



Synopsis of the Cochylini (Tortricidae: Tortricinae: Cochylini) of Iran, with the description of a new species

HELEN ALIPANAH

Insect Taxonomy Research Department, Iranian Research Institute of Plant Protection (IRIPP), P. O. Box 19395-1454, Tehran, Iran.
E-mail: halipanah@gmail.com

Table of contents

Abstract	3
Introduction	3
Taxonomy	5
Genus <i>Phtheochroa</i> Stephens, 1829	5
<i>Phtheochroa aureopunctana</i> (Ragonot, 1894)	5
<i>Phtheochroa decipiens</i> (Walsingham, 1900)	5
<i>Phtheochroa durbonana</i> (Lhomme, 1937)	5
<i>Phtheochroa inopiana</i> (Haworth, [1811])	6
<i>Phtheochroa jerichoana</i> (Amsel, 1935)	6
<i>Phtheochroa kenneli</i> (Obraztsov, 1944)	6
<i>Phtheochroa pulvillana</i> (Herrich-Schäffer, 1851)	6
<i>Phtheochroa purissima</i> (Osthelder, 1938)	6
<i>Phtheochroa subfumida</i> (Falkovitsch, 1963)	6
<i>Phtheochroa syrtana</i> Ragonot, 1888	7
<i>Phtheochroa variolosana</i> Christoph, 1887	7
Genus <i>Cochylimorpha</i> Razowski, 1960	7
<i>Cochylimorpha alternana</i> (Stephens, 1834)	7
<i>Cochylimorpha armeniana</i> (Joannis, 1891)	8
<i>Cochylimorpha asiana</i> (Kennel, 1899)	8
<i>Cochylimorpha brandti</i> (Razowski, 1963)	8
<i>Cochylimorpha diana</i> (Kennel, 1899)	8
<i>Cochylimorpha discolourana</i> (Kennel, 1899)	8
<i>Cochylimorpha eburneana</i> (Kennel, 1899)	9
<i>Cochylimorpha elegans</i> (Razowski, 1963)	9
<i>Cochylimorpha fluens</i> (Razowski, 1970)	9
<i>Cochylimorpha fucosa</i> (Razowski, 1970)	11
<i>Cochylimorpha halophilana adriatica</i> Huemer, 2000	11
<i>Cochylimorpha kurdistanica</i> (Amsel, 1959)	11
<i>Cochylimorpha langeana</i> (Kalchberg, 1897)	12
<i>Cochylimorpha montana</i> (Razowski, 1967)	12
<i>Cochylimorpha nodulana</i> (Möschler, 1862)	12
<i>Cochylimorpha nomadana</i> (Erschoff, 1874)	13
<i>Cochylimorpha nuristanica</i> (Razowski, 1967)	13
<i>Cochylimorpha pirizanicana</i> (Razowski, 1963)	13
<i>Cochylimorpha scrophulana</i> Razowski, 1963	13
<i>Cochylimorpha simulata</i> (Razowski, 1970)	14
<i>Cochylimorpha straminea</i> (Haworth, [1811])	14
<i>Cochylimorpha wiltshirei</i> (Razowski, 1963)	16
Genus <i>Phalonidia</i> Le Marchand, 1933	16
<i>Phalonidia manniana</i> (Fischer von Röslerstamm, 1839)	16
Genus <i>Gynnidomorpha</i> Turner, 1916	17

<i>Gynnidomorpha permixtana</i> ([Denis & Schiffermüller], 1775)	17
Genus <i>Agapeta</i> Hübner, 1822	17
<i>Agapeta hamana</i> (Linnaeus, 1758)	17
Genus <i>Ceratoxanthis</i> Razowski, 1960	17
<i>Ceratoxanthis iberica</i> Baixeras, 1992	18
Genus <i>Fulvoclysia</i> Obratzsov, 1943	18
<i>Fulvoclysia forsteri</i> Osthelder, 1938	18
<i>Fulvoclysia rjabovi</i> Kuznetzov, 1976	19
<i>Fulvoclysia subdolana</i> (Kennel, 1901)	19
Genus <i>Eugnosta</i> Hübner, 1825	19
<i>Eugnosta lathoniana</i> (Hübner, [1800])	19
<i>Eugnosta magnificana</i> (Rebel, 1914)	19
Genus <i>Aethes</i> Billberg, 1820	20
<i>Aethes argyrospila</i> Karisch, 2005	20
<i>Aethes bilbaensis</i> (Rössler, 1877)	20
<i>Aethes conversana</i> (Walsingham, 1908)	20
<i>Aethes cremonana</i> (Ragonot, 1894)	20
<i>Aethes deutschiana</i> (Zetterstedt, 1839)	21
<i>Aethes eberti</i> Sutter & Karisch, 2004	21
<i>Aethes eichleri</i> Razowski, 1983	21
<i>Aethes fennicana</i> (Hering, 1924)	21
<i>Aethes flagellana atlasi</i> Razowski, 1962	22
<i>Aethes francillana</i> (Fabricius, 1794)	22
<i>Aethes iranica</i> Razowski, 1963	22
<i>Aethes kandovana</i> sp. n.	22
<i>Aethes kasyi</i> Razowski, 1962	23
<i>Aethes lateritia</i> Razowski, 1970	23
<i>Aethes luteopictana</i> (Kennel, 1900)	24
<i>Aethes margarotana</i> (Duponchel, 1836)	24
<i>Aethes moribundana</i> (Staudinger, 1859)	24
<i>Aethes pardaliana</i> (Kennel, 1899)	24
<i>Aethes persica</i> Razowski, 1963	25
<i>Aethes prangana</i> (Kennel, 1900)	25
<i>Aethes scalana</i> (Zerny, 1927)	25
<i>Aethes spirana</i> (Kennel, 1899)	25
<i>Aethes tesserana</i> ([Denis & Schiffermüller], 1775)	25
<i>Aethes williana</i> (Brahm, 1791)	26
<i>Aethes xanthina</i> Falkowitsch, 1963	26
Genus <i>Cochylidia</i> Obratzsov, 1956	26
<i>Cochylidia implicitana</i> (Wocke, 1856)	26
<i>Cochylidia moguntiana</i> (Roessler, 1864)	26
<i>Cochylidia rupicola</i> (Curtis, 1834)	26
Genus <i>Diceratura</i> Djakonov, 1929	27
<i>Diceratura ostrinana</i> (Guenée, 1845)	27
<i>Diceratura porrectana</i> Djakonov, 1929	27
<i>Diceratura roseofasciana</i> (Mann, 1855)	27
<i>Diceratura teheranica</i> Razowski, 1970	27
Genus <i>Cochylis</i> Treitschke, 1829	28
<i>Cochylis amoenana</i> Kennel, 1899	28
<i>Cochylis defessana</i> Mann, 1861	28
<i>Cochylis maestana</i> Kennel, 1899	28
<i>Cochylis piana</i> (Kennel, 1919)	28
<i>Cochylis posterana hyrcana</i> (Toll, 1948)	29
<i>Cochylis roseana</i> (Haworth, [1811])	30
<i>Cochylis similana</i> Razowski, 1963	30
Acknowledgments	30
Literature cited	30

Abstract

Eighty-two species of Cochylini are recorded from Iran. Previous studies dealing with the tribe are summarized, and new data on the distribution of the Iranian species are provided. *Aethes kandovana* **sp. n.** is described; three genera, viz. *Ceratoxanthia* Razowski, *Gynnidomorpha* Turner, and *Cochylidia* Obraztsov, and the species *Phtheochroa durbonana* (Lhomme), *P. syrtana* Ragonot, *P. inopiana* (Haworth), *P. decipiens* (Walsingham), *P. kenneli* Obraztsov, *P. subfumida* (Falkovitsch), *Cochylimorpha alternana* (Stephens), *C. armeniana* (Joannis), *C. kurdistanica* (Amsel), *C. langeana* (Kalchberg), *C. montana* (Razowski), *C. nodulana* (Möschler), *C. nuristanica* (Razowski), *Phalonidia manniana* (Fischer von Röslerstamm), *Gynnidomorpha permixtana* ([Denis & Schiffermüller]), *Ceratoxanthia iberica* Baixeras, *Eugnosta lathoniana* (Hübner), *Aethes conversana* (Walsingham), *A. deutschiana* (Zetterstedt), *A. eichleri* Razowski, *A. fennicana* (Toll), *A. scalana* (Zerny), *A. williana* (Brahm), *Cochylidia moguntiana* Roessler, *C. rupicola* (Curtis), *C. implicitana* (Wocke), and *Diceratura ostrinana* (Guenée) are newly reported. The previously unknown male of *Cochylimorpha fluens* (Razowski) and the previously unknown females of *C. scrophulana* Razowski and *C. montana* (Razowski) are described.

Key words: Tortricidae, Tortricinae, Cochylini, taxonomy, distributions, new species, new records, Iran

Introduction

Cochylini have been treated variously as a tribe, subfamily, or family, and the following family names have been used: Cochyliidae Guenée, Lozopheridae Stainton, Phaloniadae Meyrick, Commophilidae Hampson, and Agapetidae Obraztsov (Razowski 1970b, 1976). The tribe is undoubtedly monophyletic, supported by the following morphological autapomorphies: 1) the distal position of forewing vein CuA₂; 2) the reduction or complete atrophy of CuP; 3) the forewing pattern usually consisting of two fascia parallel to the termen; and 4) the loss of gnathos in the male genitalia (Razowski 1994).

Members of Cochylini are distributed in all zoogeographical regions with the greatest diversity in the Holarctic and Neotropical regions. They are infrequent in the Oriental and Afrotropical regions and represented by only four species in the Australian region (Razowski 2002). Of approximately 800 species total (assigned to 60 genera) (Razowski 2002), 305 species assigned to 22 genera are restricted to the Palaearctic region (Razowski 1994). The genera *Aethes* (123 species), *Phtheochroa* (107 species), *Phalonidia* (90 species), *Cochylimorpha* (89 species), *Cochylis* (69 species), and *Eugnosta* (68 species) are the most widespread genera, with a total of 239 representatives in the Palaearctic region (Brown *et al.* 2005).

Although the fauna of the Palaearctic region is reasonably well known owing to the work *Microlepidoptera Palaearctica* (Razowski 1970b), some parts of the region were not completely inventoried and studied. Many of the species are widely distributed, extending as far as East Asia; however, there is a paucity of data concerning their distribution in Asia (Razowski 1970b).

Iran is a relatively vast country with a total land mass of approximately 1.5 million square km of which 31% supports variably arid environments; the remainder consists of arable land (14%), forest (8%), and natural pastures (47%) (Yale *et al.* 2001). Elevation ranges from 26 m below mean sea level to 5770 m above mean sea level (amsl). Most of the country occupies high table land ca. 1200 m amsl. Temperature ranges from –35°C during the winter in the northwest, to 50°C in the summer on the Persian Gulf shoreline. Precipitation ranges from 2000 mm southeast of the Caspian shoreline to 10 mm in the central desert, with an annual average of 250 mm (Makhdoum 2008).

Iran is located in the Palaearctic realm and is considered the centre of origin for many of the world's genetic resources (Makhdoum 1990). According to Zohary (1973, 2004) and Frey & Probst (1986), phytogeographical provinces of Iran consist of four regions (Fig. 1): Euro-Siberian (Euxino-Hyrcanian), Irano-Touranian (Irano-Anatolian Province), Sudano-Zambeziyan (Nubo-Sindian Province), and Saharo-Arabian region (East Saharo-Arabian Sub-region). The Irano-Touranian region is rich in endemic species. The Hyrcanian district (within the Pontic Province) is the home of relict species of the Tertiary era, and in the Saharo-Sindian region in the south, subtropical species thrive.