

New Ethmiinae (Lepidoptera: Elachistidae) species from Southeast Asia II.*

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Abstract – Descriptions of *Ethmia stojanovitsi* sp. n., *E. bisignata* sp. n. and *E. didyma* sp. n. from Southeast Asia, with some taxonomic notes and new data on the distribution of the species belonging to the *E. lapidella* species-group are given. With 22 figures.

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

INTRODUCTION

The taxa of the *Ethmia lapidella* (WALSINGHAM, 1880) species-group (sensu SATTLER 1967) occur in the Southeast Asian region, only a sole member of the group, *Ethmia heptasema* (TURNER, 1898) lives in Australia. *Ethmia stojanovitsi* sp. n., *E. bisignata* sp. n. and *E. didyma* sp. n. described hereunder, are found as stenochorous, presumably endemic species, like *E. octanoma* MEYRICK, 1914 (Taiwan), *E. reposita* DIAKONOFF, 1967 and *E. nobilis* DIAKONOFF, 1967, (Philippines) or *E. heptasema* (TURNER) (Australia). The only widely distributed species of the group is *Ethmia lapidella* (WALSINGHAM) which can be found in several countries in SE Asia.

MATERIAL

Materials examined are preserved in the following collections: The Natural History Museum, London (BMNH), National Museum of Natural History, Leiden (RMNH), the Taiwan Forestry Research Institute, Taipei (TFRI), and the Hungarian Natural History Museum, Budapest (HNHM).

* Results of the joint project of the HNHM and the TFRI, entitled "Biodiversity studies on the Lepidoptera fauna of Taiwan: taxonomy, faunagenetics and inventory of selected lepidopteran families", No. 4.

SYSTEMATIC PART

Ethmia stojanovitsi sp. n.

(Figs 1, 7, 17)

Holotype – Female, “Indonesia: Seram, Operation Raleigh, J. D. Holloway, D. T. Jones et al. Aug.-Sept. 1987, BM 1987-366, Gunung Binaia, north slopes, 1000m, “secondary forest”; BM Slide No. 29735. The holotype is deposited in the BMNH, London.

Paratypes – Indonesia, Seram: 1 female, Gunung Binaia, north slopes, 1000m, VIII-IX. 1987, BM Slide No. 29733; 1 female, 1 km N of Kanikeh Roho track, 600m, VIII-X. 1987, BM Slide No. 29734; 2 specimens, Gunung Binaia, north slopes, 1200m, VIII-X. 1987; 1 specimen, Kanikeh base-camp, 850 m, VIII-IX. 1987. The paratypes are deposited in the BMNH, London and in the NHM, Budapest.

Diagnosis – Members of the *E. lapidella* species-group (*E. lapidella*, *E. octanoma*, *E. heptasema*, *E. nobilis*, *E. reposita*, *E. stojanovitsi*, *E. bisignata*, *E. didyma*) are very similar externally, but are easily separable by the pattern of dots on forewing and thorax, and the colouration of the hindwing (Figs 1-6, 17-22). In some cases the identification requires the study of the genitalia. *Ethmia stojanovitsi* sp. n. differs from the other members of the group by the elongate dots of the forewing (Fig. 1) and the dot pattern of the thorax (Fig. 17). Tegulae grey, with black scales basally, not like in the other members of the group.

Description – (Figs 1, 17): Wingspan 19-21 mm. Antenna filiform; scape with grey, flagellum with greyish, scales; maxillary palp and base of proboscis grey. Labial palp grey with black rings on second and last segments. Frons and vertex grey with black scales on top. Thorax grey, with four black spots; tegulae grey, with black scales basally. Forewing overlaid with elongate black spots on grey background; altogether eight spots, in addition a small group of black scales at base, and a row of marginal dots; apical group consisting of three spots, one spot below cell near costa, four spots at base of wing followed by a small group of black scales. Hindwing of the same colouration as forewing background; cilia also grey. Legs grey with black rings. Abdomen greyish with yellow scales on the last segment.

Female genitalia (Fig. 7): Ovipositor conical, weakly sclerotized. Papillae anales elongate, with sparse, fine setae, apices rounded. Apophyses posteriores very long, slender, apophyses anteriores relatively thick, medium-long. Antrum sclerotized, short, flattened, with upturned lateral margins. Ductus bursae very long, membranous, tubular, with several coils. Corpus bursae large, elliptical-ovoid, signum “notched keel-shaped” (sensu Powell 1973), with rows of variably large teeth, basal plate with deep, V-shaped emargination.

Distribution – Indonesia: Seram Island.

Bionomics – The species was collected with mercury-vapour light-trap. The trap was operated in a clearing of a probably secondary forest area (HOLLOWAY 1993).

Etymology – The species is dedicated to my friend, MÁRTON SZTOJANOVITS.

***Ethmia bisignata* sp. n.**

(Figs 2, 8–9, 18)

Holotype – Male Indonesia” S. W. Celebes, Pangean, near Maros, 2000 ft. March, 1938, J. P. A. Kalis. B. M. 1938–397”, BM Slide No. 29732. The holotype is deposited in the BMNH, London.

Paratypes – Indonesia, 47 specimens with the same data as the holotype, BM Slide Nos 29727, 29728; 1 female: Sulawesi utara, Dumoga-Bone N. P., Hog’s Back’ Camp, 492 m, X. 1985, R. Ent. Soc. Lond., Project Wallace, B. M. 1935–10, BM Slide No. 29736; 1 female, Sulawesi utara, Dumoga-Bone N. P., Hog’s Back’ Camp, 492 m, Site 9., Tumpah Transect, II. 1985, leg. J. D. Holloway, R. Ent. Soc. Lond., Project Wallace, BM Slide No. 29737. The paratypes are deposited in the BMNH, London and in the HNHN, Budapest.

Diagnosis – *Ethmia bisignata* sp. n. is the largest species of of the lapidella species-group. It has only two black spots on the thorax (Fig. 18), and the genitalia of both sexes (Figs 8–9) are strongly different from those of the other members of the group.

Description – (Figs 2, 18): Wingspan 25–27 mm. Antenna filiform; scape with grey scales, flagellum with grey and brown scales; maxillary palp, labial palp and base of proboscis grey. Frons and vertex grey. Thorax grey, with two black spots; tegulae grey, with black scales terminally. Forewing overlaid with black spots having pale whitish annuli on grey background; wing pattern consisting of seven black spots, four spots in apical area, one of them indistinct, one larger spot at middle of wing, another below it, one further black spot at base with black scales around. Hindwing bright whitish grey, basal part yellowish; without costal brushes; cilia bright grey. Legs bright yellow, abdomen yellowish.

Male genitalia (Fig. 8): Uncus reduced to two long, sclerotised densely setose lobes. Gnathos weak, reduced, labis long and narrow, finger-shaped. Valva long, narrow, covered with long bristles at tip; sacculus well developed wide, with bristles. Aedeagus dorsally convex, carina with sclerotised plate. Vesica with four cornuti, three of them strong, long, fourth one flattened, arrow-shaped.

Female genitalia (Fig. 9): Ovipositor conical, sclerotized. Papillae anales elongate, covered with scarce, fine setae, apices rounded. Apophyses posteriores long, slender, apophyses anteriores small, finger-shaped. Antrum heavily sclerotized, flattened, wide in the middle. Ductus bursae long, membranous, tubular, with coils. Corpus bursae large, elliptical-ovoid, with a pair of rounded dentate signa.

Distribution – Indonesia: Sulawesi (Celebes).

Bionomics – The species was collected with light trap in the transition type of a primary lower mountain forest sensu O’DONOVAN (1990).

Etymology – Named after paired signa of the corpus bursae.

***Ethmia didyma* sp. n.**

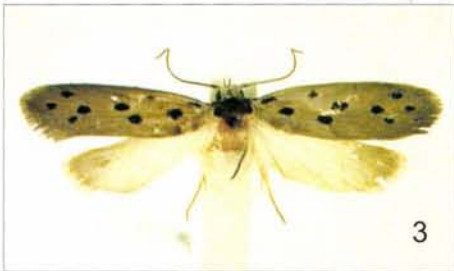
(Figs 3, 10, 19)

Holotype – Male, “Nepal, 150–300 m, Terai, Chitwan, sal & riverine for. 12–13 III. 1983, M. G. Allen 1983–114”; BM Slide No. 29730. The holotype is deposited in the BMNH, London.

Paratype – 1 male with the same data as the holotype, BM Slide No. 29729. The paratype is deposited in the HNHM, Budapest.

Diagnosis – *Ethmia didyma* sp. n. is the smallest species of the *lapidella* species-group, and is closely related to *E. lapidella* and *E. reposita*. The marginal dots of forewing are absent (Fig. 3) and the hindwings are bright grey.

Description – (Fig. 3, 19): Wingspan 18–19 mm. Antenna filiform; scape with bright grey scales, flagellum with grey scales; maxillary palp, labial palp and base of proboscis grey. Frons and vertex grey. Thorax grey, with four black spots; tegulae grey, with black scales terminally. Forewing overlaid with black spots on a grey background; wing pattern consisting of nine black spots, four spots in apical area, further four spots at first third part of wing, another one larger spot at basal part;



Figs 1–6. *Ethmia* adults: 1 = *E. stojanovitsi* sp. n., paratype, 2 = *E. bisignata* sp. n., holotype, 3 = *E. didyma* sp. n., holotype, 4 = *E. lapidella* (WALSINGHAM, 1880), 5 = *E. octanoma* MEYRICK, 1914, 6 = *E. heptasema* (TURNER, 1898)

base of wing with a group of black scales. Hindwing bright grey, basal part whitish; with a few yellow costal brushes; cilia bright. Legs bright yellow, abdomen yellowish.

Male genitalia (Fig. 10): Uncus reduced to two tongue-shaped, densely setose lobes. Gnathos weak, posterior and anterior parts undeveloped. Labis membranous, narrow, long, valva simple, with rounded apex covered with long bristles. Costal area short, costal margin strongly angled at middle; sacculus with small, sclerotized ventral processus. Aedeagus dorsally convex, with short, robust, ventral plate. Vesica with robust, arrow-shaped cornuti.

Distribution – The southern lowland of Nepal (Chitwan).

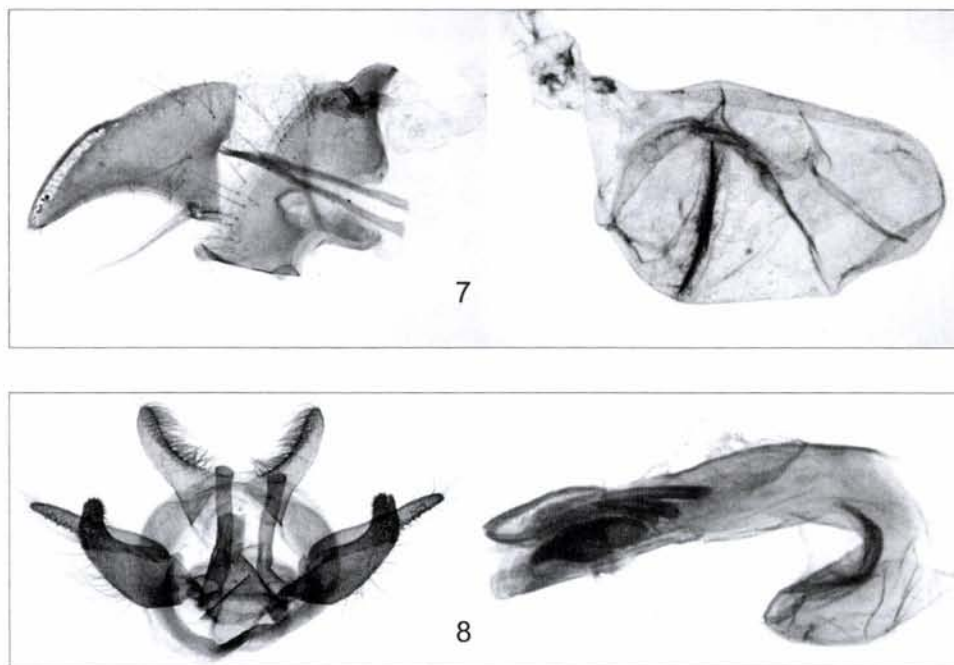
Bionomics – Unknown.

Etymology – The specific name refers to the two type specimens and the two tongue-shaped lobes of the genitalia.

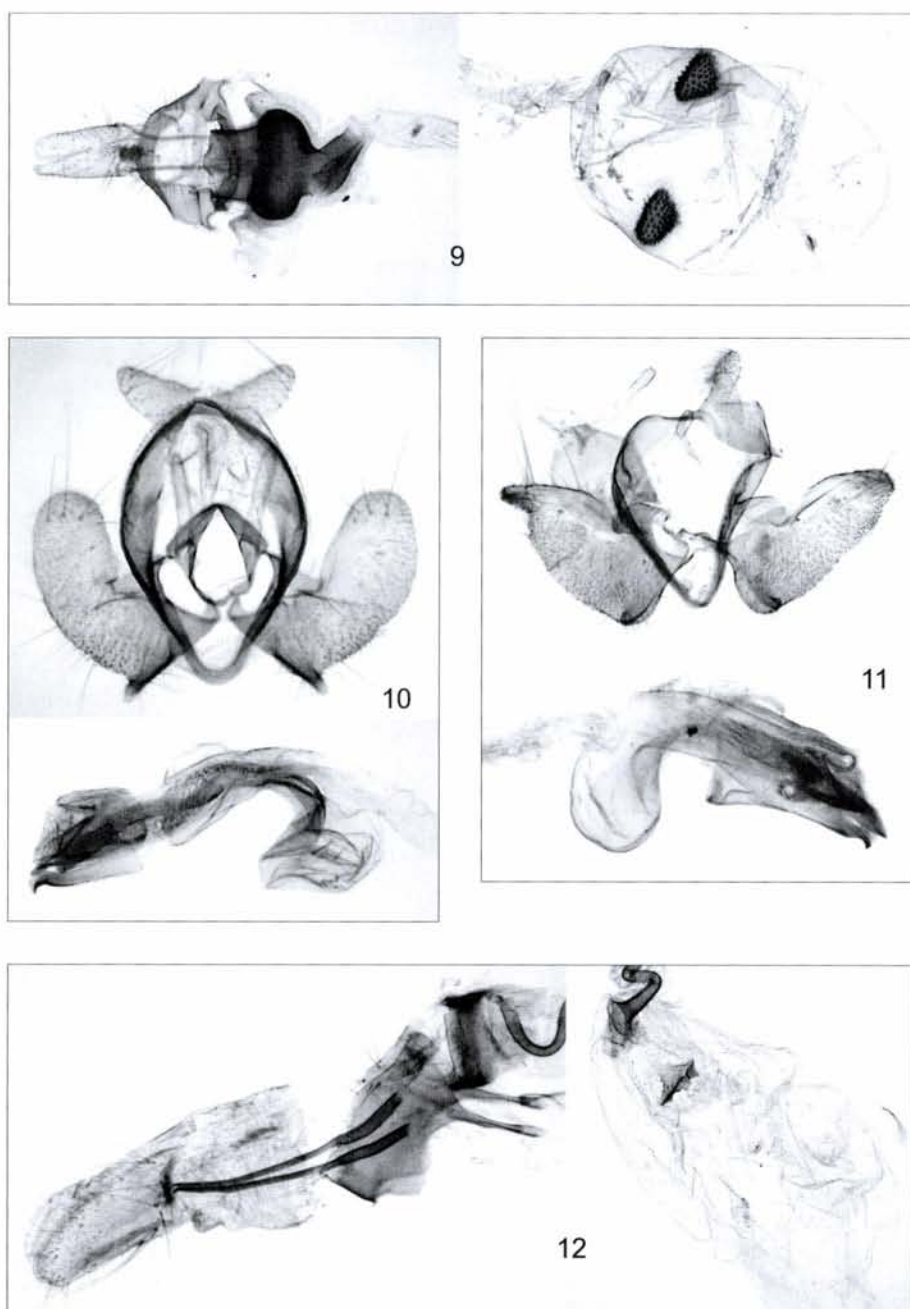
Ethmia lapidella (WALSINGHAM, 1880)
(Figs 4, 11–12, 20)

Hyponomeuta lapidellus WALSINGHAM, 1880: 86, Plate 12, Fig. 1.

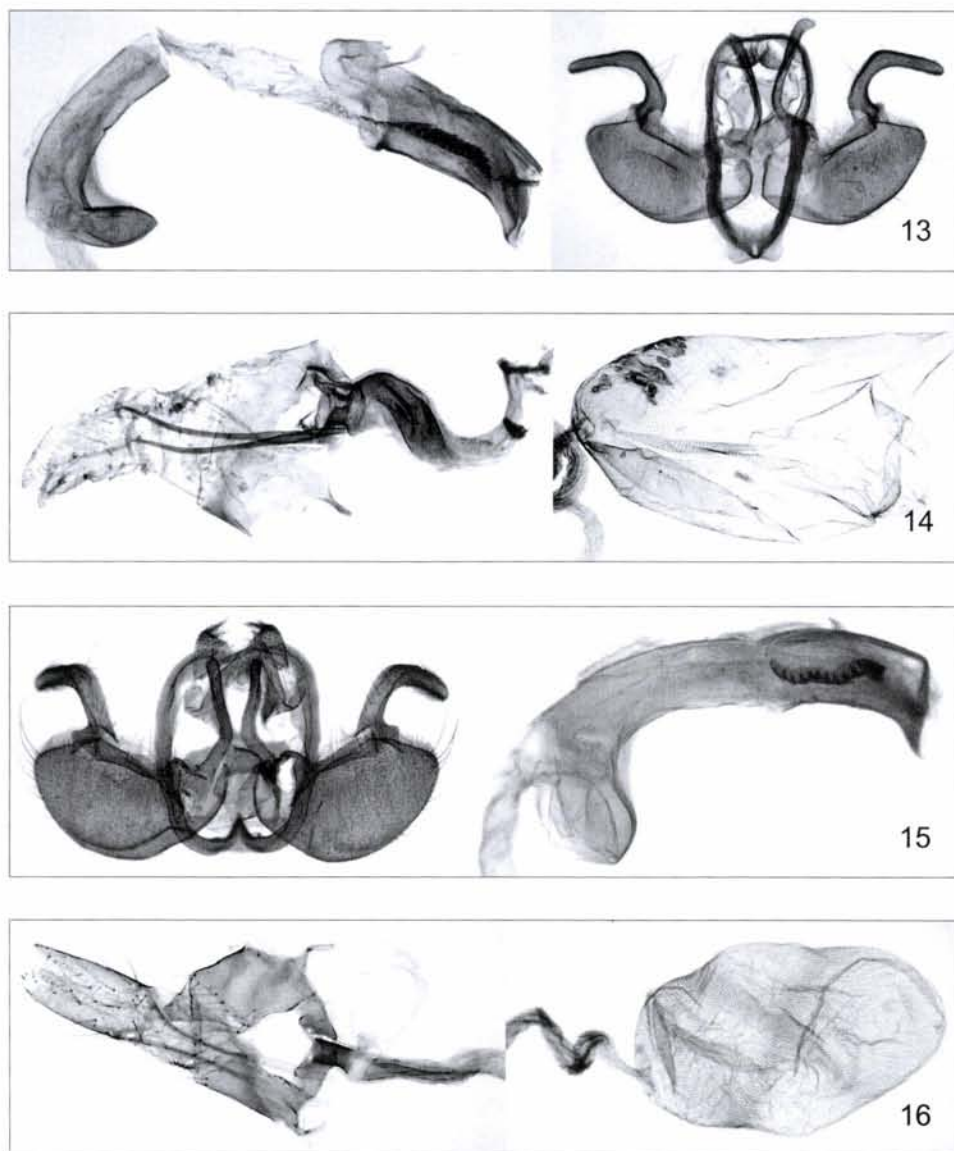
Psecadia decempunctella MATSUMURA, 1931: 1085; with Fig.



Figs 7–8. Genitalia: 7 = *Ethmia stojanovitsi* sp. n., female, holotype, “Slide No. BMNH Microlep. 29735”; 8 = *E. bisignata* sp. n., male, holotype, “Slide No. BMNH Microlep. 29732”



Figs 9–12. Genitalia: 9 = *Ethmia bisignata* sp. n., female, paratype, "Slide No. BMNH Microlep. 29736"; 10 = *E. didyma* sp. n., male, holotype, "Slide No. BMNH Microlep. 29730"; 11–12 = *E. lapidella* (WALSINGHAM, 1880): 11 = male, Slide No. KUN 68; 12 = female, Slide No. KUN 280



Figs 13–16. Genitalia: 13–14 = *Ethmia octanoma* MEYRICK: male, Slide No. 64 Kun; 14 = female, Slide No. Kun 282; 15–16 = *Ethmia heptasema* (TURNER, 1898): male, “Slide No. BMNH Microlep. 7466”; 16 = female, “Slide No. BMNH Microlep. 7459”

Material examined – China: 3 specimens, Hainan Province, Wushishan, 230 m, 7.IV.2000, leg. S. H. Yen. Kun Slide No.: 176, 177, 178 (HNHM). Taiwan: 10 specimens, Taiwan, Hengchun, Co. Pingtung, V.27.2000, III.31.2000, II.13.2000, VI.23.2000, VIII.10.2000, Co. Pingtung, XII.31.1999, XI.13.1999, all leg. D. Anstine (TFRI). Vietnam: Prov. Nghe An, Distr. Que Phong, Ban Khom, 280 m, 19°40'5''N, 104°54'1''E, 21–23.I.1999, leg. L. Peregovits, G. and L. Ronkay (HNHM). Pakistan: Margalla Hills, Pir Sohawa, 1000 m, 73°08'E, 33°49'N 21.V.1998, leg. G. Ronkay & Gy. M. László (in coll. TFRI and HNHM). Indonesia, Sulawesi: 2 male, 1 female, Sulawesi Tenggara, N slope Gn Watuwila, 17. X. 1989, leg. R. de Jong & J. Huisman (RMNH); 2 male, Mamasa, Penannang, 1650 m, 9–12. IV. 1991, leg. R. de Jong (RMNH).

Distribution – The species occurs in the southern part of SE Asia. The known data of distribution are (according to KUN & SZABÓKY 2000, LIU 1980, SATTLER 1967) as follows: India: Punjab; Japan: Kyushu; China, including Taiwan. The new, confirmed locality data are from China, Taiwan, Vietnam, Pakistan and Indonesia (Sulawesi).

Ethmia octanoma MEYRICK, 1914
(Figs 5, 13–14, 21)

Ethmia octanoma MEYRICK, 1914: 55.

Material examined – 1 male, Taiwan, County Pingtung, Hengchun, III. 18. 1994, leg. Y. B. Fan (in coll. TFRI).

Distribution – Taiwan.

Bionomics – *E. lapidella* and *E. octanoma* occur sympatrically in subtropical forest habitats, and are on the wing from March to June in the lower southern areas of Taiwan. According to KUN and SZABÓKY (2000) the host plant of the species is *Ehretia resinosa* (Boraginaceae).

Ethmia heptasema (TURNER, 1898)
(Figs 6, 15–16, 22)

Psecadia heptasema TURNER, 1898: 213.

Material examined – Australia, 2 specimens: Toowaong, Queensland, 21. XI. 1896; 24. XII. 1896, Walsingham Collection, BM Slide No. 7466; 7459 (in BMNH).

Distribution – Australia: Queensland. Rainforests of the eastern coast.

Bionomics – The morphology of the egg and the larva, as well as the adult behaviour are described in detail by POWELL (1981, 1985) and COMMON (1990). According to these papers, the host plant of the species is *Ehretia acuminata* (Boraginaceae).

Remarks – The male genitalia are very similar to those of *E. octanoma* MEYRICK. The shape of the valva and the size of the cucullus show differences (see

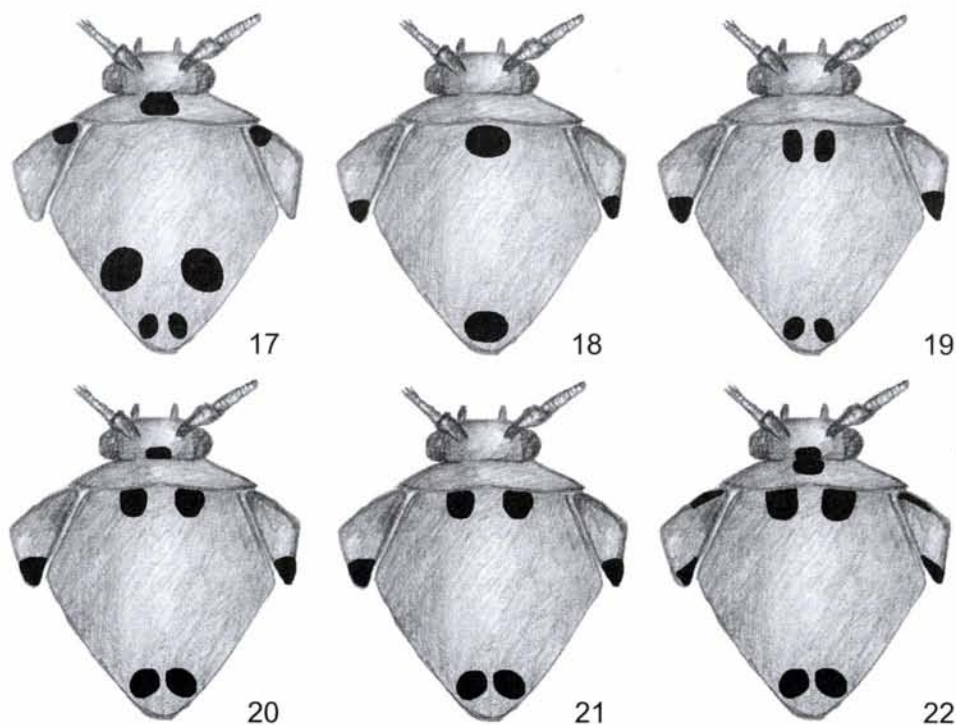
Figs, 13; 15). There are two other species in Australia (*E. virilisca* POWELL, 1985, *E. heliomela* LOWER, 1923), being related to the *lapidella*-group on the basis of genital structures, but wing colour and pattern of these species show great differences and they are easily separable from each other (POWELL 1985).

Ethmia reposita DIAKONOFF, 1967

Ethmia reposita DIAKONOFF, 1967: 257.

Distribution – Philippines: Mindanao, Zamboanga.

Remarks – Only the female holotype is known.



Figs 17–21. Thoracic pattern: 17 = *Ethmia stojanovitsi* sp. n., 18 = *E. bisignata* sp. n., 19 = *E. didyma* sp. n., 20 = *E. lapidella* (WALSINGHAM, 1880), 21 = *E. octanoma* MEYRICK, 1914, 22 = *E. heptasema* (Turner, 1898)

Ethmia nobilis DIAKONOFF, 1967

Ethmia nobilis DIAKONOFF, 1967: 258.

Material examined – Holotype: Luzon, Benquet Subprovince, Klondyke, 800 ft. 22.III.1912 BM slide No. 5555 (BMNH). Paratypes: 2 females, from the same locality 11.V.1912; 16.V.1912, BM Slide No. 5752 (BMNH).

Distribution – Philippines: Luzon, Benquet Subprovince, Klondyke.

Remarks – Only the three female type specimens are known.

*

Acknowledgements – I am grateful to the staff of the Lepidoptera Collection of the HNHN, especially to Dr. LÁSZLÓ RONKAY and Dr. LÁSZLÓ GOZMÁNY; and also to Dr JEREMY D. HOLLOWAY (BMNH London) who have helped during my studies and provided me with valuable advice for the preparation of the manuscript. I am indebted to KEVIN R. TUCK (BMNH), Dr ERIK J. VAN NIEUKERKEN (RMNH) and Dr. JUNG-TAI CHAO (TFRI) for their kind help with the loan of *Ethmia* material from SE Asia.

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