Taxonomic review of the tribe Cochylini (Lepidoptera: Tortricidae) in Korea and northeast China, with descriptions of two new species

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(Accepted 20 March 2006)

Abstract
In the present study, we revise the Cochylini fauna of the Korean Peninsula and northeast China. In total, 54 species of 10 genera are recognized including two new species (Aethes bistigmatus sp. nov. and Phalonidia coreana sp. nov.) and three new records (Cochylidia heydeniana (Herrich-Schäffer), Eugnosta ussuriana (Caradja), and Phalonidia fraterna Razowski) for China plus one subspecies (Eugnosta hydrargyrana mongolica Razowski) newly reported from Northeast China. All the available information, including geographical distribution and biology of each taxon, is provided. The keys to the genera of Cochylini of this region are provided.

Keywords: Aethes bistigmatus sp. nov., fauna, newly recorded species, Phalonidia coreana sp. nov

Introduction
The moths of the tortricid tribe Cochylini are small to medium sized, ranging throughout the world. More than 900 species have been described (Brown 2005). The tribe can be distinguished by the oblique termen and forewing vein Cu₂ arising from two-thirds of the cell. The wing pattern of the tribe is distinct from other tribes of Tortricinae. The genitalic structure indicates that the tribe has evolved in a way different from neighboring groups (Kuznetsov and Stekolnikov 1973). Especially the transtilla of the male genitalia is characteristically modified, instead of lacking gnathos, and aedeagus is very large with numerous cornuti in vesica. In most species, the uncus is reduced or absent. In female genitalia, ductus bursae is very short and corpus bursae has numerous spinules or sclerites, while the distinct signum is absent (Razowski 1970; Kawabe 1982; Park 1983a; Liu and Li 2002). Larvae of the Cochylini are mostly monophagous or oligophagous, internal feeders of seeds, stems, and roots, and occasionally flowers. Among the species, Falseuncaria kassebi Razowski has been reported as a notorious pest of Sesamum orientale Linn. in Northwest China (Liu and Li 2002); Eupoecilia ambiguella (Hübner) was also reported as
an agricultural pest, attacking the grape vine (*Vitis vinifera* L.) by spinning the inflorescence and boring into the fruit (Swatschek 1958). Currently some species, e.g. *Aethes cnicana* (Westwood), became the potential agent of biological control for weeds (Choo et al. 1992).

The taxonomic status of Cochylini has been switched amongst different ranks, e.g. family (Morris 1868), supertribe (Gueneé 1845), or tribe (Kuznetsov and Stekolnikov 1973). During the last two decades, several different classifications have been proposed by different authors, e.g. Kuznetsov and Stekolnikov (1973, 1977, 1984), Razowski (1976), and Horak (1984). Razowski (1976) reviewed the higher phylogeny and systematics of Tortricidae based on musculature of the male genitalia. He suggested three tribes, namely Archipini, Cochylini, and Tortricini in Tortricinae, while Kuznetsov and Stekolnikov (1977, 1984) suggested only two supertribes, Tortriciditae including Archipini, Cnephasiini, and Tortricini, and Cochyliditae including Cochylini and Sparganothini. Afterwards, Horak (1984) reviewed all the morphological structures which were considered taxonomically important and suggested following Razowski's system which is generally accepted by current tortricid researchers. In the present study, we follow Horak's (1984) suggestion.

Even though the tribe Cochylini has been treated as a family separate from Tortricidae within the superfamily Tortricoidea by Park (1983a, 1983b) and Liu (1983), it is now generally ranked as tribe category (Byun et al. 1998; Liu and Li 2002). Despite its peculiar wing patterns and morphological characters, there is no doubt that this tribe should be included in Tortricinae, because its characters of function of the aedeagus and valvular muscles, together with other characters of imaginal and preimaginal stages, indicate indisputable affinity with the Tortricinae (Kuznetsov and Stekolnikov 1984).

In Korea, only two species, *Phtheochroa coreana* (Walsingham) and *Cochylimorpha jaculana* (Snellen), had been reported by Walsingham (1900a) and Razowski (1970), until Park (1976) reported 10 additional species. Later he dealt with 12 species belonging to six genera in his review of “Microlepidoptera of Korea” (Park 1983a, 1983b). Recently several reports have been published by different authors (Jaros et al. 1992; Byun et al. 1993; Byun and Park 1995). In China, Liu (1983) listed 14 species of the tribe. Of them, nine species were recorded to be distributed in Northeast China. After him, some reports were published from China (Liu and Ge 1991; Ge 1992; Liu and Li 2002). Despite its economic importance, the group has been insufficiently investigated in northeast China, even though some species were included in the revisions or articles for this tribe (Liu 1983; Liu and Ge 1991; Liu and Li 2002). In this study, we revise this group in northeast China (the provinces Heilongjiang, Jirin, Liaoning, and the northeastern part of Neimenggu) and the Korean Peninsula, which are biogeographically related.

Having examined most of the collections in Korea and northeast China, 54 species of Cochylini are recognized. Two new species are described. The geographical distribution, material examined, and biological information of each species are provided. Keys to the genera are also provided and the characters, which are used to support the new taxa, are discussed.

**Material and methods**

Material examined for the present study are deposited in the following institutions: Korea National Arboretum (KNA), Centre for Insect Systematics (CIS), National Institute of Agricultural Sciences and Technology (NIAST) in Korea, and Northeast Forestry University (NEFU) in China. Literature records of the north Korean fauna were cited.
from Byun et al. (1998). Morphological terms mostly follow Razowski (1970) and Liu and Li (2002). Protocol of dissection of genitalia follows Holloway et al. (1987).

The following abbreviations are used for Korean locality names: S, Seoul; GG, Gyeonggi-do; GW, Gangweon-do; CB, Chungcheongbuk-do; CN, Chungcheongnam-do; JB, Jeonlabuk-do; JN, Jeonlanam-do; GB, Gyeongsangbuk-do; GN, Gyeongsangnam-do; JJ, Is. Jeju. The following abbreviations are used for Chinese provinces: HL, Heilongjiang; JR, Jirin; NM, Neimenggu (=Inner Mongolia).

Results

Tribe COCHYLINI Guenée, 1845

=Cochylidii Guenée 1845, p 297.
=Cochylidae Morris 1868, p 209.
=Phaloniidae Meyrick 1895, p 543.
=Cochylini Kuznetsov and Stekolnikov 1973, p 21.

Key to the adults of the genera of the tribe Cochylini

1. Apex of forewing rounded, medial fascia not oblique inwardly *Phtheochroa* Stephens
   – Apex of forewing narrowed, medial fascia oblique inwardly .................. 2

2. Basal fascia in forewing broad, well developed .................. *Phalonidia* Le Marchand
   – Basal fascia in forewing weak or absent ........................................ 3

3. Subterminal fascia distinct along termen .................. 4
   – Subterminal fascia very weak or absent ........................................ 5

4. Median fascia of forewing expanded, vein R₅ running to costa or apex ...........
   – Median fascia of forewing subtriangular, vein R₅ running to termen ........... *Cochylis* Treitschke
   – Median fascia curved inwardly near middle, several pretornal markings present . 6
   – Median fascia nearly straight towards middle of dorsum ..................... 7

5. Distance between R₁–R₂ in forewing shorter than R₂–R₃ .................. *Aethes* Billberg
   – Distance between R₁–R₂ in forewing similar or slightly longer than R₂–R₃ .... *Gymnidomorpha* Turner

6. Vein R₃ in forewing running to costa .................. *Cochylidia* Obraztsov
   – Vein R₃ in forewing ended at termen ............................................ 8

7. Vein M₃ and vein Cu₁ of hindwing separate .................. *Cochylimorpha* Razowski
   – Vein M₃ and vein Cu₁ of hindwing stalked ...................................... *Eugnosta* Hübner

Key to the genera of Cochylini based on male genitalia

1. Uncus reduced or absent; aedeagus usually with numerous cornuti, sometimes 
   with one or two longer cornuti .................................................. 2
   – Uncus present, longer than socii; aedeagus with several cornuti *Phtheochroa* Stephens
2. Sacculus and valva not fused ................3
   – Sacculus and valval bases fused ..............4
3. Valva broad, elongated, complicatedly concaved outwardly; apex of aedeagus
   shortly protruded, curved inwardly ..........6  Cochylis Treitschke
   – Valva narrow, short, well sclerotized; apex of aedeagus slender Cochylidia Obraztsov
4. Socii broad, mostly triangular; ventral and costal margins of valva nearly
   parallel ........................................ Eupoecilia Stephens
   – Socii narrow, slender, hook-shaped; ventral and costal margins of valva not parallel 5
5. Medial process of transtilla broad, short, not bifurcate apically ........6
   – Medial process of transtilla thin, long, bifurcate apically .........................7
6. Valva orbicular; sacculus weakly developed; socii erect ......................8
   – Valva broad basally, narrowed towards apex; sacculus well sclerotized; socii droop-
   like ............................................ Cochylimorpha Razowski
7. Tegumen narrow, sacculus weakly sclerotized .......... Gynnidomorpha Turner
   – Tegumen broad, sacculus well sclerotized .... Phalonidia Le Marchand
8. Socii narrow curved .................................. Aethes Billberg
   – Socii thick, erect .................................. Eugnosta Hübner

Key to the genera of Cochylini based on female genitalia

1. Antrum membranous, ostium bursae modified ............. 2
   – Antrum well sclerotized, ostium bursae simple ........ 5
2. Appendix bursae of corpus bursae usually present; corpus bursae with
   ornamentation, often indistinguishable from ductus bursae .......... 3
   – Appendix bursae of corpus bursae not present, corpus bursae simple, distinguish-
   able from ductus bursae ..................................... 4
3. Ductus bursae always wrinkled and complicately sclerotized near ostium bursae;
   ostium bursae relatively narrow with a broad and complicated antrum ..... Cochylidia Obraztsov
   – Ductus bursae usually simple, sometimes wrinkled; ostium bursae very large with
   simple antrum ........................................... Cochylis Treitschke
4. Ductus bursae strongly twisted before corpus bursae .......... Phtheochroa Stephens
   – Ductus bursae not twisted before corpus bursae .................. 6
5. Corpus bursae semiovate, with numerous tiny spinules; ductus bursae
   long ............................................... Gynnidomorpha Turner
   – Corpus bursae long, sack-like, without spinules, indistinguishable from ductus
   bursae ................................................ Phalonidia Le Marchand
6. Corpus bursae with a large sclerite signum .................. 7
   – Corpus bursae without a sclerite .................................. 8
7. Corpus bursae wrinkled near ductus bursae, ductus bursae broad, very short;
   accessory bursae usually arising from base of corpus bursae .......... Aethes Billberg
– Corpus bursae simple near ductus bursae, ductus bursae fairly long; accessory bursae usually arising from corpus bursae. . . . . Cochylimorpha Razowski

8. Ductus bursae usually with numerous spines . . . . . . Eupoecilia Stephens
– Ductus bursae usually without spines . . . . . . . . . . Eugnosta Hübner

*Aethes bistigmatus* sp. nov.

(Figures 1–3)

*Type*

Holotype: male, Mt Jeombong, GW, Korea, 10 August 1992, B. K. Byun, Genitalia slide no. KNA-3350, in KNA. Paratype: male, Mt Changbai, Jirin, China (K. T. Park), in KNA.

*Diagnosis*

The new species is characterized by having two distinct spots at middle and subapical portions of forewing costa. The related species *A. cnicana* (Westwood) and *A. amurensis* Razowski have longer and distinct medial fascia reaching to the middle of costa.

*Description*

**Adult (Figure 1).** Wingspan 14.5 mm in male. Forewing ground colour pale grey or silver-white; basal fascia indistinct, shortly elongated on costa, dark brown; median fascia developed on middle of costa, forming a small rectangular spot, then very weak towards dorsum, nearly indistinct, not arcuated; pre-apical streak similar to median fascia in shape and coloration; apex more or less rounded; termen very weakly oblique. Hindwing greyish brown, rather pale grey at basal area, showing a net-like pattern in the remaining area.

**Male genitalia (Figures 2, 3).** Tegumen broad dorsally. Uncus atrophied. Socii not prominent, very slender, elongated. Transtilla with short and sub-triangular median process, shortly bifurcate terminally. Juxta rather small, narrow, nearly half-moon shaped, with rounded top. Valva short, rather broad at base, rounded near apex; sacculus narrowed, well sclerotized basally, reaching to middle of ventral margin of valva. Aedeagus stout, shortly pointed terminally, with numerous cornuti in vesica.
Female genitalia. Unknown.

Distribution
Korea (GW), China (Jirin).

Etymology
The specific name refers to the two costal spots.

*Aethes amurensis* Razowski, 1964
*Aethes amurensis* Razowski 1964, p 348. TL: Russia (Amur Region, Blagovestensk).
*Aethes hoenei sensu* Park (nec Razowski) 1976, p 72.

Diagnosis
Wingspan 15–17 mm in both sexes. The species is similar to *A. citreoflava* Kuznetsov in appearance, but it can be distinguished by the rather narrow valva and slender socii of the male genitalia.

Material examined
One male, Mt Chiak, GW, 20 May 1974, K. T. Park; one male, Sogumgang, GW, 24 May 1988, K. T. Park; one female, Chuncheon, GW, 29 May 1984, K. T. Park; two males, two females, same locality, 15 May 1985, K. T. Park, in CIS. One male, Suweon, GG, 15 March 1975; one male, same locality, 4 July 1969, D. S. Lee; one male, same locality, 16 May 1974; one male, same locality, 15 July 1975; one male, three females, Mt Chiak, 30 May 1974; one male, Yeocheon, JN, 10 May 1976, in NIAST. Two males, Zalong, Qiqihaer, HL, 8 August 2002, B. K. Byun, C. D. Li, in NEFU.

Distribution
Korea (South); China: Heilongjiang (Jingpohu, Mt Maoershan, Qiqihaer), Jirin, Beijing (Mt Baihua, Shaanxi); Russia (Amur).

*Aethes citreoflava* Kuznetsov, 1966
*Aethes citreoflava* Kuznetsov 1966, p 203. TL: Russia (Primorsky Krai, Yakovlevka).

Diagnosis
Wingspan 13 mm. The species is similar to *A. amurensis*, but can be distinguished by longer valva of male genitalia.

Material examined
One female, Hwengseong Dam, GW, 16 July 1994, B. K. Byun; one male, Mokseokwon, JJ, 29 May 1992, B. K. Byun, in CIS. One male, Suanbo, CB, 1 July 1990, in NIAST. One female, Mt Maoershan, HL, 20 July 2002, B. K. Byun, C. D. Li; one female, Zalong,
Qiqihaer, HL, 8 August 2002, B. K. Byun, C. D. Li; one male, Laoyeling, HL, early August 1995, S. C. Yan, in NEFU.

Distribution
Korea (South); China: Heilongjiang (Qiqihaer, Laoyeling), Jirin; Japan (Honshu, Hokkaido); Russia (Amur); Mongolia.

*Aethes cnicana* (Westwood, 1854)
*Argyroplepia cnicana* Westwood 1854, p 280. TL: Great Britain (Epping and Yaxley Fen).
*Aethes cnicana* Razowski 1970, p 309.

Diagnosis
Wingspan 15–16 mm. The species resembles *A. rubigana*, but differs by bright ground colour and distinctly dark median fascia in forewing. It also differs from *A. rubigana* by smaller size and comparatively narrow, less oblique, and usually uninterrupted median fascia of forewing.

Material examined
Three males, Mt Dodram, GG, 19 May 1990, K. T. Park, B. K. Byun; one male, Hwengseong Dam, GW, 16 July 1994, B. K. Byun; two males, Chunjcheon, GW, 22 May 1985, K. T. Park; one female, same locality, 16 May 1990, K. T. Park; one male, one female, Mt Samak, GW, 19 July 1989, K. T. Park, B. K. Byun; one male, same locality, 22 May 1990, K. T. Park, B. K. Byun; four males, five females, Sogumgang, GW, 23–24 May 1988, K. T. Park, U. Park; two males, same locality, 6 July 1988, K. T. Park, in CIS. One female, Mt Kumgang, N Korea, 19 September 1980, L. Forro, G. Topal, in HNHM (Hungarian Natural History Museum). One male, Mt Maoershan, HL, 1 July 1998, S. C. Yan; one male, Laoyeling, HL, early August 1995, S. C. Yan; one female, same locality, late June 1995, S. C. Yan, in NEFU.

Distribution
Korea (South, North); China: Heilongjiang (Mt Maoershan, Laoyeling), Jirin (Mt Changbaishan), Shandong (Mt Taishan); Japan (Honshu); Russia (Amur, Siberia); Mongolia; Europe (north, west, central).

Host plants
The larvae feed on *Carduus* sp. and *Cirsium* sp. (Asteraceae) and hibernate inside the roots (Kawabe 1982).

*Aethes mesomelana* (Walker, 1863)
*Sciaphila mesomelana* Walker 1863, p 346. TL: China (Shanghai).
*Conchylis suppastana* Kennel 1901, p 235.
*Conchylis cunabulana* Caradja 1916, p 51.
*Aethes mesomelana*: Razowski 1970, p 304.
Diagnosis

Wingspan 16 mm. The species can be identified by its white ground colour with a brownish black medial fascia.

Material examined

Five males, Mt Maoershan, HL, 23 July 2002, B. K. Byun, C. D. Li; one male, same locality, 20 July 1996, S. C. Yan; one male, same locality, 1 July 1998, S. C. Yan; one female, Laoyeling, HL, 4 July 1996, S. C. Yan; one female, same locality, 4 July 1998, S. C. Yan; three males, three females, same locality, early August 1995, S. C. Yan; one male, Jianlagou, HL, 30 June 1998, S. C. Yan, in NEFU.

Distribution

China: Heilongjiang (Dailing, Mt Maoershan, Laoyeling, Jianlagou), Shanghai, Hubei; Russia (Amur).

*Aethes rectilineanus* (Caradja, 1939)

*Loxopera rectilineanus* Caradja 1939, p 10. TL: China (Shanxi Province, Mien-shan).

*Lozophera bradleyi* Razowski 1962, p 408, Figures 46–49.

*Aethes rectilineanus*: Razowski 1970, p 362.

Diagnosis

Wingspan 16 mm in female. The species is quite different from the congeneric species in having acute apex, and slender and straight median and subapical fascia in forewing.

Material examined

One female, Is. Shinsi, JB, 26 July 1980, K. T. Park, in CIS.

Distribution

Korea (South); China: Shandong, Jiangsu, Hubei; Japan (Hokkaido); Russia (Amur, Siberia); Mongolia.

*Aethes rubigana* (Treitschke, 1830)

*Tortrix rubigana* Treitschke 1830, p 117. TL: Austria.

*Cochylis rubigana obscurana* Chrétien 1893, p CCCXIV.

*Aethes rubigana*: Razowski 1970, p 310.

Diagnosis

Wingspan 15–20 mm. The species is similar to *A. cnicana* (Westwood), but can be distinguished by the rather dark ground colour and yellowish brown median fascia of forewing (Liu and Li 2002).
Distribution

China: Heilongjiang (Dailing), Jirin; Japan (Honshu); Russia (Caucasus); Europe (middle, north, south).

**Aethes triangulana excellentana** (Christoph, 1881)
*Cochylis excellentana* Christoph 1881, p 74. TL: Germany (Frankfurt).
*Aethes triangulana excellentana*: Razowski 1970, p 320.

Diagnosis

Wingspan 17–24 mm. The species is characterized by its median fascia, interrupted by ground colour at one-third near forewing costa, and by its broad subapical fascia.

Material examined

Sixteen males, Alihe, NM, 22 June 1995, S. C. Yan, in NEFU.

Distribution

China: Heilongjiang (Mudanjiang), Neimenggu (Alihe); Japan (Honshu, Shikoku); Russia (Amur).

**Cochylidia contumescens** Meyrick, 1931
*Phalonia contumescens* Meyrick 1931, p 157. TL: Japan (Hokkaido, Sapporo).

Diagnosis

Wingspan 14–15 mm. The species is characterized by having broad valvae and broad socii.

Material examined

One male, Jeongseon, GW, 30 July 1991, B. K. Byun, in CIS. One male, Suweon, GG, 14 June 1974, K. T. Park; one male, same locality, 2 July 1974; one male, same locality, 12 September 1974, K. T. Park; one male, Mt Cheonggye, 19 August 1976, in NIAST.

Distribution

Korea (South); Japan (Honshu, Hokkaido); Russia (central).

**Cochylidia heydeniana** (Herrich-Schäffer, 1851)
(Figure 4)
*Cochylis heydeniana* Herrich-Schäffer 1851, p 187. TL: Germany (Frankfurt).
*Cochylis pudorana* Staudinger 1859, p 229.
*Conchylis erigerana* Walsingham 1891, p 3.
*Phalonia sabulicola* Walsingham 1900b, p 194.
*Phalonia almana* Kennel 1919, p 74, Plate 3, Figure 5.
*Phalonia obraztsovi* Amsel 1951, p 411.
*Cochylidia anseli* Obraztsov 1956, p 19, Figures 9–11.
*Cochylidia heydeniana*: Razowski 1970, p 384.
Diagnosis

Wingspan 10–13 mm. The species is characterized by the relatively broad median fascia and the barred cilia.

Material examined

Five males, five females, central and southern area, S Korea, May to August, in CIS and NIAST. Two females, Mt Maoershan, HL, 1 July 1998, S. C. Yan, in NEFU.

Distribution

Korea (South); China: Heilongjiang (Mt Maoershan); Japan (Honshu, Shikoku, Hokkaido); Russia (Amur); Mongolia; Europe (west).

Host plants

Erigeron sp. and Solidago sp. (Asteraceae) were reported being utilized by this species in Japan (Kawabe 1982).

Remarks

This species is reported from China for the first time.

*Cochylidia moguntiana* (Rösler, 1864)

_Tortrix moguntiana_ Rösler 1864, p 131. TL: Germany.

_Ph-alonia trafvenfelti_ Benander 1949, p 8.

_Cochylis griseolana_ Petersen 1924, p 436.

_Cochylidia moguntiana_: Razowski 1970, p 381.

Diagnosis

Wingspan 9 mm in male. It is characterized by the emarginated ventral portion of valva in male genitalia.

Material examined

One male, Chuncheon, GW, 20 July 1987, K. T. Park, U. Park, in CIS. One male, Zalong, QiQihaer, HL, 8 August 2002, B. K. Byun, C. D. Li, in NEFU.

Distribution

Korea (South); China: Heilongjiang (QiQihaer), Beijing (Temple Wofoshi), Shaanxi, Shandong, Anhui; Afghanistan; Europe (throughout).

*Cochylidia richteriana* (Fischer von Rölerstamm, 1837)

_Cochylis richteriana_ Fischer von Rölerstamm 1837, p 92, Plate 40, Figure 3a, b. TL: Poland (Glogan).

_Cochylis olindiana_ Snellen 1883, p 194.
Cochylis ineptana Kennel 1901, p 233.
Phalonia xanthodryas Caradja & Meyrick 1937, p 155.
Cochylidia richteriana: Razowski 1970, p 382.

Diagnosis
Wingspan 14–15 mm. Wing pattern variable. It can be distinguished from the congeneric species by the distinct and straight median fascia followed by several tiny blackish dots in the subapical region.

Material examined
Two males, Yangyang, GW, 25 July 1987, K. T. Park; one male, Mt Jiri, GN, 17 July 1976, K. T. Park; one male, one female, Sangju, GB, 9 May 1976, K. T. Park, in CIS. Two males, Suweon, GG, 16 May 1974, P. E. S. Walley, in NIAST. Five males, Zalong, Qiqihaer, HL, 8 August 2002, B. K. Byun, C. D. Li, Genitalia slide no. NEFU 602, in NEFU.

Distribution
Korea (South); China: Heilongjiang (Qiqihaer), Liaoning, Anhui (Mt Huangshan); Japan (Honshu, Hokkaido); Russia (Amur, Siberia); Mongolia; Europe (middle).

Host plant
Kawabe (1982) recorded Artemisia sp. (Asteraceae) as the host plant of this species.

Remarks
There is considerable variation in the material from Northeast China, which has a narrower forewing with slender and dark pattern and ground colour, and the shorter costa of valva with a narrowed apex.

Cochylidia subroseana (Haworth, 1811)
Tortrix subroseana Haworth 1811, p 402. TL: Great Britain.
Cochylis phaleratana Herrich-Schäffer 1851, p 189.
Cochylis flammeolana Tengström 1848, p 161.
Cochylidia subroseana derosana Razowski 1960, p 399.
Cochylidia subroseana: Razowski 1970, p 379.

Diagnosis
Wingspan 10–16 mm. The species is characterized by the median fascia, which is more angulate at apex and narrower.

Material examined
Ten males, 10 females, central and southern area, S Korea, May to September, in CIS and NIAST.
Distribution
Korea (South); Japan (Honshu, Kyushu); Russia (Amur); Europe (north, central, west).

Host plant
Solidago sp. (Asteraceae) was recorded as the host plant of this species in Europe (Razowski 1970).

**Cochylidia subroseana rosetincta** Razowski, 1960
*Cochylidia subroseana rosetincta* Razowski 1960, p 399. TL: China (Manchuria, Jirin Province, Hsiaoling).

**Diagnosis**
Wingspan 16 mm. This subspecies can be distinguished from nominotypical *C. subroseana* (H.) by having a pink tinge at apex of forewing.

**Material examined**
Nineteen males, three females, Mt Maoershan, HL, 20–23 July 2002, B. K. Byun, C. D. Li; three females, same locality, 1–2 July 1998, S. C. Yan; one female, Jiagedaqi, HL, 2 August 2002, B. K. Byun, C. D. Li, in NEFU.

**Distribution**
China: Heilongjiang (Mt Maoershan, Dailing, Jiagedaqi), Jirin; Russia (Amur).

**Cochylis hybridella** (Hübner, 1813)
*Timea hybridella* Hübner 1833, Plate 51, Figure 351. TL: Germany (Posnan).
*Cochylis dissolutana* Herrich-Schäffer 1847, Plate 12, Figure 83.
*Cochylis carduana* Zeller 1847, p 741.
*Grapholitha carduana subvittana* Staudinger 1892, p 299.
*Conchylis dubitana* var. clarana Caradja 1916, p 52.
*Cochylis hybridella*: Razowski 1970, p 411.

**Diagnosis**
Wingspan 18 mm. The species can be distinguished from the congeneric species by white thorax and complicate emarginated sacculus in the male genitalia.

**Material examined**
Two males, one female, Mt Paektu, Samjiyon, N Korea, 14 July 1987, in IECA (Czech Academy of Science). Five males, two females, Liangshui, HL, early August 1995, S. C. Yan, in NEFU.
Distribution

Korea (North); China: Heilongjiang (Dailing, Liangshui), Jirin, Shanxi, Shaanxi; Japan (Hokkaido); Russia (Amur); Europe (west).

Cochylis nana (Haworth, 1811)
Tortrix nana Haworth 1811, p 439. TL: Great Britain.
Eupoecilia cruentana Guenée 1846, p 60.
Eupoecilia carneana Guenée 1846, p 60.
Penthiana ochreoalbana Walker 1863, p 375.
Tortrix pallidana Herrich-Schäffer 1851, p 190.
Simaethis albidana Walker 1866, p 1807.
Conchylis altocorsicana Petry 1904, p 248.
Phalonia winniana Kearfott 1905, p 10.
Cochylis nana: Razowski 1970, p 428.

Diagnosis

Wingspan 9–14 mm. The species is characterized by its simple shape of valva, which is elongate terminally.

Distribution

China: Heilongjiang (Wuying); Russia (Amur); Europe (north, west).

Eugnosta dives (Butler, 1878)
Conchylis dives Butler 1878, p 61. TL: Japan.
Safra metaphaeella Walker 1863, p 195.
Eugnosta dives Butler: Razowski 1970, p 259.
Euxanthis dives simplicella Kennel 1913, p 307.

Diagnosis

Wingspan 19–24 mm. The species can be recognized by the four sub-triangular spots arranged from one-third of costa to apex.

Distribution

China: Heilongjiang, Jirin, Liaoning, Shandong, Shaanxi, Jiangsu; Russia (Amur); Japan (Honshu).

Eugnosta fenestrana Razowski, 1964
Eugnosta fenestrana Razowski 1964, p 351. TL: China (Shantung Province, Tai-shan).

Diagnosis

Wingspan 17–24 mm. The species is characterized by the sub-triangular median fascia and broad submarginal fascia, in contrast to pale yellow ground colour of the forewing.
Distribution

China: Jirin, Beijing, Qinghai; Mongolia; Russia (Siberia, Irkutsk).

*Eugnosta hydrargyrana mongolica* Razowski, 1970

(Figure 5)

_Eugnosta hydrargyrana mongolica_ Razowski 1970, p 262. TL: Mongolia (Suchebator Province).

Diagnosis

Wingspan 20–24 mm. The subspecies can be easily recognized by the pale yellow forewing.

Material examined

Five males, five females, Mt Maoershan, HL, 20–23 July 2002, B. K. Byun, C. D. Li; one male, same locality, 13 June 1998, S. C. Yan; one male, one female, same locality, 1 July 1998, S. C. Yan; one male, one female, same locality, 24 August 1974; one male, Harbin, HL, 11 June 1964; one male, same locality, 17 June 1964; one male, same locality, 28 June 1964; two males, one female, Liangshui, HL, early August 1995; S. C. Yan, in NEFU.

Distribution

China: Heilongjiang (Mt Maoershan, Harbin, Liangshui), Beijing, Shaanxi, Shandong (Mt Taishan); Mongolia.

Remarks

This subspecies is newly recorded from NE China.

*Eugnosta ussuriana* (Caradja, 1926)

(Figure 6)

_Phtheochroa ussuriana_ Caradja 1926, p 164. TL: Russia (Amur, Sutschansk).
_Euxanthis cosmolitha_ Meyrick 1931, p 158.
_Eugnosta ussuriana_ Caradja: Razowski 1970, p 255.

Diagnosis

Wingspan 16–19 mm. The species is easily recognized by creamy white ground colour and the slender and medially interrupted median fascia.

Material examined

One female, Heli, HL, 4 July 1995, S. C. Yan; one male, Liangshui, HL, early August 1995, S. C. Yan, in NEFU.

Distribution

China: Heilongjiang (Heli, Liangshui); Russia (Amur); Japan (Hokkaido).
Remarks

The species is reported from China for the first time.

**Eupoecilia ambiguella** (Hübner, 1796)

*Tortrix ambiguella* Hübner 1796, Plate 22, Figure 153. TL: Germany.
*Tinea omphaciella* Faure-Bignet 1801, p 5. (See Brown 2005).
*Tortrix roserana* Frölich 1828, p 52.
* Clysia turbinaris* Meyrick 1928, p 435.
*Eupoecilia ambiguella*: Razowski 1970, p 277.

**Diagnosis**

Wingspan 14–16 mm. This species can be recognized by the pale ochreous forewing and the sub-triangular median fascia at forewing costa.

**Material examined**

Twenty males, 15 females, central and southern area including Is. Jeju, S Korea, mid-May to early September, in CIS and NIAST. Five males, four females, Mt Maoershan, HL, 1 July 1998, S. C. Yan; two males, two females, same locality, 2 July 1998, S. C. Yan; one male, two females, Lianshui, HL, 28 June 1996, S. C. Yan; one male, two females, Laoyeling, HL, early August 1995, S. C. Yan, in NEFU.

**Distribution**

Korea (South, North); China: Heilongjiang (Mt Maoershan, Lianshui, Laoyeling), Anhui (Mt Huangshan), Jiangxi, West Hunan, Sichuan; Taiwan; Japan (Honshu, Shikoku, Kyushu); India (Assam); Myanmar (Pegu); Indonesia (W Sumatra); Mongolia; Russia (Amur); Europe (north, west).

**Host plants**

*Prunus* sp. (Rosaceae), *Ribes* sp. (Saxifragaceae), *Hedera* sp. (Araliaceae), and *Lonicera* sp. (Caprifoliaceae) in Japan (Kawabe 1982). *Acer* spp. (Aceraceae), *Ligustrum lucidum* Ait., and *Syringa persica* L. (Oleaceae) in China (Liu and Li 2002). *Vitis vinifera* L. (Vitaceae) (Swatschek 1958).

**Eupoecilia angustana** (Hübner, 1799)

*Tortrix angustana* Hübner 1799, Plate 12, Figure 74. TL: Germany.
*Phalaena fasciella* Donovan 1808, p 41.
*Cochylis cruentana* Herrich-Schäffer 1851, p 191.
*Eupoecilia angustana*: Razowski 1970, p 275.

**Diagnosis**

Wingspan 15 mm in male. The species resembles *E. citrinana*, but differs in male genitalia, which has narrower tegumen and broader medial process of transtilla.
Material examined
One male, Mt Samak, GW, 24 May 1991, B. K. Byun, in CIS.

Distribution
Korea (South); China: Heilongjiang (Jingpohu), Jirin, Beijin, Shaanxi, Shandong, Anhui (Mt Huangshan); Japan (Hokkaido); Russia (St Petersburg, South Ural); Europe (north, west).

**Eupoecilia citrinana** Razowski, 1960
*Eupoecilia citrinana* Razowski 1960, p 401. TL: China (Jirin Province, Manchuria, Hsiaoling).

**Euxanthis patriciana** Caradja 1916, p 55.

Diagnosis
Wingspan 12–15 mm. The species is similar to the preceding species, but differs in the male genitalia.

Material examined
Ten males, central and southern area, S Korea, mid-August to early October, in CIS and NIAST. Two males, two females, Liangshui, HL, early August 1995, S. C. Yan; one male, Harbin, HL, 22 August 1964; two males, Jiagedaqi, HL, 2 August 2002, B. K. Byun, C. D. Li, in NEFU.

Distribution
Korea (South); China: Heilongjiang (Yichun, Mt Maoershan, Liangshui, Harbin, Jiagedaqi), Beijin, West Hunan; Japan (Honshu, Hokkaido); Russia (Amur, East Siberia).

**Eupoecilia inouei** Kawabe, 1972
*Eupoecilia inouei* Kawabe 1972, p 250, Figures 9, 19, 25. TL: Japan (Honshu, Yamanashi Prefecture, Kagosaka-toge, base of Mt Fuji).

Diagnosis
Wingspan 16 mm. The species is similar to *E. citrinana*, but distinguishable by having nearly rectangular valva (Kawabe 1972).

Material examined
One female, Yangyang, GW, 10 July 1987, K. T. Park, in CIS.

Distribution
Korea (South); China: Hunan, Jiangxi; Japan (Honshu, Hokkaido).
**Eupoecilia kobeana** Razowski, 1968

_Eupoecilia kobeana_ Razowski 1968, p 125, Figures 37–39. TL: Japan (Honshu, Hyogo Prefecture, Kobe).

**Diagnosis**

Wingspan 11 mm in male. The species is characterized by having strongly curved ventral margin of valva and shortly curved socii.

**Material examined**

One male, Mt Daedun, JB, 22–23 May 1992, B. K. Byun; one male, Gwangyang, JN, 8 June 1991, B. K. Byun; three males, two females, Mokseokwon, JJ, 29 May 1992, B. K. Byun; one female, Kwanumsa, JJ, 24 August 1992, B. K. Byun; one female, Jeju city, JJ, 11 May 1985, K. T. Park; one male, same locality, 10 June 1993, B. K. Byun; one male, one female, Hamdok, JJ, 11 August 1993, B. K. Byun, in CIS.

**Distribution**

Korea (South); China: Guangxi, Yunnan; Japan (Honshu, Shikoku, Kyushu).

**Phtheochroa inopiana** (Haworth, 1811)

_Tortrix inopiana_ Haworth 1811, p 469. TL: Great Britain.

_Euchromia centrana_ Herrich-Schäffer 1851, p 205.

_Idiographis excentricana_ Erschoff 1877, p 341.

_Hysterosia inopiana hinnuleana_ Krulikowsky 1908, p 18.

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Figures 4–7. Adult of new record. (4) _Cochylidia heydeniana_ (Herrich-Schäffer). (5) _Eugnosta hydrargyrana mongolica_ Razowski. (6) _Eugnosta ussuriiana_ (Caradja). (7) _Phalonidia fraterna_ Razowski.
**Hysterosia inopiana obscurana** Kennel 1913, p 350.
**Hysterosia inopiana pallidana** Caradja 1916, p 55.
**Hysterosia inopiana**: Razowski 1970, p 106.

**Diagnosis**

Wingspan 22 mm. The species is similar to *P. pistrinana* in appearance, but can easily be distinguished by the rather ochreous pattern of forewing and simple and slender sacculus of the male genitalia.

**Distribution**

China: Heilongjiang (Dailing), Beijing; Mongolia; Russia (Siberia, Ural, Amur); Europe (central, north).

**Phtheochroa pistrinana** (Erschoff, 1877)
*Conchylis pistrinana* Erschoff 1877, p 341. TL: Russia (Siberia, Irkutsk).
**Hysterosia coreana** Walsingham 1900a, p 447.
**Phtheochora albiscutellum** Walsingham 1900a, p 448.
**Propira pistrinana heptopotamica** Obraztsov 1944, p 68.
**Hysterosia pistrinana**: Razowski 1970, p 106.

**Diagnosis**

Wingspan 15–22 mm. The species is similar to the preceding species, but has a broad median fascia and submarginal fascia in the forewing.

**Material examined**

One male, Gwangleung, GG, 17 June 1994, B. K. Byun, in KNA.

**Distribution**

Korea (South, North); China: Beijing, Jiangxi, Tibet; Japan (Honshu); Russia (Siberia, Amur); Mongolia.

**Host plant**

*Lilium auratum* L. (Liliaceae) was reported being utilized by the species in Japan (Kawabe 1982).

**Gynnidomorpha alismana** (Ragonot, 1883)
*Conchylis alismana* Ragonot 1883, p CXVIII. TL: France.
**Phalonidia alismana**: Razowski 1970, p 224.

**Diagnosis**

Wingspan 11–14 mm. The species is very similar to *G. minimana*, but can be distinguished by the less angulate median fascia of the forewing and presence of the subapical spot which is strigulated or fractured in the tornal area.
Material examined

Five males, five females, central and southern area, including Is. Jeju, S Korea, late May to mid-September, in CIS and NIAST.

Distribution

Korea (South); China: Heilongjiang, Jiangxi, Shaanxi, Guangdong, Yunnan; Europe (central, west).

Host plant

*Alisma plantago-aquatica* L. (Alismataceae) was reported as the host plant in Europe (Razowski 1970).

Gynnidomorpha luridana (Gregson, 1870)

*Argyropleia luridana* Gregson 1870, p 80. TL: England (Witherslack, Westmoreland).  
*Phalonidia luridana*: Razowski 1970, p 222.

Diagnosis

Wingspan 12 mm. The ochreous white ground colour and the pale ochreous brown markings are characteristic for the species.

Material examined

One male, Mt Yumyong, GG, 17 June 1990, B. K. Byun; one male, Chuncheon, GW, 5 June 1983, K. T. Park; one male, Mt Wolak, CB, 18 August 1993, K. T. Park, B. K. Byun, in CIS.

Distribution

Korea (South); China: Heilongjiang (Dailing); Russia (Kuril Is.); central Asia; Europe (west).

Remarks

This species can be found singly in mixed grassland, meadows, bamboo forest, coniferous and mixed forests from July to August in the Russian Far East (Kuznetsov 1973).

Gynnidomorpha minimana (Caradja, 1916)

*Conchylis minimana* Caradja 1916, p 52. TL: Russia (E Siberia, Primorsky Krai, Ussuri R., Kazakevich).

*Phalonia walsinghamana* Meyrick 1928, p 489.

*Phalonidia minimana*: Razowski 1970, p 226.

Diagnosis

Wingspan 9–12 mm. The present species is similar to *G. alismana*, but distinguishable by having a more angulate medial fascia and smaller size.
Material examined

Ten males, 10 females, central and southern area including Is. Jeju, S Korea, late May to mid-September, in CIS and NIAST. One male, Laoyeling, HL, early August 1995, S. C. Yan; two females, Mt Maoershan, HL, 21 July 2002, B. K. Byun, C. D. Li; one female, Zalong, Qiqihaer, 8 August 2002, B. K. Byun, C. D. Li, in NEFU.

Distribution

Korea (South); China: Heilongjiang (Laoyeling, Mt Maoershan, Qiqihaer), Jirin (Mt Changbaishan), Hebei, Jiangxi; Japan (Honshu); Russia (St Petersburg, Amur, Siberia); Europe (north, west).

Host plant

*Pedicularis palustris* L. (Scrophulariaceae) in Japan (Kawabe 1982).

**Gynnidomorpha permixtana** (Denis and Schiffermüller, 1775)
*Tortrix permixtana* Denis and Schiffermüller 1775, p 129. TL: Austria (Vienna).
*Cochylis mussehiliana* Treitschke 1835, p 141.
*Cochylis dymotana* Treitschke 1835, p 142.
*Phalonidia permixtana*: Razowski 1970, p 227.

Diagnosis

Wingspan 12 mm. The extent and intensity of the greyish suffusion and strigulation of the forewing varies: in some specimens, it may be very weak, the pale ochreous-white ground colour then being more evident. The blackish grey suffusion at the middle of the outer margin of the median fascia and the grey suffusion in the distal half are characteristic for this species.

Material examined

Five males, five females, central and southern area, S Korea, mid-May to early September, in CIS and NIAST. Two females, Liangshui, HL, 27–28 June 1996, S. C. Yan; one female, same locality, early August 1996, S. C. Yan, in NEFU.

Distribution

Korea (South); China: Heilongjiang (Liangshui), Liaoning, Beijing, Hebei, Shandong, Shaanxi, Shanghai, west Hunan, Sichuan; Japan (northeast); Mongolia; Russia (Siberia); Afghanistan; Europe (north, west).

Host plants

*Alisma* sp. (Alismataceae), *Gentiana* sp. (Gentianaceae), *Euphrasia* sp., and *Pedicularis* sp. (Scrophulariaceae) from Japan (Kawabe 1982) and *Alisma orientale* (Sam.) Juzepcz, *Euphrasia pectinata* M. Tenore., *Pedicularis* L., and *Gentiana lutea* L. from China (Liu and Li 2002).
**Gynnidomorpha rubricana** (Peyerimhoff, 1877)

*Cochylis rubricana* Peyerimhoff 1877, p 101. TL: France.

*Phalonidia rubricana*: Razowski 1970, p 221.

**Diagnosis**

Wingspan 15 mm in female. The species is similar to *G. permixtana* (D. and S.) in appearance, but distinguishable by the rather dark medial fascia of forewing, surrounded by numerous tiny dark blackish brown dots between the outer margin of medial fascia towards termen.

**Material examined**

One female, Gapyong, GG, 21 May 1983, K. T. Park, in CIS.

**Distribution**

Korea (South); China: Jirin (Mt Changbaishan); Europe (south).

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**Gynnidomorpha vectisana** (Humpreys and Westwood, 1845)

*Cochylis vectisana* Humpreys and Westwood 1845, p 176. TL: England.

*Phalonia grisescens* Durrant and Joannis 1922, p 209.

*Cochylis geyeriana* Herrich-Schäffer 1851, p 189.

*Phalonidia vectisana*: Razowski 1970, p 223.

**Diagnosis**

Wingspan 9–12 mm. The wing pattern varies individually, but it can be distinguished by the small size, olive-brown general coloration of the forewing, and the reticulated pattern in the distal area.

**Material examined**

Ten males, 10 females, central and southern area including Is. Jeju, S Korea, mid-May to late August, in CIS and NIAST.

**Distribution**

Korea (South); China: Shanghai, Shaanxi, Hubei, Hunan, Jiangxi, Zhejiang, Sichuan; Japan (Honshu, Shikoku, Kyushu); Russia (Far East); Europe (west).

**Host plants**

*Glycine max* (L.) Merr. (Fabaceae) and *Prunus salicina* Lindl. (Rosaceae) are utilized by this species in Korea (Park 1983b).
Phalonidia coreana sp. nov. (Figures 8–12)

Type

Holotype: male, Mt Juwang-san, GB, Korea, 18 August 1993, K. T. Park, B. K. Byun, Genitalia slide no. KNA-3640, in KNA. Paratype: female, Pyongchang, GW, Korea, 31 July 1991, B. K. Byun, Genitalia slide no. KNA-2721, in KNA.

Diagnosis

The new species can be easily distinguished from the species of Gynnidomorpha by broad basal patch of forewing and long corpus bursae of female genitalia which is indistinguishable from ductus bursae.

Description

Wing venation (Figure 8). Forewing venation with R₁ and R₂ distant at base and parallel; R₃ and R₄ parallel towards costa; R₄ and R₅ closely approximated at base; R₄ towards end at five-sixths of costa and R₅ emerged to costa just before apex; R₅ and M₁ stalked; M₃ closer to Cu₁ than M₂; Cu₂ arising beyond two-thirds of cell. Hindwing venation with Rs and M₁ stalked; M₃ and Cu₁ separated; Cu₂ originated from two-thirds of cell; 1A+2A reaching to basal one-third of dorsum. Different from Gynnidomorpha Turner by the following: vein R₅ in forewing emerged to apex or termen, and R₅ and M₁ not stalked.

Adult (Figure 9). Wingspan 14 mm in male and female. Vertex covered by strongly appressed scales. Labial palpus long; second segment expanded, dilated towards terminal portion; terminal segment very short and thin. Wing pattern with ground colour dark brown; basal patch dark yellow, distinct, well developed, covering nearly two-fifths of forewing; two small dark yellow spots located on middle of tornus; median and sub-terminal fasciae concolorous with ground colour, but with distinct outlines. Hindwing dark grey.

Male genitalia (Figures 10, 11). Tegumen short, rounded at dorsum. Socii short, broad, rounded at apex. Transtilla appressed laterally, a slender and long posterior medial process present with apex bifurcate shortly. Juxta broad, somewhat pentagonal. Valva rather broad
basally, sub-rectangular, extremely narrowed at distal one-third; sacculus well developed, ventral margin with a pointed apex. Aedeagus large, long and thick, attenuate towards posterior end, with long and prominent cornutus.

**Female genitalia (Figure 12).** Papillae analis narrow laterally. Apophysis anterioris weakly thickened, longer than apophyes posterioris. Ostium bursae strongly sclerotized, large, rounded laterally, with a wide opening. Ductus bursae indistinguishable from corpus bursae. Corpus bursae very long, slightly twisted at distal one-third, then curved again at sub-ventral portion; minutely plicated parts well developed at basal one-quarter and three-quarters, respectively. Signum absent.

**Distribution**

Korea (GW, GB).

**Etymology**

The specific name refers to the country name of the holotype locality.

*Phalonidia aliena* Kuznetsov, 1966

*Phalonia aliena* Kuznetsov 1966, p 200, Figures 21a, b, 22. TL: Russia (Primorsky Krai, Vladivostok, Okeanskaya Biological Station).
Diagnosis

Wingspan 11 mm in male, 14 mm in female. This species can be recognized by the blackish brown median fascia and subapical spot.

Material examined

One male, one female, Hongcheon, GW, 14 June 1987, K. T. Park; one female, same locality, 31 August 1992, B. K. Byun; one female, Chuncheon, GW, 3 August 1990, B. K. Byun; one female, same locality, 25 August 1988, K. T. Park; one female, Sogumgang, GW, 9 August 1988, K. T. Park, in CIS.

Distribution

Korea (South); Russia (Vladivostok); Japan (Honshu, Shikoku).

Phalonidia chlorolitha (Meyrick, 1931)

Phalonia chlorolitha Meyrick 1931, p 157. TL: Japan (Hokkaido, Sapporo).

Gynnidomorpha azyga Meyrick 1935, p 47.

Phalonidia chlorolitha: Razowski 1970, p 218.

Diagnosis

Wingspan 16 mm. The species is characterized by its peculiar wing pattern, which has various tiny dots throughout the forewing.

Material examined

One male, Mt Yaksu, GW, 9 August 1989, K. T. Park, in CIS.

Distribution

Korea (South); China: Heilongjiang (Dailing), Jirin, Liaoning, Zhejiang; Japan (Hokkaido); Russia (Amur).

Phalonidia curvistrigana (Stainton, 1859)

Eupoecilia curvistrigana Stainton 1859, p 272. TL: England.

Phalonidia curvistrigana: Razowski 1970, p 204.

Diagnosis

Wingspan 12–14 mm. The species can be distinguished from the congeneric species by the shape of gnathos and sacculus in the male genitalia.

Material examined

One male, Mt Deogyu, JB, 13 August 1975, K. T. Park, in CIS. One male, Suweon, GG, 10 May 1976, in NIAST.
Distribution
Korea (South, North); China: Heilongjiang, Anhui (Mt Huangshan); Japan (Honshu); Russia (Amur); Europe (throughout except southeastern part).

Host plants
Solidago spp. (Asteraceae) and Glycyne max M. (Fabaceae) in Korea (Park 1983b).

Phalonidia dysodona (Caradja, 1916)
Cochylis dysodona Caradja 1916, p 52. TL: Russia (Khabarovsky Krai, Raddé).
Phalonidia dysodona: Razowski 1970, p 228.

Diagnosis
Wingspan 14 mm. The species differs from related species by the broad and rounded sacculus of the male genitalia, which is protruded ventrally, and fairly broad socii.

Distribution
China: Heilongjiang (Dailing); Russia (Amur).

Phalonidia fraterna Razowski, 1970
(Figure 7)
Phalonidia fraterna Razowski 1970, p 216, Plate 11, Figure 126. TL: Russia (Far East, Primorsky Krai, Askold Island).

Diagnosis
Wingspan 10 mm. This species is very similar to P. lydiae, superficially, but it can be distinguished by the slightly curved median fascia of forewing, but nearly straight and distinct without curve in P. lydiae. The aedeagus is rather long and more elongate than in the latter, with a large cornutus, which is longer than half of the aedeagus; it is rather short in P. lydiae.

Material examined
Nine males, 10 females, central and southern area including Is. Jeju; S Korea, late May to late August, in CIS and NIAST. One male, Mt Maoershan, HL, 23 July 2002, B. K. Byun, C. D. Li, in NEFU.

Distribution
Korea (South); China: Heilongjiang (Mt Maoershan); Russia (Siberia, Amur, Vladivostok).

Remarks
The species is reported from China for the first time.
**Phalonidia latifasciana** Razowski, 1970

*Phalonidia latifasciana* Razowski 1970, p 206, Figure 118. TL: Central Asia (Kemerowsk District, Waganowo).

**Diagnosis**

Wingspan 14 mm. The species is readily distinguished from the congeneric species by broad median fascia.

**Material examined**

One female, Hongcheon, GW, 14 August 1987, K. T. Park, in CIS.

**Distribution**

Korea (South); China: Jirin (Mt Changbaishan); Japan (Hokkaido); central Asia.

**Phalonidia lydiae** (Filipjev, 1940)

*Piercea lydiae* Filipjev 1940, p 180. TL: Russia (Voroshilov-Ussurijsk).

*Phalonidia lydiae*: Razowski 1970, p 220.

**Diagnosis**

Wingspan 10 mm. This species is very similar to *G. fraterna* in external morphology, but distinguishable by narrowly angulate median fascia of forewing and the size of aedeagus of the male genitalia.

**Material examined**

One male, Mt Seolak, GW, 9 August 1992, B. K. Byun; one male, Mt Sokri, CN, 19 August 1993, B. K. Byun, in CIS. Two males, Zalong, Qiqihaer, HL, 8 August 2002, B. K. Byun, C. D. Li; six males, Mt Maoershan, HL, 20–23 July 2002, B. K. Byun, C. D. Li; three males, Liangshui, HL, early August 1995, S. C. Yan; two males, Jianlagou, HL, 30 June 1998, S. C. Yan; one male, Laoyeling, HL, 4 July 1998, S. C. Yan, in NEFU.

**Distribution**

Korea (South); China: Heilongjiang (Dailing, Qiqihaer, Mt Maoershan, Liangshui, Jianlagou, Laoyeling), west Hunan; Japan (Honshu); Russia (Amur).

**Phalonidia nicotiana** Liu and Ge, 1991

*Phalonidia nicotiana* Liu and Ge 1991, p 355. TL: China (Heilongjiang, Jingpohu).

**Diagnosis**

Wingspan 14 mm. Liu and Ge (1991) mentioned that the species is closely allied to *G. scabra* Liu and Ge in general appearance, but different from the latter in narrower median fascia, elongated and apically tapered valva, and sacculus ventrally rounded.
Distribution

China: Heilongjiang (Jingpohu). Endemic to China.

**Phalonidia scabra** Liu and Ge, 1991

*Phalonidia scabra* Liu and Ge 1991, p 355, Figures 2, 24. TL: China (Jiangxi, Mt Lu).

Diagnosis

Wingspan 12–15 mm in male, 13–16 mm in female. The species is characteristic by having a very broad medial fascia towards costa of forewing, very small valva, sacculus with a short process, and ring-shaped sclerite along the inner surface of corpus bursae.

Material examined

One male, Hongcheon, GW, 14 August 1987, K. T. Park; one female, Chuncheon, GW, 12 August 1988, K. T. Park, in CIS.

Distribution

Korea (South); China: Jiangxi.

**Phalonidia silvestris** Kuznetsov, 1966

*Phalonidia silvestris* Kuznetsov 1966, p 198. TL: Russia (Amur Region, Klimoutsy, 40 km W Svobodnyy).

Diagnosis

Wingspan 13–15 mm in both sexes. The species can be distinguished from the *G. latifasciana* by broader valva and aedeagus with a sharp apex.

Material examined

One female, Hongcheon, GW, 14 August 1987, K. T. Park, in CIS. One male, Heli, HL, mid-July 1995, S. C. Yan, in NEFU.

Distribution

Korea (South); China: Heilongjiang (Mudanjiang, Heli), Liaoning; Russia (Amur, Vladivostok).

**Phalonidia zygota** (Razowski, 1964)

*Phalonidia zygota* Razowski 1964, p 338. TL: Russia (Khabarovsky Krai, Raddé).

Diagnosis

Wingspan 12–15 mm. This species can be recognized by the rounded apex of forewing and the broad blackish brown submarginal fascia along termen.
Material examined

One male, one female, Yeoju, GG, 20 August 1990, D. S. Park, S. Y. Joo; one male, one female; Chuncheon, GW, 30 August 1990, B. K. Byun; three males, same locality, 21 September 1988, K. T. Park; four males, two females, same locality, 25 July 1988, K. T. Park; three males, same locality, 9 September 1988, K. T. Park; one male, Hwengseong Dam, GW, 22 August 1994, B. K. Byun; one male, Mt Juwang, GB, 18 August 1993, B. K. Byun, in CIS. Two females, Laoyeling, HL, early August 1995, in NEFU.

Distribution

Korea (South); China: Heilongjiang (Laoyeling), Beijing, Shandong, Qinghai; Japan (Honshu, Hokkaido); Russia (Amur); Mongolia.

Cochylimorpha asiana (Kennel, 1899)

Cochylis asiana Kennel 1899, p 18. TL: Central Asia (Namangan).
Euxanthis mirabilana Turati 1934, p 195.
Euxanthis taganrogana Kennel 1900, p 132.
Stenodes asiana: Razowski 1970, p 139.

Diagnosis

Wingspan 17–21 mm. The species is similar to C. cultana, but can be distinguished by narrower dorsum of tegumen and broader cucullus of valva.

Distribution

China: Heilongjiang, Beijing, Hebei, Shaanxi, Shandong, Gansu, Qinghai; Mongolia; Russia (Caucasus); Afghanistan; Iran; Libya.

Cochylimorpha cultana (Lederer, 1855)

Cochylis cultana Lederer 1855, p 118. TL: Russia (Altai).
Cochylis pontana Staudinger 1859, p 228.
Euxanthis bigenerana Kennel 1901, p 241.
Euxanthis bilarana var. albidana Caradja 1916, p 55.
Stenodes cultana: Razowski 1970, p 140.
Euxanthis symmerista Meyrick 1935, p 47.
Cochylis oedemana Constant 1894, p 402.
Euxanthis hilarana albidana Caradja 1916, p 55.
Conchylis assalana Chrétien 1915, p 299.
Cochylis extensana Staudinger 1859, p 229.
Conchylis lambessana Baker 1888, p 254.

Diagnosis

Wingspan 13–17 mm. The species is similar to C. asiana, but differs from the latter by wider tegumen and the valva, which has parallel sides towards apex.
Distribution
China: Jirin (Mt Changbaishan), Shandong, Shanxi, Shaanxi, Qinghai (Xining); Russia (Ural); Europe (south); Algeria; Tunisia.

*Cochylimorpha cuspidata* (Ge, 1992)
*Stenodes cuspidata* Ge 1992, p 306, Figures 7, 19. TL: China (Shanxi Province, Yangling).

Diagnosis
Wingspan 13 mm. The species is very similar to *C. alticolana* Razowski, 1964 and *C. hedemaniana* (Snellen) in male genitalia, but different in the sharp medial process of transtilla, large sacculus, and sharp aedeagus with a dorsal dentation.

Material examined
One female, Mt Palbong, GW, 15 June 1990, B. K. Byun; one male, Chuncheon, GW, 7 July 1987, K. T. Park, U. Park; one female, Temple Wonasa, GW, 24 July 1994, B. K. Byun; one male, Mt Gyeryong, CN, 20 August 1980, K. T. Park, in CIS. Eight males, six females, Mt Maoershan, HL, 20–23 July 2002, B. K. Byun, C. D. Li; one male, same locality, 21 July 1998, S. C. Yan; nine males, six females, same locality, 1–2 July 1998, S. C. Yan, in NEFU.

Distribution
Korea (South); China: Heilongjiang (Mt Maoershan), Beijing (Mt Baihuashan), Shaanxi (Yangling).

*Cochylimorpha emiliana* (Kennel, 1919)
*Euxanthis emiliana* Kennel 1919, p 71, Plate 2, Figure 24. TL: Russia (Siberia, East Tannuola).
*Stenodes emiliana*: Razowski 1970, p 181.

Diagnosis
Wingspan 17–24 mm. The species is characteristic by two subapical fasciae running from near apex to tornus and from three-quarters of costa to the end of cell, respectively.

Distribution
China: Heilongjiang (Tuquan); Mongolia; Russia (Amur).

*Cochylimorpha hedemanniana* (Snellen, 1883)
*Conchylis hedemanniana* Snellen 1883, p 192. TL: Russia (Amur, Blagoveshchenk).
*Euxanthis rectifascia* Filipjev 1924, p 53.
*Stenodes hedemanniana*: Razowski 1970, p 169.

Diagnosis
Wingspan 12–15 mm. The species is very similar to *C. cuspidata* Ge in appearance, but can be distinguished by the male genitalic characters as mentioned above.
Material examined

One male, Mt Myongji, GG, 23 May 1991, B. K. Byun; one male, same locality, 27 June 1992, K. T. Park; one female, same locality, 28 July 1992, K. T. Park; one male, Gapyong, GG, 15 July 1986, K. T. Park, U. Park; one male, Chuncheon, GW, 30 July 1986, K. T. Park; one male, same locality, 29 May 1989, K. T. Park; one female, same locality, 19 June 1990, K. T. Park, B. K. Byun; one female, same locality, 18 July 1989, K. T. Park; one female, same locality, 22 July 1991, K. T. Park; one female, Yangyang, GW, 30 June 1987, K. T. Park; one male, same locality, 25 July 1987, K. T. Park, in CIS.

Distribution

Korea (South); China: Heilongjiang, Beijing, Shandong, Shanxi, Shaanxi, Jiangsu, Anhui, Yunnan; Russia (Siberia, Amur).

*Cochylimorpha jaculanus* (Snellen, 1883)

*Conchylis jaculana* Snellen 1883, p 195. TL: Russia (Siberia, Primorsky Krai, Suifun).

*Stenodes jaculana* Razowski 1970, p 131.

Diagnosis

Wingspan 15 mm. This distinctive species can be distinguished by the rather broad forewing with an oxhorn-shaped median fascia.

Material examined

Two females, Hongcheon, GW, 31 August 1992, B. K. Byun, in CIS. Three males, Zalong, Qiqihaer, HL, 8 August 2002, B. K. Byun, C. D. Li; one male, Arong County, NM, 9 August 2002, B. K. Byun, in NEFU.

Distribution

Korea (South, North); China: Heilongjiang (Qiqihaer), Jirin, Neimenggu (Arong), Shaanxi, Shandong, Anhui, Yunnan; Japan (Honshu, Hokkaido, Shikoku); Mongolia; Russia (Amur).

*Cochylimorpha nankinensis* (Razowski, 1964)

*Stenodes nankinensis* Razowski 1964, p 346. TL: China (Kiangsu Province, Lungtan, near Nanking).

Diagnosis

Wingspan 15 mm. The species is quite similar to *C. triangulifera* Kuznetsov superficially, but it can be distinguished by the narrower medial projection of transtilla.

Material examined

One male, Suweon, GG, 15 July 1975, K. T. Park, in CIS. One male, Pyongchang, GW, 24 June 1988, S. H. Oh; one male, Mt Chiak, GW, 23 June 1977; one male, Mt Deogyu,
Distribution
Korea (South); China: Jiangsu, Zhejiang, Shaanxi.

*Cochylimorpha nipponana* (Razowski, 1977)
*Stenodes nipponana* Razowski 1977, p 35–36. TL: Japan (Sikoku, Kochi Prefecture, Asizuri-Saki).

Diagnosis
Wingspan 16 mm. Wing pattern characterized by having median fascia of forewing running from three-quarters of costa to the middle of dorsum, slender but distinct in coloration.

Distribution
China: Heilongjiang (Dailing), Shaanxi; Japan (Shikoku).

*Cochylimorpha triangulifera* (Kuznetsov, 1966)
*Stenodes triangulifera* Kuznetsov 1966, p 201, Figure 23. TL: Russia (Ussuri).

Diagnosis
Wingspan 15–17 mm in male. Similar to *C. nankinensis* Razowski, but different in the male genitalia.

Material examined
Three males, Mt Myongji, GG, 26 June 1992, K. T. Park; two males, Jeju National University, JJ, 17–18 May 1991, K. T. Park; one male, Mokseokwon, JJ, 29 May 1992, K. T. Park, in CIS. One male, Mt Naejang, JB, 16 June 1982, S. B. Ahn, in NIAST. One male, Mt Myohyang, Hyangsan, N Korea, 15 June 1985, in ICEA.

Distribution
Korea (South, North); Russia (Amur).

Discussion
The venation is rather uniform within the tribe. It is also useful to apply the venation R₅ and M₁ of the forewing to separate specific groups at the generic level. According to the wing pattern, the two new species, *Aethes bistigmatus* and *Phalonidia coreana*, can be easily distinguished from the related species. Especially *Aethes bistigmatus* is very characteristic of extremely short median fascia representing on middle and near apex of costa such as a spot, while the related species, *A. cnicana* (Westwood) and *A. amurensis* Razowski, have the typically long median fascia. And *Phalonidia coreana* has a peculiar wing pattern showing the distinct and broad basal patch on forewing, which is quite different from the related species.
In the present paper, we adopted the newly suggested names of the two genera, i.e. *Phtheochroa* Stephens (*=Hysterosia* Stephens) and *Cochylimorpha* Razowski (*=Stenodes* Guenée). Some nomenclatural histories of them are discussed. Nye and Fletcher (1991) stated “*Hysterosia* Stephens, 1852 is unavailable name according to Code (Edn 3), Article 10” and suggested using *Phtheochroa* Stephens, 1829, which is followed by recent researchers (Razowski 1991; Oku 2003). On the genus *Cochylimorpha* Razowski, 1959, they also mentioned that “A junior homonym of *Stenodes* Dujardin, [1844 November] 1845, in Roret, Suites à Buffon, Hist. nat. Helminthes: 264, – Vermes. There is no objective replacement name but *C. elongana* was placed by Leraut, 1980, Liste syst. syn. Lépid. Fr. Belg. Corse: 100, as the senior synonym of *Cochylis favillana* Staudinger, 1859, the type-species of *Cochylimorpha* Razowski, 1959; the latter is thus available for use as a subjective replacement name” (Nye and Fletcher 1991). Their suggestion is followed by recent researchers (Kuznetsov 2001; Oku 2003). Recently, the species from both *Gynnidomorpha* and *Phalonida* have been combined into *Gynnidomorpha* (Kuznetsov 2001; Oku 2003) due to the confused nomenclatural history. In this study, we follow the newest taxonomic status for the two genera (Brown 2005), which listed the species placing under each genus respectively.

From a biogeographic point of view, 39 of the 41 known northeast Chinese species are Palaearctic elements, while the Korean fauna include an Oriental species, *Phalonidia scabra* Liu and Ge, and three East Palaearctic–Oriental species, *Eupoecilia inouei* Kawabe, *E. kobeana* Razowski, and *Cochylimorpha nankinensis* Razowski. Even though Razowski (2000) indicated that *Eupoecilia ambiguella* (Hübner), which is distributed in southern China, e.g. Jiangxi and Hunan, is a Transpalaearctic species, we considered that it would be better to regard it as a Transpalaearctic–Oriental species, because it was reported to be widely distributed in the Indo-Oriental region, e.g. India, Myanmar, Nepal, Indonesia, and Taiwan (Kawabe and Sakurai 1988; Byun et al. 1998). In the shared species, the two faunas show a high affinity, representing the percentages to the total number of each fauna as 66% for the Korean Peninsula and 61% for Northeast China. The percentages of endemism to total number of these faunas are low, showing 3.7% for Korea and 1.9% for northeast China.

Acknowledgements

We thank Dr L. Aarvik, Natural History Museum, University of Oslo, Norway for his valuable review and comments on our manuscript. We are grateful to Prof. K. T. Park, CIS, Kangweon National University, Korea for his continuous guidance. Our thanks are also due to Mr K. R. Tuck, The Natural History Museum, London, UK and Dr U. Jinbo, Japan Heterocerists Society, Tokyo for their valuable comments and discussions on our research. We are also indebted to Prof. S. C. Yan, Northeast Forestry University, Harbin, China, for providing invaluable materials in NEFU for this study. This study was financially supported by the “Korea Science and Engineering Foundation (KOSEF, 2002–2003)” and partly by the Korea National Arboretum under the project “Systematic study of Microlepidoptera (Lepidoptera) attacking forest plants” (first author).

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