

Tortricidae (Lepidoptera) Collected in Taiwan, with Description of One New Genus and Eight New Species, and a Comparison with Some Regional Faunas

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Józef Razowski (2000) Tortricidae (Lepidoptera) collected in Taiwan, with description of one new genus and eight new species, and a comparison with some regional faunas. *Zoological Studies* 39(4): 319-327. One genus (*Taiwancylis*) and 8 new species (*Cnesteboda davidsoni*, *Diactenis youngi*, *Archips taichunganus*, *Neocalyptis taiwana*, *Diplocalyptis shanpingana*, *Isodemis proxima*, *Hermenias pilushina*, and *Taiwancylis cladodium*) are described. Two tribes of the subfamily Chlidanotinae, Chlidanotini and Polyorthini, and 4 species are newly recorded. Thus the list of Taiwan Tortricidae is enlarged to 235. The Taiwan tortricine fauna is discussed and compared with 3 local Oriental faunas (Sri Lanka, Sumatra, and the Philippines) and 2 Palaeartic faunas (Korea, Japan). However, being Oriental, strong connections between the Taiwan and Palaeartic faunas are noticed.

Key words: Systematics, Faunistics, Lepidoptera, Tortricidae, Taiwan.

In the checklist of the Lepidoptera of Taiwan, Kawabe et al. (1992) listed 223 species of Tortricidae. A further 12 species are added in this paper, and the occurrence of several other species is confirmed. One genus and 8 species are described as new, and 4 species are newly recorded.

All 3 tortricine subfamilies are represented in Taiwan, but there are no representatives of 3 tribes, viz., Ceracini, Cnephasiini, and Zacoriscini. The Chlidanotinae until now was known from a single species of Hilarographini. Now, the 2 remaining tribes, Chlidanotini and Polyorthini, are recorded. The following 3 tribes have not been discovered in the local fauna under discussion. The Cnephasiini is scarcely represented in the Oriental Region as only 2 species occur in Yunnan, China and 1 in Kashmir. Only a single Oriental species of the Sparganothini is known, and the Zacoriscini, distributed in the Australian and Oriental regions, has never been found in Taiwan. The Cochylini is also scarce in this region (cf. Razowski 1984), and only 7 species are known in Taiwan, while in the Palaeartic East Asia ca. 40 species occur. Except for Tortricini and Archipini, the remaining tribes of Tortricinae are scarcely represented in the 2 regions. Ramapesiini is more abun-

dant in the Palaeartic, while Ceracini is so in Oriental Asia. Schoenotenini, Phricanthini, and Zacoriscini (unrecorded in Taiwan) are unknown from the Palaeartic. Of the Chlidanotinae, only the Hilarographini is recorded from Palaeartic East Asia; the 2 remaining tribes are rather tropical in distribution, and have no representatives in the above-mentioned area. All tribes of Olethreutinae are recorded from Taiwan. As everywhere, Endotheniini and Microcorsini are here scarcely represented, and Olethreutini and Eucosmini are most abundant.

The figures given in the descriptions of the labial palpus indicate the proportion of its total length to the diameter of the eye.

MATERIALS

The present paper is based on material supplied by the Department of Invertebrate Zoology, the Carnegie Museum of Natural History, Pittsburgh, PA, USA, in which the types are deposited. The numbers of species cited in table 1 are based on my own data and compilation from the literature (Diakonoff 1967 1982 1983, Kawabe 1982, Razowski 1999).

RESULTS

Zoogeographical approach

The Oriental fauna is still insufficiently studied as can be seen from table 1. For comparison, data from Sri Lanka, the Philippine islands, and Sumatra (after Diakonoff 1967 1982 1983, respectively) are demonstrated. The Indian fauna requires a revision, and that of Nepal gathered by Diakonoff (1976) seems rather different. Unfortunately the tortricine faunas of other territories of Oriental East Asia are insufficiently known, and the data are not yet gathered. For the same reason, a comparison of the discussed fauna with the local faunas of southern continental China is impossible. From the fragmentary data, one might judge that the affinities between it and Taiwan are strong. This and the affinities of Taiwanese fauna with tropical and submeridional faunas may be confirmed by the situation of Taiwan being in the meridional climatic-vegetation zone as proposed by Meusel et al. (cf. Kostrowicki 1969). In comparison with the mentioned local faunas, that of Taiwan is well studied as it consists of 235 species. In Sri Lanka, there are 113 species, and in the Philippines and Sumatra, 79 and 85, respectively. All these figures are low in comparison with the 2 neighboring Palaearctic local faunas, viz., that of Korea with its 358 species and Japan's comprising 602 species (after Razowski 1999, now higher). Thus the estimated number of Taiwan tortricines should be ca. 30% larger than now known. Very high numbers of "endemic species" also speak of insufficient knowledge of the Tortricidae. Some of the so-called "endemic" taxa have recently been discovered in other local faunas. The endemism in Taiwan is certainly high; however, some species may be discovered in continental Asia, or even in the Palaearctic. The number of endemic species is comparable with that in Sumatra, while from the Philippines and Sri Lanka, somewhat lower figures are given. The number (105) of Japanese endemics is high, despite many species having recently been found on the continent, e.g., in Korea and Primorsk. The percentages of endemic species to total numbers in the particular faunas are as follows: in Sumatra 67%, in the Philippines 54%, in Japan 17.6%, and in Korea 2.5%. To demonstrate the biodiversity of the Tortricidae in the chosen 6 local faunas, the numbers of known genera are also given in table 1.

The numbers of species common to Taiwan and mentioned in Oriental local faunas are rather small. In the Philippines and Sri Lanka, they reach 18 and in Sumatra, only 7. Of the Palaearctic faunas in Korea,

there are 18 species in common with Taiwan and in Japan 69. The coefficient relationships (from the Szymkiewicz formula: the number of shared species divided by the number of species in less abundant fauna times 100; cf. Razowski 1999) between Taiwan and the chosen Oriental faunas are low: with Sumatra being only 8, with Sri Lanka 16, and with the Philippines 23. These figures are 11.5 and 14 in the cases of Japan and Korea, respectively. They are different for the Tortricinae and Olethreutinae as seen from table 1. The affinity of the Taiwanese tortricine fauna and the entire Oriental fauna is high, having a coefficient relationship of 59 (139 shared species) which confirms that this fauna is high, having a coefficient relationship of 59 (139 shared species) which confirms that this fauna is typically Oriental.

The coefficient relationship between Taiwan and Palaearctic faunas is 24.5 as they share 58 species, and it is much higher in the case of the Olethreutinae (29.6) than in the Tortricinae (20.0).

The species shared by these 2 faunas should be classified mainly as Palaearctic-Oriental. It would seem risky to make a more accurate subdivision now as the distribution of species, especially in the Oriental region, is insufficiently known. Some of them may be treated as Palaearctic despite their areas extending into southern parts of continental China or into Taiwan. To this group belong the transpalaearctic *Eupoecilia ambiguella* (Hübner, 1796) and *Bactra furfurana* (Haworth, 1811). *Epiblema foenella* (Linnaeus, 1758) is Palaearctic-Oriental while *Grapholita molesta* (Busck, 1916) and *Rhopobota unipunctana* (Haworth, 1811) are probably Holarctic-Oriental. There are also widely distributed species such as *Lobesia aeolopa* Meyrick, 1907 which is Palaearctic-Oriental-Ethiopian or *Bactra venosana* (Zeller, 1847) which represents the Palaearctic-Oriental-Australian group. There is only 1 cosmopolitan species, viz., *Crociosema plebejana* Zeller, 1847. The largest group is East Palaearctic-Oriental to which belong *Acleris enitescens* (Meyrick, 1912), *Choristoneura magnanima* (Diakonoff, 1948), *Ch. issikii* (Yasuda, 1962), *Neocalyptis lirata* (Christoph, 1881), *Celypha orthocosma* (Meyrick, 1931), *Matsumuraeses falcana* (Walsingham, 1900), etc. When discussing the zoogeography of the Korean Tortricidae, I regarded them as particular zoogeographical elements (Razowski 1999). Now some of them may be either retained in their groups, e.g., *Acleris japonica* (Walsingham, 1900), *Spatalistic christophana* (Walsingham, 1900), and *Eucoenogenes japonica* Kawabe, 1978 in the Sino-Pacific group of species, or after discovering them in Taiwan, included in the

East Palaearctic-Oriental group. A discovery of some species in Taiwan is very interesting: for instance *Acleris submaccana* (Filipjev, 1962) which was regarded as Amurian-Altaian or *Acleris lacordairana* (Duponchel, 1936), a Boreo-Alpine species. There are 2 species treated until now as Europeo-Manchurian, disjunctive, viz., *Acleris*

cristana (Denis et Schiffermüller, 1775) and *Gibberifera simplana* (Fischer v. Röslerstamm, 1834) whose distribution extends into the Oriental region.

Several species are certainly typically Oriental (e.g., *Acleris placata* (Meyrick, 1912) *Dactylographa tonica* (Meyrick, 1909), and *Proschistis marmaropa* (Meyrick, 1908)); however, their areas extend some-

Table 1. Comparison of the Taiwan fauna with 3 Oriental and 2 Palaearctic local faunas

Taxon/local fauna	Taiwan		Philippines			Sumatra		Sri Lanka			Korea			Japan				
TORTRICIDAE	105		24.5	47	23	50	8		74	16	107	14	135	11.5				
	237	58	58	79	43	18	85	57	7	113	45	18	358	45	18	602	106	69
Tortricinae	33	10		18	26.6		24	14.6		15	34.7		39	12		46	20	
	89	33	18	30	17	8	41	29	6	23	6	8	158	6	11	193	37	18
Cochylini	5	–		1	–		1	–		2	–		7	–		9	–	
	7	2	2	1	–		2	2	–	4	2	–	39	1	2	193	37	18
Phricanthini	1	–		1	–		1	–		1	–		–	–		–	–	
	1	–	–	2	–	1	1	1	–	1	–	1	–	–	–	–	–	–
Schoenotenini	2	–		2	–		1	–		–	–		–	–		–	–	
	2	–	–	2	2	–	2	1	–	–	–	–	–	–	–	–	–	–
Tortricini	3	–		2	–		1	–		4	–		4	–		5	–	
	30	13	9	2	1	–	1	1	–	5	1	2	44	2	5	69	19	8
Ceracini	2	–		–	–		–	–		–	–		–	–		2	–	
	5	2	–	–	–	–	–	–	–	–	–	–	–	–	–	3	–	–
Cnephasiini	–	–		–	–		–	–		–	–		4	–		4	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	9	3	–	7	2	–
Sparganothini	–	–		–	–		–	–		–	–		1	–		1	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	1	–	–	3	–	–
Euliini	–	–		–	–		–	–		–	–		4	–		5	–	–
	–	–	–	–	–	–	–	–	–	–	–	–	5	–	–	6	3	–
Ramapesiini	5	–		2	–		–	–		–	–		3	–		4	–	–
	9	6	–	2	2	–	–	–	–	–	–	–	4	–	–	7	2	1
Zacoriscini	–	–		1	–		–	–		–	–		–	–		–	–	–
	–	–	–	3	3	–	–	–	–	–	–	–	–	–	–	–	–	–
Archipini	15	–		10	–		20	–		8	–		16	–		16	–	–
	35	10	7	21	12	7	35	24	6	13	3	5	56	–	5	59	8	7
Chlidanotinae	4	–		1	–		1	–		5	–		–	–		3	–	–
	4	2	–	3	2	1	2	1	–	6	3	–	–	–	–	7	4	–
Chlidanotini	1	–		2	–		–	–		2	–		–	–		–	–	–
	1	1	–	2	2	–	–	–	–	2	1	–	–	–	–	–	–	–
Hilarographini	1	–		–	–		–	–		1	–		–	–		3	–	–
	1	1	–	–	–	–	–	–	–	1	1	–	–	–	–	7	4	–
Polyorthini	2	–		1	–		1	–		2	–		–	–		–	–	–
	2	–	–	1	–	1	1	1	–	3	1	–	–	–	–	–	–	–
Olethreutinae	68	29.6		28	19.6		25	2.3		54	12		68	16		86		
	135	24	40	46	24	9	43	27	1	84	36	10	200	3	22	402	65	38
Microcorsini	1	–		1	–		–	–		–	–		1	–		1	–	–
	1	–	–	1	1	–	–	–	–	–	–	–	2	–	–	3	–	–
Bactrini	2	–		2	–		2	–		2	–		1	–		1	–	–
	8	–	3	7	2	2	2	–	1	8	1	3	4	–	2	5	–	3
Olethreutini and Gatesclarkeani	30	–		11	–		12	–		18	–		29	–		41	–	–
Endotheniini	65	14	12	16	5	5	16	11	–	27	7	6	87	2	5	138	22	12
	2	–		–	–		–	–		1	–		1	–		1	–	–
	2	–	2	–	–	–	–	–	–	2	–	–	3	–	2	8	1	2
Eucosmini	20	–		7	–		8	–		17	–		22	–		22	–	–
	39	5	15	12	9	1	22	14	–	26	16	1	58	1	12	153	24	14
Ancylidini	6	–		4	–		–	–		8	–		6	–		7	–	–
	8	1	4	4	3	–	–	–	–	9	5	–	22	–	3	27	6	4
Grapholitini	7	–		3	–		3	–		8	–		8	–		13	–	–
	12	4	4	6	4	1	3	2	–	12	7	7	24	–	3	68	12	3

Note: In the upper row: the upper left number designates the total number of genera, the upper right number – the coefficient relationship in percent, in the case of Taiwan with the Palaearctic region, in the remaining local faunas on their own with Taiwan; in the lower row: the leftmost number – total number of species, the middle number – number of endemic species, the rightmost number – the number of shared species with the Palaearctic region (in the case of Taiwan) or species shared with Taiwan (in the remaining local faunas).

what northwards. The zoogeographical classification of the Oriental tortricine moths known from Taiwan is at present impossible because of the scarcity of materials. At present, studies of local faunas still bring more data on endemics than on shared species, and generally add to information on widely distributed, common taxa.

Remarks on the checklist by Kawabe et al. 1992

In synonymy with *Eupoecilia ambiguella* (Hübner, 1796), *Clysia turbinaris* Meyrick, 1935 is added. This species seems, however, distinct as some differences are found in the aedeagus. The Taiwan specimens require re-examination.

There are some doubts as to the determination of *Choristoneura murinana* (Hübner, 1976-99) as some close species were recently described.

Neocalyptis owadai (Kawabe, 1992), comb.nov. is transferable from *Clepsis* Guenée, 1845. It is close to the type species of *Neocalyptis* Diakonoff, 1949 as shown by its male genitalia (the shapes of the labis, membranous outer area of the valva, the distinct pulvinus, the produced ventral corners of the vinculum, etc.).

N. tricensa (Meyrick, 1912) is to be replaced by its older synonym *N. lirata* (Christoph, 1881).

Epinotia rasdolnyana (Christoph, 1881) is the correct spelling for *E. rasdorniana* [sic!] of the checklist.

LIST OF SPECIES

Subfamily Tortricinae

Cnesteboda davidsoni Razowski, sp. n. (Tortricini)

Adult: Wing span 14 mm (in paratype 13.5 mm). Head, thorax, and labial palpus brown. Forewing broadest before middle, costa convex, termen straight to middle, not oblique. Ground color brownish slightly mixed with ochreous especially on distal part of wing, with darker suffusions and brownish strigulation, the latter mainly on distal area; cilia brownish. Hindwing brownish gray, paler basally; cilia paler than distal part of wing.

Female genitalia (Fig. 10): Signum absent; anteostial sterigma short, its distal parts broad, ductus bursae slender in proximal 1/3, with minute pouch before sterigma, ventrally.

Materials examined: Holotype, ♀: "Taiwan: Kaohsiung: Shanping. 640 m. 11-20 May 1988, J.

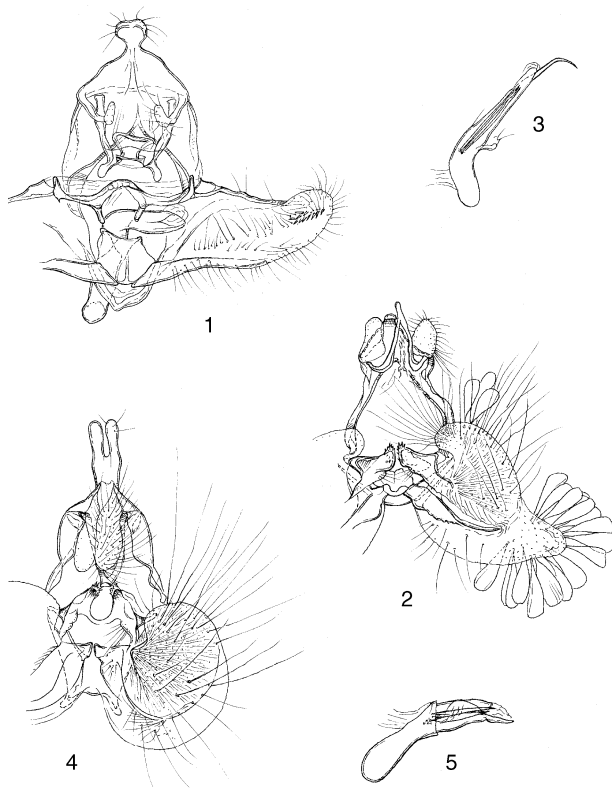
Rawlins, C. Young, R. Davidson"; 12251; paratype, an identically labelled ♀.

Flight period: Mid-May.

Diactenis youngi Razowski, sp. n. (Schoenotenini)

Adult: Wing span 7.5 mm; head grayish cream, labial palpus ca 1.5; thorax slightly darker than head. Forewing weakly expanded terminally, costa slightly curved, termen oblique. Ground color cream suffused with ochreous, dotted with brown between median veins; markings brownish, brown along edges: median fascia in form of small costal and minute median spots, subapical spot vestigial. Fringes concolor with wing. Hindwing white cream with similar cilia. Variation: ground color suffused with brownish, with more or less distinct brown dots and markings.

Male genitalia (Fig. 1) as in *D. tryphera* Common, 1965 from Queensland, Australia but uncus not incised apically and terminal processes of gnathos small (in *tryphera* twice as long as the socius).



Figs. 1-5. Male genitalia: 1, *Diactenis youngi* Razowski, sp. n., holotype; 2, 3, *Neocalyptis taiwana* Razowski, sp. n., holotype; 4, 5, *Diplocalyptis shanpingana* Razowski, sp. n., holotype.

Female genitalia (Fig. 11) as in *D. tryphera* but colliculum more expanded distally, and proximal portion of sterigma hardly concave medially.

Materials examined: Holotype, ♂: "Taiwan: Kaohsiung: Shanping. 640 m. 11-20 May 1988, J. Rawlins, C. Young, R. Davidson"; GS 12253; paratypes: 2 pairs identically labelled.

Flight period: Mid-May.

Remarks: Meyrick described 4 species of this genus from India, Sri Lanka, and Andaman Is. (cf. Clarke 1958) but they differ in the shape of the forewing (the termen in *D. bidentifera* Meyrick, 1928 is strongly oblique, in *D. deformata* Meyrick, 1928 and *D. veligera* Meyrick, 1928 a submedian costal spot is present, and *D. pteroneura* Meyrick, 1907 has a distinct dorso-basal spot and almost straight aedeagus). The new species is named after its collector, Mr. C. Young, Pittsburgh.

***Gnorismoneura exulis* (Issiki et Stringer, 1932)**
(Ramapesiini)

Materials examined: Six specimens from Shanping, Kaohsiung collected in March, April, and May.

Distribution: Known from Taiwan and Japan.

***Geogepa pedaliota* (Meyrick, 1936)**

Materials examined: Single specimen from Shanping, Kaohsiung, in May. One specimen from Rantaizan in the Natural History Museum, London.

Distribution: Endemic in Taiwan.

***Archips paredreus* (Meyrick, 1931)**
(Archipini)

Material examined: One specimen from Shanping, Kaohsiung collected in March.

Distribution: Endemic in Taiwan.

***Archips taiwanensis* Kawabe, 1985**

Materials examined: Two specimens from Shanping, Kaohsiung, in May.

Distribution: Endemic in Taiwan.

Remarks: Until now it was known from the type material only.

***Archips taichunganus* Razowski, sp. n.**

Adult: Wing span 29 mm. Externally very similar to *A. oporanus* (Linnaeus, 1758). Forewing slightly expanded terminally, termen somewhat concave beneath apex, then convex. Ground color creamy fer-

ruginous slightly suffused with rust; strigulation ferruginous, markings slightly darker, strigulated rust-brown. Basal blotch indistinct consisting of strigulae, median fascia interrupted subcostally, weakly developed at dorsum, subapical blotch long, accompanied by small subterminal and terminal markings. Cilia paler than ground color, rust in apical part. Hindwing brownish with apical ½ ochreous marked with rust at apex. Cilia pale brownish creamy, rust in apex area.

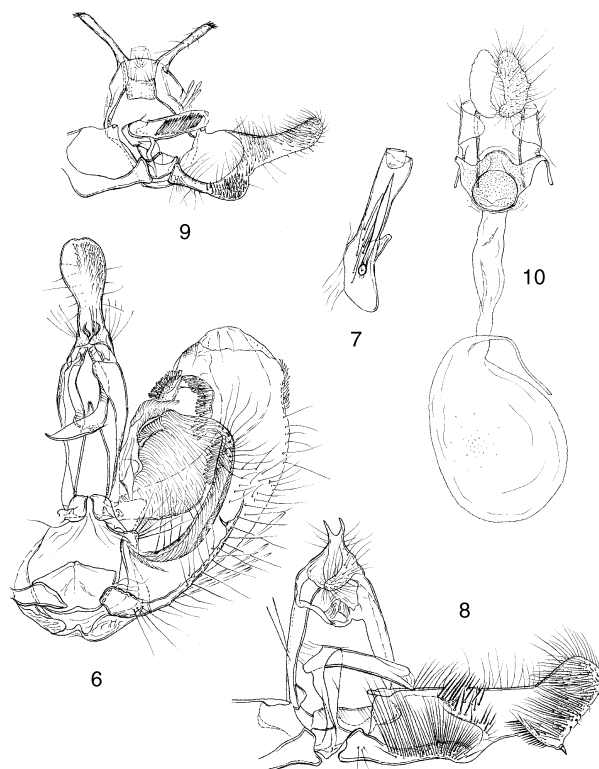
Female genitalia (Fig. 12) as in *A. formosanus* (Kawabe, 1968) but with much longer proximal part of colliculum and without cestum.

Material examined: Holotype, ♀: "Taiwan: Taichung: Pilushi. 2200 m. 22-23 May 1988, R. Davidson, C. Young, J. Rawlins"; GS 12262.

***Choristoneura issikii* (Yasuda, 1962)**

Materials examined: Four specimens from Shanping, Kaohsiung; April, May.

Distribution: Widely distributed. Known from China: Chekiang; Russia: Primorsk; Japan: Honshu, Kyusyu; and Taiwan.



Figs. 6-10. Male genitalia: 6, 7, *Isodemis proxima* Razowski, sp. n., holotype; 8, *Hermenias pilushina* Razowski, sp. n., holotype; 9, *Taiwancylis cladodium* Razowski, sp. n., holotype; 10, *Cnesteboda davidsoni* Razowski, sp. n., holotype.

***Homona coffearia* (Nietner, 1811)**

Materials examined: Four examples: Shanping, Kaohsiung; March and May.

Distribution: Widely distributed in the Oriental Region.

***Tosirips perpulchranus* (Kennel, 1901)**

Material examined: One specimen from Pilushi, Taichung, in May.

Distribution: Nominate subspecies, known from temperate-submeridional zone of East Asia (Primur'e, Primorsk, NE China, Korea) and the Oriental Region: Taiwan.

***Pandemis inouei* Kawabe, 1968**

Material examined: One example from Pilushi, Taichung, in May.

Distribution: Endemic in Taiwan; until now known from the type series only.

***Chiraps alloica* (Diakonoff, 1948)**

Material examined: One specimen from Shanping, Kaohsiung; March.

Distribution: Widely distributed in the Oriental region, from the Himalayas to Indonesia.

***Neocalyptis taiwana* Razowski, sp. n.**

Adult: Wing span 12 mm. Head, thorax, and ground color of forewing brownish yellow, tegula browner. Forewing as in *N. nexilis* Razowski, 1984 from Jiangsu Prov., China but with termen slightly concave near middle and median fascia atrophied. Ground color brownish creamy suffused and delicately strigulated with brownish. Basal blotch ill-defined, preserved in form of a suffusion and some posterior spots; median fascia in form of small costal blotch and an incomplete, diffuse fascia almost reaching dorsum; subapical blotch brownish with some dark brown spots extending towards tornus by means of 2 lines. Cilia concolor with ground color. Hindwing brownish gray, paler basally; cilia similar. It differs from *N. affinisana* (Walker, 1863) of Sri Lanka in having an interrupted subapical blotch.

Male genitalia (Figs. 2, 3) as in the 2 mentioned species but with slenderer uncus, strongly elongate distal part of valva, and very long terminal process of aedeagus.

Material examined: Holotype, ♂: "Taiwan:

Kaohsiung: Shanping. 640 m. 11-20 May 1988 J. Rawlins, C. Young, R. Davidson"; GS 12240.

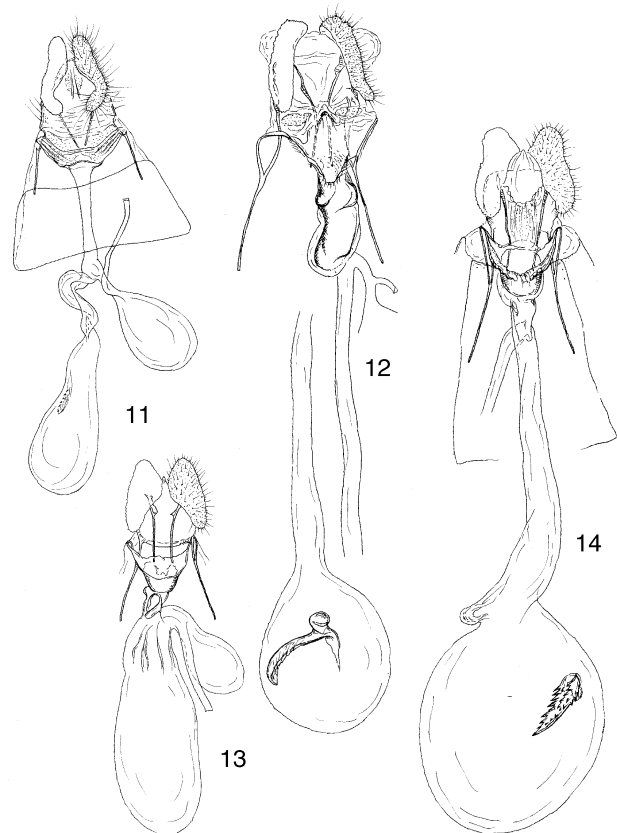
Flight period: Mid-May.

***Diplocalyptis shanpingana* Razowski, sp. n.**

Adult: Wing span 13-14 mm. Head and thorax brownish, shape of forewing similar to that of *D. tenuicula* Razowski, 1984 from Zhejiang, China. Ground color pale ochreous, more creamy in distal 1/3; suffusions brownish ochreous, accompanied by a few browner strigulae. Median fascia slender expanding towards tornus, brown ochreous, with some browner spots; subapical blotch slightly darker. Cilia creamy. Hindwing pale brownish, tinged creamy in apex area; cilia similar. In paratypes, the markings are brown, at dorsum often tinged blackish.

Male genitalia (Figs. 4, 5) as in *tenuicula* but uncus broadening submedially with shorter distal processes, and process of labis much broader.

Female genitalia (Fig. 13) as in *tenuicula* but blade-shaped part of signum much smaller.



Figs. 11-14. Female genitalia: 11, *Diactenis youngi* Razowski, sp. n., holotype; 12, *Archips taichunganus* Razowski, sp. n., holotype; 13, *Diplocalyptis shanpingana* Razowski, sp. n., paratype; 14, *Isodemis proxima* Razowski, sp. n., paratype.

Materials examined: Holotype, ♂: "Taiwan: Kaohsiung: Shanping. 640 m. 11-20 May 1988, J. Rawlins, C. Young, R. Davidson"; GS 12239; paratypes, 4 ♀♀ identically labelled, or, 2, dated 23-31 March.

Flight period: Late March, Mid-May.

***Isodemis proxima* Razowski, sp. n.**

Adult: Wing span 19 mm in male, 20-21 mm in female. Head chestnut-brown, thorax browner medially. Forewing as in *I. serpentiana* (Walker, 1863); basal half chestnut ochreous, dorsum to base and other markings dark rust brown; ground color between subapical blotch and median fascia grayish creamy tinged violet-pink. Hindwing and cilia dark brown; apex of wing orange brown. Female head gray cream, thorax brownish. Forewing ground color yellowish cream suffused brownish between veins extending from base to apex; dark brown, irregular suffusions at dorsum and termen, costal elements of markings small. Hindwing brown-gray with some ochreous creamy spots at apex; cilia paler than wing.

Male genitalia (Figs. 6, 7) as in *I. serpentiana* (Walker, 1863) distributed from India to New Guinea and *I. stenotera* Diakonoff, 1983 (from Sumatra) but with only 1 thick, not undulating cornutus, and slender basal portion of uncus.

Female genitalia (Fig. 14) characterized with broad colliculum and strong, thorny signum.

Materials examined: Holotype, ♂: "Taiwan: Kaohsiung: Shanping. 640 m. 11-20 May 1988, J. Rawlins, C. Young, R. Davidson"; GS 12269; paratypes, 1 identically labelled ♂ and 2 ♀♀ dated 23-31 March and 11-20 April.

Flight period: Late March, Mid-April, Mid-May.

***Isotenes inae* Diakonoff, 1948**

Materials examined: Four specimens from Shanping, Kaohsiung; April and May.

Distribution: Known from India, Nepal, Taiwan, Sumatra, and Java.

***Adoxophyes orana*
(Fischer v. Röslerstamm, 1834)**

Materials examined: Several specimens from Shanping, Kaohsiung; March till May.

Distribution: Palearctic Region, Oriental Region: Taiwan.

***Lopharcha angustior* (Diakonoff, 1941)
(Polyorthini)**

Material examined: One specimen from Shanping, Kaohsiung, May.

Distribution: This species was only known from both sexes from East Java until now.

Remarks: Determined on the basis of the original description and figure by Diakonoff (1974) which is based on a rather deformed preparation, thus the genitalia of the Taiwan specimen are figured (Fig. 15).

***Ebodina elephantodes* (Meyrick, 1938)**

Materials examined: Two specimens from Shanping, Kaohsiung, in March and May.

Distribution: Described from Western Java.

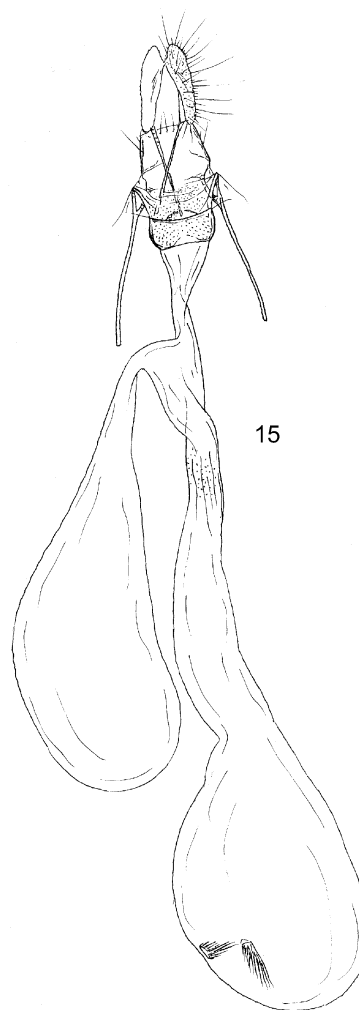


Fig. 15. Female genitalia of *Lopharcha angustior* (Diakonoff), Taiwan.

New to Taiwan.

Olethreutinae

Gatesclarkeana senior Diakonoff, 1973

(Gatesclarkeanini)

Material examined: One specimen from Shanping, Kaohsiung, late March.

Distribution: Known from Indonesia, the Philippines, and Taiwan.

Sorolopha liochlora (Meyrick, 1914)

(Olethreutini)

Material examined: One specimen from Shanping, Kaohsiung, in May.

Distribution: New to Taiwan. Until now known from West Central Sumatra only.

Phaecasiophora cornigera Diakonoff, 1959

Materials examined: Four specimens: Shanping, Kaohsiung; March, May.

Distribution: India, Taiwan.

Hedya iophaea (Meyrick, 1912)

Material examined: One specimen, near Tuona, 15 km SE Shanping, Kaohsiung, Mid-May.

Distribution: Sri Lanka, W. Java, E. Borneo, and Taiwan.

Celypha orthocosma (Meyrick, 1931)

Material examined: One specimen from Shanping, Kaohsiung, 640 m, 11-20 May.

Distribution: Known from China, Korea, Japan, and Taiwan.

Hermenias pilushina Razowski, sp. n.

(Eucosmini)

Adult: Wing span ca. 16 mm. Head white creamy, thorax darker, labial palpus ca. 2. Forewing fairly broad, expanding posteriorly, apex broad, rounded, termen straight, weakly oblique. Ground color creamy, sprinkled and strigulated brownish, costal strigulae brown; apical and subterminal markings indistinct, brownish ochreous, costal remnant of median fascia brown. Cilia (worn) whitish with brownish median line. Hindwing brownish creamy, cilia much paler.

Male genitalia (Fig. 8): Uncus broad basally,

bifurcate; socius large, drooping; valva large, with long basal cavity beyond which some setae are present, neck short, cucullus with ventral spine.

Material examined: Holotype, ♂: "Taiwan: Taichung: Pilushi. 2200 m. 22-23 May 1988, R. Davidson, C. Young, J. Rawlins"; GS 12265.

Flight period: Late May.

Remarks: *H. pilushina* differs from other known species of this genus in the broad forewing and non-sinuate termen. The female remains unknown.

Neohermenias melanocopa (Meyrick, 1912)

Material examined: One specimen from Shanping, Kaohsiung, in May.

Distribution: Described from Khasis, India. New to Taiwan.

Taiwancylis Razowski, gen. n.

Adult: Habitus as in *Eucosma* Hübner or *Ancylis* Hübner. Venation: in forewing veins R4-R5 stalked to middle, this last to termen just beneath apex, M2-M3 very close to one another at median cell; in hindwing M2 approaching M3, well distanced from Cu1A.

Male genitalia: Tegumen short, uncus absent, socii long, sclerotized arms with apical spines. Basal part of valva broad, basal cavity large, cucullus slender. Aedeagus and cornuti as in *Ancylis*.

Remarks: The synapomorphy with *Ancylis* is probably the configuration of the cornuti bunch, and the putative autapomorphies are the shapes of the socius, its sclerotization, and the presence of the apical spines.

Taiwancylis cladodium Razowski, sp. n.

Adult: Wing span 11.5 mm. Head and thorax creamy, labial palpus ca. 2.5, with some browner scales subterminally. Forewing not expanding terminally with costa weakly convex, apex elongate, sharp, not curved, termen incised. Ground color creamy sprinkled brown; costal strigulae and subdorsal marking concolor, apex ochreous, tornal area little differentiated. Cilia whitish. Hindwing slender, pale brownish cream; cilia creamy.

Male genitalia (Fig. 9) as described for the genus. Angular area of sacculus covered with short spines, group of setae beyond basal cavity separate from cucullar group.

Material examined: Holotype, ♂: "Taiwan: Kaohsiung: Shanping. 640 m. 11-20 May 1988, J. Rawlins, C. Young, R. Davidson"; GS 12242.

Flight period: Mid-May.

Distribution: Taiwan.

***Cryptophlebia repletana* (Walker, 1863)**
(Grapholitini)

Material examined: One specimen: Shanping, Kaohsiung, in May.

Distribution: Oriental species known from the Philippines, Sarawak, and Taiwan.

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ABBREVIATION

GS genitalia slide

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臺灣產捲葉蛾科一新屬八新種之描述，兼記昆蟲相之比較

Józef Razowski¹

本文描述一新屬 *Taiwancyllis* 與 *Cnesteboda davidsoni*、*Diactenis youngi*、*Archips taichunganus*、*Neocalyptis taiwana*、*Diplocalyptis shanpingana*、*Isodemis proxima*、*Hermenias pilushina* 與 *Taiwancyllis cladodium* 等八個新種。Chlidanotinae 亞科內兩個族：Chidanotini 與 Polyorthini 和四個種為新記錄，因此，臺灣捲葉蛾科種類現今為 235 種。本文亦將臺灣與遠東區內其他三個地區：斯里蘭卡、蘇門答臘與菲律賓等地的捲葉蛾分布情形予以討論，由於臺灣位處遠東區的邊緣，因此將舊北區的捲葉蛾分布在此也一併加以考慮。

關鍵詞：系統分類，動物區系，鱗翅目，捲葉蛾科，臺灣。

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