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Revision of the Generic Group *Cochylis* TREITSCHKE *(Lepidoptera, Cochylidae)*

[Pp. 131—148, 8 text-figs]

Rewizja grupy rodzajowej *Cochylis* TREITSCHKE *(Lepidoptera, Cochylidae)*

Ревизия родовой группы *Cochylis* TREITSCHKE *(Lepidoptera, Cochylidae)*

Abstract. The paper contains a discussion on the genera *Cochylis* TREIT. and *Cryptocochylis* RAZ. The remaining genera described as closely related with *Cochylis* TREIT. are synonymus with it. The systematic part is a review of the world fauna of the moths belonging to the mentioned genera. Two species are described as new ones.

Cochylis TREITSCHKE

ON THE CORRECT NAME OF THE GENUS

TREITSCHKE erected his genus *Cochylis* in 1829 for *Tortix roseana* HAW., 1811, and, however, the transliteration is most probably incorrect we cannot judge about this from the original paper. (Internat. Code Zool. Namencl. art. 32a—II). Thus the name *Cochylis* is an unfounded emendation introduced by SODOFFSKY in 1837. According to the art. 33 a II of the Code *Conchylis* SOD. falls as a synonym of *Cochylis* TREIT. Based on the generic name, the correct spelling of the family name is to be preserved as written by GUENÉE 1845 e. g. *Cochylidae*.

CHARACTERISTICS OF THE GENUS

Venation is rather variable even in the groups of the species treated previously as a subgenera or genera. In forewing r_5 to before apex, the distances among radial veins variable; cu_1 more or less close to m_3; cu_2 opposite the middle

of the distance between r_1 and r_2. In hindwing *sc* sometimes partially atrophied; *r* stalked with m_1 to about middle, remaining veins separate.

Male genitalia: Tegumen broad with short pedunculi and large membraneous scaphium in which the socii are situated. Socii more or less distinctly coalescent with one another. Vinculum always connected membraneously at the ends of ventral arms, never coalescent. Valva broad basally with rather well developed costal portion. Sacculus usually strong. Transtilla provided with more or less elongate central part; juxta broad. Aedeagus with a tendency to shortening the coecum penis and broadening the median portion. Its posterior part is slender, more or less elongate. Cornuti usually present.

Female genitalia: Papillae anales normally developed, sometimes with partially reduced hairs and well developed minute spines of median areas. In some species ovipositor telescopical, long, in other ones short. The length of anapophyses posteriores depending on the shape of the ovipositor. Eighth tergite well developed. Antrum usually heavily sclerotized; sterigma weak or completely atrophied. The environs of antrum membraneous or slightly stronger sclerotized than surrounding membrane, forming ovate area or quite complicated tube. Posterior part of it (weakly developed lamella postvaginalis) sometimes distinctly edged apically, marked with hairs. Ductus bursae short, ductus seminalis anterior, corpus bursae elongate. Sclerotization of bursa copulatrix usually weak, however, sometimes ductus bursae well sclerotized.

SYSTEMATICS

In 1960 I divided genus *Cochylis* TREIT. into 6 subgenera: *Cochylis* TREIT. s. str., *Neocochylis* RAZ., *Paracochylis* RAZ., *Cochylichroa* OBR. & SWATSCH. in SWATSCH., *Brevicornutia* RAZ. and *Pontoturania* OBR. Two of them have been previously described as distinct genera, e. g. *Pontoturana* OBR. and *Cochylichroa* OBR. & SWATSCH. in SWATSCH. Working on larger material I am finding what the differences among them are rather insufficient even for an infrageneric system.

In the subgenus *Cochylis* s. str. I placed the type species *C. roseana* (HAW.), *C. undulatana* (KENN.) and *C. flaviciliana* (WESTW.) [but its female genitalia under the name of *C. roseana* (HAW.)]. *C. undulatana* (KENN.) is a synonym of *C. roseana* (HAW.) so only two of mentioned species make up this group. It is characterized by absence of the cornuti and slender aedeagus in the male and telescopical ovipositor in the female. The latter feature as in several other groups of the *Tortricodea* is not of subgeneric importance and is due to the biology of particular species. The shape of the aedeagus seems to be also only a specific charakter as in *C. similana* RAZ. it is rather transitional to next groups. The ovipositor in *C. similana* RAZ. is long and similar to that in *C. roseana* (HAW.), but the shape of the antrum is somewhat different. In comparison to my paper of 1960 the two next groups have to change their places

becouse *C. amoenana* KENN. (type species of *Paracochylis* RAZ.) is closer to *C. similana* RAZ. than to *C. molliculana* (ZELL.) (the type species of the subgenus *Neocochylis* RAZ.) is. In *C. amoenana* KENN. the shape of all parts of the male genitalia are similar to those in preceding group but only the aedeagus is broader. The female has much shorter ovipositor, but the VIII-th tergite is still elongate. In the middle of antrum area there is a characteristic sclerite which is always absent from the antrum of *roseana*-group. To *amoenana*-group I should enclose also *C. morosana* KENN. in which the aedeagus is very broad medially and the uncus is present. The presence of uncus is very peculiar for this genus, but judging from the similarity of the remaining features of the genitalia it is not of any subgeneric importance. The female genitalia of this species are a development of those of *C. amoenana* KENN. The median sclerite of the antrum armature is larger and more elongate.

The next group named in mentioned paper as a subgenus *Neocochylis* RAZ. is characterized by the shape of the aedeagus which is elongate and provided with long posterior portion. In the females the antrum is rather simple but the infrasegmental membrane develops quite strong sclerites (sterigma). Anteriorly to this the edge of pregenital sternite there is a membrane which protects the ostium.

To the group of *C. atricapitana* STEPH. for which the genus *Cochylichroa* OBR. & SWATSCH. in SWATSCH. was erected (in my paper treated as a subgenus) belongs only one Palaearctic species. In the North American fauna there are some further species. The only differences between this group and the former one are in the shape of the antrum armature which is very broad and rather slightly sclerotized. But the accurate comparison of its structure permits us to judge that it is only a close development of the antrum armature of the former group.

To *Brevicornutia* RAZ. I enclosed only *C. pallidana* ZELL. (now another species namely *C. dolosana* KENN. is found to be closely related). These species are transitional to the *defessana*-group in which the antrum is heavily sclerotized.

The above mentioned group of *C. defessana* (MANN) has been treated as a separate genus *Pontoturania* OBR., or as a subgenus (RAZOWSKI,1960). In this group the sacculus is strong, heavily sclerotized, characteristic specifically. The costal portion of the valva weakly sclerotized caudally, irregularly folded in some species. The aedeagus always broad, with quite slender terminal process and with large group of strong cornuti. The females with short ovipositor and strongly sclerotized antrum. Sterigma is delicate; ductus seminalis posterior.

To the genus *Cochylis* TREIT. I enclose now also *Longicornutia* RAZ. created for *C. epilinana* DUP. (erroneously named „*phaleratana*", what has been corrected by SVENSSON, 1966 who designated *C. epilinana* DUP. for the type species of the genus). The male genitalia of that species are rather similar to those in preceding group of the species, however, the shape of the sacculus is somewhat different. The aedeagus is provided with very large, elongate bunch

of small cornuti. This is probably a development of the short cornuti cluster in the *posterana*-group. The females have a very strong, well sclerotized antrum.

OBRAZTSOV (1944) created the genus *Acornutia* with type species *Tortrix nana* HAW. placing it in the *Hysterosia*-group. In this species there is an uncus (or a projection of apical part of tegumen). The socii are in a membraneous scaphium and the vinculum is not coalescent ventrally. These features permit us to place the species in the genus *Cochylis* TREIT. In North America there are two species similar to *C. nana* (HAW.) genitalically, however, with atrophied „uncus". I place *C. nana* (HAW.) at the end of the systematic arrangement of the old world *Cochylis* TREIT.

Among the American *Cochylis*-species there are some very closely related to the Palaearctic species, as well some species intermediate between above mentioned groups. Some species are very peculiar becouse of the shape of the genitalia (*C. pimana* [BUSCK]). But most interesting group characteristic probably only for America is that in which the external characters are close to the representatives of the genus *Phalonidia* LE MARCH. The genitalia of them are also very alike those in mentioned genus, but only the socii are delicate, placed in the membraneous scaphium. In the females the antrum is cup-like, similar to that in some *Phalonidia*-species two. To this group of species belong *C. felix* (WALSM.), *C. plicana* (WALSM.), *C. campicolana* WALSM. and many others. Some further species having the male genitalia of the *Phalonidia*-type differ from that type in the females, as for instance *C. parallelana* WALSM.

LIST OF SPECIES

Cochylis roseana (HAWORTH)

Tortrix roseana HAWORTH, 1811, Lep. Brit.: 401.
Cochylis undulatana KENNEL, 1899, Iris, **12**: 28, pl. 1, fig. 25—**synon. nov.**

The species is rather variable in the colouration of the forewing which very often shows no pink tint. In some examples pink colour is preserved only in subapical area of the wing. In ab. *undulatana* the forewing is ochreous to brownish yellow, without pink hue and the pattern is pale brownish. In some specimens from Hungary the pattern is dark, rather brown, the ground colour variable, even with grey hue. Fringes paler than pattern, but sometimes distinctly divided with brown bars.

In the male genitalia small variability is shown in the proprotions of the aedeagus and sacculus. The concavity of valva more or less deep, often provided with delicate, irregular projections. In the female genitalia the length of the anapophyses posteriores also somewhat varies.

I found no differences between typical *C. roseana* (HAW.) and KENNEL'S *undulatana* except for pale brownish yellow colouration in the latter, but as mentioned above, that is of infraspecific value. Thus I drop *C. undulatana* KENNEL as a synonym of the species in question.

Distribution. The species has been known from Western and Central Europe and partially from Scandinavia. It has been also found in S. Europe (Yugoslavia). New, interesting localities are: Urals, and Derbend near Teheran (Iran).

Cochylis flaviciliana (WESTWOOD)

Eupoecilia flaviciliana WESTWOOD, 1854, Wood's Index Ent., ed. II: 281, pl. 59, fig. 1858.

Very similar to *C. roseana* (HAW.) in the shape of the wing and colouration, but distinct by whitish dorsal wing area, and more vivid pink or reddish colouration. The pattern is yellow-brown to brownish, sometimes a subterminal yellowish to yellow-brown suffusion is developed. Fringes yellow-ochreous to brownish yellow. The differences in the male genitalia are in the shape of the sacculus which in this species is larger and more pronounced terminally than in *C. roseana* (HAW.). In the females the sclerite of the antrum is much larger, distinctly concave at the ostium.

KENNEL (1913) interpreted GUENÉE'S *Eupoecilia ostrinana* wrongly. His description and colour figure refer to *C. flaviciliana* (WESTW.). Also the female genitalia figured by me in the Keys (1963, fig. 273) and named as *C. roseana* (HAW.) are referable to the species in question.

Distribution. KENNEL reported it from England, France, Central Europe, and NW Africa. New locality: Vucija Bara in Herzegovina, Yugoslavia.

Cochylis similana RAZOWSKI

Cochylis similana RAZOWSKI, 1963, Acta zool. cracov. **8**: 274, figs 65—68.

C. similana RAZ. resembles externally the preceding species, but has longer forewing. The termen are straight or even hardly concave. The species was described on basis of 5 males. Now several females, most probably conspecific with them, before me. The females have forewing more slender and more distinctly pointed than the males. They are easy to distinguish from another very similar species *C. amoenana* KENN. by extending, long ovipositor. Variability rather adaequate to that in *C. roseana* (HAW.). Typical form ochreous yellow, pale, with pattern ill-defined yellow-brown, and with slight pinkish suffusion subapically. Other specimens have very distinct pink suffusion along costa and in apical area, or are entirely pink except for dorso-terminal yellow-brown shade and distinct brownish median fascia. Two or three examples resemble the preceding species very much as white dorsal area is preserved. Remaining specimens have lost pink colour and are yellow-brown or brownish ochreous with distinct brownish median fascia, and sometimes tornal spot. Fringes usually yellow-ochreous to brownish yellow.

Male genitalia (RAZOWSKI, 1963) are probably transitional to those of next group of species. The concavity of valva is reduced, the sacculus much larger than in two preceding species, provided with short free termination. Aedeagus

much broader, with shorter basal part and thin terminal part. The cornuti are present. The female genitalia are characterized by very long ovipositor and long anapophyses posteriores. The antrum is rather simple, well sclerotized. Ductus bursae broad, well sclerotized; ductus seminalis anterior, distinctly sclerotized basally; corpus bursae large, elongate, delicately sculptured.

Distribution. Iran (Barfkhaneh). Further localities are: Becharré, N. Lebanon; Khurd-Kabul, S. E. of Kabul.

Note. The species has been collected in April, May, June and August. Some examples at the altitude of 1900 m.

Cochylis heratna Razowski

Cochylis heratana Razowski, 1967, Beitr. naturk. Forsch. SW-Deutschl., **26**: 107, figs. 46, 47.

Very similar to *C. similana* Raz. but with whiter ground colour. Only the female known to date.

Cochylis amoenana Kennel

Cochylis amoenana Kennel, 1899, Iris, **12**: 26, pl. 1, fig. 23
Cochylis apricana Kennel, 1899, Iris, **12**: 27, pl. 1, fig. 24 — **synon. nov.**

Typical form ochreous brownish with distinct brown pattern and rather delicate pink suffusion along costa and subapically. There is, however, large variability in the size of the specimens, their colouration and shape of the wing. Moreover, the females differ from the males having forewing broader, provided with more rounded apex. Some males have narrow wings, distinctly expanding termined. Colouration of the males: ground colour pale yellowich ochreous to cream. Posterior part of wing suffused with ochreous-brown or yellow-brown in many specimens. Pink suffusion very often atrophied, sometimes, however, very distinct, extending along costa and partially in terminal part of wing. The suffusion is more vivid, dark at subapical spot and in the place where median fascia touches the costa. Terminal area of the wing is ochreous or yellow-brown, rather concolorous with fringes.

Male genitalia (Razowski, 1960). The shape of the valva is somewhat similar to that in *C. similana* Raz., but there is no concavity beyond the end of sacculus which is not free. Aedeagus shorter than in the preceding species with shortened terminal portion.

Female genitalia (Razowski, 1960). The ovipositor much shorter than in the three preceding species, but distinctly longer than in the next group of representatives of the genus. Armature of antrum broad, but weakly sclerotized except for median helmet-shaped sclerite.

Distribution. Type locality: Samarkand. Known from Iran and Afghanistan where it has been collected at the altitude of 2800 m. New localities: Quetta,

Pakistan, 2100 m., in May; Usgent; Alexander Mts.; Margelan; Fergana and Stalinabad in Armenia (Caucasus).

Comments. I have examined the type of *C. apricana* KENN. which shows no differences with *C. amoenana* KENN. and must be merged as a synonym of it. That type has lost its abdomen, but the comparison of the shape of the wings and the colouration permits such a conclusion. The type specimen is labelled „Achalzich, 82 HBH., Origin".

Cochylis morosana KENNEL

Cochylis morosana KENNEL, 1899, Iris, **12**: 19, pl. 1, fig. 17.

External appearance different than in all the preceding species. Pink or reddish colour absent. Pattern consists of basal suffusion, median fascia and terminal markings. The colour of the pattern varies from black-brown to ochreous-olive or ochreous.

Male genitalia (figs. 1, 2). Socii well developed; uncus present. Valva broad anteriorly, narrowing in terminal portion; sacculus gently curved outwards, without a free termination. Transtilla broad with very large, hook-shaped central process. Vinculum parts rather narrow. Aedeagus broad except for terminal projection; cornuti numerous (about 25 long and several minute ones).

Female genitalia. Ovipositor short; anapophyses short; sterigma weak, reduced to thin connective of anapophyses anteriores; antrum very large, heavily sclerotized, broad anteriorly, provided with cylindric posterior sclerite. The latter is most probably homologus to median sclerite in the preceding species. Ductus bursae broad, corpus bursae large, transparent.

Comments. The type of *Conchylis subobscurana* KENN. shows no differences with typical form of this species, and is only somewhat darker than it.

Distribution.: Type locality: Usgent. Type locality of *C. subobscurana* (KENN.) is Puli Hatum. The species has been also found in the following localities: Alai Mont. and Khinh-e-Andarab in Pamir (Afghanistan).

Cochylis molliculana ZELLER

Cochylis molliculana ZELLER, 1847, Isis: 743.
Cochylis rufosignana KENNEL, 1899, Iris, **12**: 21, pl. 1, fig. 19 —**synon. nov.**
Conchylis calavrytana REBEL, 1906, Berl. ent. Ztg., **50**: 304 — **synon. nov.**

The species is very variable. The ground colour varies from whitish in the typical form to yellowish cream, pattern from pale yellowish grey or yellowish brown to brown or rusty brown.

Comments: Type of *C. rufosignana* KENN. labelled „Chiclana m. 80, 19. V. Origin", and type of *Conchylis calavrytana* RBL., labelled „Kalavryta, Morea, Holtz" do not differ from the type of *C. molliculana* ZELL. („Type, *molliculana* Z., Syrac., 7. Jun., ZELLER coll.") in the genitalia. The external differences are of infraspecific value only.

Cochylis salebrana (MANN)

Conchylis salebrana MANN, 1862, Wien. ent. Monatschr., **6**: 395, pl. 3, fig. 12.
Cochylis millierana PEYERIMHOFF, 1877, Pet. Nouv. Ent., **2**: 101 — **synon. nov.**

The typical form is characterized by pale grey-white ground colour sprinkled with pale orange and distinct brown pattern. The fringes are orange, divided with brown-grey. Head and thorax brownish. In other specimens examined, ground colour varies from white to ochreous or yellow-brown. The pattern in pale specimens is brownish and the median fascia is rusty subdorsally (similarly as in *C. hybridella* (HBN.), while in dark specimens it is even blackish brown, especially the median fascia.

Male genitalia. Socii proportionately small; valva broad medially, tapering terminad, provided with strong hook at base of sacculus. Transtilla with long central projection. Aedeagus elongate, thin posteriorly, minutely spined postmedially. Coecum penis shorter than in the preceding species.

Distribution. KENNEL (1913) mentions Hungary, Spain (Castilia), and Asia Minor (Brussa). New localities: Daghestan, vicinity of Skopje and Drenovo near Kavadar, Yugoslavia.

Comments. The type of *C. millierana* PEYER. labelled "*Millierana* PEYER." is in the collection of the Museum d'Hist. Nat., Paris.

Cochylis hybridella (HÜBNER)

Tinea hybridella HÜBNER, [1817], Samml. eur. Schmett., pl. 51, fig. 351.
Conchylis dubitana var. *clarana* CARADJA, 1916, Iris, **30**: 52 — **synon. nov.**

The variability rather slight; some specimens are more distinctly coloured, darker, some pale with weak pattern. The colour of pattern varies between brownish and rusty-brown. Median fascia (or subdorsal blotch) with more or less distinct rusty marking.

Male genitalia (RAZOWSKI, 1963). The shape of the sacculus distinctly varies even in the same specimen (left side differs very often from the right one). This variability occurs in the number and shape of the dents of posterior edge of sacculus prominence. In exterme cases there is only single dent at the top of the sacculus.

Comments. KENNEL (1913) supposed *C. mililerana* PEYER. to be conspecific with the species in question, as some specimens fit the original description given for PEYERIMHOFF'S species. Really, some specimens of *C. hybridella* (HBN.) are very pale with weak pattern, but on the other hand the specimens of *C. salebrana* (MANN) are also pale, similarly patterned.

C. dubitana var. *clarana* CAR. is belonging to *C. hybridella* (HBN.) as the examination of the lectotype shows (RAZOWSKI, 1964).

Type: „Posnan, LÖW, ZELLER coll., Type" in the British Museum (Nat. Hist.).

Distribution. KENNEL (1913) mentioned *C. hybridella* (HBN.) to be distributed in Central and South Europe, Northern Spain, Asia Minor and Armenia. WILTSHIRE reported it from Lebanon. New localities: Mien Shan, Prov. Shansi and Kasakevitsh near Chabarovka, Ussuri. The data given by FLETSCHER (1921) and WALSINGHAM (1900) and concerning Dharmsala, India are probably referable to a different unkown species.

Cochylis dubitana (HÜBNER)

Tortrix dubitana HÜBNER, [1799], Samml. eur. Schmett., pl. 12, fig. 71.

Widely distributed in Europe. New locality: Mien Shan, Prov. Shansi, China.

Cochylis atricapitana (STEPHENS)

Eupoecilia atricapitana STEPHENS, 1852, List. of spec. Brit. Anim., **10**: 103.

The differences in the shape of the antrum in the female genitalia are depending on the pressure of the covering glass during preparation.

Distribution. New localities: Krasnoarmiejsk in SE Europe; Coto, Huelva, in Spain; and Tangier, Morocco.

Cochylis pallidana ZELLER

Cochylis pallidana ZELLER, 1847, Isis: 742.

I have noticed a variability in the size and shape of the forewing in this species. The variability of the colouration is rather slight, and well known. In the male genitalia occurs a variability of the dentation of premarginal area of the sacculus. It varies in some specimens even in sleft and right sides. The shape of dents is also irregular. Number of the cornuti is inconstant.

Distribution. Known from Central Europe, Scandinavia and Asia Minor. In the British Museum (Nat. Hist.) there are two examples from CHRISTOPH coll., probably from Krasnoarmiejsk (Sarepta), SE Europe.

Cochylis dolosana (KENNEL)

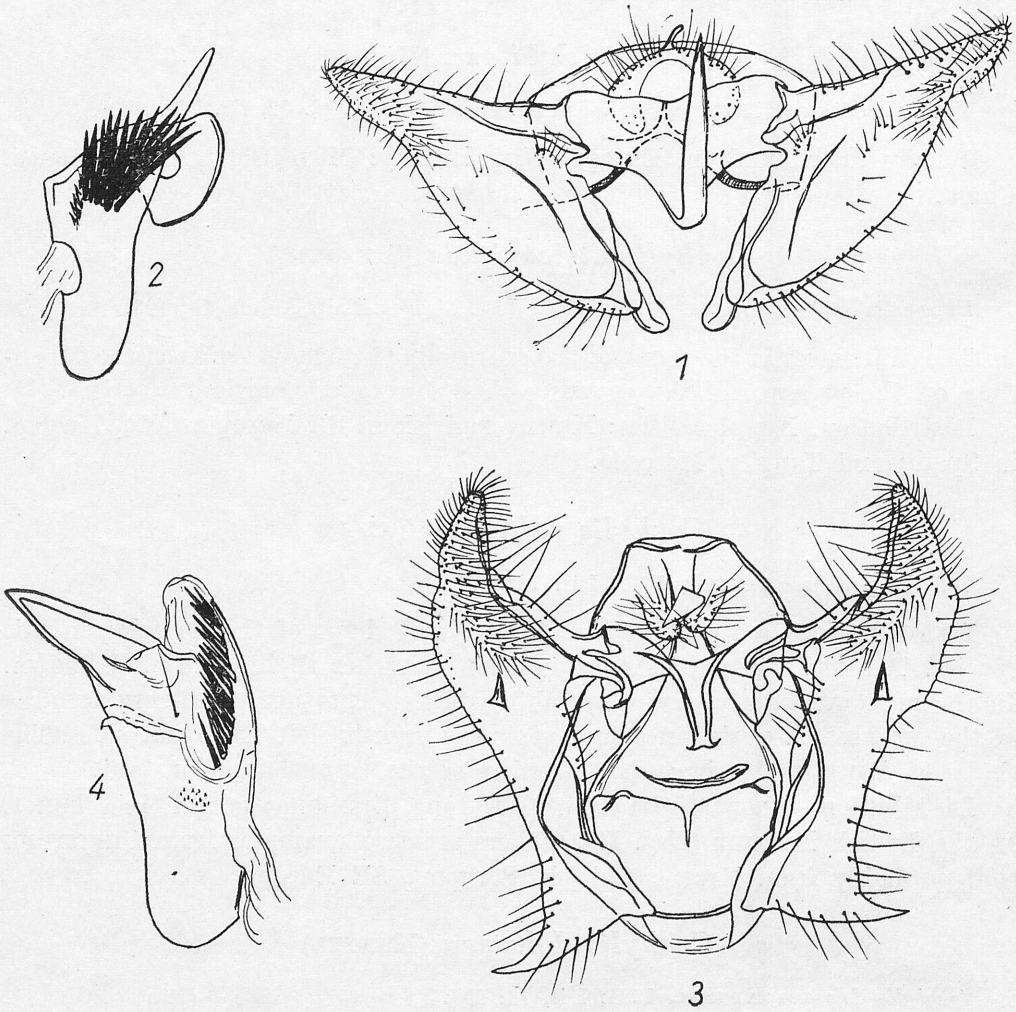
Conchylis dolosana KENNEL, 1901, Iris, **13**: 234.

Male genitalia (RAZOWSKI, 1961). Very similar to those in the preceding species but there is no dentate comb on the sacculus and the termination of the sacculus is provided with a bifurcate dent.

Cochylis laetana sp. nov.

Labial palpus, head and thorax whitish. Forewing hardly expanding terminad; costa delicately curved outwards; apex pointed; termen oblique. Ground colour white, slightly mixed with pale brown anteriorly, where indistinct strig-

ulation is present. Three delicate brownish stripes in anterior of half wing, another one, much stronger in its middle, one in place of subapical blotch. Dorsum with large, subtriangular brown, dark brown striped blotch medially, connecting to tornal and terminal markings. Fringes partially damaged, brownish. Hindwing: pale brownish grey with paler cilia. Length of forewing 7 mm.



Figs. 1—4. *Cochylis* TREIT.: 1 — male genitalia of *C. morosana* KENN., „NO Afghanistan, Khinch-e-Andarab, Westl. Pamir, 3500—4000 m., 17—27. VII. 1957, G. EBERT leg.", G. Sl. 5610, 2 — aedeagus of same specimen, 3 — male genitalia of *C. leatana* sp. n., type, 4 — aedeagus of same specimen

Male genitalia (figs. 3, 4). Socii proportionately small, rounded. Valva very broad basally with well differentiate costal portion which is tapering apicad, pointed. Sacculus hardly convex ventrally, terminating in elongate tip. Caudal edge of valva delicately concave beyond sacculus. Solitary destinct thorn in

caudal part of valva, rather medially. Transtilla and juxta normally developed. Aedeagus broad, large, with terminal portion tapering apicad; numerous small cornuti present.

Type: „Khasis (Nat. Coll.)", G.Sl. 8794 in the British Museum (Nat. Hist.).

Cochylis posterana Zeller

Cochylis posterana Zeller, 1847, Iris: 740.
Phalonia nubivagana Zerny, 1935, Mem. soc. Sci. nat. Maroc., **42**: 132 — **synon. nov.**

I have realized a variability of the shape of the sacculus the posterior prominence of which is more or less elongate, rounded or angulate terminally.

The type labelled „Type, Zeller coll." is in the British Museum (Nat. Hist.). The type of *Phalonia nubivagana* Zerny bears the label „Marocco, Gr. Atlas, Tizin Tachdirt, 3100—3200 m., 21—25. VII. 33, Zerny" and is preserved in the Naturhistorisches Museum, Vienna. There are no specific differences between them, and Zerny's name must be put among the synonyms of *C. posterana* Zell.

Ssp. *hyrcana* Toll

Phalonia posterana hyrcana Toll, 1947, Zschrft. wien. ent. Ges., **32**: 112, pl. 14, figs. 17, 18, pl. 6, fig. 37.

To this subspecies belong large specimens with pale cream slightly grey strigulate ground colour and dark grey pattern. Remaining features as in typical form. This is most probably a form connected with the warm climate of Asia Minor. For the lectotype I designate the specimen labelled „Hyrcania, Kuh i Mirabi Mont., 2000 m., VII—VIII, Type", G. Sl. 954 [Toll]. The lectotype and 14 lectoparatypes are preserved in the collection of the Institute of Systematic Zoology PAS, Kraków.

Distribution. The typical form is widely distributed in Europe and West North Africa. Ssp. *hyrcana* Toll known from Asia Minor only.

Cochylis nigrociliana Kennel

Cochylis nigrociliana Kennel, 1899, Iris, **12**: 40, pl. 1, fig. 39.

The species is unknown to me. It is either synonymous with *C. posterana* Zell. or is closely related to that species. The colour figure is in Kennel's monograph (1913). Type locality: Andalusia, Spain.

Cochylis aestiva (Walsingham)

Phalonia aestiva Walsingham, 1900, Ann. & Mag. Nat. Hist., ser. 7, **6**: 445.

Externally similar to the preceding species, but yellower, with more brownish yellow pattern. The female genitalia of the type illustrated in my paper of 1964.

Male genitalia (figs. 5, 6): Tegumen broad; socii delicate. Valva broad anteriorly with costa well sclerotized to just before the end. Sacculus strong, slightly protruding posteriorly, pointed apically. Valva distinctly concave beyond sacculus, expanding caudally. This expanded part can be probably folded on the internal surface and its shape is most probably depending on the preparation.

Distribution. Known only from the type locality: Shar Devesy, Haleb in Asia Minor.

Cochylis maestana KENNEL

Cochylis maestana KENNEL, 1899, Iris, **12**: 32, pl. 1, fig. 31.

This is a very variable species. The ground colour is pale cream or olive-cream or grey-cream, very often sprinkled or suffused with dark grey. Pattern dark grey suffused with yellowish, yellow-brown, rusty or dark red-pink. This suffusion is very often transformed into distinct spots or blotches. In ab. *suleimana* OSTH. pattern is pale, brownish yellow.

Distribution. Type locality: Shah-Kuh, NE Iran. I have examined numerous specimens from Afghanistan and Iran.

Cochylis piana (KENNEL)

Phalonia piana KENNEL, 1919, Mitt. münch. ent. Ges., **8**: 75, pl. 3, fig. 6.

Pontoturania pamira OBRAZTSOV, 1943, Mitt. münch. ent. Ges., **33**: 96, figs. 8, 9 (above), 10 (left), pl. 9, fig. 2 — **synon. nov.**

Phalonia subposterana TOLL, 1947, Zschrft. wien. ent. Ges., **32**: 112, pl. 4, fig. 19, pl. 6, fig. 38 — **synon. nov.**

The species is characteristic by pale ochreous or cream-ochreous ground colour, weak subterminal suffusion and rusty or yellow-brown black-grey anteriorly dorsal portion of median fascia. The reddish suffusion in apical portion of the wing and dark spots in posterior area is lacking. The species is rather variable. In some specimens dark marking of anterior edge of dorsal blotch is partially or completely atrophied, and the shape of the blotch is variable.

Male genitalia. Tegumen broad; socii large; sacculus short, with short, protruding posterior projection. Ventro-caudal edge of valva distinctly broadened, rounded; posterior, costal part of valva narrow. Aedeagus broad anteriorly, provided with long, pointed termination.

Female genitalia. Sclerite of antrum proportionately large, narrowing posteriorly; corpus bursae delicately spined. The differences among the females of this group of species are very slight.

Comments. The type of *C. piana* (KENN.) labelled „Umg. Dscharkent, Ili Geb. RÜCKBEIL 1913" is in the coll. of the Zoologische Sammlung der Bayerischen Staates in Munich. The species described by OBRAZTSOV under the name *Pontoturania pamira* and being the type species of the genus *Pontoturania* OBR. is in collection of the Kiev University. The comparison of the figures

and original description enabled me to realise that this is conspecific with the species in question. Another synonymous species is *C. subposterana* TOLL described from Hyrcania. The type does not show any differences with the type of *C. piana* (KENN.) and is preserved in the coll. of the Institute of Systematic Zoology PAS, Kraków.

Distribution. Ili Mts., Pamir (OBRAZTSOW 1943, Hyrcania (TOLL, 1947), Iran (RAZOWSKI 1963a). Further localities: Teheran, Derbend, Meched in Iran and environment of Kabul, Kandahar, Band-i-Amir and Paghman in Afghanistan.

Cochylis faustana (KENNEL)

Phalonia faustana KENNEL, 1919, Mitt. müchen. ent. Ges. **8**: 73, pl. 3, fig. 4.

Very similar to the preceding species externally, differing in the more whitish or even whitish grey, grey or brownish grey strigulate ground colour and in distinct brownish grey, dark spotted and often tinged with reddish posterior area of the wing. The fringes are brown-grey, often interrupted with brown.

Male genitalia. Very similar to those in *C. piana* (KENN.) but usually larger, with broader valva and longer free termination of the sacculus.

Female genitalia very alike those in *C. piana* (KENN.)

The type is preserved in the coll. of the Zoologische Sammlung des Bayerischen Staates in Munich.

Distribution: Type locality: Dscharkent, Ili Mts. Further material examined is from Afghanistan (Sarobi, Kabul, Badakshan, Herat) and Pakistan (Quetta).

The moth appear in May, June and July, some specimens have benn collected at the altitude of 1600 m.

Cochylis defessana (MANN)

Conchylis defessana MANN, 1861, Wien. ent. Monatschr., **5**: 185, pl. 3, fig. 1.

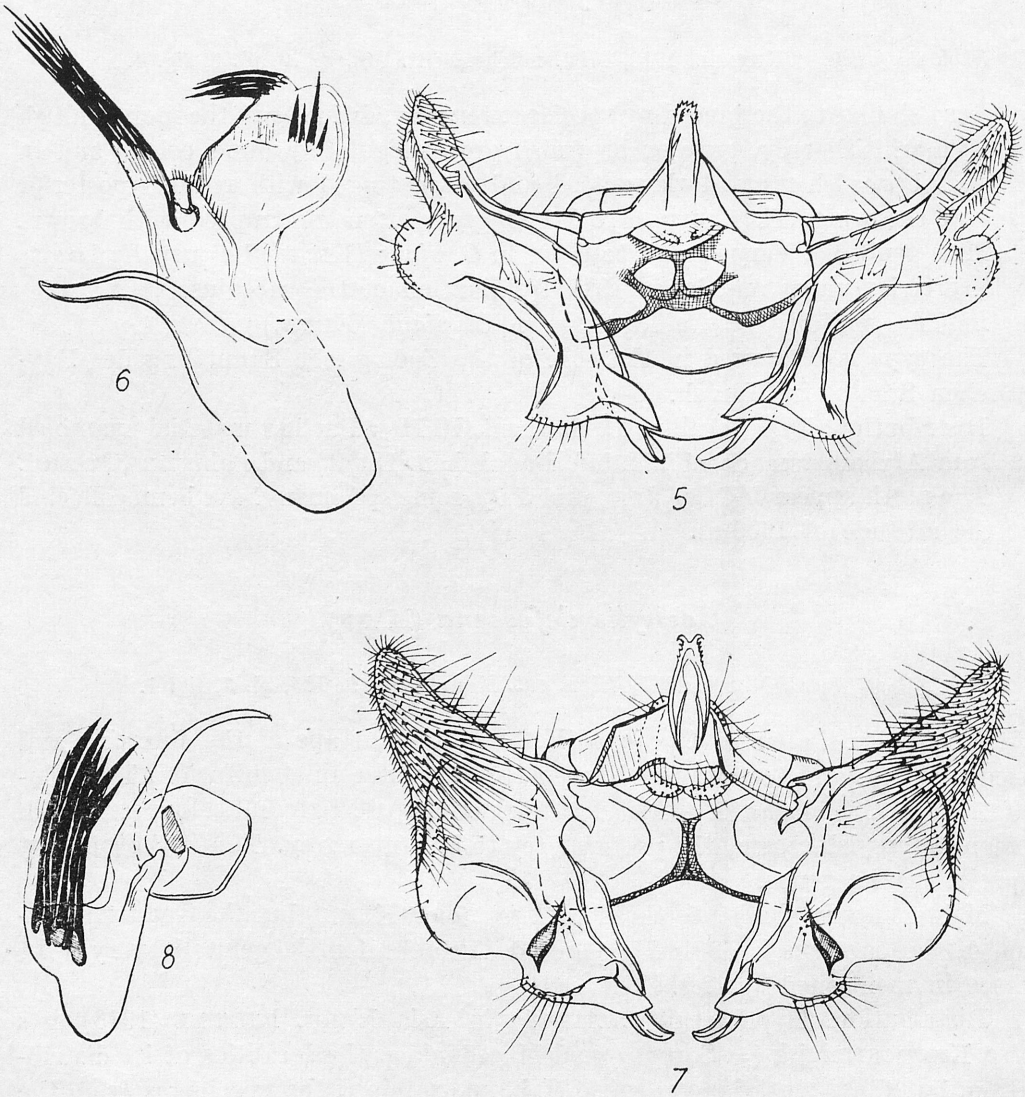
Externally similar to *C. piana* (KENN.) in thesh ape of the forewing and median fascia and to the preceding species in subterminal suffusion. The colouration of *C. defessana* (MANN) is, however, much paler; ground colour is whitish cream to greyish cream, the pattern grey to brownish grey. This is the smallest species of the genus.

Male genitalia similar to those in *C. faustana* (KENN.) but the free termination of the sacculus is distinctly pointed. Also the female genitalia very alike those in mentioned species.

Distribution. Type locality: Amasia in Asia Minor. KENNEL (1913) lists also Krasnoarmiejsk (= Sarepta) and Macedonia as the localities of its distribution, but these must be confirmed. I have examined the specimens from the following localities: Ankara, Kurdistan (Malatya), S. Elburz, Derbent, Teheran, Ak-Shehir, Iran and Pontus.

Cochylis indica sp. nov.

Labial palpus about 2, dark brownish grey, brown scaled, with terminal joint strong. Head and scape of antenna cream, flagellum brownish; thorax grey-cream abdomen greyer. Forewing broadening terminad, costa almost straight, hardly concave medially; apex pointed; termen oblique, straight. Ground colour whitish cream tinged with pale grey-cream dorso-posteriorly; grey stripes along costa beyond middle, some three small ones more posteriorly and some in basal area. Dorsal blotch broad, consisting of dark blackish grey stripe anteriorly and some paler ones parallel to this and tolerably parallel



Figs. 5—8. *Cochylis* TREIT.: 5 — male genitalia of *C. aestiva* (WALSM.), paratype, 6 — aedeagus of same specimen, 7 — male genitalia of *C. indica* sp. n., type, 8 — eadeagus of same specimen

to termen; ill-defined, elongate also parallel shade-lines just beyond the blotch; tornus suffused, delicately marked with grey-brown apex with some three reddisch spots limited anteriorly by an elongate marking extending from posterior part of costa to anterior portion of termen, then two or three similar rusty brown spots. Fringes (damaged) brownish grey. Hindwing elongate, trapezoidal, protruding apically, brownish grey in colour, pale anteriorly. Fringes greyish. Length of forewing 7 mm.

Male genitalia (figs. 7, 8): Tegumen broad; socii narrow, elongate. Valva broad anteriorly with narrow costal portion and strongly broadening ventrocaudal part which is rounded externally; sacculus short, provided with short, pointed free termination. Distinctly sclerotized fold above termination of sacculus on valva present. Aedeagus with short coecum penis and broad median portion; termination long, bent, pointed apically.

Type, ♂: „N. India, Khyra Gully, Maj. H. Roberts", G.Sl. 7235, in the coll. of the British Museum (Nat. Hist.), London.

Comments. The species resembles *C. posterana* Zell. externally, but the male genitalia are similar to those of *defessana*-group. Female unknown.

Cochylis lutosa Razowski

Cochylis lutosa Razowski, 1967. Beitr. naturk. Forsch. SW-Deutschl., **26**: 107, figs. 48—50.

Externally this species resembles pale coloured specimen of *C. maestana* Kenn. or *C. aestiva* (Walsm.). The male genitalia are also of their type but the concavity of the valva is rather parallel to the sacculus, while in the mentioned species it is oblique to it. Remaining features and female genitalia very close to those of the mentioned species.

Described from Afghanistan (Panjao). Two examples from central Afghanistan (Band-i-Amir) before me.

Cochylis epilinana Duponchel

Cochylis epilinana Duponchel, 1843, Hist. Nat. Lép. France, Suppl., **4**: 312, pl. 65, fig. 5.

Svensson (1966) pointed out that *C. epilinana* Dup. is a species erroneously mentioned by me (1960) under the name *Longicornutia phaleratana* (H.-S.). He had an opportunity to compare the types of the two species and realized that the latter is synonymous with *Cochylidia subroseana* (Haw.)

The central European *C. epilinana* Dup. is characterized by cream or pale brownish cream ground colour and yellow-brown or ochreous markings. Besides the typical form there is another one occuring in southern Europe, Asia Minor, and most probably in North Africa. This has been known under the name *Cochylis carpophilana* Stgr. In this form the ground colour is pale cream, sometimes tinged with pale pink, the pattern is rusty brown in its darkest

parts. The median fascia marked with blackish anteriorly, brownish grey costally. There are no differences between *C. carpophilana* STGR. and *C. epilinana* DUP. in the genitalia.

Cochylis nana (HAWORTH)

Tortrix nana HAWORTH, [1811], Lep. Brit.: 439.

This species differs from remaining palaearctic species of this genus. It is widely distributed in Holarctic Region. KENNEL (1913) mentioned its distribution as follows: Central and Northern Europe, northern Spain, northern Italy, Dalmatia, Asia Minor and North America. First data in the distribution of this species is far East come from the labels of the examples of the collection of the Zoological Museum, A. S., Leningrad. These are: Jarkovo near Novosibirsk, Klimoitsy in Amur district and Vinogradovka.

Cryptocochylis RAZOWSKI

Cryptocochylis RAZOWSKI, 1960, Pol. Pismo ent., **30**: 313.

Forewing with apex protruding. Venation: r_4 to costa before apex; r_5 to termen; cu_2 rather opposite to r_2. Hindwing: *sc* long; r—m_1 and m_3—cu_1 stalked to middle.

Male genitalia. Socii coalescent; transtilla with bifurcate median part; costa of valva short. Female genitalia: antrum bulbous; sterigma in shape of broad connactives extending between antrum and anapophyses anteriores.

Only one species belong to this genus.

Cryptocochylis conjunctana (MANN)

Conchylis conjunctana MANN, 1864, Wien. ent. Monatschr. **8**: 183, pl. 3, fig. 12.
Euxanthis grapholithana KENNEL, 1913, Zoologica, **21**: 333, pl. 14, fig. 49 — **synon. nov.**

The species is rather variable in the pattern and colouration. Ground colour varies between whitish and grey-brown; pattern more or less distinct, sometimes partially reduced, grey to brown-grey.

In the male genitalia (RAZOWSKI 1960) tegumen broad, scaphium membraneous; socii large, coalescent one with another; valva broad with costa well sclerotized; costal portion of valva proportionately distinctly sclerotized, provided with irregular dentation apically and caudally. Sacculus long, thin, pointed terminally. Aedeagus small, pointed. Transtilla bifurcate medially. The free termination of the sacculus is probably variable in its length.

In the female genitalia eighth tergite very broad; anapophyses strong; sterigma well developed connected to antrum by a membrane, posterior part of bursa more strongly sclerotized than anterior one which is minutely spined. The shape of antrum and sterigma are easily deformable during preparation.

I have not found any differences between the type of *C. conjunctana* (MANN) and type of *Euxanthis grapholithana* KENNEL. First is the collection of the Naturhistorisches Museum, Vienna, the second in the collection of the British Museum (Nat. Hist.), London.

Distribution: Central Europe except its northern parts, South Germany, Austria, Hungary; Italy, Anatolia (Asia Minor).

REFERENCES

KENNEL J. 1908—1921. Die Palaearktischen Tortriciden. Zoologica, **21**, Stutgart.

OBRAZTSOV N. 1943. Lepidopterologische Ergebnisse der Pamir Expedition der Kiewer Zoologischen Museums in Jahre 1937. Mitt. münch. ent. Ges., **33**: 85—108, pl. IX.

RAZOWSKI J. 1960. Studies on the *Cochylidae (Lepidoptera)*. Part II. The Genera of the Palaearctic *Cochylidae*. Pol. Pismo ent., Wrocław, **30**: 281—356.

RAZOWSKI J. 1963a. *Tortriciidea (Lepidoptera)* from Iran. Acta zool. cracov., Kraków, **8**: 251—277.

RAZOWSKI J. 1963b. Klucze do oznaczania owadów Polski. Part 27: Lepidoptera, 41a: *Cochylidae*, Warszawa.

RAZOWSKI J. 1964. Studies on the *Cochylidae (Lepidoptera)*. Part X. The genitalia of the types of the *Cochylidae* described by WALSINGHAM. Annales zool. Warszawa, **22**: 355—385.

SWATSCHEK E. 1958. Die Larvalsystematik der Wickler *(Torticidae* und *Carposinidae*). Abhandl. Larvalsyst. Insekt. Berlin.

TOLL S. 1947. Beitrag zur Microlepidop terenfauna von Nord-Persien. Zschrft. wien. ent. Ges., **32**: 107—116, pls. IV—V.

STRESZCZENIE

Oprócz uwag o charakterze ogólnym praca zawiera nowe dane o palearktycznych gatunkach rodzaju *Cochylis* TREIT. Kilka gatunków zostało zsynonimizowanych, a jako nowe zostały opisane *C. laetana* sp. nov. i *C. indica* sp. nov.

РЕЗЮМЕ

Кроме замечаний общего характера работа содержит новые данные о палеоарктических видах рода *Cochylis* TREIT. Несколько видов зсинонимизировано, а как новые описано *C. laetana* и *C. indica*.

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