slide no. Kun 331



Ethmia szabokyi sp. n.

(Figs 3, 11–12, 17)

Holotype – Male, “Nepal, Annapurna H, 1 km N of Syange, 1200 m, 84°25' E, 28°24' N, 7. VI. 1996, leg. Márton Hreblay & Csaba Szabóky”, slide No. KUN 49. The holotype is deposited in the HNHM, Budapest.

Paratypes – Nepal: 9 males, 1 female, with the same data as the holotype, slide No. KUN 110; 1 female, Annapurna Himal, Talbagar, 1950 m, 24.VI.1996, 83°39' E, 28°34' N, leg. M. HREBLAY & CS. SZABÓKY; 1 female, Annapurna Himal, 1 km S of Bahundanda, 1000 m, 6.VI.1996, 84°25' E, 28°20' N, leg. M. HREBLAY & CS. SZABÓKY, slide No. KUN 164; 1 male, Annapurna Himal, 1 km S of Tal, 1700 m, 8.VI.1996, 84°23' E 28°28' N, leg. M. HREBLAY & CS. SZABÓKY; 1 male, Kathmandu–Chauni, 1400 m, 2.VII.1967, leg. DIERL, FORSTER & SCHACHT, slide No. KUN 155; 1 male, from the same locality but from 31.VIII.1967, slide No. KUN 156. India: 3 female and 2 male, Kumaon – Himalaya, Distr. Naini Tal, Bhim valley, 1500 m, 18.VI.1971, leg. J. DE FREINA, slide No. KUN 157, Kumaon – Himalaya, Distr. Naini Tal, Bhim valley, IX.1973; 7 female and 4 male, Assam, Khasi Hills, II.1977, coll. VOLLMER, slide No. KUN 228; 2 male, Naini Tal, 2100 m, 14–20.VI.1975, leg. W. THOMAS. The paratypes are deposited in the BMNH, HNHM, ZSM, LNK and in the coll. of CS. SZABÓKY (Budapest).

Diagnosis – The closest relatives of *E. szabokyi* are the members of the *E. crocosoma* species-group sensu SATTLER (1967), including *E. epitrocha* MEYRICK, 1914 (Fig. 4), *E. crocosoma* MEYRICK, 1914 (Fig. 5) and the two new species described here, *E. vietmiella* sp. n. (Fig. 6) and *E. yeni* sp. n. (Fig. 7). All these species can be separated from each other by their characteristic, less variable forewing pattern. In addition, the only species of the group having a black spot on the vertex is *E. vietmiella*. The additional external morphological differences and the distribution of the species are summarized in Table 1.

Description – (Fig. 3) Wingspan 23–26 mm. Male antenna filiform, grey, basal segments strongly dilated, with white scales. Scape also with white scales; maxillary palp reduced, labial palp black with white ring on second segment and with white tip; proboscis white. Frons, vertex and thorax whitish, latter with four black spots (Fig. 23); tegulae white with a pair of small black spots at base. Forewing overlaid with black markings on white background, consisting mostly of elongate, rather big black patches. Hindwing grey, without costal brushes; cilia whitish. Forelegs and midlegs grey with black rings, hindlegs whitish grey; abdomen yellow, with pairs of black spots on last two segments.

Male genitalia (Fig. 11): Uncus hood-like, flattened, bifid with deep, more or less V-shaped medial incision; anterior and posterior parts of gnathos well-developed, posterior part dentate with slender neck, anterior part wide, covered with small warts. Labis membranous, rather short, broad at base, tapering apically. Valva elongate, apically acute, covered with hairs, ventral margin with long, acute, wedge-shaped lobe at distal end of sacculus. Costa forming a long, sclerotized triangular plate; dorsal margin of aedeagus convex, carina with small, sclerotized ventral tooth, without cornuti.

Female genitalia (Fig. 12): Ovipositor sclerotized, papillae anales subconical, setose, posterior apophyses thin, as long as papillae anales, anterior apophyses short, finely pointed. Ductus bursae long, tubular; corpus bursae rather long, spherical; signum absent.

Table 1. Diagnostic characters of *Ethmia crocosoma*, *E. epitrocha*, *E. szabokyi*, *E. vietmiella*, *E. yeni*

	<i>E. crocosoma</i> MEYRICK, 1914	<i>E. epitrocha</i> MEYRICK, 1914	<i>E. szabokyi</i> sp. n.	<i>E. vietmiella</i> sp. n.	<i>E. yeni</i> sp. n.
Wingspan (mm)	28–35	20–25	23–26	23–25	23
Frons	white	black	whitish	black	white
Labial palp	black with white ring on the second segment and white tip on the last seg- ment	black with white ring on the last seg- ment	black with white ring on the second segment and white tip on the last seg- ment	labial palp with black scales	white with black scales on the second and third seg- ments
Distribution	<i>E. c.</i> <i>crocosoma</i> : India (Sikkim, Darjeeling); Nepal (Koshi). <i>E. c. resignata</i> DIAKONOFF, 1969: Philip- pines	China: Hunan, Kiangsu, Chekiang; Tai- wan; Japan	Nepal; N India	N Vietnam	China (Prov. Hainan)

Distribution – Nepal, India (Kumaon, Assam).

Bionomics – The specimens were collected in the summer period (February, June–September), the habitats are subtropical forests.

Etymology – The new species is dedicated to my friend, CSABA SZABÓKY, an excellent field lepidopterist, collector of numerous *Ethmia* species during his expeditions to the Himalayan–Pacific region.

Remarks – A sexually dimorphic species: the male is smaller in size, its antenna has strongly dilated basal segments.

***Ethmia vietmiella* sp. n.**

(Figs 6, 13, 18)

Holotype – Male, “Vietnam, Prov. Vinh Phu, Tam Dao, 55 km NNW Hanoi, 800 m, 17–21.VIII.1998 leg. A. Napolov”, slide No. KUN 103; deposited in the HNHN, Budapest.

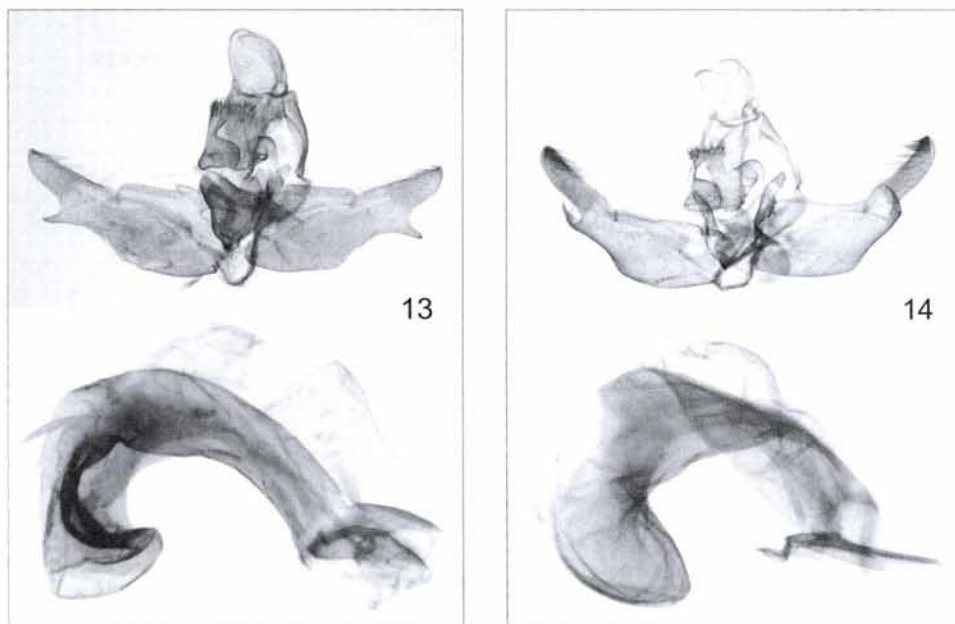
Paratype – Vietnam: 1 male, Tam Dao, secondary forest, 60 km NW Hanoi, 1200 m, 21°34'N, 105°20'E, 1–5.V.1993, leg. SINAJEV & SIMONOV, slide No. KUN 104. The paratype is deposited in the HNHN, Budapest.

Diagnosis – A comparison of the species of the *E. crocosoma* group is given under the diagnosis of the preceding species and the external differences are summarized in Table 1. The male genitalia of the species of the *E. crocosoma* group are very similar, with rather slight differences in the shape of anterior and posterior parts of the gnathos.

Description – (Fig. 6): Male. Wingspan 23–25 mm. Antenna filiform, grey, basal segments strongly dilated, with whitish scales. Scape also with whitish scales; maxillary palp reduced, labial palp with black scales; proboscis whitish. Frons black, vertex whitish with a black spot. Thorax whitish with four black spots (Fig. 18); tegulae white with a pair of black spots at base. Forewing overlaid with black markings on whitish background, consisting mostly of elongate, rather big black patches. Hindwing grey, without strong costal brushes; cilia whitish. Forelegs, midlegs and hindlegs brownish, abdomen yellow, 3rd to 7th segments with two black spots on each segment.

Male genitalia (Fig. 13): Uncus hood-like, flattened, bifid, with more or less V-shaped medial incision; anterior and posterior parts of gnathos well-developed, with a wide neck, posterior part dentate, anterior part wide, covered with small warts. Labis membranous, rather short, broad at base, tapering apically. Valva elongate, apically acute, covered with fine hairs, ventral margin with long, acute, wedge-shaped lobe at distal end of sacculus. Costa forming a long, sclerotized triangular plate; dorsal margin of aedeagus convex, carina with small, sclerotized ventral tooth.

Distribution – North Vietnam (Tam Dao).



Figs 13–14. Genitalia: 13 = *Ethmia vietmiella* sp. n. male, holotype, slide no. KUN 103; 14 = *E. yeni* sp. n. male, holotype, slide no. KUN 160

Bionomics – The types were collected in a secondary forest region, between 800–1200 meters above the sea level.

Etymology – The specific name refers to the home country of the species (Vietnam).

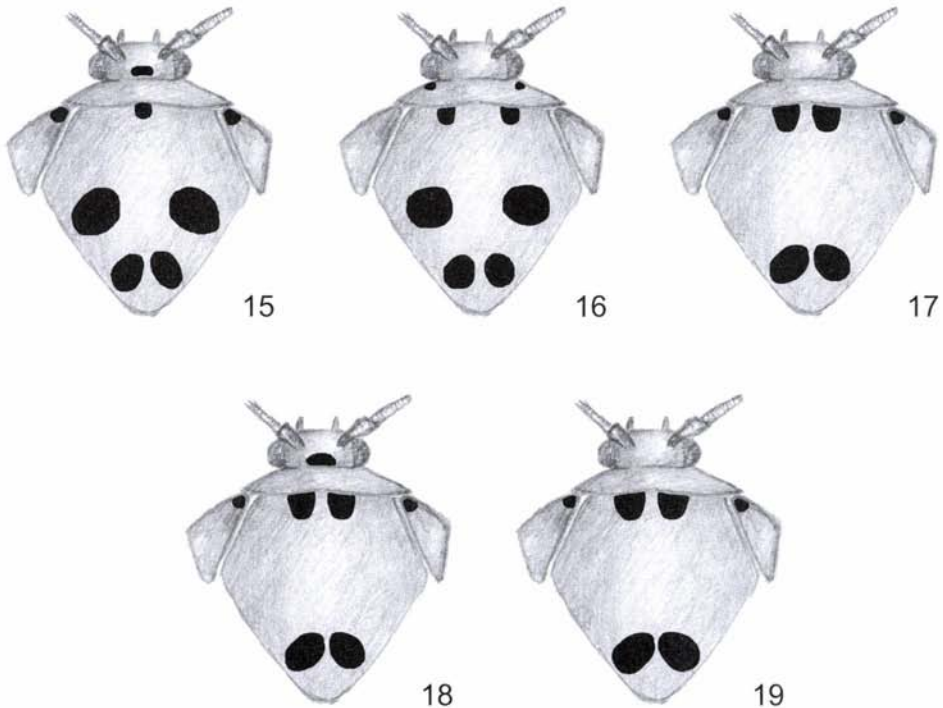
Remarks – Presumably also a sexually dimorphic species, as in the case of *E. maculata* and *E. szabokyi*.

***Ethmia yeni* sp. n.**

(Figs 7, 14, 19)

Holotype – Male, “China, Province Hainan, Wuchishan, 230 m, 7–IV–2000, S. H. Yen leg.”, slide No. KUN 160. The holotype is deposited in the Hungarian Natural History Museum, Budapest.

Diagnosis – See the diagnosis of *E. szabokyi*.



Figs 15–19. Thoracic pattern: 15 = *Ethmia anatiformis* sp. n., 16 = *E. amissus* sp. n., 17 = *E. szabokyi* sp. n., 18 = *E. vietmiella* sp. n., 19 = *E. yeni* sp. n.

Description – (Fig. 7): Male. Wingspan 23 mm. Antenna filiform, grey, basal segments slightly dilated, with white scales. Scape also with white scales; maxillary palp reduced, labial palp white with black scales on the last two segments; proboscis white. Frons and vertex white. Thorax whitish, with four black spots (Fig. 19); tegulae white with black scales at base. Forewing overlaid with black markings on white background, consisting mostly of elongate, rather small black patches (see Fig. 7). Hindwing greyish, without costal brushes; cilia whitish. Forelegs and midlegs whitish grey with black scales, hindlegs whitish grey, abdomen yellow, last four segments with two black spots on each segment.

Male genitalia (Fig. 14): Uncus hood-like, flattened, bifid, with deep, more or less V-shaped medial incision; anterior and posterior parts of gnathos well-developed, posterior part dentate, anterior part wide, covered with small warts. Labis membranous, long, broad at base, tapering apically. Valva elongate, apically acute, covered with fine hairs, ventral margin with long, acute, wedge-shaped lobe at distal end of sacculus. Costa forming a long, sclerotized triangular plate; dorsal margin of aedeagus convex, carina with small, sclerotized ventral tooth; vesica without cornuti.

Distribution – China (Prov. Hainan, Wuchishan (=Wujishan)).

Bionomics – Unknown. The species was collected in a typical tropical seasonal lowland forest (S. H. YEN, pers. com.).

Etymology – The species is dedicated to Dr. SHEN-HORN YEN, a zealous Taiwanese lepidopterist and collector of the species.

Remarks – This species, as in the case of the former two ones, is supposedly sexually dimorphic.

* * *

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