

New or little-known species and new records of Coleophoridae from Armenia (Lepidoptera)

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² Contribution to the knowledge of Coleophoridae CLIX

Abstract: This publication deals with Coleophoridae specimens collected in 2019 and 2022 in Armenia by O. Karsholt, H. Roweck and N. Savenkov. Seventy-two species are identified and listed of which 43 are new to Armenia and one, *C. zofodella* Baldizzone, 2001, is also new to Europe. Ten new species are described: *Coleophora savenkovi* Baldizzone, sp. nov., *C. paracoriacea* Baldizzone, sp. nov., *C. rowecki* Baldizzone & Richter, sp. nov., *C. sanctuariella* Baldizzone, sp. nov., *C. lepida* Baldizzone, sp. nov., *C. iucunda* Baldizzone, sp. nov., *C. hispida* Baldizzone, sp. nov., *C. anomala*, sp. nov., *C. gorovanensis* Baldizzone, sp. nov., *C. finitima* Baldizzone, sp. nov. The female genitalia of *C. adlecta* Baldizzone, 1994, *C. makuensis* Baldizzone, 1994, *C. mucronata* Baldizzone, 1994, and *C. zofodella* Baldizzone, 2001, are illustrated for the first time.

Keywords: *Coleophora*, descriptions, genitalia, Caucasus, DNA-barcode, status revised.

INTRODUCTION

Currently, around 1560 species of Coleophoridae are known, but many species remain undescribed. An increase in research in areas of great naturalistic interest, still little explored from the point of view of the fauna of microlepidoptera, will certainly lead to the descriptions of new species.

This prediction is confirmed by research that is intensively developing in the Republic of Armenia.

In the World Catalogue of Coleophoridae (Baldizzone *et al.*, 2006) only 35 species were reported for Armenia, but a research expedition carried out by Ole Karsholt in 2011 allowed the identification of 30 species of which 4 were described as new while 19 others were new for the country (Baldizzone, 2016). Another four species were reported for Armenia in the publication of Budashkin *et al.* (2015).

In 2019, Ole Karsholt, Hartmut Roweck and Nikolay Savenkov, and in 2022, H.R. and N.S., carried out highly successful expeditions, staying in the Ecologde of the Caucasus Wildlife Refuge near the village of Urtsadzor. Many Coleophoridae were collected and nearly 500 specimens were sent to me for identification. The following pages present the result of the work carried out on this material, which allowed the identification of 72

species, of which 43 are new for Armenia, the description of 10 new species, the illustration of the previously unknown genitalia of the females of 4 species, and the addition of notes on some little-known species. A cordial collaboration with Czech and Slovakian colleagues allowed a useful exchange of information and the inclusion of additional specimens collected by them in the paratype series of some new species.

Abbreviations

Bldz = Giorgio Baldizzone

IgR = Ignác Richter

GP = genitalia preparation

ECKU = Collection of Ecology-Centre, Kiel University, Germany

HNHM = Hungarian Natural History Museum, Budapest, Hungary

LNKD = Landessammlung für Naturkunde, Karlsruhe, Germany

MNHN = Muséum National d'Histoire Naturelle, Paris, France

NHMUK = Natural History Museum, London, U.K. (formerly British Museum of Natural History = BMNH and B.M.)

NMPC = National Museum of the Czech Republic, Prague

TLMF = Tiroler Landesmuseum Ferdinandeum, Innsbruck, Austria

ZMUC = Zoological Museum, Natural History Museum of Denmark, Copenhagen, Denmark

ZT = Zdenko Tokár

MATERIAL AND METHODS

Almost all specimens were collected with portable ultraviolet light traps, but a few were collected with an insect net, sweeping the vegetation.

The collecting data are as follows:

“ARMENIA, Prov. Ararat | Urtsadzor, Caucasus Wildlife Reserve | Eco Lodge, 1250 m | 39°56'58"N 44°53'14"E | 22-30.V.2019 | O. Karsholt, H. Roweck & N. Savenkov *leg.*; ibidem, 26.IV.-7.V.2022, H. Roweck & N. Savenkov *leg.*; ibidem, 26.IV.-9.V.2022, B. Skule *leg.*

“ARMENIA, Prov. Ararat | Vedi, Goravan sands-Reserve, 910 m | 39°53'35"N 44°43'03"E | 25-29.V.2019 | O. Karsholt, H. Roweck & N. Savenkov *leg.*”; ibidem, 956 m, 26.IV.-7.V.2022, H. Roweck & N. Savenkov *leg.*; ibidem, 26.IV.-7.V.2022, B. Skule *leg.*

As regards the correct spelling of Gorovan Sands, here is the explanation published by Šumpich *et al.* (2022): “The nature reserve is named after the old name of the village Gorovan, which has later become Goravan. But the official name of this protected area remained in its original spelling. Therefore, the names of the municipality and the protected area differ.”

For holotypes the information is cited verbatim as on the labels, with vertical bars representing changes of lines, for paratypes it is also cited verbatim, without vertical bars, whereas for other material it is cited in an abbreviated format. It should be noted that on all labels “Goravan” is mentioned, not Gorovan.

The distributional data of each species are based mainly on the catalogue of Baldizzone *et al.* (2006), on the volume of the Italian Coleophoridae (Baldizzone, 2019), and on the author's database. These sources are not mentioned separately in the distribution chapter of each species.

All identified species are listed according to the traditional order proposed by Toll (1953, 1962) with several variations. As is known, this classification is now obsolete, and work based on modern criteria will be necessary to propose a more satisfactory classification.

The determination of the specimens was carried out through the study of the genitalia. The genetic analysis, through barcoding, was carried out for a limited number of specimens, in particular for some doubtful species, such as those which appeared undescribed based on morphology, and to correctly attribute the two sexes to the correct species. For this operation on DNA barcoding, the help of Jukka Tabell was fundamental; in addition to having the barcoding procedures carried out through the

kindness of Marko Mutanen, he provided indications and suggestions based on the results of the analyses. Subsequently, further specimens were barcoded thanks to the help of Toni Mayr and Peter Huemer.

Most of the Euparal slide mounts of dissected genitalia were photographed with a Bresser 5.0 camera attached to a Bresser BioScienze 40-1000x trinocular microscope, mainly using the Leitz PL Fluotar 6.3 / 0.20 objective. A few slides were photographed with an old Miranda camera body fitted with an adaptor tube to an old “Galileo” microscope equipped with Aus Jena 3:1-0.10 and 6.3:1-0.18 objectives. Black-and-white Ilford PAN F film was used to obtain images with high contrast between the structures and the background. Film negatives were digitized with a scanner then cleaned and edited in Corel PaintShop Pro. Adults were photographed with a Canon EOS 5D Mark II digital camera equipped with a Canon MP-E 65 mm objective, with lighting provided by two circular neon lamps OSRAM L 32W / 8400 C (cool white).

The technique of the genitalia preparation and the morphological terms follow Baldizzone (2019).

Brief characterization of the two biotopes of the species collected (courtesy of Hartmuth Roweck)

The National Sanctuary Gorovan Sands (Fig. 1) in the Ararat region was established to protect the habitats of endangered animals and the unique vegetation. One of the most typical ecosystems of the arid zone are sandy *Artemisia* semi-deserts with a fauna and flora well adapted to extreme drought and temperature variation. Gorovan Sands National Sanctuary represents the largest area of this type in Armenia. It is characterised by cold winters, dry and hot summer months and annual precipitations of only 200-300 mm. The vegetation is dominated by tussocks of *Artemisia fragans*, *Achillea tenuifolia*, salt resistant plants such as *Salsola* spp., *Kochia prostrata*, *Ziziphora tenuior*, phog (*Calligonum polygonoides*), and others, mainly psammophytic plant species, which show a huge variety of adaptations to sandy conditions with a poor supply of nutrients and extreme dry periods. About 160 species of vascular plants have been noted at this site, among them at least 12 species listed on the Armenian Red List. For *Calligonum polygonoides*, the foodplant of the endemic *Pharaonus caucasicus* (Reitter, 1888) (Coleoptera, Scarabaeidae), it is the only known occurrence in Armenia. Unfortunately, branches and roots of this plant suffer intensive collecting by local people just for burning. A further stress for this plant is uncontrolled grazing by domestic animals (mainly goats and sheep).

Besides Gorovan Sands collections were carried out in the surroundings of the Ecolodge of the Caucasus Wildlife Refuge (Fig. 2), not far from the village of Urtsadzor, which offers splendid accommodation for biologists, with diverse ecosystems nearby. For example,



Figs 1-2. The biotopes in which the specimens were collected: (1) Gorovan Sands National Sanctuary. (2) The Ecologde of Caucasus Wildlife Refuge with Mount Ararat in the background (photos N. Savenkov).

the xerophilous vegetation of subalpine meadows in that region is floristically very rich and varies according to topography, altitude, and site conditions. Also, natural *Stipa* dominated habitats have been replaced by fields and their successions, especially in the valleys and on foothills. In comparison with Gorovan Sands, the continental climate is less severe with average annual precipitations of 350-450 mm. Winters are relatively mild (without snow cover every year), and the average temperature in January is -4 to +5°C while the lowest temperatures reach -25°C. The rather short spring period is often relatively wet, and ephemeral plants grow abundantly in the spring when the temperatures rise and ground moisture is available. Along the Wedi River and its tributaries, which have formed deep V-shaped valleys, groundwater seems to be available throughout the year, and their banks are covered by *Fraxinus*, *Populus*, *Salix*, and *Tamarix* bushes. Towards the middle of May air temperatures strongly increase, and a dry and hot summer begins, with maximum temperatures in July and August reaching up to 38°C. Most of the present steppe formations (not only here but in all of Transcaucasia) are the result of secondary successions, which can be mixed with natural vegetation, as they often have fallen out of use decades ago. But the original vegetation has almost everywhere been removed for grazing, various crops, and vineyards. At present, primary forests (if at all!) survive only in very few protected areas, on steep slopes, unsuitable for cultivation and in a handful of very remote areas. These remnants of juniper- (*Juniperus polycarpus*) and oak- (*Quercus macranthera*) dominated forests are often rich in relict plant communities and associated insects which are rare elsewhere nowadays. At the upper part of the semi-desert zone there are rocky and stony slopes with sedimentary limestone and chalky clay. These slopes also harbour numerous otherwise very rare plants and animals. The south-exposed rocky slopes at altitudes of 1,400-1,700 m are often covered with Armenian-Iranian “phrygana” vegetation, characterized by a thorny bush association with *Amygdalus fenzliana*, buckthorn (*Rhamnus pallasii*), *Spiraea*, honeysuckle (*Lonicera*), rose (*Rosa*), hawthorn (*Crataegus*) and pear (*Pyrus*), along with hackberry (*Celtis glabrata*), *Pistacia* species, *Rhus* (*Rhus coriaria*), joint-rush (*Ephedra*), and a huge variety of different grass species.

TAXONOMY

Augasma atraphaxidellum Kuznetsov, 1957

Augasma atraphaxidellum Kuznetsov, 1957: 43.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♂ ibidem, 26.IV.-7.V.2022; 1 ♂ Vedi env., Goravan vill., Gorovan Sands Reserve, 30.IV.2022.

Distribution: Romania, Southern Russia, Armenia.

Coleophora zernyi Toll, 1944

Coleophora zernyi Toll, 1944: 243.

Material studied: 3 ♂, 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♂ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV.2022.

Distribution: Portugal, Spain, Corsica, Sardinia, Morocco, Tunisia, Lebanon, Cyprus, Caucasus (Azerbaijan), Syria, Iraq, Iran. **New for Armenia.**

Coleophora gryphipennella (Hübner, 1796)

Tinea gryphipennella Hübner, 1796: Plate VIII-30, fig. 206.

Material studied: 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019.

Distribution: Almost all of Europe, Turkey, Armenia, Siberia, Japan.

Coleophora savenkovi Baldizzone, sp. nov.

Figs 3, 25-27

Holotype: ♂ (GP Bldz 18020 [DNA specimen ID: TLMF_Lep_44905]); “ARMENIA: Vedi | Goravan sands, 965 m | 27.04.2022 | H. Roweck & N. Savenkov” [39°53’35”N 44°43’03”E]; in ECKU.

Diagnosis: A small species with an overall brownish appearance which belongs to the *C. incultella* Toll, 1952 species group and based on the structure of the male genitalia it is close to *C. iordanica* Baldizzone, 2023. The new species is distinct from *C. iordanica* by the much wider transtilla, the more robust cucullus, the valvula externally expanded in a triangular shape, the longer and thinner cucullus, the long and sharp longer phallosome, and the longer vesica.

Description (Fig. 3): Wingspan 10.5 mm. Head dirty white, brown suffused on frons. Antenna ringed in an inconspicuous way, dirty white and light brown; scape light brown with few erect scales. Labial palp predominantly white on outer side and almost completely grey brown on inner side; second article approximately 0.5x longer than third. Proboscis of normal shape. Thorax and tegula brown. Forewing colour a mix of brown and white scales, the latter most evident along costa from base to middle and in median part along anal fold; fringes greyish brown. Hindwing and fringes greyish brown. Abdomen brown.

Abdominal structures (Fig. 27): No posterior lateral struts. Transverse strut very thick and sclerotized, with undifferentiated proximal edge, slightly curved distal edge. Tergal disks (3rd tergite) about 3.5x as long as wide, covered with about 40 spines.

Male genitalia (Figs 25-26): Gnathos knob globular. Tegumen stout, slightly constricted in middle; pedunculus quite long, slightly dilated on outer side.

Transtilla large, triangular. Valvula large, ventral edge round, external edge expanded into a triangular shape. Cucullus of medium length, narrower at base. Sacculus well sclerotized, ventral edge slightly curved, beak-shaped, pointed at apex, dorsal edge slightly concave. Phallosome conical, narrow, pointed, and sclerotized only dorsally. Vesica narrow and very long, slightly sclerotized, without cornuti.

Female genitalia: Unknown.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Gorovan Sands National Sanctuary.

Etymology: The species is dedicated to Dr Nikolay Savenkov (Riga, Latvia) in recognition of his important research activities on microlepidoptera.

Coleophora uralensis Toll, 1961

Coleophora uralensis Toll, 1961a: 217.

Material studied: 1 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 3 ♂, 3 ♀ ibidem, 26.IV.-7.V.2022; 1 ♂, 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV.2022.

Distribution: Spain, France, Italy, Croatia, Macedonia, Hungary, Crimea, Turkey, Southern Russia, Urals, Kazakhstan, Iran, Afghanistan. **New for Armenia**.

Coleophora cf. paraptarmica Toll & Amsel, 1967

Coleophora paraptarmica Toll & Amsel, 1967: 13.

Material studied: 8 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Reported for Afghanistan, Turkmenistan, Turkey, Pakistan, Iran, Syria (Baldizzone, 1994), but this distribution will have to be reconsidered when the precise identity of the species is established.

Remarks: I discussed this species in the article dealing with the description of *C. santonici* Baldizzone & Takács, 2022 (Baldizzone *et al.*, 2022), highlighting that its identity has not yet been satisfactorily defined and that it probably corresponds to a group of species. The specimens from Armenia, all females, have identical genitalia.

Coleophora mucronata Baldizzone, 1994

Figs 4, 28-31

Coleophora mucronata Baldizzone, 1994: 23.

Material studied: 1 ♂, 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

The species was described only from the male, so the presence of two specimens of the two sexes collected together, whose identity was also confirmed by barcoding, allows the description of the female genitalia.

Female genitalia (Figs 29, 31): Papillae anales oval, slightly elongated, well sclerotized. Apophyses posteriores twice as long as anteriores. Sterigma trapezoidal, 1.5x as wide as long, deeply hollowed by broad sinus vaginalis, distal edge bristled with some long setae. Ostium bursae large, oval. Colliculum cup-shaped, well sclerotized on distal edge, crossed by medial line in proximal part which is thickened along external sides. Ductus bursae wrapped in small spines arranged in two parallel bands in posterior part for a length of approximately 4x as long as sterigma; in central part ductus folded and sclerified, without spines, immediately after insertion of ductus seminalis; anterior part long, transparent, finely dotted only in part that extends from bursa copulatrix. Corpus bursae shaped like an elongated sac, with large leaf-shaped signum.

Distribution: Iran, Armenia. The species, described from Iran, was recently reported from Armenia (Budashkin *et al.*, 2015).

Coleophora obtectella Zeller, 1849

Coleophora obtectella Zeller, 1849: 333.

Material studied: 7 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 7 ♂ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-30.V.2019.

Distribution: Spain, France, Italy, Sicily, Austria, Hungary, Croatia, Greece, Crete, Bulgaria, Ukraine, Lebanon, Palestine, Turkey, Armenia.

Coleophora sogdiana Baldizzone, 1994

Coleophora sogdiana Baldizzone, 1994: 33.

Material studied: 4 ♂ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Afghanistan, Pakistan, Iran, Oman. **New for Armenia**.

Coleophora parthenica Meyrick, 1891

Coleophora parthenica Meyrick, 1891: 59.

Material studied: 3 ♂, 3 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019; 3 ♂, 10 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Romania, Greece, Morocco, Algeria, Russia (Lower Volga, Transbaikalia), Caucasus (Armenia, Azerbaijan), Mongolia, Korea.

***Coleophora tshogoni* Falkovitsh, 1972**

Coleophora tshogoni Falkovitsh, 1972a: 82.

Material studied: 3 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019; 1 ♂, 6 ♀ Vedi env., Goravan vill., Goravan Sands Reserve, 25-29.V.2019; 7 ♀ ibidem, 27.IV.2022.

Distribution: Turkestan, Uzbekistan. **New for Armenia.**

***Coleophora calligoni* Falkovitsh, 1972**

Coleophora calligoni Falkovitsh, 1972a: 77.

Material studied: 2 ♂, 2 ♀ Vedi env., Goravan vill., Goravan Sands Reserve, 27-30.IV.2022; 5 ♀ ibidem, 26.IV.-7.V.2022.

Distribution: Russia (Lower Volga), Central Asia, Mongolia. **New for Armenia.**

***Coleophora paracoriacea* Baldizzone, sp. nov.**

Figs 5, 32-38

Holotype: ♂ (GP Bldz 17273 [DNA specimen ID: MM27607]); "ARMENIA: Vedi | Urtsadzor, CWR Eco Lodge, 1250 m, 20-30.05.2019 | H. Roweck & N. Savenkov" [39°56'58"N 44°53'14"E]; in ECKU.

Paratypes: 5 ♀ (GP Bldz 17267 [DNA specimen ID: MM27610], 17554 [DNA specimen ID: TAB0036], 17558): same data as holotype; 1 ♀: "ARMENIA: Vedi, Urtsadzor, CWR Ranger Campus, 1450 m, 28.05.2019, H. Roweck & N. Savenkov"; 1 ♂ (GP Bldz 18024) same data, but 26.04.-7.05.2022; 3 ♀ (GP Bldz 17111, 17113 [DNA specimen ID: MM27096], 17114): "ARMENIA, prov. Ararat, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 39°56'58"N 44°53'14"E, 22-30.v.2019, O. Karsholt, H. Roweck & N. Savenkov"; 5 ♀ (GP Bldz 18122, 18130) same data, but 20.04.-1.05.2022; 1 ♀ (GP Bldz 18007): "ARMENIA, prov. Ararat, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 39°56'58"N 44°53'14"E, 1240 m, 26.iv-9.v.2022, leg. B. Skule (Dania)"; 1 ♂ (GP 35033 IgR), 1 ♀ (GP 35032 IgR): "Armenia, Urtsadzor, 2 km NE, Eco Lodge, 1250 m, 39°56'59"N, 44°53'14" E, 30.4.2022, leg. Z. Tokár; in coll. Tokár; 1 ♀ (GP ZT 14367): "Armenia, Urtsadzor 3,5 km NE, Eco Lodge 0,5 km N, 1380 m, 39°57'18"N 44°53'20"E, 1.5.2022, leg. Z. Tokár"; in coll. Tokár; 6 ♀ (GP Bldz 18030, 18039, 18044, 18046, 18136): "ARMENIA: Vedi, Goravan sands, 956 m, 27.04.2022, H. Roweck & N. Savenkov"; 3 ♀ same data, but 30.04.2022; in coll. ECKU, ZMUK, Baldizzone; 1 ♂ (GP 35035 IgR), 1 ♀ (GP 34604 IgR): "Armenia, Khosrov Forest St. Reserve, Azizkend 0,5 km W 1400 m, 39°57'44" N, 44°56'39" E 4. 5. 2022, leg. Z. Tokár"; in coll. Tokár.

Diagnosis: Small species, close to *C. coriacea* (Falkovitsh, 1989) due to the structure of the genitalia. Since the drawings of the genitalia published by Falkovitsh in the original description are not sufficiently suitable to give a correct representation of the species, a photographic plate (Figs 39-41) is presented to facilitate the comparison of the genitalia with those of *C. paracoriacea*. In the male genitalia of *C. paracoriacea* compared to those of *C. coriacea* (Figs 39-40), the external expansion of the pedunculus is greater, the transtilla is much longer and thinner, the sacculus is longer and pointed. In the female genitalia of *C. paracoriacea*, compared to those of *C. coriacea* (Fig. 41) the distal part of the sterigma has a greater sclerotized portion and more clearly angled on external edges, the two sclerotized lines of the posterior side of the sterigma are straight and united in proximal part, while those of *C. coriacea* are slightly curved and not fused; in *C. paracoriacea* the ductus bursae is much larger and longer, approximately 4.5x the length of the sterigma, while that of *C. coriacea* is much thinner and approximately 2.5x the length of the sterigma.

Description (Fig. 5): Wingspan 8-9 mm. Head white, light beige suffused dorsally. Antenna white and brown ringed; scape light beige dorsally, brown ventrally, without erect scales. Labial palp white with longitudinal brown streak on outer side, second article about 0.5x as long as third. Proboscis of normal shape. Thorax light brown. Tegula white. Forewing with mixture of brown and white scales, the brown ones more concentrated forming band above anal fold and along dorsum; fringes light grey. Hindwing light greyish brown; fringes light grey. Abdomen dirty white.

Abdominal structures (Figs 35, 38): No posterior lateral struts. Transverse strut thick, curved and well sclerotized on distal edge, proximal edge straight, almost imperceptible. Tergal disks (3rd tergite) about 4x as long as wide, covered with about 25 spines.

Male genitalia (Figs 32-34): Gnathos knob big, globular. Tegumen short and stocky, narrowed in middle; pedunculus short, very dilated on outer side. Transtilla long, thin and curved. Cucullus short, slightly thicker at base, ear shaped. Valvula small, slightly sclerotized, with inclined external edge. Sacculus curved and slightly wavy on ventral edge, ending at apex with more or less rounded triangular shape. Phallosome conical, sclerotized only at base with two evidently joined symmetrical sternal rods. Vesica rather robust, without cornuti.

Female genitalia (Figs 36-37): Papillae anales elongate, densely covered with bristles of different lengths. Apophyses posteriores slender, 1.2x as long as anteriores, but much thicker and sclerotized. Sterigma trapezoidal, sclerotized only in distal part, angled on external edges, in posterior side sclerotized only along two converging V-shaped longitudinal lines. Ostium bursae small, oval. Colliculum transparent, tubular. Ductus bursae

approximately 4.5x as long as sterigma, completely transparent, finely dotted in distal part, progressively widening towards corpus bursae. Corpus bursae oval, without signum.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Ararat Province, Urtsadzor, Caucasus Wildlife Refuge and Gorovan Sands National Sanctuary; Khosrov Forest State Reserve.

Etymology: The name with the Greek prefix *παρά* = close, similar, etc., highlights the affinity of the species with *C. coriacea*.

Coleophora kandymella (Falkovitsh, 1988)

Papyrosipha kandymella Falkovitsh, 1988: 139.

Material studied: 1 ♀ Vedi env., Gorovan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Turkmenistan, Iran. **New for Armenia.**

Coleophora larissae (Budashkin & Bidzilya, 2021)

Aporiptura larissae Budashkin & Bidzilya, 2021: 567.

Material studied: 1 ♀ Vedi env., Gorovan vill., Gorovan Sands Reserve, 27.IV.2022; 1 ♂, 1 ♀ ibidem, 30.IV.2022.

Distribution: Described and known from the Crimea. In my collection I have a pair of specimens donated to me by M. I. Falkovitsh labelled “Turkmenistan, Badgyz, ex larva *Suaeda microphylla*, 28.VII. and 14.VIII.1986, Falkovitsh leg.”. **New for Armenia.**

Coleophora ofaistoni (Anikin, 2005)

Aporiptura ofaistoni Anikin, 2005: 388.

Material studied: 1 ♂ Vedi env., Gorovan vill., Gorovan Sands Reserve, 956 m, 27.04.2022.

Distribution: Russia (Lower Volga, Kalmykia). **New for Armenia.**

Coleophora zhusguni Falkovitsh, 1972

Coleophora zhusguni Falkovitsh, 1972a: 79.

Material studied: 3 ♂, 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 4 ♂, 3 ♀ Vedi env., Gorovan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Turkmenistan, Uzbekistan, Russia (Lower Volga). **New for Armenia.**

Coleophora klimeschiella Toll, 1952

Coleophora klimeschiella Toll, 1952b: 157.

Material studied: 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019; 1 ♂, 4 ♀ Vedi env., Gorovan vill., Gorovan Sands Reserve, 25-29.V.2019; 1 ♀ ibidem, 30.IV.2022.

Distribution: Hungary, Romania, Bulgaria, North Macedonia, Greece, Ukraine, Russia, Caucasus (Dagestan), Iran, Turkmenistan, Pakistan, USA (introduced). **New for Armenia.**

Coleophora eurasiatica Baldizzone, 1989

Coleophora eurasiatica Baldizzone, 1989: 13.

Material studied: 1 ♀ Vedi env., Gorovan vill., Gorovan Sands Reserve, 27.IV.2022.

Distribution: Hungary, Bulgaria, Russia (Lower Volga, Southern Ural, Altai, Far East), Armenia, Mongolia, China, Korea.

Coleophora ochroflava Toll, 1961

Coleophora ochroflava Toll, 1961c: 163.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 26-27.IV.2022; 2 ♂, 1 ♀ Vedi env., Gorovan vill., Gorovan Sands Reserve, 26.IV.-7.V.2022.

Distribution: Italy, Bulgaria, Romania, Greece, Crimea, Russia (Lower Volga), Caucasus (Dagestan, Kabardino-Balkaria, Stavropol district), Turkmenistan. **New for Armenia.**

Coleophora arachnias Meyrick, 1922

Figs 6, 42-46

Coleophora arachnias Meyrick, 1922: 556.

Material studied: 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♂, 1 ♀ ibidem, 26.IV.2022; 2 ♀ Vedi env., Gorovan vill., Gorovan Sands Reserve, 25-29.V.2019; 1 ♀ ibidem, 27.IV.2022.

Distribution: Palestine, Turkmenistan, Afghanistan, Iran, Saudi Arabia, Oman. **New for Armenia.**

Remark: The genitalia of the two sexes, which had previously been illustrated separately with drawings, are presented together here on a photographic plate.

Coleophora macilenta Falkovitsh, 1972

Figs 7, 47-51

Coleophora macilenta Falkovitsh, 1972b: 694.

Material studied: 1 ♀ Urtsadzor, Caucasus Wildlife

Reserve, Eco Lodge, 20-30.V.2019; 1 ♂, 4 ♀ Vedi env., Goravan vill., Goravan Sands Reserve, 25-29.V.2019.

Distribution: Russia (Lower Volga), Iran, Turkmenistan, Mongolia. **New for Armenia.**

Remark: As for the previous species the genitalia of the two sexes, which had previously been illustrated separately with drawings, are presented here together on a photographic plate.

Coleophora denigrella Gerasimov, 1930

Coleophora denigrella Gerasimov, 1930: 40.

Material studied: 4 ♂ Vedi env., Goravan vill., Goravan Sands Reserve, 25-29.V.2019.

Distribution: Turkey, Uzbekistan, Turkmenistan, Afghanistan. **New for Armenia.**

Coleophora roweckii Baldizzone & Richter, sp. nov.

Figs 8, 52-59

Holotype: ♂ (GP 17541 [DNA specimen ID: TAB0029]); "ARMENIA: Vedi | Urtsadzor, CWR Eco Lodge, 1250 m, 20-30.05.2019 | H. Roweck & N. Savenkov" [39°56'58"N 44°53'14"E]; in ECKU.

Paratypes: 1 ♀ (GP Bldz 17548 [DNA specimen ID: TAB0029]) same data as holotype; 1 ♀ (GP Bldz 17542): "ARMENIA: Vedi, Urtsadzor, CWR Ranger Campus, 1450 m, 28.05.2019, H. Roweck & N. Savenkov"; 2 ♂ (GP Bldz 17102, GP Bldz 17541 [DNA specimen ID: MM27089]): "ARMENIA, prov. Ararat, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 39°56'58"N 44°53'14"E, 22-30.v.2019, O. Karsholt, H. Roweck & N. Savenkov"; 2 ♀ (GP Bldz 17117, 17118 [DNA specimen ID: MM27090]): "ARMENIA, prov. Ararat, Goravan sands Reserve, 910 m, 39°53'35"N 44°43'03"E, 25-27.v.2019, O. Karsholt, H. Roweck & N. Savenkov"; 3 ♂ (GP Bldz 17543, 17547 [DNA specimen ID: TAB 0031], 17593), 1 ♀ (GP Bldz 17549 [DNA specimen ID: TAB0032]): "ARMENIA, Vedi, Goravan sands, 956 m, 25-29.05.2019, H. Roweck & N. Savenkov"; in ECKU, ZMUC, Baldizzone; 1 ♂ (GP IgR 31372), 1 ♀ (GP IgR 31373): "ARMENIA, Vedi env., Goravan vill., Goravan Sands Reserve, 956 m, sandy steppe, 39°53'20"N, 44°43'58"E, 31.v.2017, Jan Šumpich *leg.*"; in NMPC; 3 ♂ (GP 35114 IgR): "Armenia, Vedi env. Dashtakar vill. 1013 m 39°56'45"N, 44°44'41"E 1.6.2017 rocky steppe, *leg.* J. Šumpich"; in NMPC; 1 ♀ (GP 35117 IgR): "Armenia, 3 km NW of Meghri, LEVHAZ env., Arevik National Park 38°54'59" N 46°10'12" E rocky steppe, 844 m 5. 6. 2017, *leg.* J. Šumpich", in NMPC.

Diagnosis: Medium sized species, with ochreous-brown forewing and white costal stripe. It belongs to

the group of *Coleophora onobrychiella* Zeller, 1849. Compared to this species, whose genitalia have frequent individual variations, in the male genitalia of *C. roweckii* the sacculus is characteristic, not notched on the ventral edge and normally longer and narrower. In the female the sterigma is longer and not hollowed on the external side, which is linear, and the initial part of medial line of ductus bursae in the transparent coiled part is shorter.

Description (Fig. 8): Wingspan 12-13 mm. Head white, suffused light yellow dorsally. Antenna white, ringed brown, with first three basal segments covered with yellowish scales; scape yellowish with erect scales of same colour on outer side and darker on inner side. Labial palp white, second article about 0.5x longer than third. Proboscis of normal shape. Thorax white, tinged yellow in middle. Tegula yellow on inner side and white on outer side. Forewing ochreous brown, dorsal half slightly paler; costal streak white, slightly expanded apically; thin white streak along anal fold, from base up to one third of wing; dorsal streak white, wide at base, then thin along entire edge; costal fringes white, apical ochraceous brown, dorsal fringes beige. Hindwing grey; fringes light grey brown. Abdomen white.

Abdominal structures (Figs 55, 59): No posterior lateral strut. Transverse strut almost straight with thin proximal edge more sclerotized in middle, distal edge slightly curved, more sclerotized, except in middle. Tergal discs (3rd tergite) about 3.5x as long as wide in male, covered with about 45 small conical spines; about 2.5x as long as wide in female.

Male genitalia (Figs 52-54): Gnathos knob globular. Tegumen quite elongated trapezoidal, slightly narrowed in middle; pedunculus short, slightly dilated on outer side. Transtilla short. Valvula large, convex upper edge surmounted by robust curved cilium, external lateral edge inclined, more or less curved. Cucullus long, thinner at base, club shaped. Sacculus strongly sclerotized in shape of acute triangle, ending in sharp tip; lower edge slightly curved, upper edge inclined and wavy in some specimens (Fig. 53). Phallosome large, conical, less sclerotized in ventral part. Vesica robust, rather wide with a braid of 8 cornuti progressively longer towards apex.

Female genitalia (Figs 56-58): Papillae anales elongated oval. Apophyses posteriores approximately 2.3x longer than anteriores. Sterigma subtrapezoidal, slightly curved distal edge bristling with straight setae of different lengths in middle, deeply hollowed by sinus vaginalis. Ostium bursae large, oval. Colliculum large, calyx-shaped with distal part wide on each side, on which there are some short straight setae; proximal funnel-shaped part more sclerotized on edges, crossed by large terminal part of medial line. Ductus bursae long, coiled in middle, crossed by medial line beginning at insertion of ductus seminalis; posterior part of ductus wrapped in small, broad-based spines for a length of approximately 6x that of sterigma; coiled part, where medial line begins,

transparent; anterior part of ductus finely dotted. Corpus bursae large, sac-shaped with leaf-shaped signum.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Ararat province, Urtsadzor, Caucasus Wildlife Refuge, Gorovan Sands National Sanctuary, and Arevik National Park.

Etymology: The new species is dedicated to Prof. Hartmut Roweck (Kiel, Germany) eminent botanist and microlepidopterist, in recognition of his research activities in Armenia.

Coleophora testudo Falkovitsh, 1973

Coleophora testudo Falkovitsh, 1973: 222.

Material studied: 1 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 4 ♂, 2 ♀ ibidem, 26.IV.-7.V.2022; 2 ♂, 7 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 26.IV.-7.V.2022.

Distribution: Turkey, Uzbekistan, Turkmenistan, Iran, Afghanistan. **New for Armenia.**

Coleophora deauratella Lienig & Zeller, 1846

Coleophora deauratella Lienig & Zeller, 1846: 295.

Material studied: 2 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019.

Distribution: Almost all of Europe, Turkey, Lebanon, Caucasus (including Armenia), Siberia, China, Japan; accidentally introduced into Canada and the USA.

Coleophora pennella (Denis & Schiffermüller, 1775)

Tinea pennella Denis & Schiffermüller, 1775: 140.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♂ Vedi env., Goravan vill., Gorovan Sands Reserve, 30.IV.2022.

Distribution: Almost all of Europe, Ukraine, Crimea, Russia (Lower Volga, Southern Urals), Turkey, Caucasus (Azerbaijan, Dagestan), Turkmenistan, Iran, Morocco. **New for Armenia.**

Coleophora sanctuariella Baldizzone, sp. nov.

Figs 9-10, 60-63, 68-71

Holotype: ♂ (GP Bldz 17994 [DNA specimen ID: TLMF_Lep_44922]); "ARMENIA: Vedi | Goravan sands, 956 m, 27.04.2022, H. Roweck & N. Savenkov" [39°53'35"N 44°43'03"E]; in ECKU.

Paratypes: 2 ♀ (GP Bldz 18002) same data as holotype; 1 ♀ (GP 18102) ibidem, 27.04.2022; 1 ♀

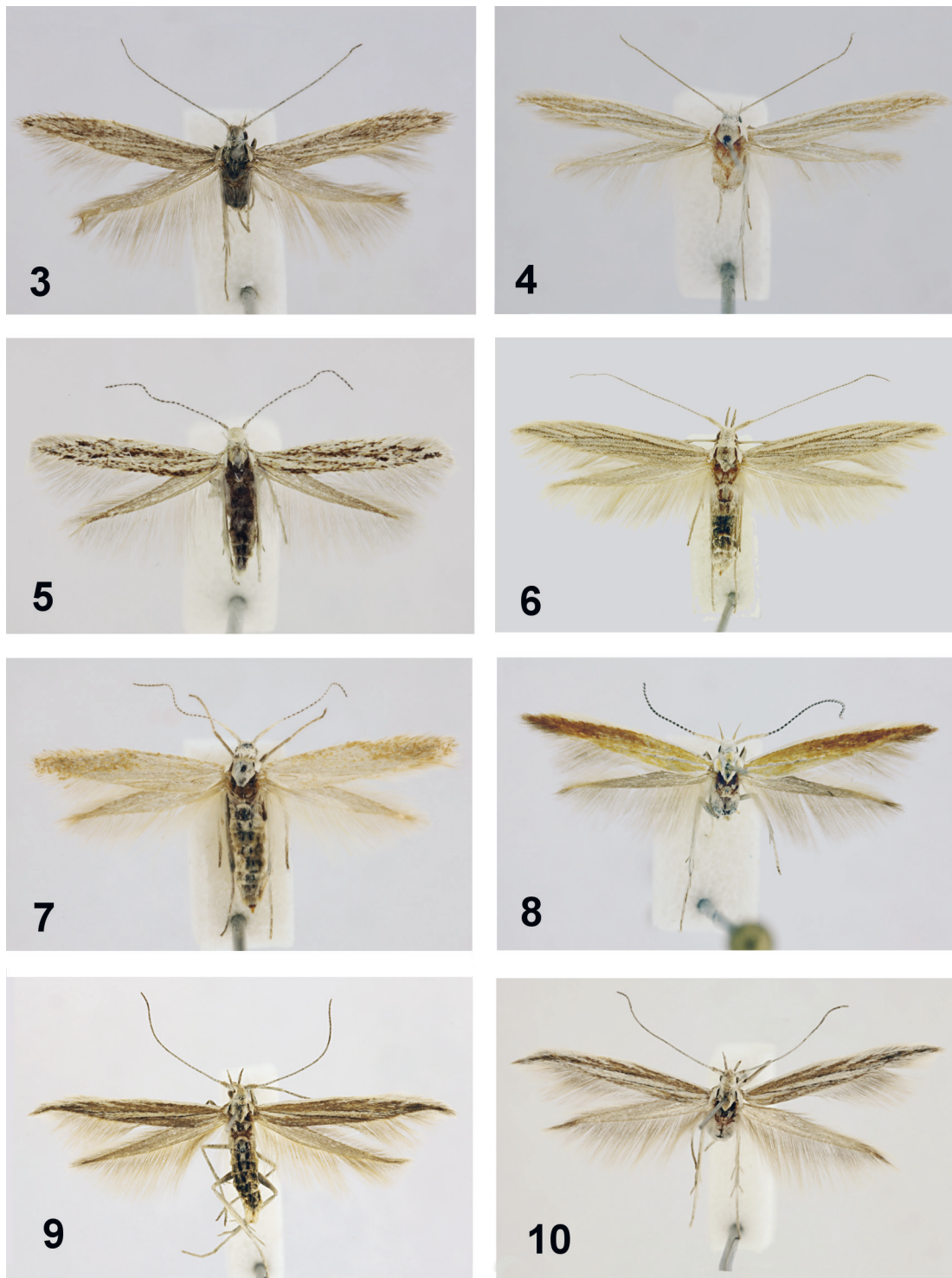
(GP 17995 [DNA specimen ID: TLMF_Lep_44923]) ibidem, 30.04.2022; in ECKU and coll. Baldizzone.

Diagnosis: Medium-sized species with brown forewing adorned with a thin white streak along the costa and a wider streak on the anal fold. Based on the colour of the forewing and the structure of the male genitalia, *C. sanctuariella* is close to *C. argentulella* Turati, 1924. In the adult, the most evident feature in the forewing is the white streak along the anal fold, not present in *C. argentulella*. In the male genitalia of *C. sanctuariella* the tegumen is significantly wider in the distal part; the dorsal edge of the valvula is straight, not inclined as in *C. argentulella*, and the external edge is more sclerotized and evident; the cucullus is wider at the base and shorter; the phallosome is slightly shorter and thinner and it is truncated at the apex and not sharp; the cornuti are shorter, gathered in a stockier formation. The female genitalia of *C. sanctuariella* do not resemble those of any other known species.

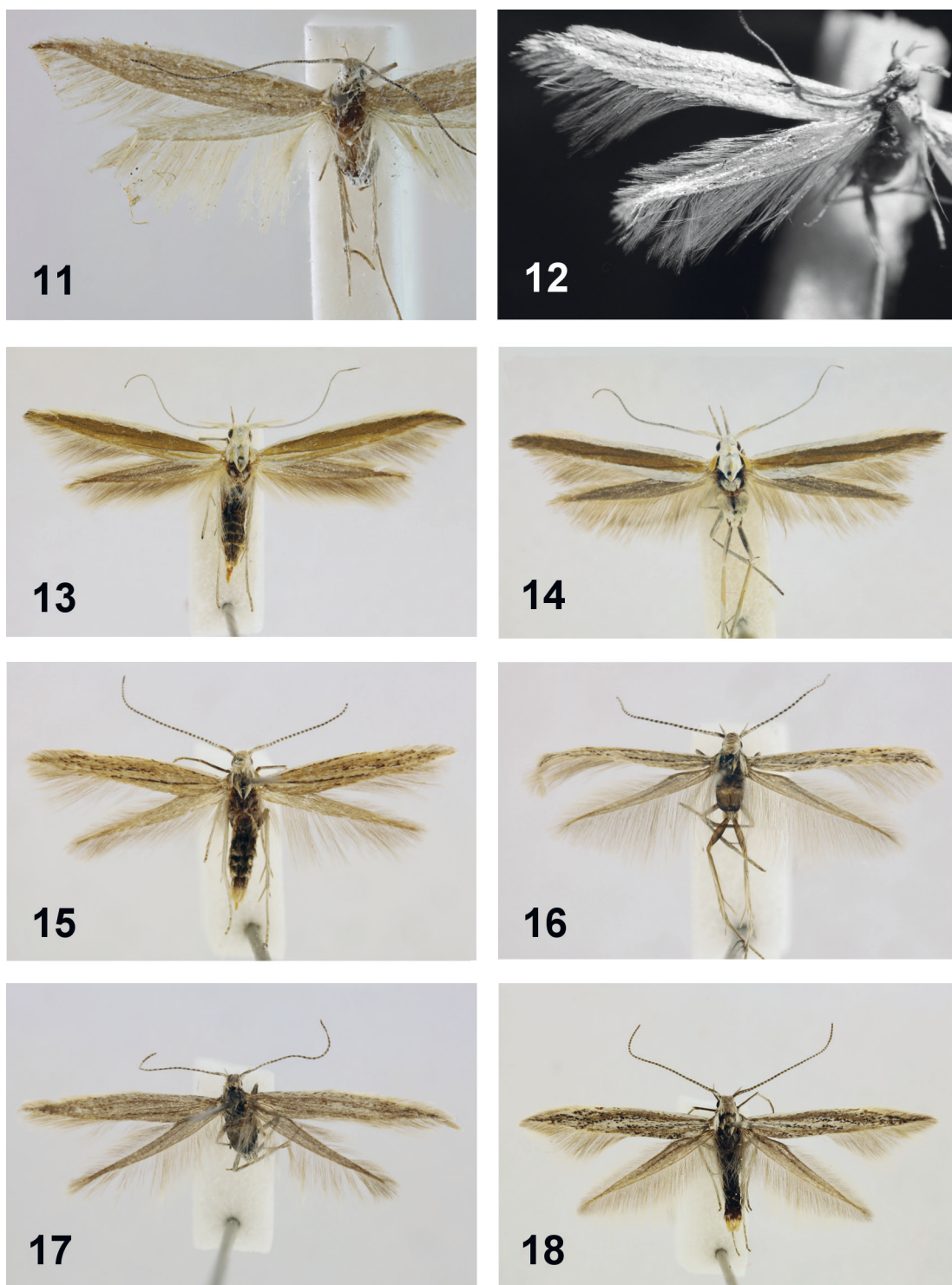
Description (Figs 9-10): Wingspan 13-15 mm. Head white, suffused brown dorsally. Antenna white, faintly ringed with pale brown in almost imperceptible way; scape white, with little tuft of short beige scales. Labial palp almost completely white on inner side, brown on outer one; second article about 0.5x longer than third. Proboscis of normal shape. Thorax white, suffused beige in middle. Tegula white on inner side, brown on outer side. Forewing brown, with white streak along costa, three small oblique white streaks along radial veins, large white or dirty white streak along anal fold ending just before edge of wing; costal fringes white, apical brown, dorsal light grey brown. In two of the four females the streaks on the forewing are wider and more distinctly white, with a lighter overall appearance (Fig. 10). Hindwing light brown; fringes grey brown. Abdomen brown.

Abdominal structures (Figs 63, 71): No posterior lateral struts. Transverse strut thick, straight proximal edge more thickly sclerotized in small middle area, distal edge arched in male, curved only in less sclerotized central part in female. Tergal discs (3rd tergite) about 5x as long as wide, covered with about 45-50 small conical spines.

Male genitalia (Figs 60-62): Gnathos knob globular; basal arms of gnathos very large. Tegumen large and robust, narrow in middle, wider in distal part; pedunculus short, expanded on outer side. Transtilla thin and elongated. Valvula large, oval, with a robust cilium erect and curved in dorsal part inserted under dorsal edge near base of transtilla. Cucullus short, very wide at base, progressively narrowing towards rounded distal part. Saccus curved and well sclerotized on ventral side, with robust, sharp triangular expansion at ventral angle, and short and inclined dorsal edge. Phallosome robust, subcylindrical, slightly curved, more sclerotized dorsally. Vesica wide and short with two small cornuti of different lengths joined in irregular elongated base in claw-like structure.



Figs 3-10. Adult habitus of *Coleophora* spp. (3) *C. savenkovi* Baldizzone, sp. nov, holotype, ♂ (10.5 mm). (4) *C. mucronata* Baldizzone, 1994, ♀ (13 mm) (GP Bldz 17250) [DNA specimen ID MM 27602] Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (5) *C. paracoriacea* Baldizzone, sp. nov., paratype ♀ (10 mm) Armenia, Vedi, Urtsadzor, CWR, Ranger Campus, 1450 m, 28.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (6) *C. arachnias* Meyrick, 1922, ♀ (20 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (7) *C. macilentata* Falkovitsh, 1972, ♀ (13 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (8) *C. roweckii* Baldizzone & Richter, sp. nov., paratype ♀ (GP Bldz 17549) (12.5 mm). (9) *C. sanctuariella* Baldizzone, sp. nov., paratype ♀ (15 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 27.IV.2022, H. Roweck & N. Savenkov. (10) *C. sanctuariella* Baldizzone, sp. nov., paratype ♀ (GP 18102) (15 mm).



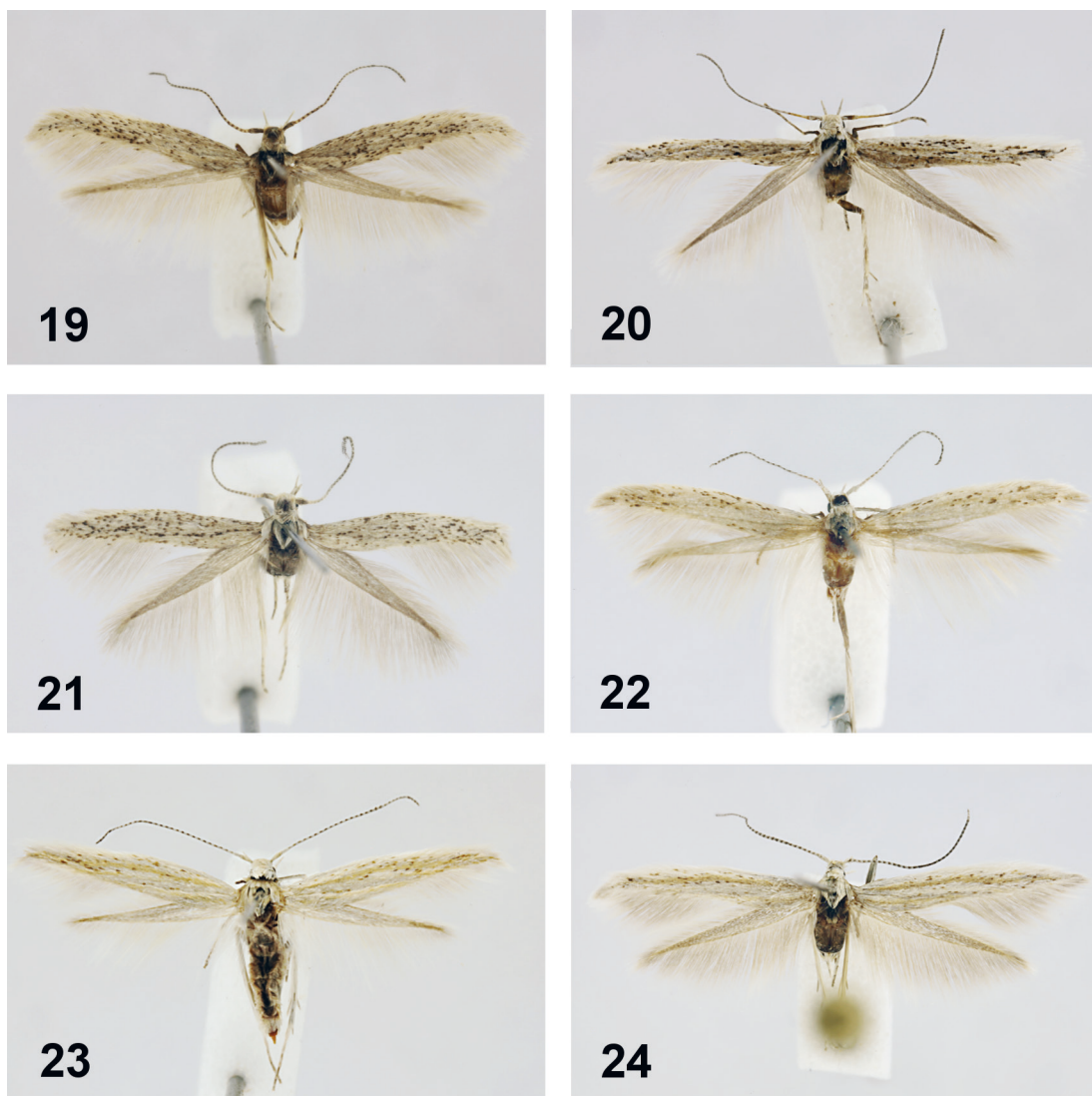
Figs 11-18. Adult habitus of *Coleophora* spp. (11) *C. argentulella* Turati, 1924, lectotype ♂ (15 mm) (photo D. Lees, NHMUK). (12) *C. fulvociliella* Chrétien, 1915, lectotype ♂ (15 mm). (13) *C. lepida* Baldizzone, sp. nov., paratype ♀ (17 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (14) *C. longipalpella* Fuchs, 1903, ♀ (20 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (15) *C. adlecta* Baldizzone, 1994, ♀ (10 mm) Armenia, Vedi, Urtsadzor, CWR, Eco Lodge, 1250 m, 20-30.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (16) *C. zofodella* Baldizzone, 2001, ♀ (GP Bldz 18034) (9 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 30.IV.2022, H. Roweck & N. Savenkov. (17) *C. iucunda* Baldizzone, sp. nov., holotype ♂ (11 mm). (18) *C. genviki* (Anikin, 2002), ♂ (13.5 mm) Armenia, Vedi, Urtsadzor, CWR, Eco Lodge, 1250 m, 26-27.IV.2022, H. Roweck & N. Savenkov.

Female genitalia (Figs 68-70): Papillae anales large, oval, more thickly sclerotized on proximal edge, covered with numerous setae of progressive lengths from apex to base. Apophyses posteriores twice as long as anteriores. Sterigma trapezoidal, approximately twice as wide as long, almost straight proximal edge, curved distal edge, bristling in middle with some long straight and robust setae which also border sinus vaginalis. Ostium bursae oval, rather small, located at proximal edge of sterigma. Colliculum calyx-shaped, approximately as long as sterigma, with more sclerotized proximal edge and curved distal part crossed by medial line. Ductus bursae: distal section of posterior part approximately 3x length

of sterigma, wrapped in small spines, with two robust sclerotized bands, one of which is longer and more robust and curved in proximal part where spinous part merges into part without thorns, shorter, curved and finely dotted on one side; anterior part of ductus short, narrow and transparent. Corpus bursae large, oval with small signum bursae similar to curved thorn or leaf with very narrow laminar part.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Gorovan Sands National Sanctuary.



Figs 19-24. Adult habitus of *Coleophora* spp. (19) *C. hispida* Baldizzone, sp. nov., holotype ♂ (10 mm). (20) *C. hystricella* Toll, 1957, ♀ (9.5 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 27.IV.2022, H. Roweck & N. Savenkov. (21) *C. anomala* Baldizzone, sp. nov., holotype ♂ (9.5 mm). (22) *C. gorovanensis* Baldizzone, sp. nov., holotype ♂ (9 mm). (23) *C. makuensis* Baldizzone, 1994 ♀ (10 mm) Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (24) *C. finitima* Baldizzone, sp. nov., paratype ♂ (GP Bldz 17551) (11 mm) Armenia, Vedi, Urtsadzor, CWR, Eco Lodge, 1250 m, 20-30.V.2019, O. Karsholt, H. Roweck & N. Savenkov.

Etymology: From the Latin *sanctuarium* [- ii] = sanctuary, because the species was collected in a natural sanctuary.

Remarks: The discovery of this new species, whose male genitalia are similar to those of *C. fulvociliella* Chrétien, 1915, has stimulated careful reflection on this old species and on the species considered synonymous, i.e., *C. argentulella* Turati, 1924, as a consequence also of the recent study of two specimens. *Coleophora argentulella* was described by Turati on the basis of a single male specimen (Fig. 11) from Libya (Cyrenaica) collected in Benghazi in 1922. The original description does not specify the number of specimens, although it is probably only one. I published photos of the adult and the male genitalia in a contribution dedicated to the Coleophoridae described by Emilio Turati, preserved at that time in the Hartig collection, and after his death at the NHMUK (Baldizzone, 1979a). The specimen, preserved at the NHMUK is labelled: “Cyrenaica | Bengasi | 15.III.[19]22 | Geo. C. Krüger”; “*Coleophora argentulella* | Typ.|Trti” [handwritten by Turati]; “Typus“ [green label, handwritten by Turati]; “Mus. TURATI | Coll. HARTIG” [pink label]; “E. Turati Coll. | F. Hartig Coll. | B.M. 1979-141”; “1198 ♂” [yellow label for GP Bldz number]; “LECTOTYPUS ♂ | *Coleophora argentulella* Trti | Baldizzone 1977” [red label]; “LECTOTYPE” [round, blue-edged label]; “NHMUK 013699543” [with QR code].

Coleophora fulvociliella was described by Chrétien based on material collected in Algeria, Biskra in 1912 and, also in this case, probably based on a single male specimen, even if that is not specified in the original description. I published photos of the adult and the male genitalia in a contribution dedicated to the Coleophoridae described by Pierre Chrétien, based on the original material preserved in the MNHN (Baldizzone, 1979b). The specimen is labelled “[Biskra] fulvociliella, 8.4.[19]12” [handwritten by Chrétien]; “PG Bldz 1790 ♂” [yellow label]; “LECTOTYPUS ♂ | *Coleophora fulvociliella* Chrétien | Baldizzone 1978” [red label].

The genitalia of the two specimens (Figs 66-67, 72, 74) are very similar, which led me to establish the synonymy between the two species (Baldizzone, 1985) despite the difference in the colour of the forewings, predominantly brown in *C. argentulella* (Fig. 11) and similar to ivory in *C. fulvociliella* (Fig. 12). I thought it was just a variation of the same species. Recently, however, I studied two further male specimens with brown forewings, one of which was found among the undetermined Coleophoridae of the NHMUK from Biskra, the collection site of *C. fulvociliella* and one from Morocco, collected by Z. Tokár, cited in a recent publication on Coleophoridae from Morocco (Tabell *et al.*, 2023). Therefore, I had the opportunity to study a greater range of structures of male genitalia (Fig. 65), which have some slight individual variations, but the shape of the cornuti is always the same (Fig. 64), with evident difference from that of the

lectotype of *C. fulvociliella* (Fig. 66). In consideration of the difference in the colour of the adult and in the cornuti, I believe that it is appropriate to consider *C. argentulella* Turati, 1924, as a *bona species*, **status revised**.

Coleophora didymella Chrétien, 1899

Coleophora didymella Chrétien, 1899: 146.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 26.IV-7.V.2022.

Distribution: France, Italy, Hungary, North Macedonia, Bulgaria, Turkey. **New for Armenia.**

Coleophora gallipennella (Hübner, 1796)

Tinea gallipennella Hübner, 1796: Plate VIII-29, fig. 202.

Material studied: 2 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

Distribution: Europe (except for Great Britain and Iberian Peninsula), Turkey, Russia (Lower Volga), Caucasus (including Armenia), Siberia, Altai, Mongolia.

Coleophora canariipennella Toll, 1959

Coleophora canariipennella Toll, 1959: 336.

Material studied: 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

Distribution: Previously known only from Turkey and Iraq. **New for Armenia.**

Coleophora stramentella Zeller, 1849

Coleophora stramentella Zeller, 1849: 274.

Material studied: 6 ♂, 8 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♂, 1 ♀ ibidem, 26.IV.-7.V.2022; 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25.-29.V.2019.

Distribution: Central Europe, Balkans, Crimea, southern Russia, Turkey. **New for Armenia.**

Coleophora lepida Baldizzone, sp. nov.

Figs 13, 76-83

Holotype: ♂ (GP Bldz 17521 [DNA specimen ID: TAB0024]); “ARMENIA: Vedi | Goravan sands, 965 m | 25-29.05.2019 | H. Roweck & N. Savenkov” [39°53'35"N 44°43'03"E]; in ECKU.

Paratypes: 2 ♂ (GP Bldz 18087), 5 ♀ (GP Bldz 17522 [DNA specimen ID: TAB0025], GP Bldz 18088) same label as the holotype; in ECKU and coll. Baldizzone;

1 ♂ (GP 31341 IgR), 5 ♀ (GP 28589, 28587, 28584, 31376 IgR): "ARMENIA, Vedi env. Goravan vill. GORAVAN sands Reserve 956 m, 39°53'20"N, 44°43'58"E 31/05/2017 sandy steppe, *leg.* J. Šumpich", in NMPC; 1 ♀ (GP 35112 IgR): "ARMENIA, Areni env. NORAVANK monastery 39°41'44"N, 45°12'52"E, 2.6.2017, rocky steppe, 1350 m, *leg.* J. Šumpich", in NMPC.

Diagnosis: Large species with shaded dark ochre forewing and evident white streak along the costa. It belongs to the group of *C. stramentella* Zeller, 1849 and based on the genitalia it is similar to *C. iranella* Toll, 1959, a species of similar size, but with a yellow forewing with a thin brown band under the costal streak. In the male genitalia of *C. lepida*, compared to those of *C. iranella*, the tegumen is more robust, the external part of the sacculus is wider at the dorsal angle, and the cornuti are gathered in a significantly shorter formation. In the female genitalia of *C. lepida* compared to those of *C. iranella* the apophyses are longer and thinner, the sterigma is much narrower and longer, as is the colliculum, the spinulate part of the ductus bursae is thinner, and the signum bursae is larger.

Description (Fig. 13): Wingspan 17-19 mm. Head white. Antenna white; scape white with thick tuft of long erect scales, white on outer side, ochre on inner side. Labial palp white; second article about 3x as long as third. Proboscis of normal shape. Thorax white, slightly tinged with yellow in middle. Tegula white, tinged with yellow on inner side. Forewing dark ochre between costa and anal fold, very light ochre in between anal fold and dorsum; white streaks: along costa a thin one up to 1/3 from base and then widening, stopping before apex; one along anal fold, wide at base of wing and then very thin, stopping before edge; one on dorsum at base of wing wide and very short; costal fringes white, apical dark ochre, dorsal greyish brown. Hindwing grey; fringes greyish brown. Abdomen brown.

Abdominal structures (Figs 79, 83): No posterior lateral struts. Transverse strut thick, with indistinct proximal edge and curved distal edge, less sclerotized in middle; thinner and with straight and more evident proximal edge in female. Tergal discs (3rd tergite) about 2.5x as long as wide, bristling with about 55 small conical spines.

Male genitalia (Figs 76-78): Gnathos knob large, oval. Tegumen long, progressively narrowed in distal half; pedunculus short, slightly expanded at outer edge. Transtilla short, triangular. Valvula large, bristling with robust erect setae, longer in dorsal part. Cucullus robust, very inclined, rounded at apex. Sacculus large, heavily sclerotized on outer edge, with slight curve at ventral angle and thin, pointed horn-shaped protuberance at dorsal angle. Phallosome large, conical, more sclerotized in basal part. Vesica arched, long and robust with 6 cornuti of different lengths, similar to curved needles, gathered at base in long formation.

Female genitalia (80-82): Papillae anales small, oval. Apophyses very long: posteriores about twice as long as anteriores. Sterigma elongated, about twice as long as wide, partially sclerotized with almost straight proximal edge and narrower dome-shaped distal edge, with few very short setae; vaginal sinus narrow and very long; small and oval ostium bursae located near proximal edge. Colliculum long and narrow, calyx-shaped, more strongly sclerotized on edges in proximal part, crossed by distal section of medial line. Ductus bursae very long, rolled up in central part; posterior part completely crossed by medial line and covered with dense short spines for a long portion approximately 5x as long as sterigma; central part transparent with only medial line apparent; transition area between anterior and posterior parts with curved area thickly dotted at insertion of ductus seminalis; anterior part shorter, transparent and progressively narrowing from bursa copulatrix to connection with posterior part. Corpus bursae large, in shape of elongated sac; signum well sclerotized, leaf shaped.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Gorovan Sands National Sanctuary and Noravank monastery area.

Etymology: From Latin *lepidus* [-a, -um] = graceful, pleasant, kind, due to the appearance of the species.

Coleophora longipalpella Fuchs, 1903

Figs 14, 84-87

Coleophora longipalpella Fuchs, 1903: 12.

Material studied: 4 ♂, 3 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019. 2 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25.-29.V.2019.

Redescription (Fig. 14): Wingspan 16-21 mm. Head white. Antenna white; scape white with tuft of erect scales white on outer side and light ochre on inner side. Labial palp very long, white, tinged with beige dorsally, second article approximately 3x longer than third. Proboscis of normal shape. Thorax white, slightly tinged ochre in middle. Tegula ochre. Forewing dark ochre with two showy glossy white streaks: one wide along costa, ending before apex, and one very wide along dorsum at base gradually narrowing towards apex at base of fringes; costal fringes white, apical fringes dark ochre, dorsal fringes beige. Hindwing greyish brown; fringes beige. Abdomen white.

Abdominal structures (Fig. 86): No posterior lateral struts. Transverse strut slightly curved with straight proximal edge, sclerotized only in middle and distal edge more sclerotized at base of tergal discs. Tergal discs (3rd tergite) about twice as long as wide, covered with about 50 small conical spines.

Male genitalia (Figs 84-85): Gnathos knob large, globular. Tegumen robust, quite narrowed in middle; pedunculus very short. Transtilla small, triangular, and pointed. Valvula very large, covered with thin setae, elongated ventrally and rounded along well sclerotized edge. Cucullus short, slightly narrowed at base. Sacculus large, strongly sclerotized, with curved ventral edge, curved expansion at ventral angle, slightly sunken lateral edge, dorsal angle with short triangular tip. Phallosome large, conical, more sclerotized at base and in dorsal part. Vesica curved, very large and rather strongly sclerotized; 5-6 long and curved needle-like cornuti, gathered partly at base in long formation, but distal ones often detached from base and more extended towards proximal part of vesica.

Female genitalia (Fig. 87): Papillae anales elongated oval, bristled with some setae of different lengths. Apophyses very long: posteriores twice as long as anteriores. Sterigma trapezoidal with distal edge curved, bristled with many short setae also present along edges of deep sinus vaginalis up to ostium bursae. Ostium bursae oval. Colliculum long, calyx-shaped with slightly sclerotized distal part with medial line widened distally, and thin proximal part more thickly sclerotized on external edges. Ductus bursae long and coiled in middle; posterior part surrounded by small spines for approximately 8x as long as sterigma, with central convolution transparent, with medial line starting adjacent to insertion of seminal duct; anterior part shorter than posterior part and transparent. Corpus bursae large, sac-shaped with leaf-like signum.

Distribution: The species was described by Fuchs based on a single male collected in Konia, Turkey. Reported from Crimea (Karadag reserve) by Budashkin & Falkovitsh in 2007. In addition to some specimens from various localities in Turkey I also studied a specimen from Iraq: 1 ♀ (GP Bldz 17124) “SW-Iraq, 21.V.1963, O. v. Rutba, leg. Kasy & Vartian”, coll. Baldizzone. **New for Armenia.**

Remark: The genitalia of this characteristic species have never been published, so it was decided to present a photographic table to facilitate the identification (Figs 84-87).

***Coleophora conspicuella* Zeller, 1849**

Coleophora conspicuella Zeller, 1849: 236.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, ex larva 5., 13.VI.2029.

Distribution: Almost all of Europe, Turkey, Caucasus (including Armenia), Russia (Lower Volga, Southern Urals, Altai), Syria, Iraq, Kazakhstan, Russian Far East.

***Coleophora ditella* Zeller, 1849**

Coleophora ditella Zeller, 1849: 247.

Material studied: 3 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 8 ♂, 2 ♀ ibidem, 26.IV.-9.V.2022; 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25.-29.V.2019; 2 ♀ ibidem, 27-30.IV.2022.

Distribution: Estonia, Central and Southern Europe, North Africa, Ukraine, Crimea, Russia (Lower Volga), Turkey, Caucasus (including Armenia), Iran, Central Asia, Siberia, Altai, Mongolia, Japan.

Remark: The study of the DNA has revealed that under the name “*Coleophora ditella*” some species not yet separated are included (Tabell, pers. com.). It follows that the data on the geographical distribution of the species must be considered provisional.

***Coleophora dubiella* Baker, 1888**

Coleophora dubiella Baker, 1888: 256.

Material studied: 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.v.2019.

Distribution: Spain, France, North Africa, Anatolia, Iran, Iraq, Jordan, Afghanistan, Caucasus (Azerbaijan). **New for Armenia.**

Remark: Also for this species the study of the DNA has revealed that it is a complex of species that will have to be differentiated. The same considerations on geographical distribution therefore apply.

***Coleophora changaica* Reznik, 1975**

Coleophora changaica Reznik, 1975: 372.

Material studied: 11 ♂, 4 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 2 ♂, 13 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Portugal, Spain, Morocco, Algeria, Crimea, Russia (Lower Volga), Jordan, Afghanistan, China. **New for Armenia.**

Remark: *Coleophora changaica* also belongs to a group of species yet to be divided, as attested by genetic studies. The same considerations as with the previous two species regarding the geographical distribution therefore apply.

***Coleophora quadristraminella* Toll, 1961**

Coleophora quadristraminella Toll, 1961b: 285.

Material studied: 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019; 1 ♀ Vedi env.,

Goravan vill., Gorovan Sands Reserve, 25-27.V.2019; 1 ♀ ibidem, ex larva *Achillea* sp., 15.VI.2022.

Distribution: Southern France, Italy, Sicily, Croatia, Romania, Macedonia, Greece, Crimea, Ukraine, Turkey, Armenia, Russia (South Urals), Egypt.

***Coleophora ochrea* (Haworth, 1828)**

Porrectaria ochrea Haworth, 1828: 533.

Material studied: 1 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, larvae 20-30.V.2019, excl. 13.IX.2019.

Distribution: Europe, except northern part (reported only from Sweden), northern Africa, Turkey, Crimea, Russia (Lower Volga), Caucasus (Krasnodar district), Turkmenistan. **New for Armenia.**

***Coleophora lixella* Zeller, 1849**

Coleophora lixella Zeller, 1849: 231.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

Distribution: Europe, Turkey, Russia (Lower Volga), Caucasus (including Armenia).

***Coleophora tricolor* Walsingham, 1899**

Coleophora tricolor Walsingham, 1899: 201.

Material studied: 2 ♂, 5 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

Distribution: Great Britain, France, Italy, Switzerland, North Macedonia, Greece. **New for Armenia.**

***Coleophora hospitiella* Chrétien, 1915**

Coleophora hospitiella Chrétien, 1915: 356.

Material studied: 3 ♂, 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV.2022; 1 ♂, 1 ♀ ibidem, 30.IV.2022.

Distribution: Canary Islands, North Africa, Saudi Arabia, Iran, Afghanistan, Uzbekistan, W Siberia. **New for Armenia.**

***Coleophora filaginella* Fuchs, 1881**

Coleophora filaginella Fuchs, 1881: 465.

Material studied: 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV.2022.

Distribution: Finland, Latvia, Germany, Croatia, North

Macedonia, Greece, Romania, Bulgaria, Turkey. **New for Armenia.**

***Coleophora adlecta* Baldizzone, 1994**

Figs 15, 88-92

Coleophora adlecta Baldizzone, 1994: 229.

Material studied: 9 ♂, 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Ranger Campus, 1450 m, 28.V.2019; 2 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

Female genitalia (Figs 89-91): Papillae anales oval elongated, bristled with setae of different lengths. Apophyses posteriores twice as long as anteriores. Sterigma quite long, subtrapezoidal, bristled with some short straight setae on distal edge, corrugated on proximal edge. Ostium bursae oval. Colliculum long, calyx shaped, more thickly sclerotized in distal part and on external edges, transparent in proximal part restricted to connection with ductus bursae. Posterior part of ductus bursae with two parallel sclerotized bands covered with small spines for section as long as sterigma, then transparent for section of same length up to insertion of ductus seminalis; anterior part curved, sclerotized and robustly dotted, narrower at exit from bursa copulatrix. Corpus bursae large, oval with leaf-shaped signum with short peduncle.

Distribution: Species known only from Iran and unreported after the description. **New for Armenia.**

Remark: The species was described only from the male, so the availability of specimens of the two sexes collected together and also barcoded allows the description of the female genitalia.

***Coleophora adelogrammella* Zeller, 1849**

Coleophora adelogrammella Zeller, 1849: 365.

Material studied: 1 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 2 ♂ ibidem, 26.IV.-7.V.2022.

Distribution: Scandinavia, Baltic Countries, Portugal, Spain, France, Corsica, Italy, Switzerland, Austria, Czech Republic, Slovenia, Croatia, Macedonia, Romania, Turkey, Iran, Russia (Transbaikalia, Siberia, Far East). **New for Armenia.**

***Coleophora zofodella* Baldizzone, 2001**

Figs 16, 93-96

Coleophora zofodella Baldizzone, 2001: 133.

Material studied: 1 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♀ Vedi env.,

Goravan vill., Gorovan Sands Reserve, 27.IV.2022; 1 ♂, 1 ♀ ibidem, 30.IV.2022.

Female genitalia (Figs 94-95): Papillae anales oval, bristled with some curved setae. Apophyses posteriores approximately 2.5x as long as anteriores. Sterigma trapezoidal, 1.3x as wide as long, curved on distal edge and bristled with setae of different lengths, largely hollowed in middle. Ostium bursae quite large, oval, located just below distal edge of sterigma. Colliculum cup-shaped, more thickly sclerotized laterally, slightly less long than sterigma in proximal part, much wider in distal part and highly asymmetrically expanded on one side with a strongly sclerotized structure followed by a less strongly sclerotized external swelling absent on other side, where there is a transition into ductus bursae with a long, curved band of small spines of different lengths. Ductus bursae in posterior part with two sclerotized bands, one as extension of structure adhering to colliculum, other parallel for short section and then converging and merging with other band; remaining portion of posterior part of ductus wider, transparent, and continuous with curved, more strongly sclerotized part, dotted on right side and with insertion of ductus seminalis; anterior part of ductus transparent. Corpus bursae almost circular, with leaf-shaped signum.

Distribution: The species was known only from Turkey. I also studied a European specimen: 1 ♀ Greece, Peloponnesus, Leonidon, Bona Castle, 4.V.1996, leg. G. Baisch, coll. Baldizzone. **New for Armenia and Europe.**

Remark: The species was described only from the male, so the availability of specimens of the two sexes collected together allows the description of the female genitalia.

Coleophora gnaphalii Zeller, 1839

Coleophora gnaphalii Zeller, 1839: 207.

Material studied: 3 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♂, 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Northern and Central Europe, France, Romania, Russia (Lower Volga). **New for Armenia.**

Coleophora treskaensis Toll & Amsel, 1967

Coleophora treskaensis Toll & Amsel, 1967: 15.

Material studied: 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Ranger Campus, 1450 m, 28.V.2019; 9 ♂, 3 ♀ ibidem, 26.IV-7.V.2022; 1 ♂, 2 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV-7.V.2022.

Distribution: Spain, France, Italy, Macedonia, Turkey, Iran, Turkmenistan, Afghanistan. **New for Armenia.**

Coleophora iucunda Baldizzone, sp. nov.

Figs 17, 97-100

Holotype: ♂ (GP Bldz 18004 [DNA specimen ID: TLMF_Lep_44906]); "ARMENIA: Vedi | Urtsadzor, CWR Eco Lodge, 1250 m, 26.04.-07.05.2022 | H. Roweck & N. Savenkov" [39°56'58"N 44°53'14"E]; in ECKU.

Diagnosis: Little species with overall grey appearance. The male genitalia are similar to those of *C. eltonica* (Anikin, 2005), a species described from Russia (Lower Volga). The main differences are the following: in *C. iucunda* the gnathos knob is larger, the upper edge of the transtilla is less hollowed at the junction with the base of the cucullus; the cucullus is larger and expanded ventrally, less narrowed at the base; the sacculus at the ventral angle is more expanded and triangular and at the dorsal angle there is a characteristic sharp spine, absent in *C. eltonica*; the curved and elongated cornuti are significantly thinner.

Description (Fig. 17): Wingspan 11 mm. Head grey, brownish suffused, white above eye. Antenna ringed white and light brown in first 1/4 and then ringed beige and brown up to apex; scape beige, dirty white dorsally, without erect scales. Labial palp beige on outer side, dirty white on inner side; second article approximately 0.5x length of third. Proboscis of normal shape. Thorax grey. Tegula grey. Forewing grey, suffused beige, scattered with few brown scales in apical half; with thin and poorly marked dirty white streak along costa from base to 1/3; costal fringes light grey, dorsal fringes light grey suffused with beige. Hindwing grey; fringes light grey suffused with beige. Abdomen dark grey.

Abdominal structures (Fig. 100): No posterior lateral strut. Transverse strut thick with proximal edge slightly curved and distal edge sclerotized only at base of tergal discs. Tergal discs (3rd tergite) length about 3.5x their width, covered with about 27-30 small conical spines.

Male genitalia (Figs 97-99): Gnathos knob large, globular. Tegumen stocky, narrowed in middle; pedunculus widely expanded on outer side. Transtilla robust, strongly curved, ribbon shaped. Valvula small, bristled with robust straight setae, ventral part rounded, more thickly sclerotized on external edge. Cucullus broad, slightly narrowed at base, curved on lower edge, ear shaped, thickly covered with robust straight setae. Sacculus with ventral margin well sclerotized, strongly curved, with ventral angle obtuse, dorsal angle expanded in sharp thorn. Phallosome with two narrow, arched, almost symmetrical sternal rods, with one slightly more sclerotized and longer, exceeding outer edge of sacculus slightly. Vesica long and curved with one very long and curved cornutus made of the fusion of some long spines. **Female genitalia:** Unknown.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Ararat Province, Urtsadzor, Caucasus Wildlife Refuge.

Etymology: From Latin *iucundus* [-a, -um] = cheerful, pleasant.

***Coleophora phrygiae* Baldizzone, 1994**

Coleophora phrygiae Baldizzone, 1994: 153.

Material studied: 1 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Ranger Campus, 1450 m, 28.V.2019.

Distribution: Species known only from Turkey and unreported after the description. **New for Armenia.**

***Coleophora coarctataephaga* Toll, 1961**

Coleophora coarctataephaga Toll, 1961b: 302.

Material studied: 1 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019.

Distribution: Macedonia, Albania, Greece, Bulgaria, Romania, Armenia.

***Coleophora noaeae* (Falkovitsh, 1989)**

Casignetella noaeae Falkovitsh, 1989: 60.

Material studied: 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV.2022.

Distribution: Turkmenistan, Iran. **New for Armenia.**

***Coleophora discomaculella* Toll & Amsel, 1967**

Coleophora discomaculella Toll & Amsel, 1967: 9.

Material studied: 1 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

Distribution: North Macedonia, Canary Islands, Algeria, Turkmenistan, Iran, Afghanistan. **New for Armenia.**

***Coleophora genviki* (Anikin, 2002)**

Figs 18, 101-105

Casignetella genviki Anikin, 2002: 180.

Material studied: 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 8 ♂, 4 ♀ ibidem, 26.IV.-7.V.2022.

Distribution: Ukraine, Crimea, Russia (prov. Astrakhan, Kalmykia, Dagestan). **New for Armenia.**

Remarks: In the original description, the male genitalia

were illustrated with a drawing along with a drawing of the female genitalia erroneously attributed to this species and actually a species probably undescribed yet. Anikin (2017) illustrated the true female with a photograph. Given this, I believe it is useful to include a photographic table with the genitalia of the two sexes together.

***Coleophora hispida* Baldizzone, sp. nov.**

Figs 19, 106-108

Holotype: ♂ (GP Bldz 18021 [DNA specimen ID: TLMF_Lep_44907]); "ARMENIA: Vedi | Urtsadzor, CWR Eco Lodge, 1250 m, 26.04.-07.05.2022 | H. Roweck & N. Savenkov" [39°56'58"N 44°53'14"E]; in ECKU.

Diagnosis: Small species with a greyish brown appearance. The male genitalia resemble those of *C. pandionella* Baldizzone, 1988 slightly due to the shape of the sacculus, with evident differences in protuberances of the ventral and dorsal angles and above all due to the characteristic shape of the transtilla and phallosome, which are unmistakable.

Description (Fig. 19): Wingspan 10 mm. Head light greyish brown. Antenna dirty white ringed light brown; scape brown without erect scales. Labial palp predominantly white on outer side and almost completely brown on inner side, second article approximately 1.5x longer than third. Proboscis of normal shape. Thorax and tegula brown. Forewing shaded dark beige, dotted with numerous brown scales; fringes grey. Hindwing and fringes greyish brown. Abdomen brown.

Abdominal structures (Fig. 108): No posterior lateral struts. Transverse strut well sclerotized, slightly curved with distal edge thinner in middle. Tergal discs (3rd tergite) length about 1.5x their width, covered with about 50 small conical spines.

Male genitalia (Figs 106-107): Gnathos knob globular. Tegumen constricted in middle; pedunculus long and rather broad. Transtilla elongated in shape of sharp harpoon in distal part. Valvula small, with more evident outer edge. Cucullus stocky, narrower at base, ear shaped. Sacculus strongly sclerotized, curved on ventral edge and strongly hollowed on outer edge; with large blunt triangular protuberance at ventral angle; dorsal angle with robust horn-shaped protuberance with little triangular tooth in middle, with apex overlapping dorsal edge of cucullus. Phallosome with two slightly curved and asymmetric sternal rods: longer one less sclerotized in basal half and apically narrowing, surmounted in its distal 1/3 by a sharp triangular tooth and just before apex with a small protuberance; shorter one more sclerotized in basal half, medially narrowing and with robust spine, in distal half with club-shaped widening towards apex,

with sharp triangular tooth subapically. Vesica short with sclerotized anellus, without cornuti.

Female genitalia: Unknown.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Ararat Province, Urtsadzor, Caucasus Wildlife Refuge.

Etymology: From the Latin *hispidus* [-a, -um] = bristling with thorns, due to the shape of the transtilla and the spiny protuberances of the phallosome.

Coleophora tanacetii Mühlig, 1865

Coleophora tanacetii Mühlig, 1865: 182.

Material studied: 4 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

Distribution: Northern and Central Europe, Belgium, Spain, Italy, Sicily, Sardinia, Slovakia, Hungary, Romania, Bulgaria, Ukraine, Russia (Lower Volga), Turkey, Turkmenistan. **New for Armenia.**

Coleophora hystricella Toll, 1957

Figs 20, 109-113

Coleophora hystricella Toll, 1957: 100.

Material studied: 1 ♂, 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV.2022; 1 ♀ ibidem, 26.IV-7.V.2022.

Distribution: Canary Islands, Algeria, Tunisia, Turkey. **New for Armenia.**

Remarks: The genitalia of the two sexes were illustrated separately: the male with a drawing in the original description (Toll, 1957), the female with a photograph in which the genitalia were still inside the abdomen (Baldizzone, 1982). They are presented here together on a photographic plate (Figs 109-113).

Coleophora anomala Baldizzone, sp. nov.

Figs 21, 114-116

Holotype: ♂ (GP Bldz 18119) "ARMENIA: Vedi | Urtsadzor, CWR Eco Lodge, 1250 m | 01.05.2022, H. Roweck & N. Savenkov" [39°56'58"N 44°53'14"E]; in ECKU.

Diagnosis: Small species with a dirty white brownish suffused appearance. The male genitalia resemble those of *C. hystricella* Toll, 1957 in overall appearance, with evident differences: in *C. anomala* the ventral edge of the sacculus is much less thick, the protuberance of the ventral angle is longer and less sharp and that of the dorsal angle is longer. The phallosome is completely

different, without the long spiniform protuberances characteristic of *C. hystricella*.

Description (Fig. 21): Wingspan 9.5 mm. Head dirty white, suffused light ochre dorsally. Antenna dirty white, ringed light brown; scape dirty white with tuft of short scales. Labial palp dirty white, almost completely suffused with brown on outer side; second article about 0.5x length of third. Proboscis of normal shape. Thorax and tegula dirty white. Forewing dirty white, finely speckled with brown scales; costal fringes white, dorsal fringes light grey. Hindwings and fringes grey. Abdomen grey.

Abdominal structures (Fig. 116): The only available abdomen has an evident malformation with a fusion of part of the transversal strut and tergal discs of tergites I and II. Other tergites normal; tergal discs of 3rd tergite about 3x as long as wide, covered with 30 conical spines. *Male genitalia* (Figs 114-115): Gnathos knob oval. Tegumen constricted in middle; pedunculus long, rather expanded on outer side. Transtilla long and well sclerotized, tapering towards apex. Valvula small, not very evident, with rounded ventral edge. Cucullus large, slightly less long than protuberance at ventral angle of sacculus. Sacculus deeply hollowed on outer edge with long protuberance rounded at apex of ventral angle and long, thin, almost straight protuberance at dorsal angle. Phallosome with two robust sternal rods, slightly curved: shorter one thinner in median part, club-shaped in distal half, with tooth-shaped protuberance in dorsal half and lower, subtriangular one just before apex; longer one more robust, tapering in apical area, with small dome-shaped dorsal protuberance at 4/5 from base and sclerotized keel extended dorsally from base of protuberance to apex and ending in drop shape. Vesica short with sclerotized anellus, without cornuti.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Ararat Province, Urtsadzor, Caucasus Wildlife Refuge.

Etymology: From the Latin *anomalus* [-a, -um] = anomalous, due to the malformation of the abdominal structures of the specimen.

Coleophora caroxyli Falkovitsh, 1970

Coleophora caroxyli Falkovitsh, 1970: 879.

Material studied: 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019; 1 ♀ ibidem, 26.IV-7.V.2022.

Distribution: Previously known only from Uzbekistan. **New for Armenia.**

***Coleophora granuloseella* Staudinger, 1880**

Coleophora granuloseella Staudinger, 1880: 379.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 28.IV.2022; 1 ♂ ibidem, 1.V.2022; 1 ♂ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019; 1 ♂, ibidem, 30.IV.2022.

Distribution: Cyprus, Turkey, Lebanon. **New for Armenia.**

***Coleophora gorovanensis* Baldizzone, sp. nov.**

Figs 22, 117-120

Holotype: ♂ (GP Bldz 17263 [DNA specimen ID: MM27604]), "ARMENIA: Vedi | Goravan sands, 956 m, 25-29.05.2019, H. Roweck & N. Savenkov" [39°53'35"N 44°43'03"E]; in coll. ECKU.

Paratype: 1 ♂ (GP 34599 IgR) "ARMENIA Goravan Sands, 1000 m, 39°53'N 44°45'E 19.7.2023, Zdenko Tokár & Ignác Richter"; in coll. Tokár.

Diagnosis: Small species with general appearance beige. The shape of the male genitalia resembles that of *C. rostrata* Baldizzone, 1994, a species known only from Iran. The differences are evident: in *C. rostrata* the sacculus has an elongated expansion, curved at the apex at ventral angle, absent in *C. gorovanensis*, and the horn-shaped protuberance at dorsal angle is longer and thinner and surpasses the dorsal edge of the cucullus, while in *C. gorovanensis* it is stockier and the tip stops just before the edge; in the phallotheca of *C. rostrata* the thinner sternal rod is more robust than that of *C. gorovanensis* and there is only one short and well sclerotized thorn-like cornutus.

Description (Fig. 22): Wingspan 9 mm. Head white. Antenna white, ringed light brown on distal 1/4; scape white dorsally and light brown ventrally, without erect scales. Labial palp white, irregularly suffused with light brown on both sides; second article approximately 0.5x longer than third. Proboscis of normal shape. Thorax light beige. Tegula white, beige on outer side. Forewing white, suffused with light beige, with scattered sparse brown scales; costal fringes light beige, dorsal fringes light grey. Hindwing grey; fringes light grey. Abdomen light beige.

Abdominal structures (Fig. 120): No posterior lateral strut. Transverse strut slightly curved with proximal edge uniformly sclerotized and distal edge unsclerotized medially. Tergal discs (3rd tergite) about 3.5x longer than wide, covered with about 20 small conical spines.

Male genitalia (Figs 117-119): Gnathos knob globular. Tegumen large, subtrapezoidal, slightly constricted medially, pedunculus long, dilated on outer side. Transtilla robust, divided at apex into two rounded lateral expansions. Valvula small, with ventral edge

inclined. Cucullus rather short, wide, narrowed at base, ear shaped. Sacculus curved and well sclerotized on ventral edge with robust horn-shaped projection at dorsal angle. Phallotheca with two asymmetric sternal rods of equal lengths: thinnest slightly curved, tapering towards acute apex; second much more robust and curved, with small curved and sharp dorsal thorn in middle, apex surmounted by triangular expansion. Vesica cylindrical, curved, with small claw-like formation made up of three cornuti joined at their base, a short basal one similar to a thorn, a longer and more robust one similar to a claw, and a very thin one longer than the others.

Female genitalia: Unknown.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Gorovan Sands National Sanctuary.

Etymology: The name is derived from that of the collecting locality.

***Coleophora crispella* Baldizzone, 1994**

Coleophora crispella Baldizzone, 1994: 186.

Material studied: 2 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

Distribution: Known only from Turkey. **New for Armenia.**

***Coleophora makuensis* Baldizzone, 1994**

Figs 23, 121-129

Coleophora makuensis Baldizzone, 1994: 176.

Material studied: 1 ♂, 10 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019; 1 ♀, ibidem, 20-30.V.2019; 1 ♂, 2 ♀, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019; 1 ♀, Urtsadzor, Caucasus Wildlife Reserve, Ranger Camp, 27-28.V.2019.

Female genitalia (Figs 126-128): Papillae anales elongated oval. Apophyses posteriores about 2.5x as long as anteriores. Sterigma subtrapezoidal, with curved distal edge bristling with setae of different lengths, deeply hollowed by sinus vaginalis. Ostium bursae large, oval. Colliculum big, cup-shaped, constricted in middle, more sclerotized in distal part, in proximal part like an ampulla with two curved and asymmetric sclerifications towards outer edge. Ductus bursae crossed by medial line only in posterior part, finely dotted, narrowed at point of insertion of ductus seminalis; anterior part completely transparent, progressively wider towards bursa copulatrix. Corpus bursae sac-shaped with leaf-like signum with short peduncle and laminar part with irregular edge.

Distribution: Iran. **New for Armenia.**

Remarks: The species was described only from one male collected in NW Iran, so the availability of specimens of the two sexes collected together and with the same barcode allows the description of the female genitalia.

***Coleophora finitima* Baldizzone, sp. nov.**

Figs 24, 130-133

Holotype: ♂ (GP Bldz 17553 [DNA specimen ID: TAB0026]); “ARMENIA: Vedi | Goravan sands | 956 m, 25-29.05.2019, H. Roweck & N. Savenkov” [39°53'35”N 44°43'03”E]; in ECKU.

Paratypes: 3 ♂ (GP Bldz 17271 [DNA specimen ID: MM27605], 17556, 17581) with same data as holotype; 1 ♂ (GP Bldz 17551): “ARMENIA: Vedi | Urtsadzor, CWR Eco Lodge, 1250 m, 20-30.05.2019 | H. Roweck & N. Savenkov” [39°56'58”N 44°53'14”E]; in ECKU and coll. Baldizzone; 2 ♂ (GP 31357 IgR): “ARMENIA, Vedi env., Goravan vill., Goravan Sands Reserve, 956 m, sandy steppe, 39°53'20” N, 44°43'58”E, 31.v.2017, Ján Šumpich *leg.*; in NPMC; 1 ♂ (GP 35105 IgR): “Arménia, Vedi env. Dashtakar vill. 1013 m 39°56'45” N, 44°44'41” E 1.6.2017 rocky steppe, *leg.* Jan Šumpich”; in NPMC.

Diagnosis: Small species with forewing streaked white and light brown. Based on male genitalia, it belongs to a small group of species of which the most similar is *C. ammophora* (Falkovitsh, 1989), a species known from Turkey, Turkmenistan, Iran, and Afghanistan. The main differences are as follows: in *C. ammophora* (Fig. 134) the transtilla is much wider, linear and ribbon-shaped, the sacculus has a larger expansion of a rounded (not triangular) shape at the ventral angle, the tooth located at the base of the protuberance of the dorsal angle is shorter and more robust than that of *C. finitima*, and both juxta rods of the phallosome are equal in length and curved at apex.

Description (Fig. 24): Wingspan 10 mm. Head white, dorsally suffused with pale beige. Antenna: flagellum ringed with white and light brown; scape white without erect scales. Labial palp white, second article about 1.5x longer than third, brown on outer side. Proboscis of normal shape. Thorax white. Tegula white, partially suffused with light ochre on outer side. Forewing white with two light ochre streaks: a subcostal one of irregular shape from base of wing to apex and one between anal fold and dorsum; with some brown scales scattered but more concentrated at apex; costal fringes white, dorsal fringes light beige. Hindwing light grey, fringes beige. Abdomen white.

Abdominal structures (Fig. 131): No posterior lateral struts. Transverse strut thick with almost straight proximal edge, thicker in middle, and with strongly curved distal

edge. Tergal discs (3rd tergite) about 6x as long as wide, covered with about 25 small conical spines.

Male genitalia (Figs 130, 132-133): Gnathos knob oval. Tegumen rather long, constricted in middle; pedunculus long, dilated on outer edge. Transtilla curved and thin. Valvula small, bristling with robust straight setae, with prominent curved dorsal edge. Cucullus large, narrow at base, ear shaped. Sacculus with curved and well sclerotized ventral edge, at ventral angle with triangular sclerotized expansion and at dorsal angle a protuberance in shape of long oblique horn with sharp spine at base approximately 1/4 of protuberance length. Phallosome with two long, slender, slightly asymmetric sternal rods, with longest one curved at apex. Vesica long and curved with evident anellus; single thin cornutus in shape of sharp and slightly curved thorn, more dilated at base and spur shaped.

Female genitalia: Unknown.

Bionomy: The early stages and the foodplant are unknown.

Distribution: Armenia, Ararat Province, Urtsadzor, Caucasus Wildlife Refuge and Goravan Sands National Sanctuary.

Etymology: From the Latin *finitimus* [-a, -um] = close, similar, etc. due to its affinity with other species.

***Coleophora nutantella* Mühlig & Frey, 1857**

Coleophora nutantella Mühlig & Frey, 1857: 13.

Material studied: 1 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♀ Vedi env., Goravan vill., Goravan Sands Reserve, 25-27.V.2019.

Distribution: Baltic countries, Central and Southern Europe, Morocco, Turkey, Armenia, Iran, Southern Siberia up to Altai.

***Coleophora heringi* Toll, 1952**

Coleophora heringi Toll, 1952a: 56.

Material studied: 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019; 1 ♀ Vedi env., Goravan vill., Goravan Sands Reserve, 25-27.V.2019.

Distribution: Turkey, Afghanistan. **New for Armenia.**

***Coleophora argentula* (Stephens, 1834)**

Porrectaria argentula Stephens, 1834: 287.

Material studied: 1 ♂ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

Distribution: Almost all of Europe, Ukraine, Russia

(Lower Volga), Caucasus (including Armenia), Asia Minor, S Siberia up to Altai, Japan.

***Coleophora granulatella* Zeller, 1849**

Coleophora granulatella Zeller, 1849: 371.

Material studied: 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

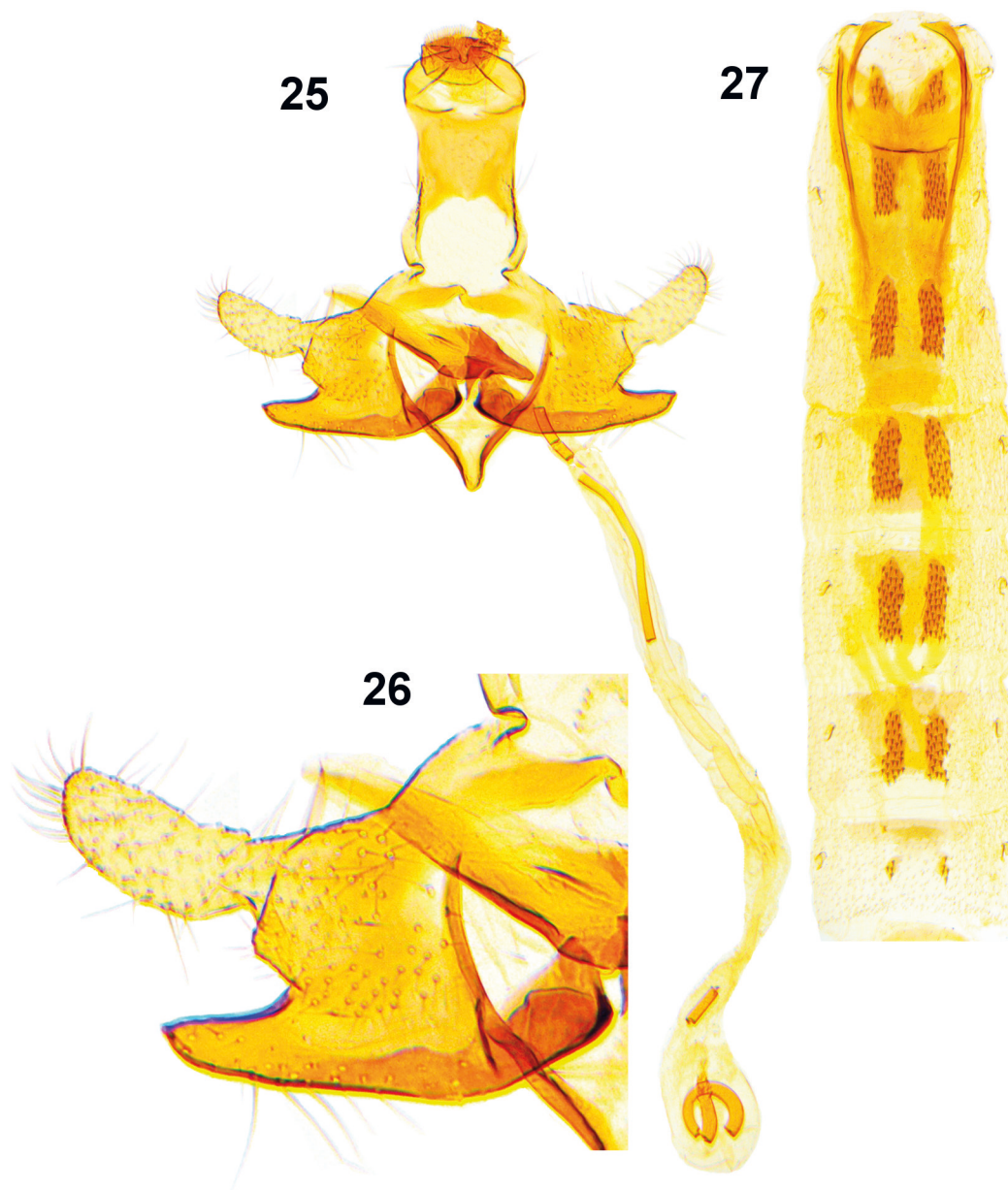
Distribution: Almost all of Europe, Ukraine, Crimea, Russia (Lower Volga, Western Siberia), Caucasus (Kabardino-Balkaria, Krasnodar district), Turkmenistan, Mongolia, China (Inner Mongolia), Korea, Canada, USA. **New for Armenia.**

***Coleophora dianthi* Herrich-Schäffer, 1855**

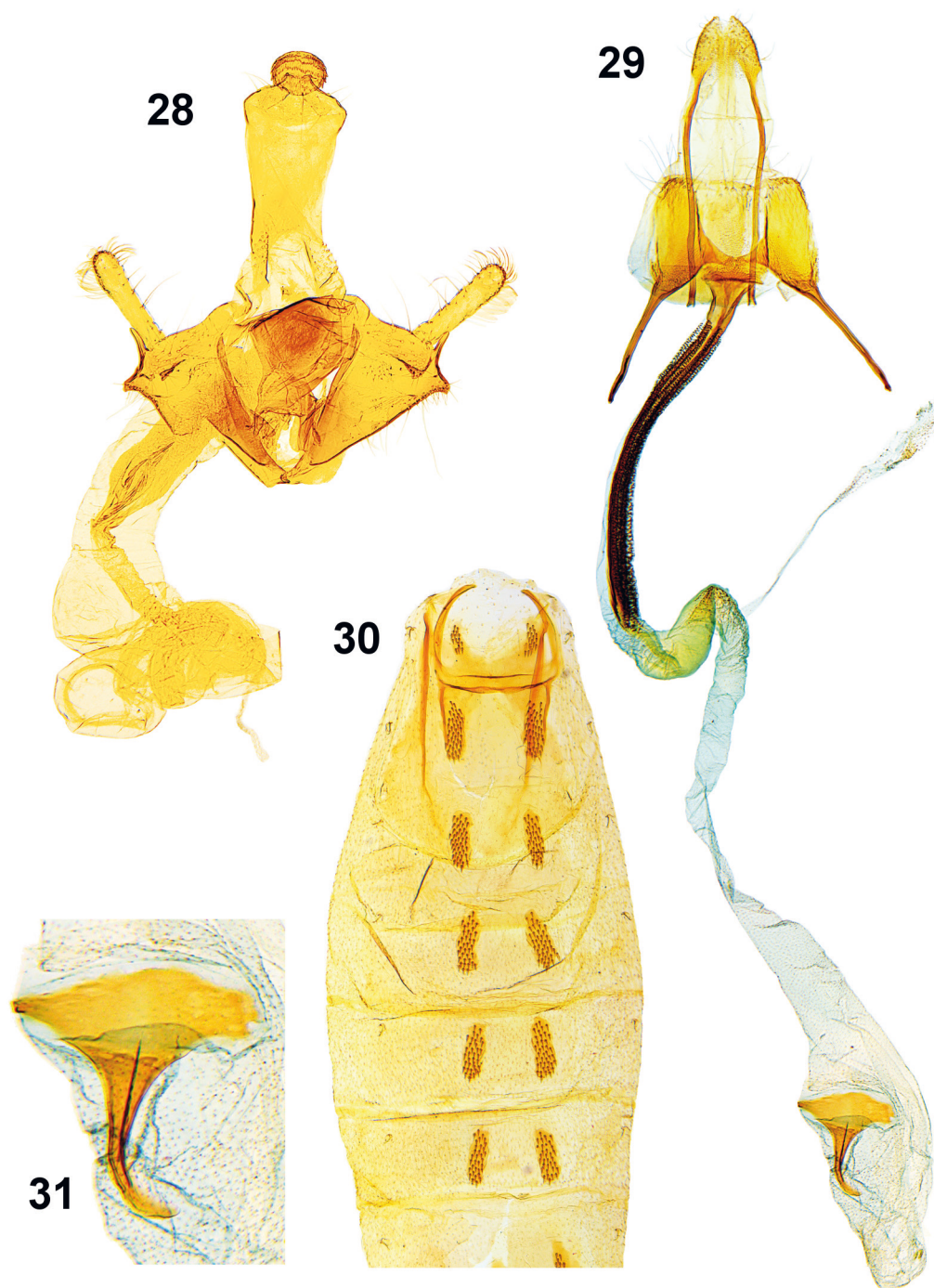
Coleophora dianthi Herrich-Schäffer, 1855: 227.

Material studied: 10 ♂, 3 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019; 1 ♂, 1 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 27.IV.2022.

Distribution: Almost all of Europe, Crimea, Russia (Lower Volga), Caucasus (including Armenia), Turkey, Iraq, Iran, Turkmenistan, Transbaikalia, Southern Siberia up to Altai, Japan.



Figs 25-27. Male genitalia of *Coleophora savenkovi* sp. nov. (25) GP Bldz 18020, holotype. (26) Enlarged detail of valva and phallosome. (27) Abdomen.



Figs 28-31. Genitalia of *Coleophora mucronata* Baldizzone, 1994. (28) Male genitalia, GP Bldz 17094, Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (29) Female genitalia, GP Bldz 17250), same label data. (30) Abdomen. (31) Enlarged detail of signum bursae.

***Coleophora aequalella* Christoph, 1872**

Coleophora aequalella Christoph, 1872: 32.

Material studied: 2 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 22-30.V.2019; 7 ♀ Vedi env., Goravan vill., Gorovan Sands Reserve, 25-29.V.2019.

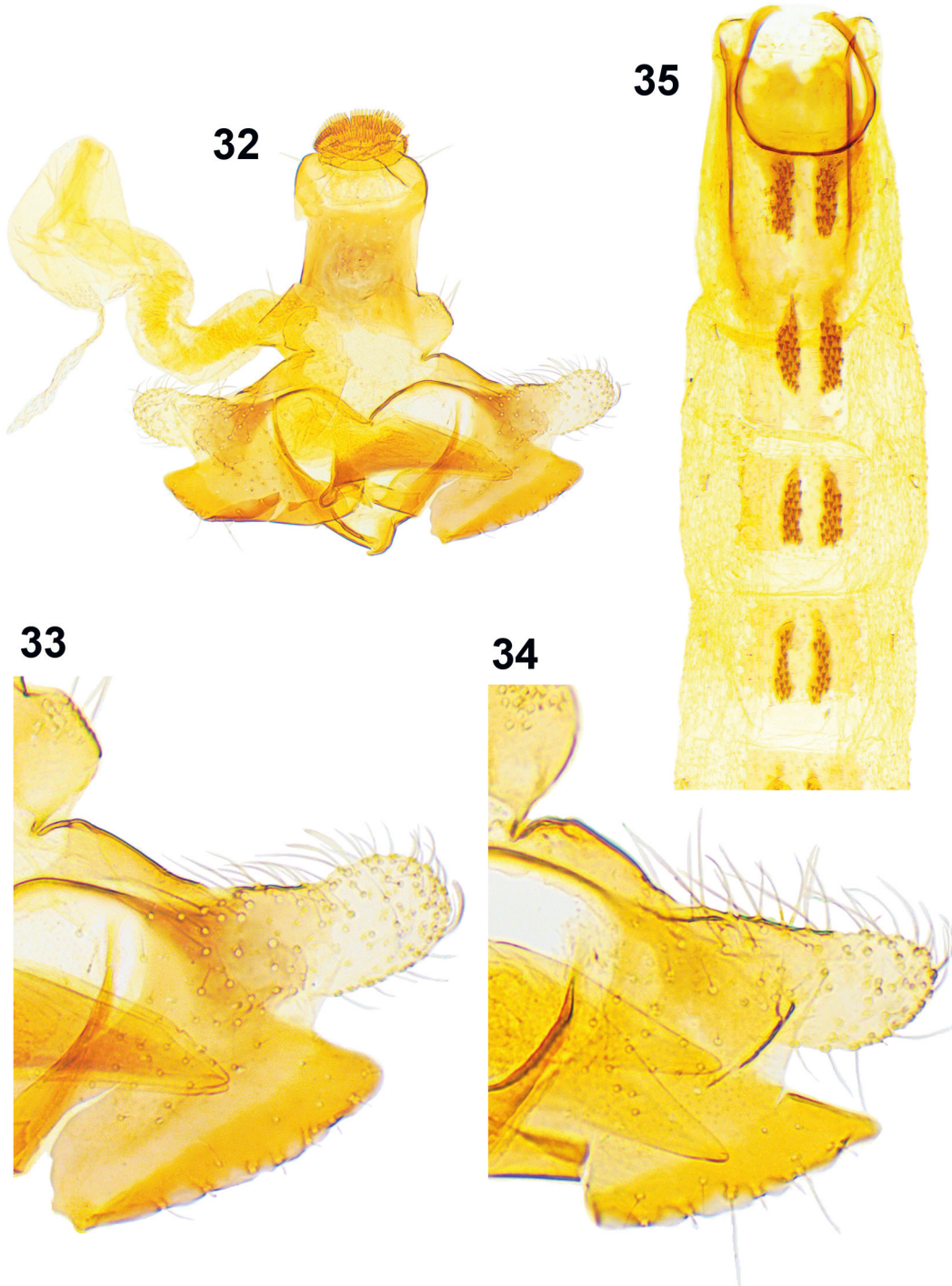
Distribution: Crimea, Russia (Lower Volga, Ural province), Caucasus (Stavropol district, Kabardino-

Balkaria), Kazakhstan, Uzbekistan, Iran, Afghanistan.
New for Armenia.

***Coleophora cf. onopordiella* Zeller, 1849**

Coleophora onopordiella Zeller, 1849: 213.

Material studied: 6 ♂, 1 ♀ Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019.

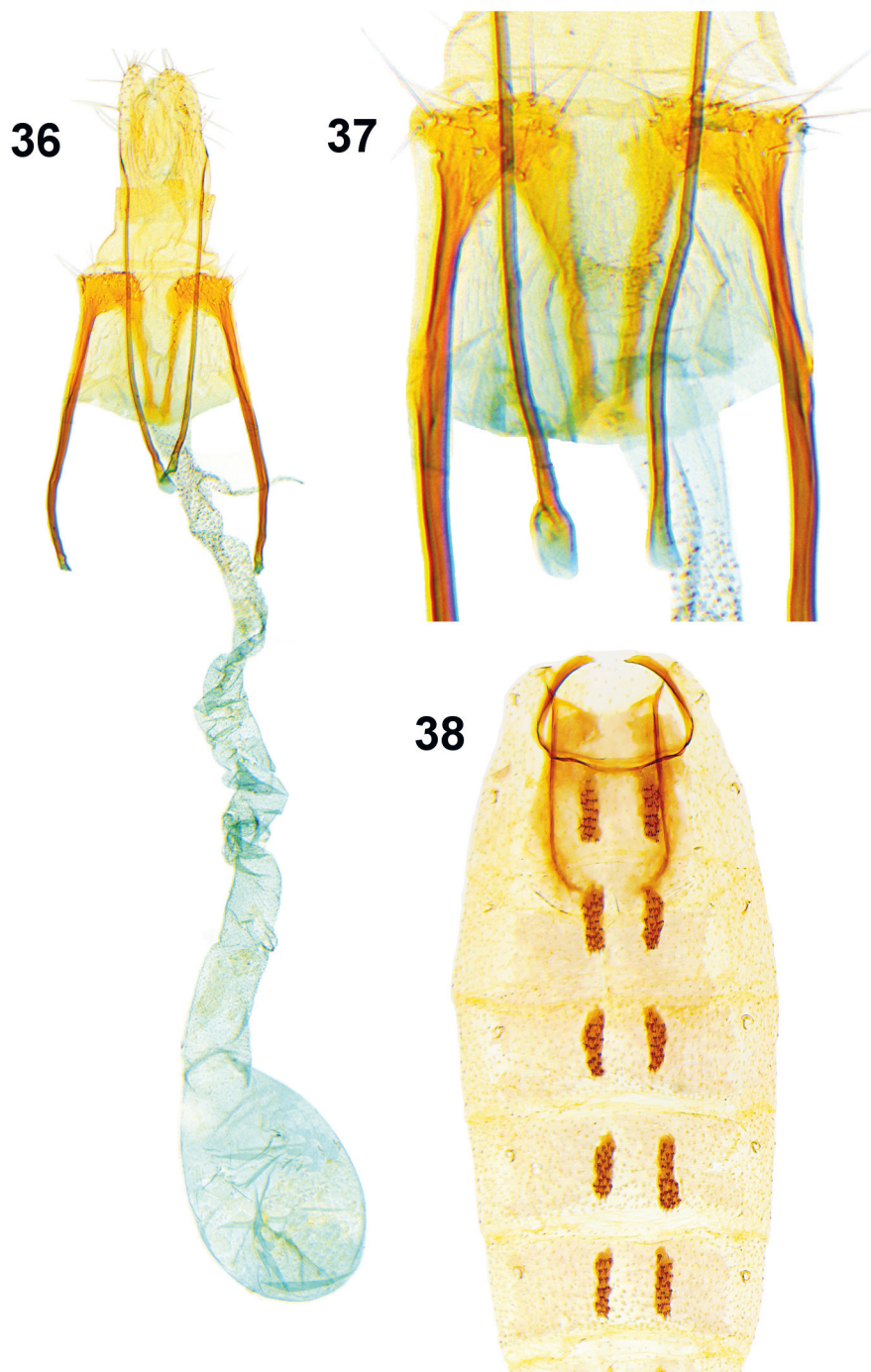


Figs 32-35. Male genitalia of *Coleophora paracoriacea* sp. nov. (32) GP Bldz 18024, paratype. (33) Enlarged detail of valva and phallosome. (34) Same detail, GP Bldz 17267, holotype. (35) Abdomen.

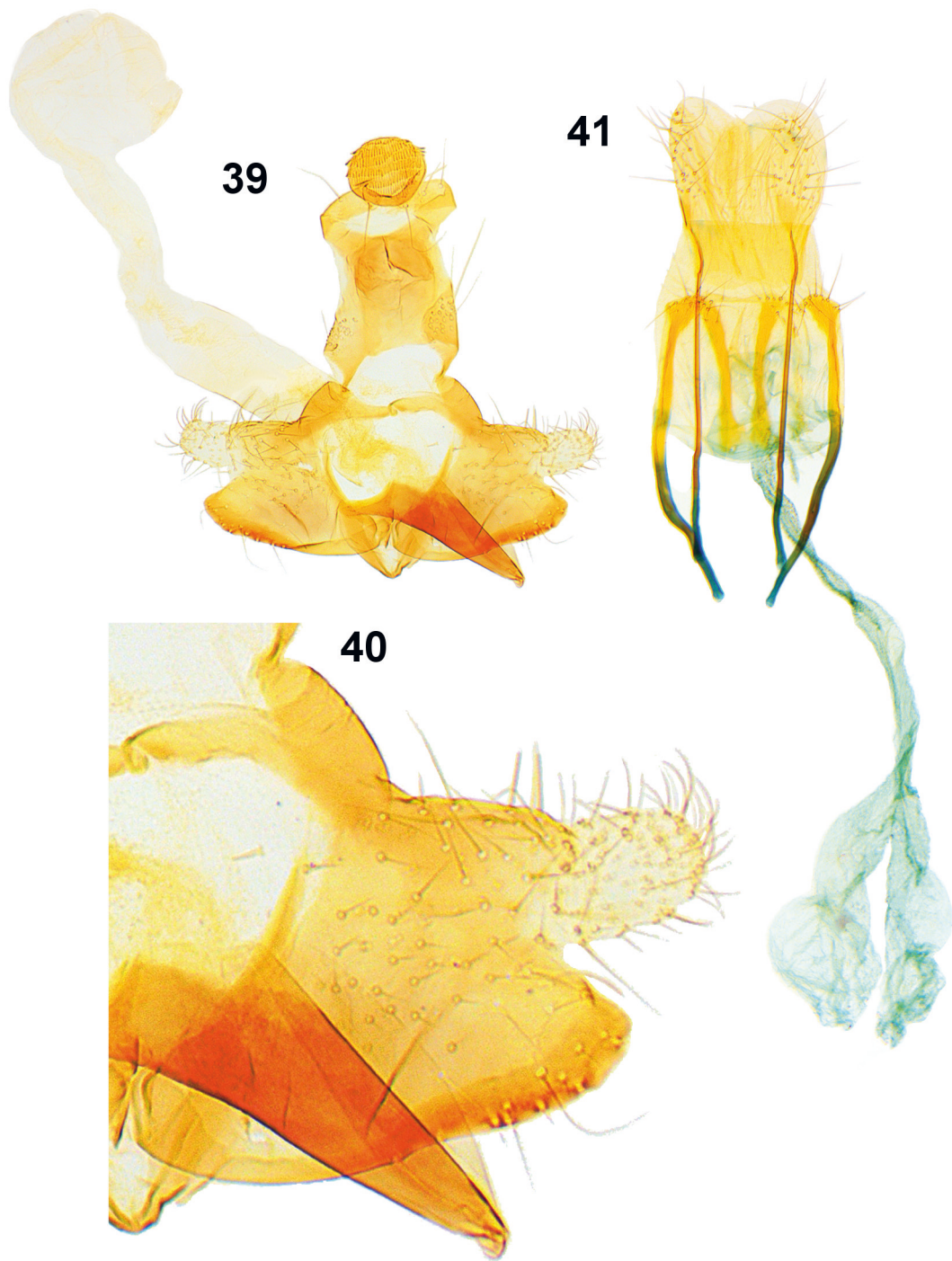
Distribution: As “*onopordiella*” species complex, there are data from southern France, central-southern Italy, Austria, Poland, Czech Republic, Slovakia, Hungary, Romania, Macedonia, Greece, Palestine, Jordan, Turkey, Caucasus (including Armenia), Syria, Iran.

Remark: On the basis of recent DNA analyses (J. Tabell, pers. com.), it was discovered that the name

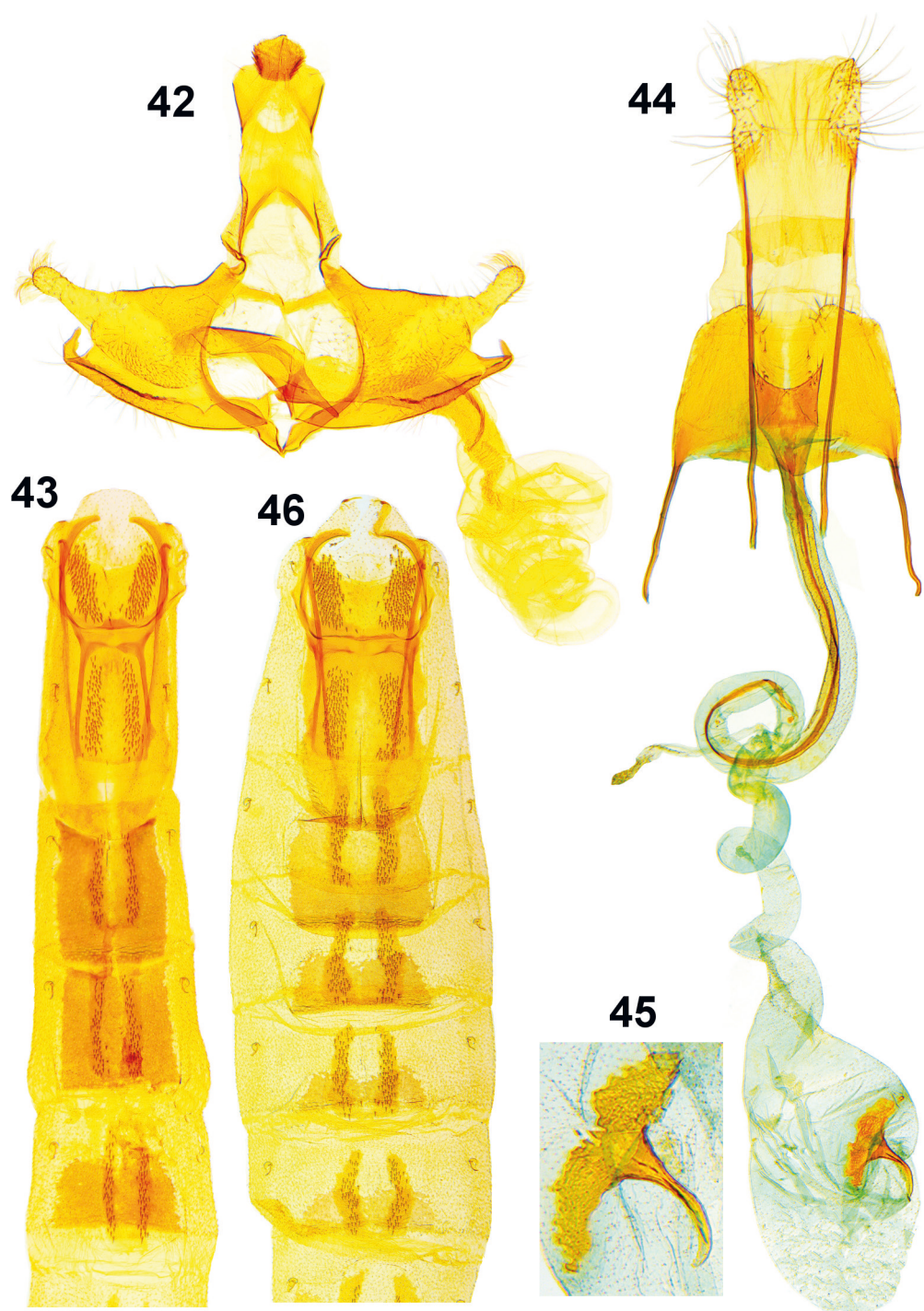
“*onopordiella*” encompasses a complex of species that will require precise attribution of relevant names described in the past for which in some cases there is only one type specimen available with a genitalia preparation in poor condition.



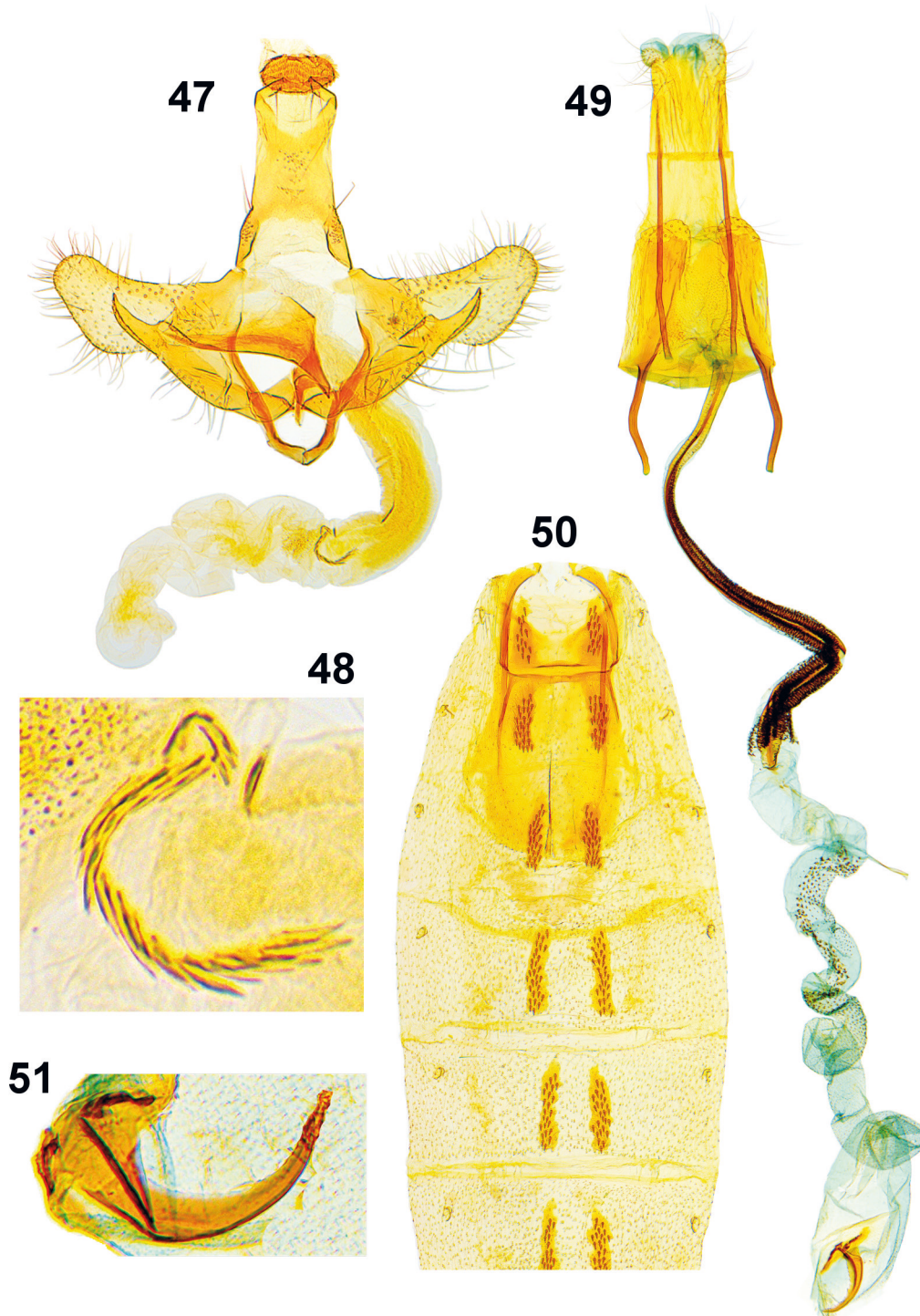
Figs 36-38. Female genitalia of *Coleophora paracoriacea* sp. nov. (36) GP Bldz 18039, paratype. (37) Enlarged detail of sterigma, GP Bldz 18046, paratype. (38) Abdomen.



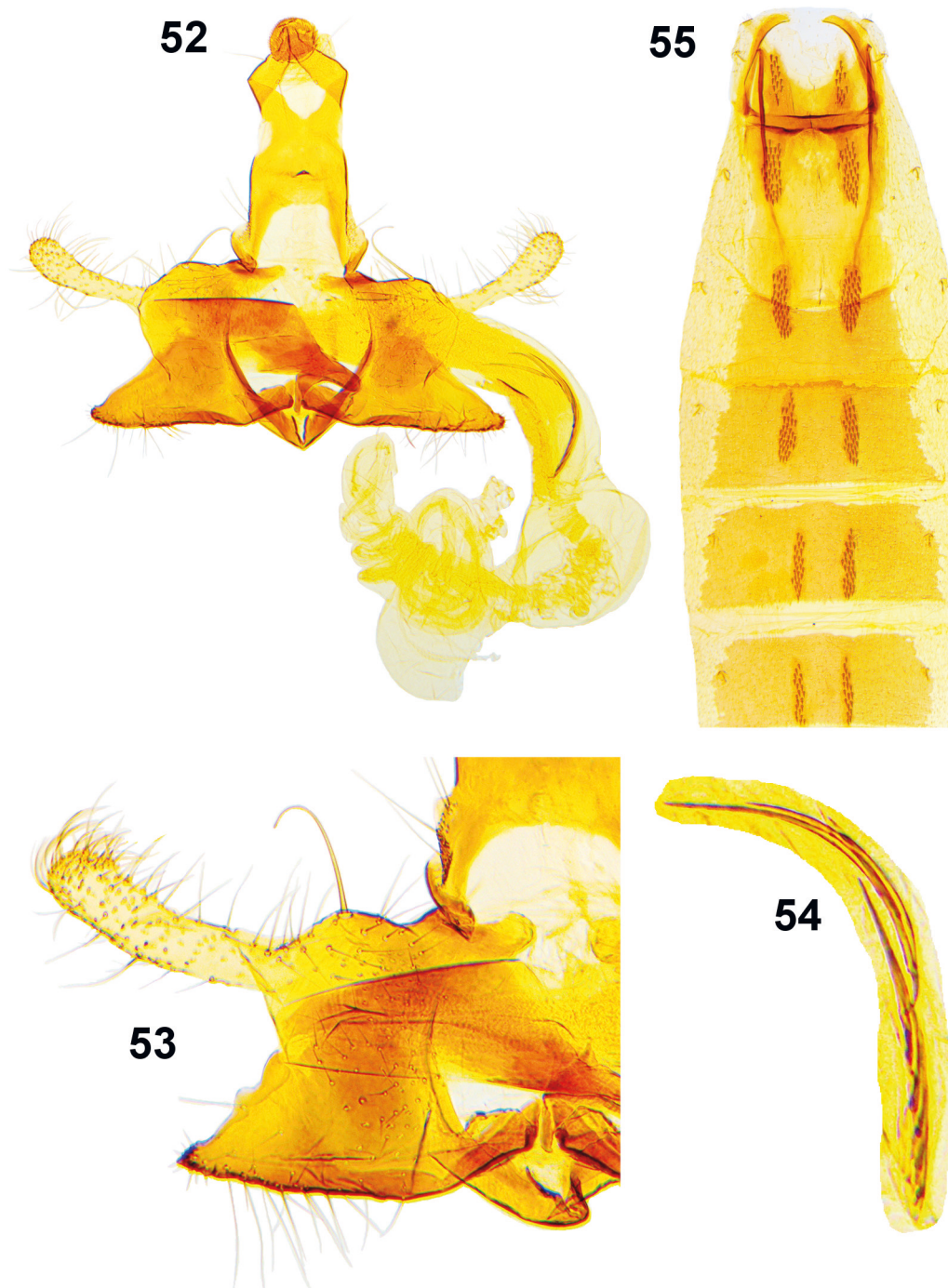
Figs 39-41. Genitalia of *Coleophora coriacea* (Falkovitsh, 1989). (39) Male genitalia, GP Bldz 9927, paratype, Kazakstan, 150 km S of Alma-Ata, river Ili, ex larva *Atraphaxis* sp., 27.V.1988, leg. Falkovitsh, coll. Baldizzone. (40) Enlarged detail of valva and phallosome. (41) Female genitalia, GP Bldz 9928, paratype, same label, but 29.V.1988, coll. Baldizzone.



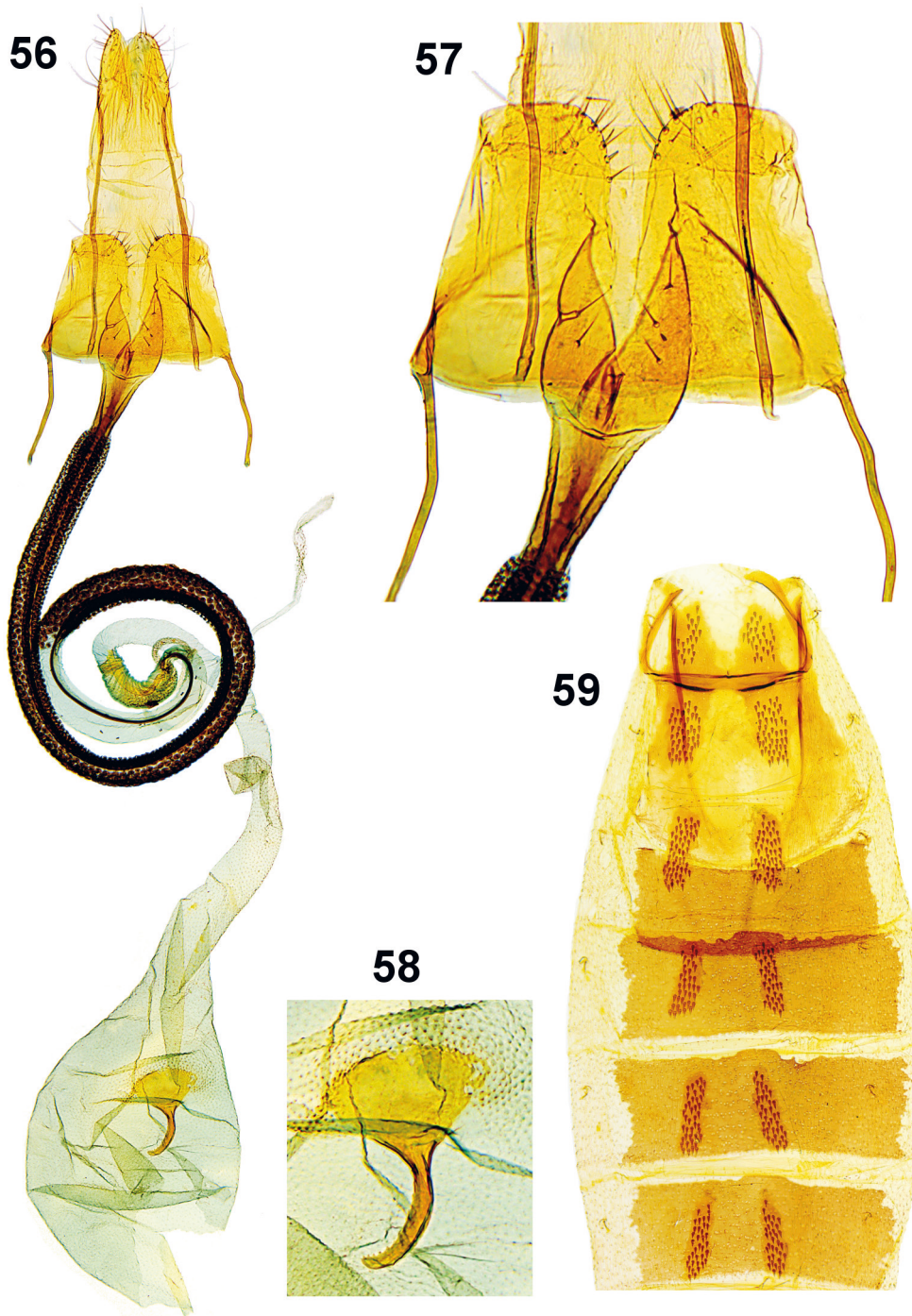
Figs 42-46. Genitalia of *Coleophora arachnias* Meyrick, 1922. (42) Male genitalia, GP Bldz 18056, Armenia, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 26.IV.-7.V.2022, H. Roweck & N. Savenkov. (43) Abdomen of same specimen. (44) Female genitalia, GP Bldz 18058, Armenia, Vedi, Gorovan Sands Reserve, 956 m, 27.IV.2022, H. Roweck & N. Savenkov. (45) Enlarged detail of signum bursae, GP Bldz 17575, Armenia, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 20-30.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (46) Abdomen of same specimen.



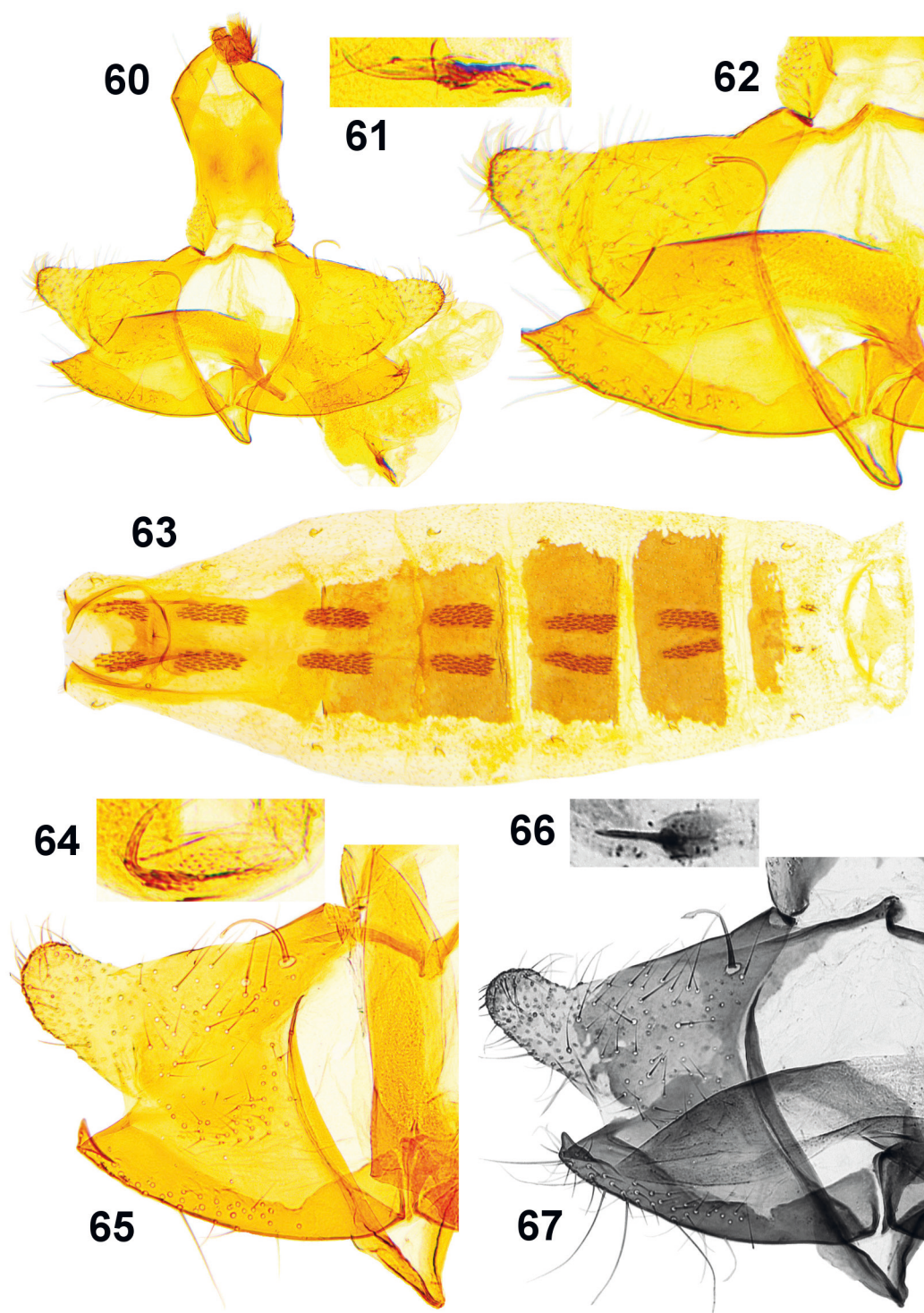
Figs 47-51. Genitalia of *Coleophora macilenta* Falkovitsh, 1972. (47) Male genitalia, GP Bldz 8434, N-Iran, Berge östl. Semnan, 18.VI.1963, Kasy & Vartian, coll. Baldizzone. (48) Enlarged detail of cornuti. (49) Female genitalia, GP Bldz 17260, Armenia, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 20-30.V.2019, 1250 m, O. Karsholt, H. Roweck & N. Savenkov. (50) Abdomen of same specimen. (51) Enlarged detail of signum bursae, GP Bldz 17551, Armenia, Vedi, Goravan Sands Reserve, 1250 m, 25-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov.



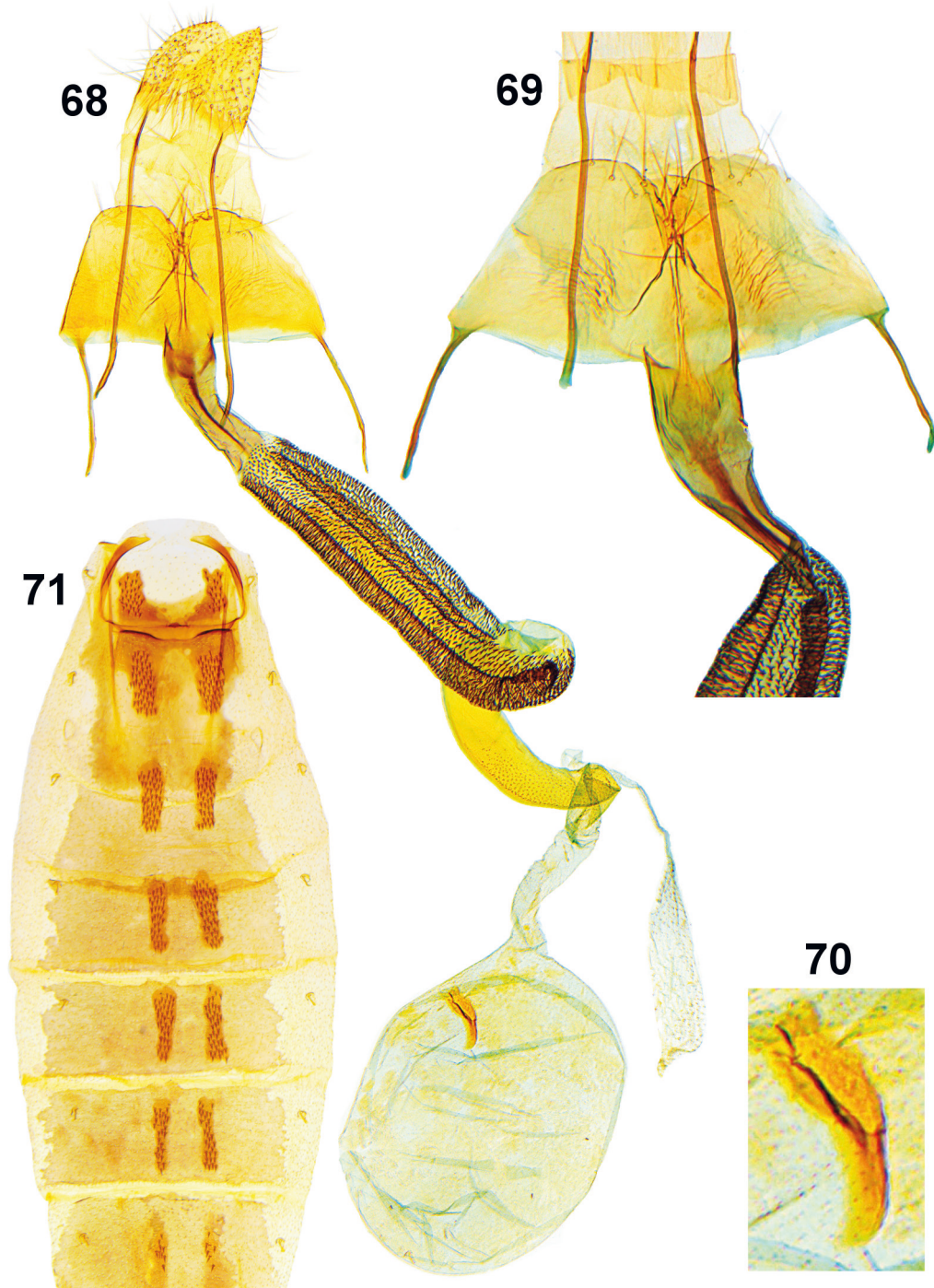
Figs 52-55. Male genitalia of *Coleophora rowecki* sp. n. (52) GP Bldz 17102, paratype. (53) Enlarged detail of valva and phallosome, GP Bldz 17547, paratype. (54) Enlarged detail of cornuti, GP Bldz 17547. (55) Abdomen, GP Bldz 17102.



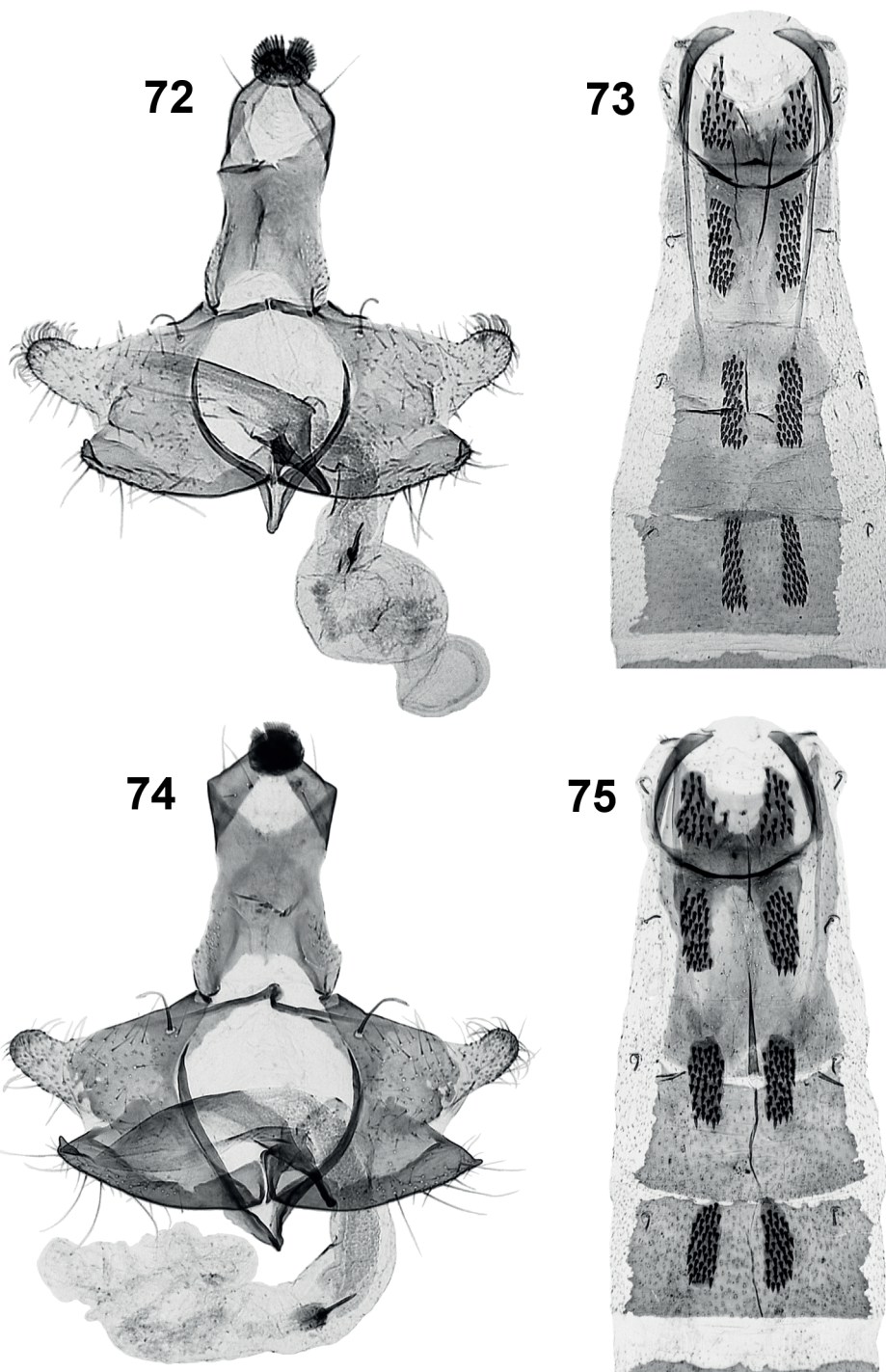
Figs 56-59. Female genitalia of *Coleophora rowecki* sp. n. (56) GP 17117, paratype. (57) Enlarged detail of sterigma. (58) Enlarged detail of signum bursae. (59) Abdomen.



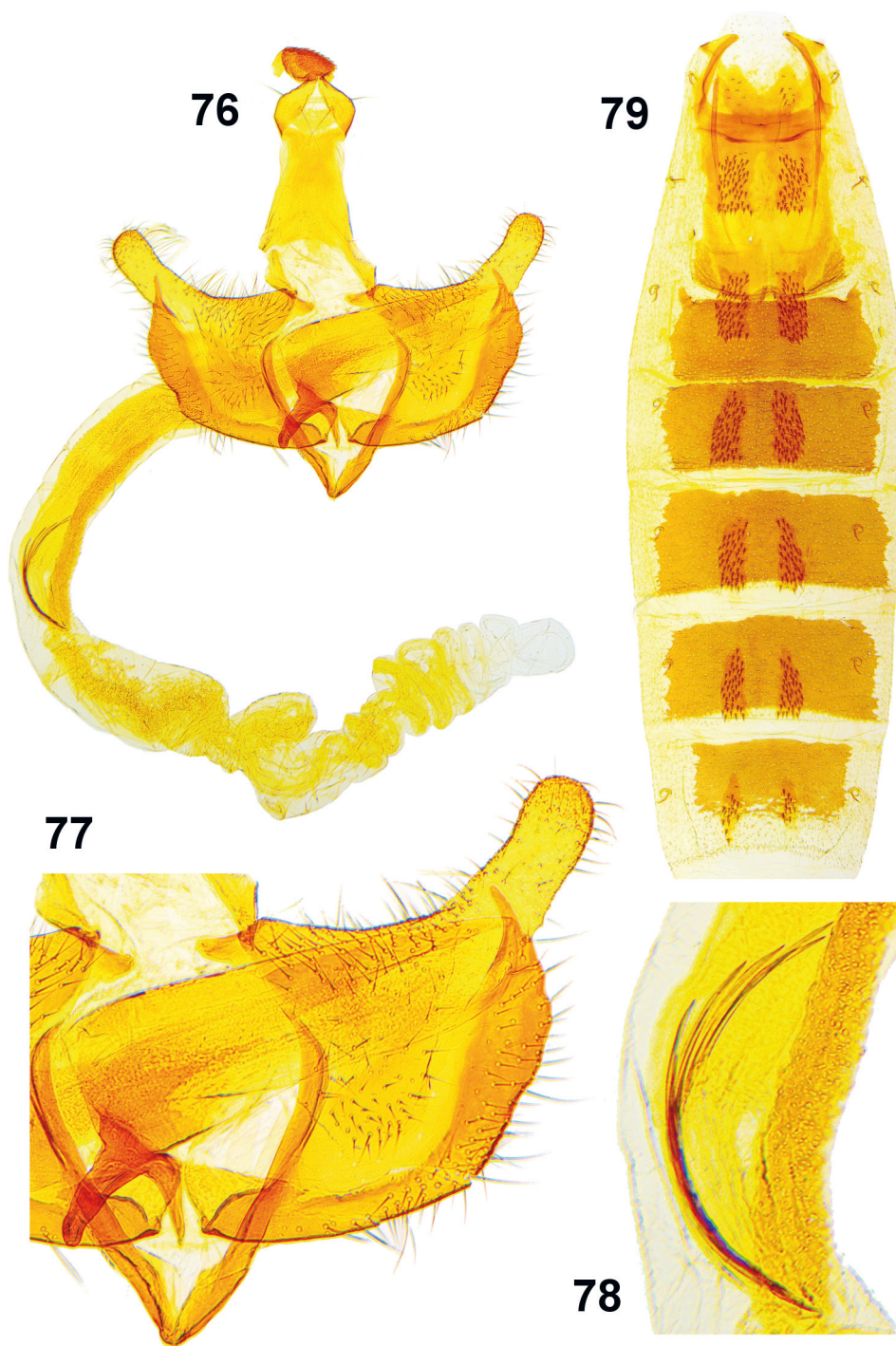
Figs 60-67. Male genitalia of *Coleophora* species. (60) *C. sanctuariella* sp. nov., GP Bldz 17994, holotype. (61) Enlarged detail of cornuti. (62) Enlarged detail of valva and phallosome. (63) Abdomen of same specimen. (64) *C. argentulella* Turati, 1924, GP Bldz 16939, "Biskra | 24. April 08 | (W. R. & E. H.)", NHMUK 0108977749, coll. NHMUK, enlarged detail of cornuti. (65) Enlarged detail of valva and phallosome. (66) *C. fulvociliella* Chrétien, 1915, GP Bldz 1790, lectotype, enlarged detail of cornuti. (67) Enlarged detail of valva and phallosome.



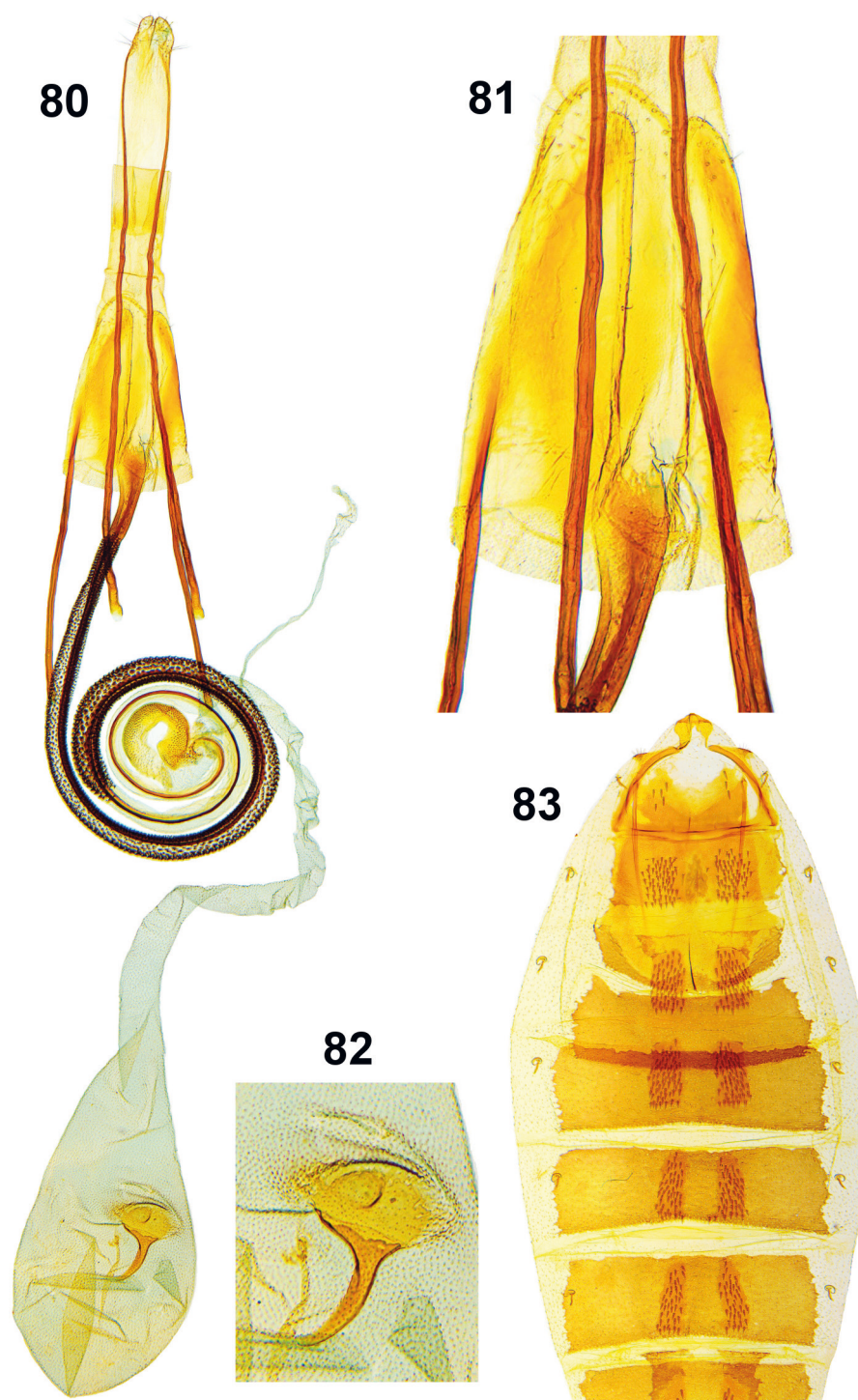
Figs 68-71. Female genitalia of *Coleophora sanctuariella* sp. nov. (68) GP Bldz 17995, paratype. (69) Enlarged detail of sterigma, GP Bldz 18002, paratype. (70) Enlarged detail of signum bursae, GP Bldz 17995. (71) Abdomen, GP Bldz 17995.



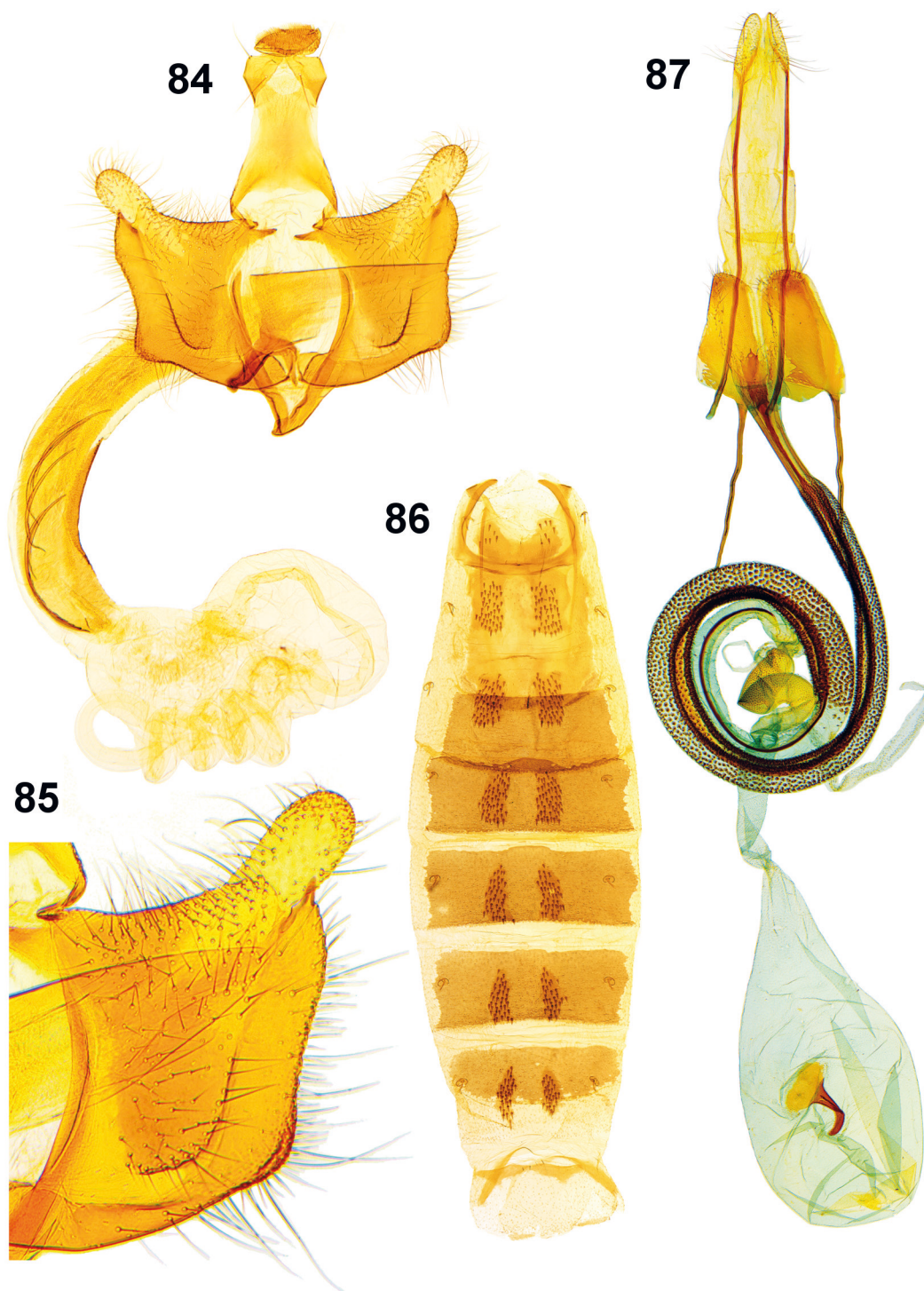
Figs 72-75. Male genitalia of *Coleophora* species. (72) *C. argentulella* Turati, 1924, GP Bldz 1198, lectotype. (73) Abdomen. (74) *C. fulvociliella* Chrétien, 1915, GP Bldz 1790, lectotype. (75) Abdomen.



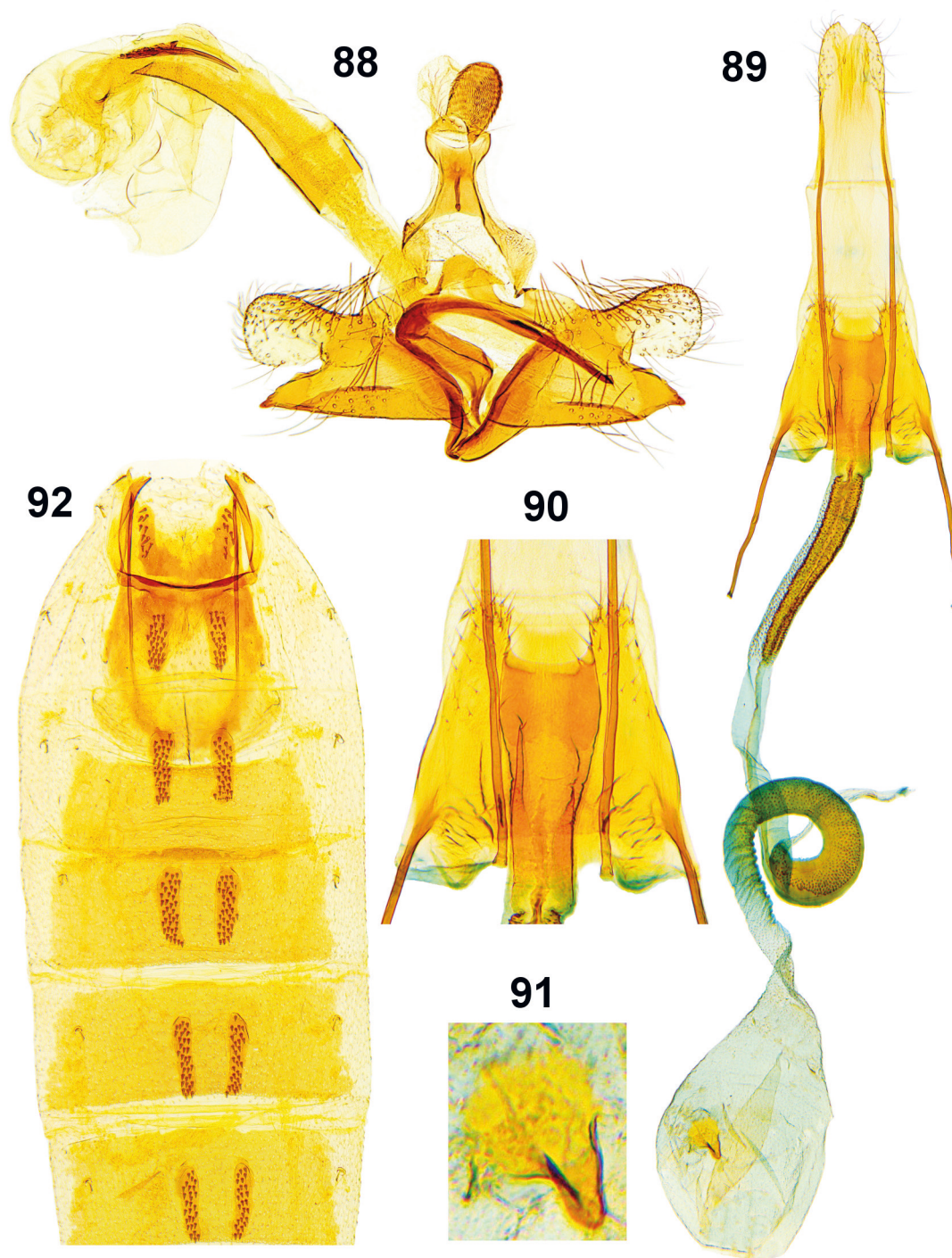
Figs 76-79. Male genitalia of *Coleophora lepida*, sp. nov. (76) GP Bldz 17521, holotype. (77) Enlarged detail of valva and phallosome. (78) Enlarged detail of cornuti. (79) Abdomen.



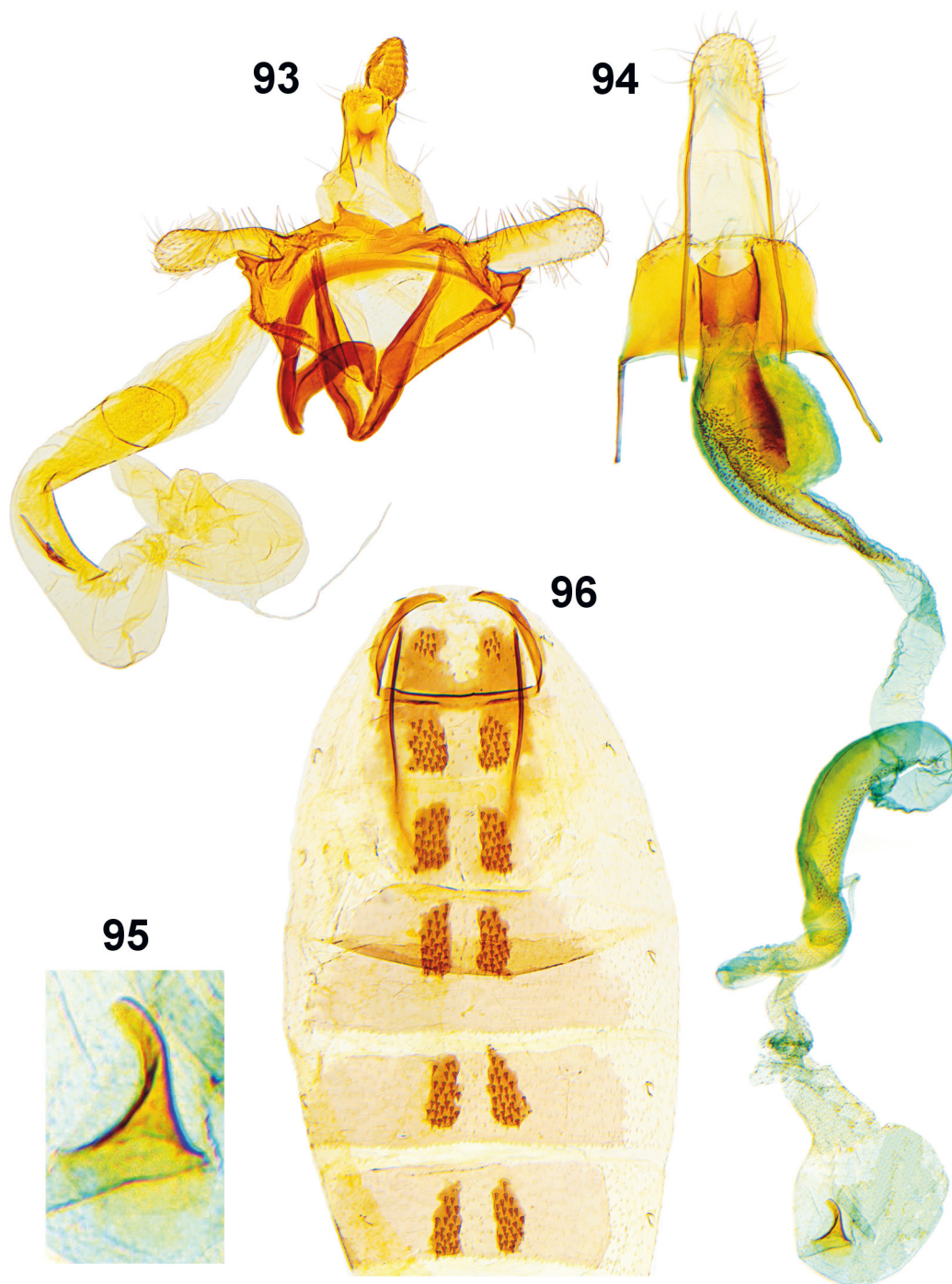
Figs 80-83. Female genitalia of *Coleophora lepida*, sp. nov. (80) GP Bldz 18088, paratype. (81) Enlarged detail of sterigma. (82) Enlarged detail of signum bursae. (83) Abdomen.



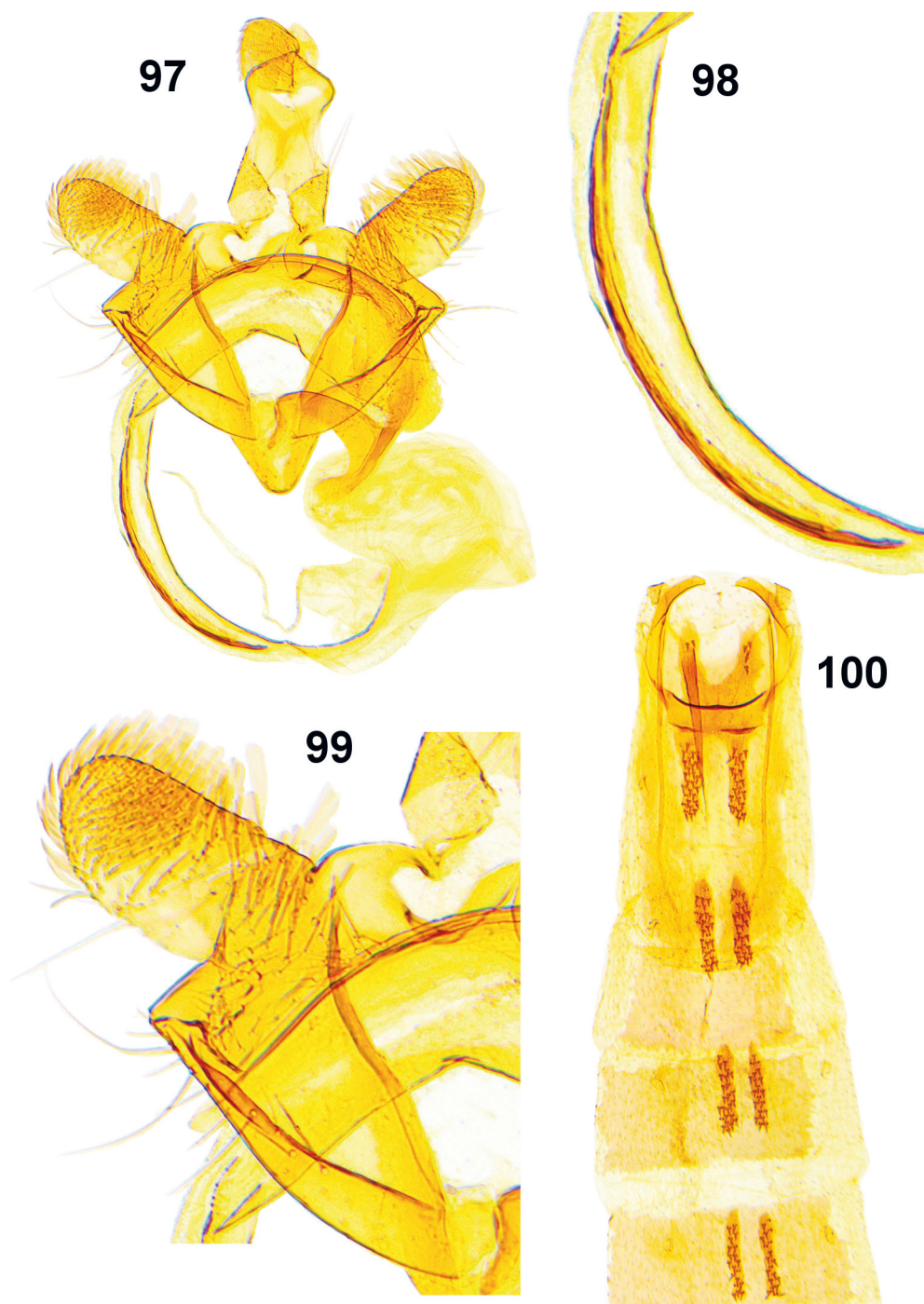
Figs 84-87. Genitalia of *Coleophora longipalpa* Fuchs, 1903. (84) Male genitalia, GP Bldz 17087, Armenia, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 22-30.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (85) Enlarged detail of valva and phallosome. (86) Abdomen of same specimen. (87) Female genitalia, GP Bldz 1752, Armenia, Vedi, Gorovan Sands Reserve, 956 m, 25.-29.V.2019, O. Karsholt, H. Roweck & N. Savenkov.



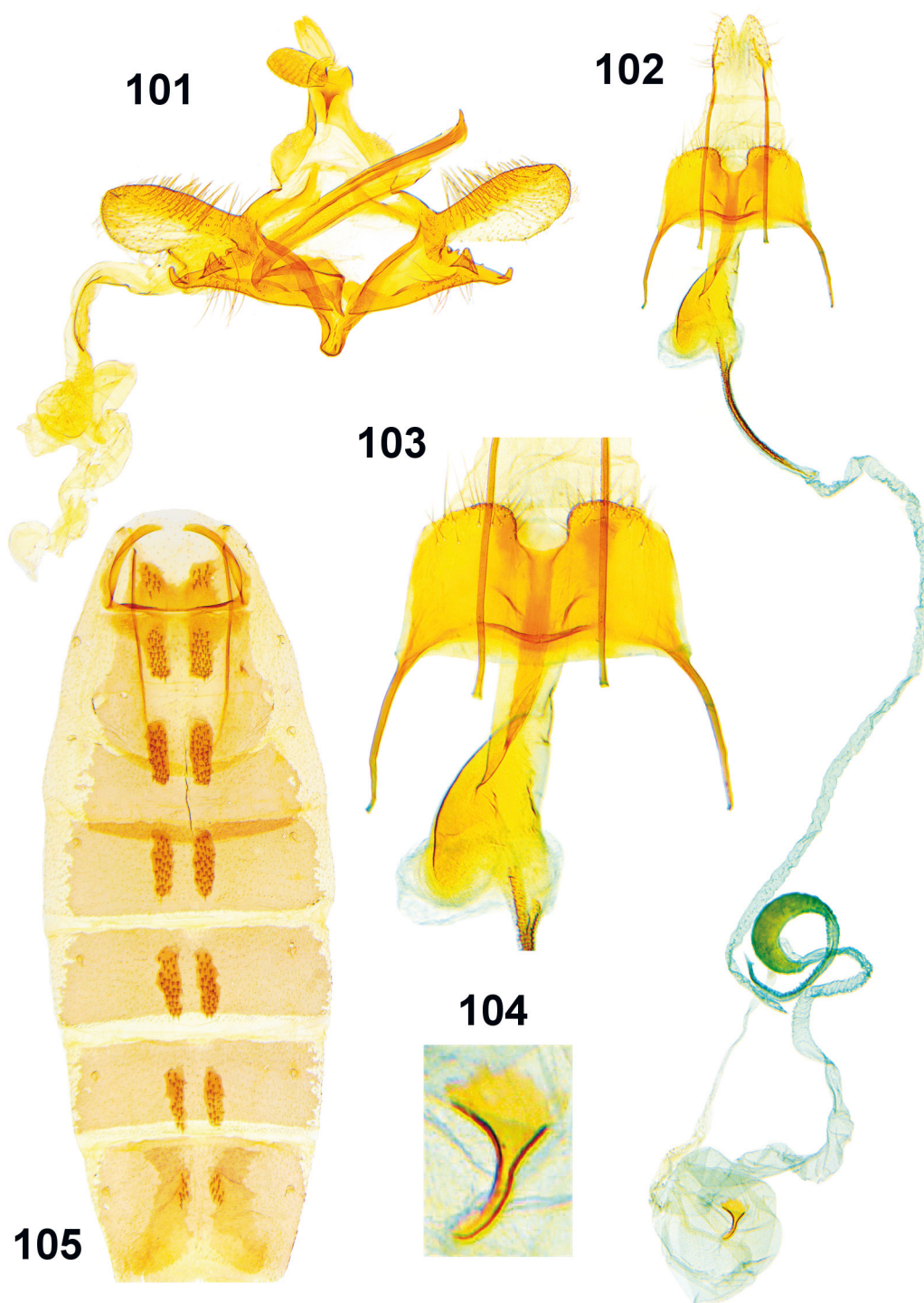
Figs 88-92. Genitalia of *Coleophora adlecta* Baldizzone, 1994. (88) Male genitalia, GP Bldz 17099, Armenia, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 22-30.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (89) Female genitalia, GP Bldz 18110, same label data as male. (90) Enlarged detail of sterigma. (91) Enlarged detail of signum bursae. (92) Abdomen.



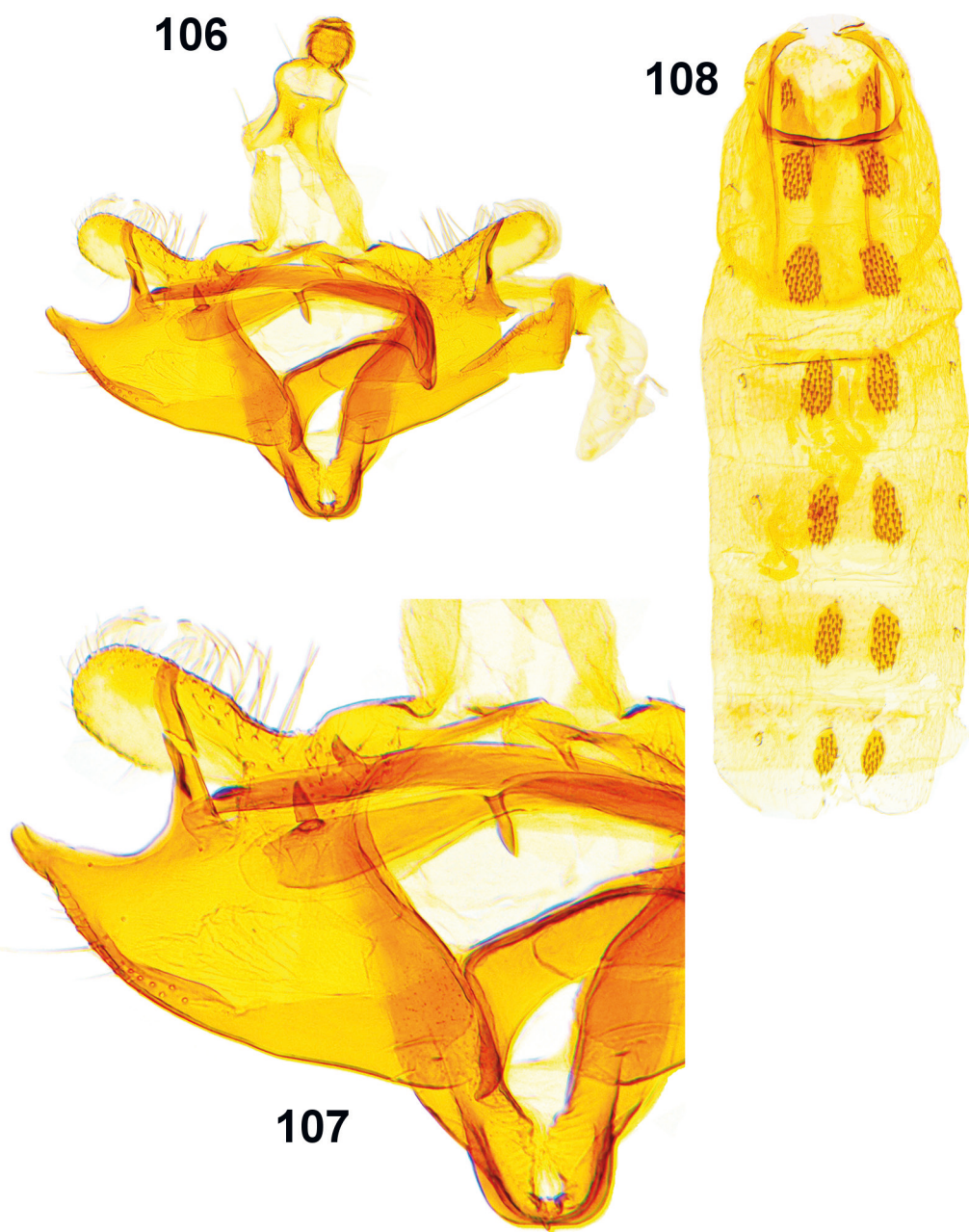
Figs 93-96. Genitalia of *Coleophora zofodella* Baldizzone, 2001. (93) Male genitalia, GP Bldz 17270 (barcode ID MM 27608), Armenia, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 22-30.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (94) Female genitalia, GP Bldz 18042, Armenia, Vedi, Goravan Sands Reserve, 956 m, 27.IV.2022, leg. H. Roweck & N. Savenkov. (95) Enlarged detail of signum bursae. (96) Abdomen.



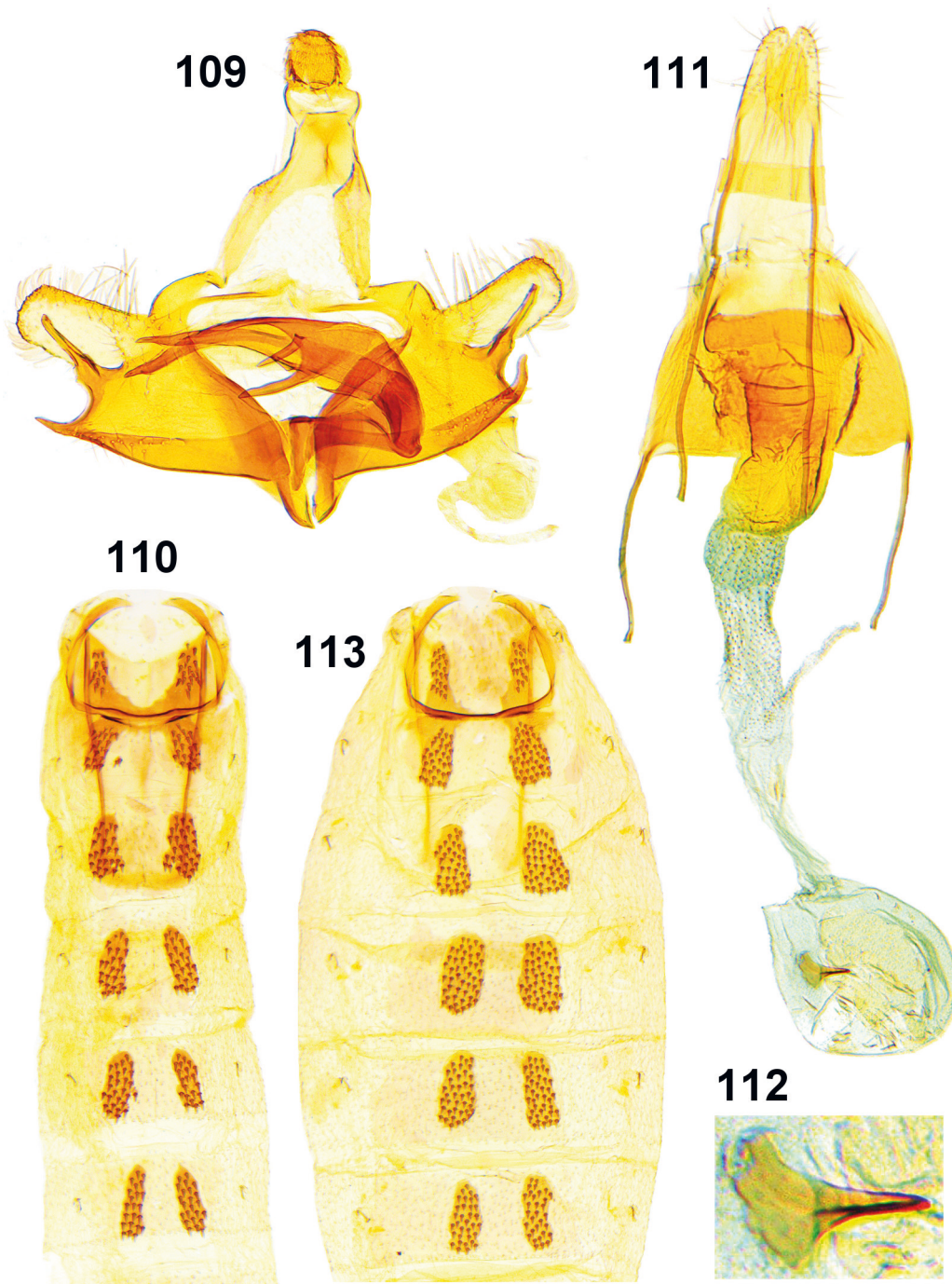
Figs 97-100. Male genitalia of *Coleophora iucunda*, sp. nov. (97) GP Bldz 18004, holotype. (98) Enlarged detail of cornuti. (99) Enlarged detail of valva and phallosome. (100) Abdomen.



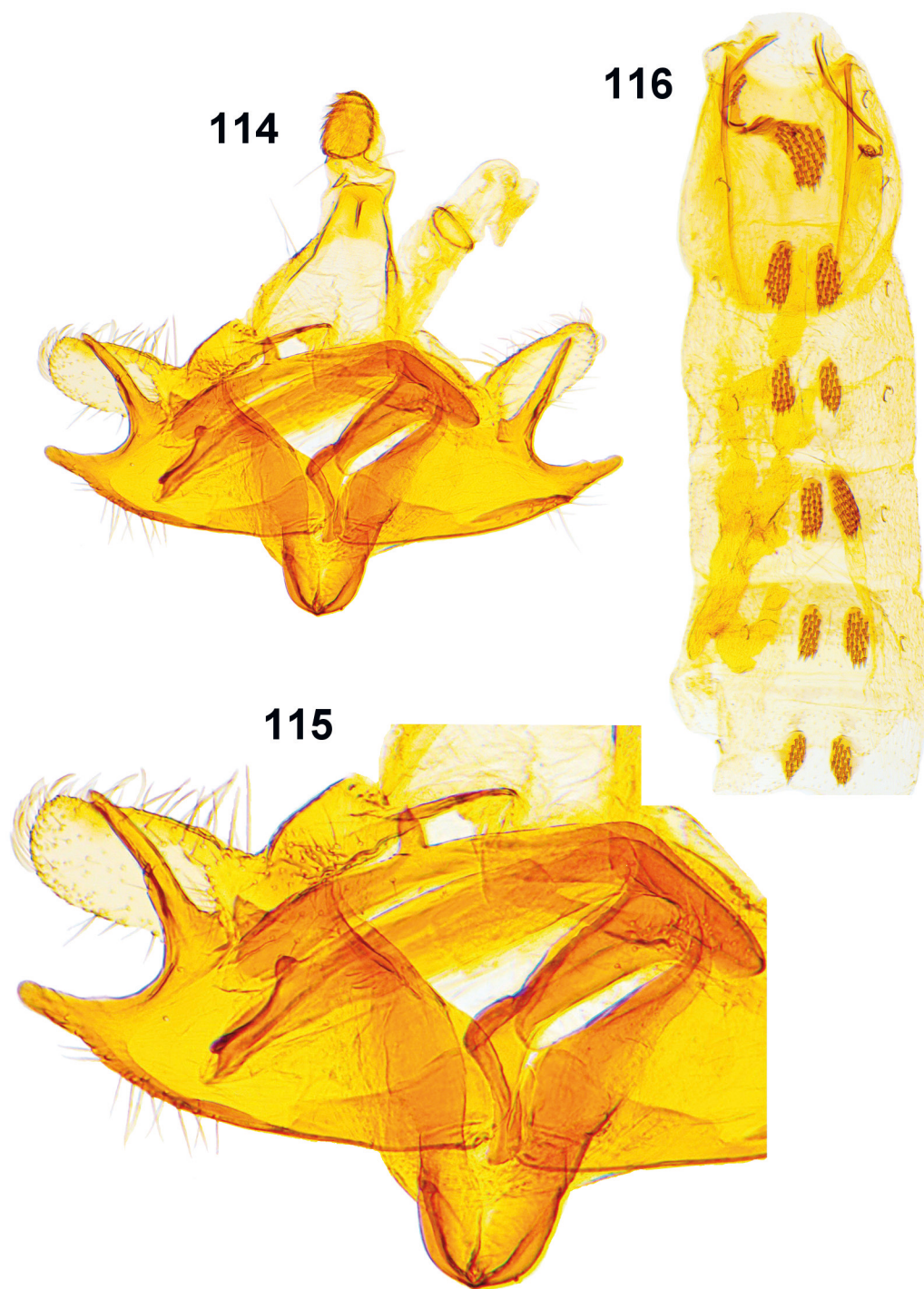
Figs 101-105. Genitalia of *Coleophora genviki* (Anikin, 2002). (101) Male genitalia, GP Bldz 17996, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 26.IV.-7.V.2022, H. Roweck & N. Savenkov. (102) Female genitalia, GP Bldz 18025, same label data as male. (103) Enlarged detail of sterigma. (104) Enlarged detail of signum bursae. (105) Abdomen.



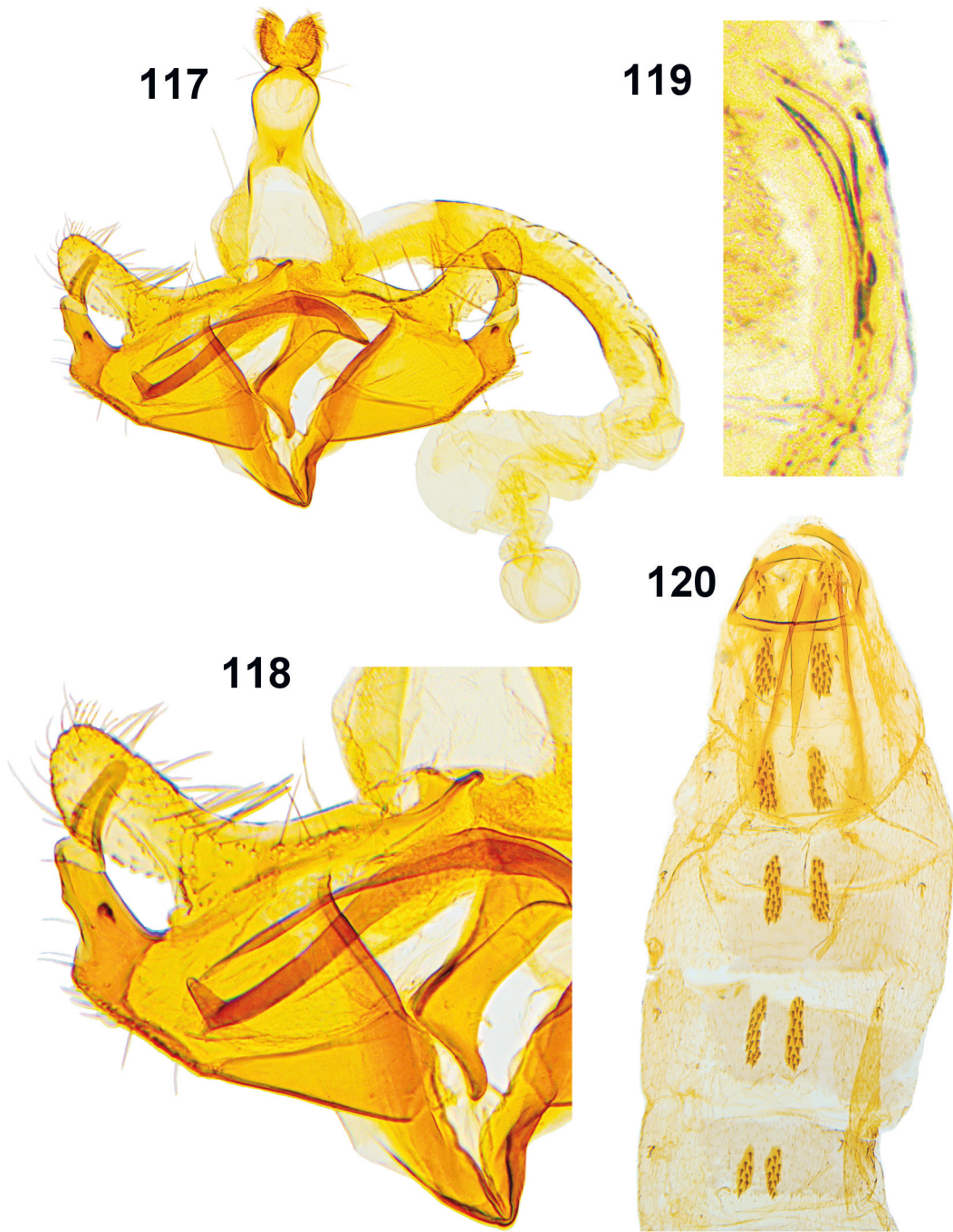
Figs 106-108. Male genitalia of *Coleophora hispida*, sp. nov. (106) GP Bldz 18021, holotype. (107) Enlarged detail of valva and phallosome. (108) Abdomen.



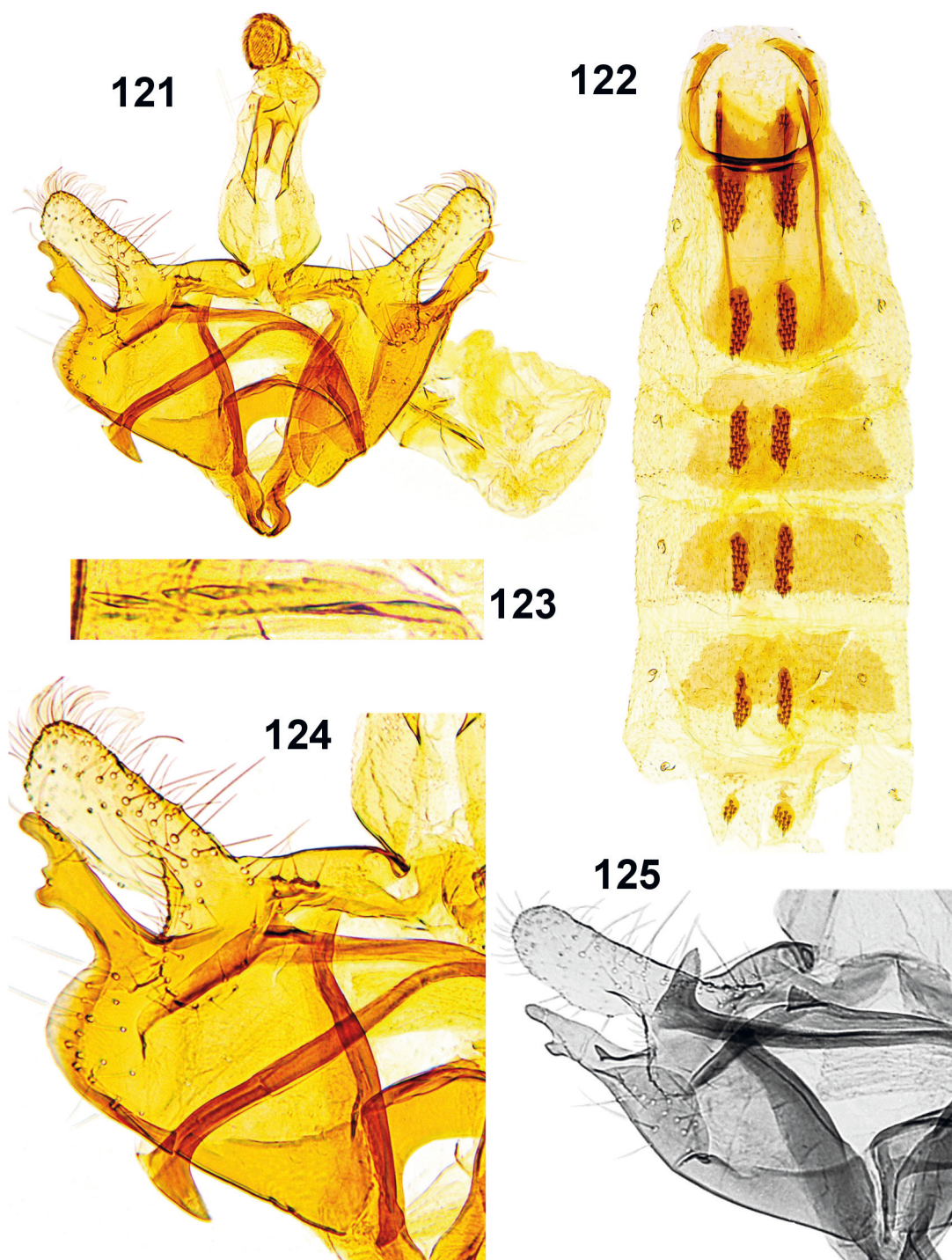
Figs 109-113. Genitalia of *Coleophora hystricella* Toll, 1957. (109) Male genitalia, GP Bldz 18036, Armenia, Vedi, Gorovan Sands Reserve, 956 m, 27.IV.2022, H. Roweck & N. Savenkov. (110) Abdomen. (111) Female genitalia, GP Bldz 18032, same label data as male. (112) Enlarged detail of signum bursae. (113) Abdomen.



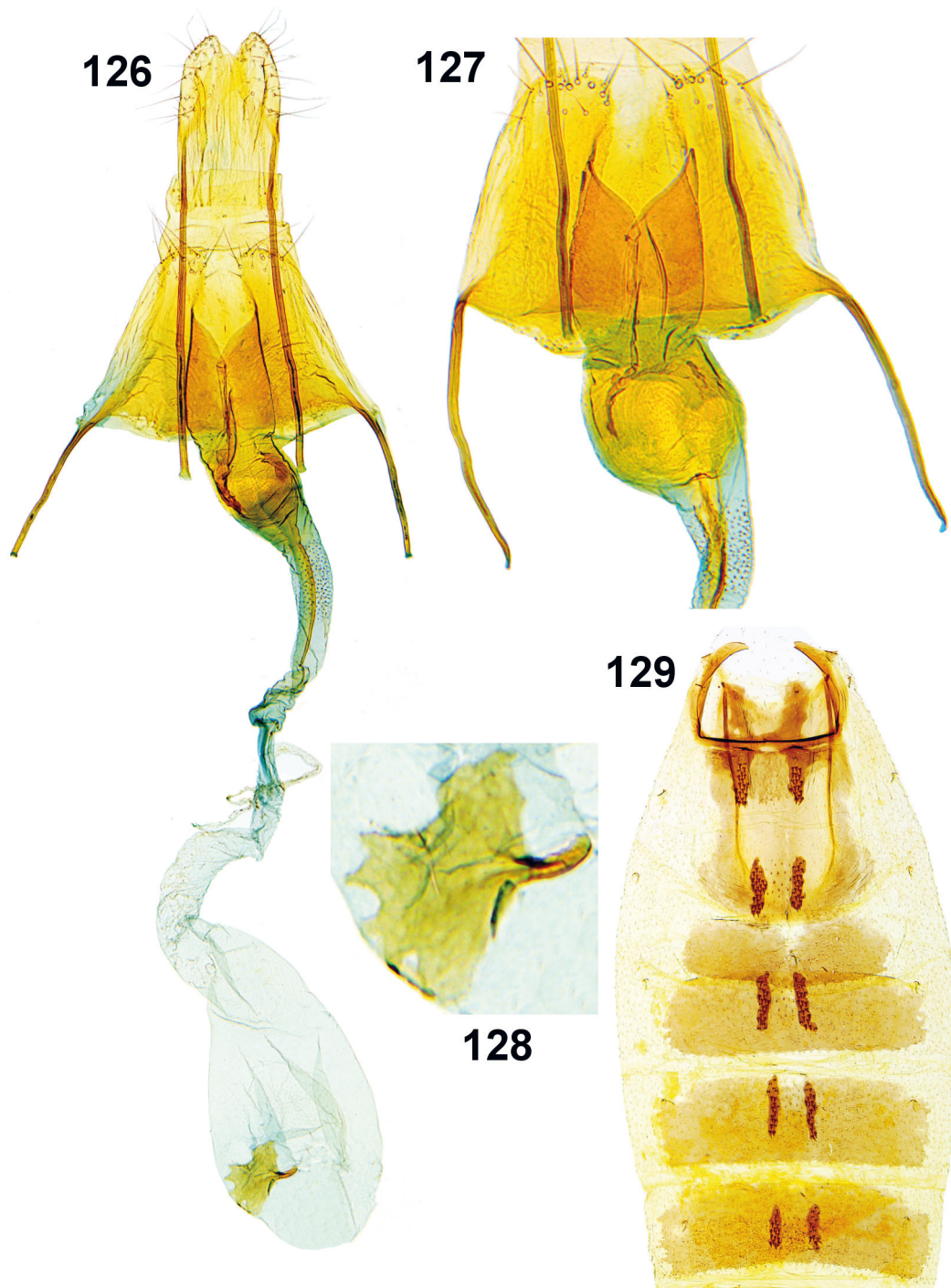
Figs 114-116. Male genitalia of *Coleophora anomala*, sp. nov. (114) GP Bldz 18119, holotype. (115) Enlarged detail of valva and phallosome. (116) Abdomen.



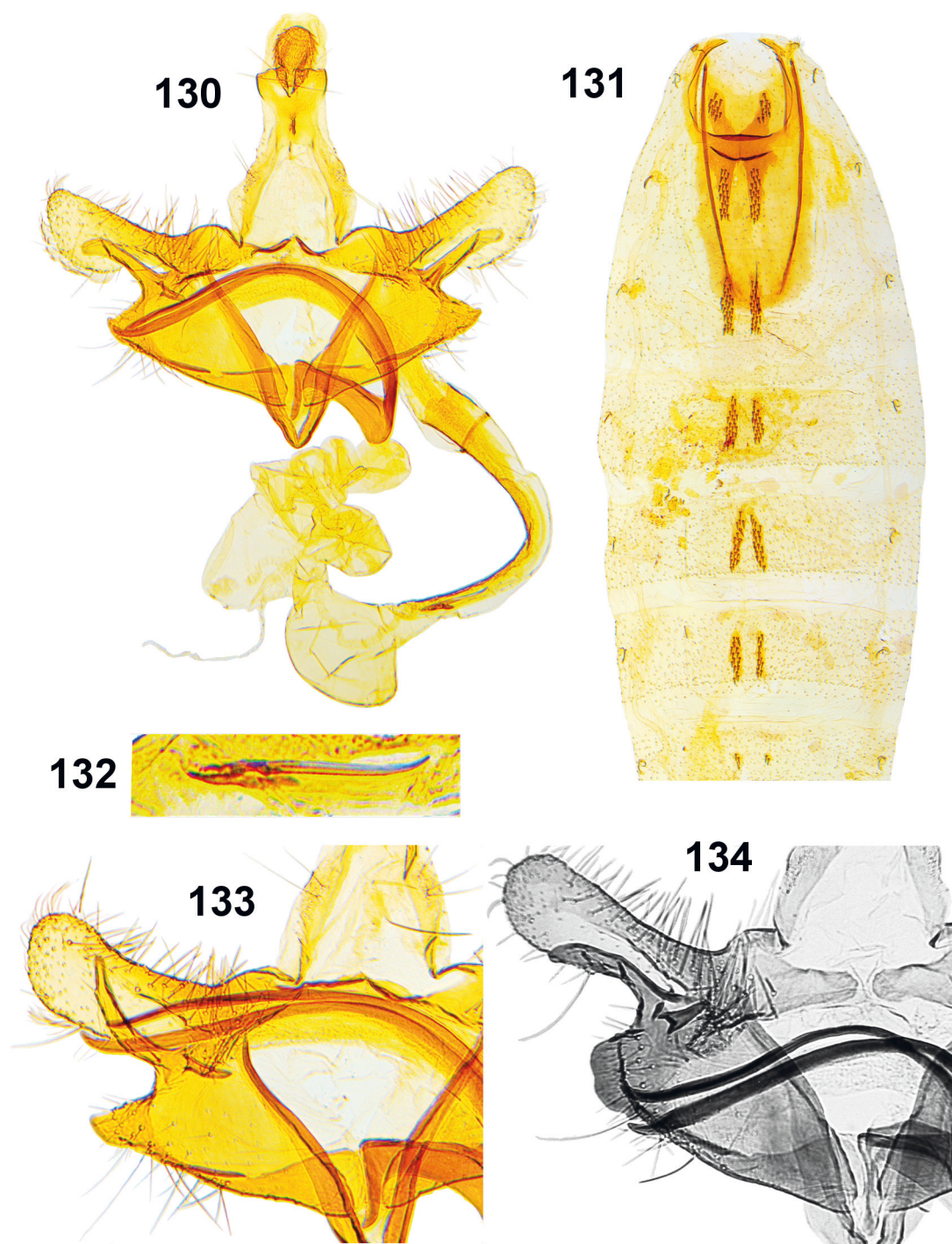
Figs 117-120. Male genitalia of *Coleophora gorovanensis*, sp. nov. (117) GP Bldz 17263, holotype. (118) Enlarged detail of valva and phallosome. (119) Enlarged detail of cornuti. (120) Abdomen.



Figs 121-125. Male genitalia of *Coleophora makuensis* Baldizzone, 1994. (121) GP Bldz 17110 [DNA specimen ID: MM27087], Armenia, prov. Ararat, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, 22-30.V.2019, O. Karsholt, H. Roweck & N. Savenkov. (122) Abdomen. (123) Enlarged detail of cornuti. (124) Enlarged detail of valva and phallosome. (125) GP Bldz 5733, holotype, "NW-Iran, 15 km sö. Maku 1050 m, 3.VI.1975, H. G. Amsel leg.", in LNK.



Figs 126-129. Female genitalia of *Coleophora makuensis* Baldizzone, 1994. (126) GP Bldz 17104, Armenia, prov. Ararat, Urtsadzor, Caucasus Wildlife Reserve, Eco Lodge, 1250 m, O. Karsholt, H. Roweck & N. Savenkov. (127) Enlarged detail of sterigma, GP Bldz 17550 [DNA specimen ID: TAB0027], Armenia: Vedi, Goravan sands, 956 m, 25-29.05.2019, H. Roweck & N. Savenkov. (128) Enlarged detail of signum bursae. (129) Abdomen.



Figs 130-134. Male genitalia of *Coleophora* species. (130) *C. finitima*, sp. nov., GP Bldz 17553, holotype. (131) Abdomen. (132) Enlarged detail of cornuti. (133) Enlarged detail of valva and phallosome, GP Bldz 17551, paratype. (134) Same detail, *C. ammophora* (Falkovitsh, 1989), GP Bldz 5734, NW-Iran, 17 km NW Maku, 1400 m, 4.VI.1975, H. G. Amsel leg., coll. Baldizzone.

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REFERENCES

- Anikin V.V. 2002. New casebearer species of the tribe Casignetellini from European Russia and Armenia (Lepidoptera: Coleophoridae). *Zoosystematica Rossica* 11: 179-182.
- Anikin V.V. 2005. [New and little known species of casebearers (Lepidoptera, Coleophoridae) associated with Chenopodiaceae in Russia]. *Entomologicheskoe Obozrenie* 84(2): 387-406. [In Russian].
- Anikin V.V. 2017. A new species of the genus *Augasma* from the Volga-Ural Region and re-description of a female of *Casignetella genviki* Anikin, (Lepidoptera: Coleophoridae) (pp. 526-528). In: Anikin V.V., Sachkov S.A., Zolotuhin V.V. Fauna Lepidopterologica Volgo-Uralensis: from P. Pallas to present days. *Proceedings of the Museum Witt, Munich* 7: 1-696.
- Baker G.T. 1888. Descriptions of some new species of microlepidoptera from Algeria. *The Entomologist's Monthly Magazine* 24: 254-257.
- Baldizzone G. 1979a. Les espèces du genre *Coleophora* Hübner décrites par Emilio Turati. VII^e contribution à la connaissance des Lepidoptera, Coleophoridae. *Linneana Belgica* 7: 262-284.
- Baldizzone G. 1979b. Contributions à la connaissance des Coleophoridae, XIII. Les espèces de Coleophoridae décrites par Pierre Chrétien. *Alexanor* 11: 111-130.
- Baldizzone G. 1982. I Coleophoridae raccolti della spedizione del Museo di Budapest in Tunisia nel 1977 (Lepidoptera). *Annales Historico-Naturales Musei Nationalis Hungarici* 74: 203-216.
- Baldizzone G. 1985. Nuove sinonimie nel genere «*Coleophora*» Hübner (IV). Contribuzioni alla conoscenza dei «Coleophoridae». XL (Lepidoptera). *Rivista Piemontese di Storia Naturale* 6: 181-198.
- Baldizzone G. 1988. Contributions à la connaissance des Coleophoridae. XLVIII. Quatre nouvelles espèces du genre *Coleophora* Hübner de l'URSS. *Beiträge zur Entomologie* 38: 74-82.
- Baldizzone G. 1989. Contributions to the knowledge of the Coleophoridae. L. *Coleophora eurasiatica* sp. n. and *Coleophora koreana* sp. n. *Nota lepidopterologica* 12: 13-18.
- Baldizzone G. 1994. Contribuzioni alla conoscenza dei Coleophoridae. LXXV. *Coleophoridae* dell'Area Irano-Anatolica e regioni limitrofe (Lepidoptera). *Associazione Naturalistica Piemontese, Memorie* vol. III, 424 pp.
- Baldizzone G. 2001. Contribuzioni alla conoscenza dei Coleophoridae. XCV. Nuove specie di Coleophoridae della collezione Klimesch (Lepidoptera: Coleophoridae). *SHILAP Revista de Lepidopterologia* 29(114): 131-144.
- Baldizzone G. 2016. The Coleophoridae of Armenia collected by Ole Karsholt in 2011. Contributions to the knowledge of the Coleophoridae CXXXI (Lepidoptera: Coleophoridae). *SHILAP Revista de Lepidopterologia* 44(177): 129-144. <https://doi.org/10.57065/shilap.651>
- Baldizzone G. 2019. Lepidoptera Coleophoridae. Fauna d'Italia. LIII. *Calderini, Bologna*, XVII + 907 pp.
- Baldizzone G. 2023. The Jordanian Coleophoridae, with description of two new species: *Coleophora iordanica* Baldizzone, sp. nov. and *C. ratamensis* Baldizzone, sp. nov. Contribution to the knowledge of Coleophoridae CLIV (Lepidoptera: Coleophoridae). *SHILAP Revista de lepidopterologia*, 51(202): 241-253. <https://doi.org/10.57065/shilap.458>
- Baldizzone G., van der Wolf H., Landry J.-F. 2006. Coleophoridae, Coleophorinae (Lepidoptera). World Catalogue of Insects 8. *Apollo Books, Stenstrup*, 215 pp. <https://doi.org/10.1163/9789004475403>
- Baldizzone B., Takács A., Szabóky C., Bozsó M. 2022. *Coleophora santonici* Baldizzone & Takács (Lepidoptera, Coleophoridae), new species from Hungary bred from *Artemisia santonicum*. *Revue suisse de Zoologie* 129(2): 309-322.
- Budashkin Yu.I., Bidzilya O.V. 2021. Review of the genus *Aporiptura* Falkovitsh, 1972 (Lepidoptera, Coleophoridae) with description of a new species from Crimea. *Entomologicheskoe Obozrenie* 100(2): 459-473.
- Budashkin Yu.I., Falkovitsh M.I. 2007. Casebearers (Lepidoptera, Coleophoridae) of the Karadag Nature Reserve (South-East Crimea) // Ecosystems of Crimea, their Optimization and Conservation. Thematic collection of scientific papers. *Simferopol: TNU* 17: 107-128.
- Budashkin Yu.I., Richter I., Tabell J. 2015. [New findings of the casebearer moths (Lepidoptera: Coleophoridae) in Russia and Armenia]. *Eversmannia* 41: 11-22. [in Russian].
- Chrétien P. 1899. Description d'une nouvelle espèce de *Coleophora* [Lép.]. *Bulletin de la Société entomologique de France* 1899: 146-147.
- Chrétien P. 1915. Contribution à la connaissance des Lépidoptères du Nord de l'Afrique. *Annales de la Société entomologique de France* 84: 289-374.
- Christoph H. 1872. Neue Lepidoptera des Europaischen Faunengebietes. *Horae Societatis Entomologicae Rossicae* 9: 3-39.
- Denis J.N.C.M., Schiffermüller I. 1775. Ankündigung eines

- systematischen Werkes von den Schmetterlingen der Wienergegend. *Augustin Bernardi, Wien*, 322 pp. + 2 pls.
- Falkovitsh M.I. 1970. [New species of casebearer moths (Lepidoptera, Coleophoridae) associated with trees and shrubs of the family Chenopodiaceae in Soviet Central Asia]. *Entomologicheskoe Obozrenie* 49: 869-885. [In Russian].
- Falkovitsh M.I. 1972a. [New species of casebearers (Lepidoptera, Coleophoridae) bred from larvae in the Kysylkum Desert]. *Trudy Vsesoyuznogo Entomologicheskogo Obshchestva* 55: 66-92. [In Russian].
- Falkovitsh M.I. 1972b. [New species of casebearers (Lepidoptera, Coleophoridae) from the Gobi Desert]. *Nasekomye Mongolii* 1: 693-714. [In Russian].
- Falkovitsh M.I. 1973. [Contribution to the knowledge of casebearers (Lepidoptera, Coleophoridae) of the Kysylkum Desert]. *Trudy Vsesoyuznogo Entomologicheskogo Obshchestva* 56: 199-233. [In Russian].
- Falkovitsh M.I. 1988. [On the fauna of casebearer moths (Lepidoptera, Coleophoridae) of southern Turkmenia (with description of new species). Part 1.] (pp. 134-162). In: Falkovitsh M.I., Sinev S.Yu. (eds). [Materials on systematics of insects]. *Trudy Zoologicheskogo Instituta, Akademia Nauk SSSR* No. 178, 167 pp. [In Russian].
- Falkovitsh M.I. 1989. [New species of casebearer moths (Lepidoptera, Coleophoridae) of the Turanian fauna] (pp. 40-87). In: Falkovitsh M.I. (ed.). [Lepidoptera of Middle Asia]. *Trudy Zoologicheskogo Instituta, Akademia Nauk SSSR* No. 200, 147 pp. [In Russian].
- Fuchs A. 1881. Microlepidopteren des Rheingauges. Zweiter Artikel. *Entomologische Zeitung* (Stettin) 42: 451-470.
- Fuchs A. 1903. Neue Kleinfalter des Mittelmeergebiets. *Entomologische Zeitung* (Stettin) 64: 3-16.
- Gerasimov A. 1930. Zur Lepidopteren-Fauna Mittel-Asiens. I Microheterocera aus dem Distrikt Kaschka-Darja (SO-Buchara). *Annuaire du Musée Zoologique de l'Académie des Sciences de l'URSS* 31: 21-48 + pls VIII-XVII.
- Haworth A.H. 1803-1828. *Lepidoptera Britannica; sistens digestionem novam insectorum lepidopterorum quae in magna Britannia reperiuntur; larvarum pabulo, temporeque pascendi; expansione alarum; mensibusque volandi; synonymis atque locis observationibusque variis. J. Murray, London*. Part I: xxxvi, 1-136 (1803); Part II: 137-376 (1809); Part III: 377-512 (1811); Part IV: 513-609 (1828).
- Herrich-Schäffer G.A.W. 1855. Systematische Bearbeitung der Schmetterlinge von Europa, zugleich als Text, Revision und Supplement zu Jakob Hübner's Sammlung europäischer Schmetterlinge. Heft 66: Vol. 1, Index pp. 21-24. Vol. 3, Index pp. 1-34. Vol. 5, Main text pp. 225-288. Vol. 6, Systema Lepidopterorum Europae pp. 61-72. *G.J. Manz, Regensburg*.
- Hübner J. [1796-1836]. Sammlung europäischer Schmetterlinge. Horde VIII, Tineae-Schaben. *Privately published, Augsburg*, 78 pp. + 71 pls.
- Kuznetsov V.I. 1957. [Two new species of gall forming moths (Lepidoptera: Microheterocera) damaging shrubs in Armenia]. *Doklady Akademii Nauk Armyanskoi SSR* 25: 43-48. [In Russian].
- Lienig F., Zeller P.C. 1846. Lepidopterologische Fauna von Livland und Curland. *Isis* 3: 175-302.
- Meyrick E. 1891. A fortnight in Algeria, with descriptions of new Lepidoptera. *The Entomologist's Monthly Magazine* 27: 55-62.
- Meyrick E. 1922. *Exotic Microlepidoptera* 2(16-19): 481-608.
- Mühlig G.G. 1865. *Coleophora tanacetii* sp. nov. *Entomologische Zeitung* (Stettin) 26: 182-184.
- Mühlig G.G., Frey H. 1857. Beiträge zur Naturgeschichte des Coleophoren. *Vierteljahrsschrift der Naturforschenden Gesellschaft in Zürich* 2: 10-28.
- Reitter E. 1888. Übersicht der Arten der Coleopteren-Gattung *Phyllopertha* Kirby aus Europa, den angrenzenden Ländern, Sibirien mit Central-Asien. *Entomologische Nachrichten* 14: 289-294.
- Reznik S.Ya. 1975. [New species of casebearer moths of the group *Coleophora vibicella* Hb. (Lepidoptera Coleophoridae) from Mongolia]. *Nasekomye Mongolii* 3: 370-394. [In Russian].
- Staudinger O. 1879-1880. Lepidopteren-Fauna Kleinasien's (Fortsetzung.). *Horae Societatis Entomologicae Rossicae* 15: 269-278. (1879), 369-435 (1880).
- Stephens J.F. 1831-1835. Illustrations of British entomology; or, a synopsis of indigenous insects: containing their generic and specific distinctions; with an account of their metamorphoses, times of appearance, localities, food, and economy, as far as practicable. *Haustellata* vol. IV. *Baldwin & Cradock, London*. 433 pp..
- Šumpich J., Karsholt O., Savenkov N., Roweck H. 2022. The genus *Tegostoma* in Armenia, with description of a new species (Crambidae, Odontiinae). *Nota Lepidopterologica* 45: 269-278. <https://doi.org/10.3897/nl.45.87795>
- Tabell J., Kullberg J., Mutanen M., Tokár Z. & Sihvonen P. 2023. New and little known *Coleophora* Hübner, 1822 species from Morocco. Part I. (Lepidoptera, Coleophoridae). *Zootaxa* 5374(2): 151-195. <https://doi.org/10.11646/zootaxa.5374.2.1>
- Toll S. 1944. Studien über die Genitalien einiger Coleophoriden VI. *Zeitschrift der Wiener Entomologischen Gesellschaft* 29: 242-247, 268-275.
- Toll S. 1952a. Etude sur les génitalia de quelques Coleophoridae X. Nouvelles espèces de *Coleophora* d'Afrique du Nord, Asie-Mineure, Syrie, Palestine, Liban et Iran. *Bulletin de la Société Entomologique de Mulhouse* 1952: 17-24, 27-30, 35-39, 43-47, 53-56, 61-65.
- Toll S. 1952b. Studien über die Genitalien einiger Coleophoriden. XI. *Zeitschrift der Wiener Entomologischen Gesellschaft* 37 [Band 63]: 156-165 + 2 pls.
- Toll S. 1953. Rodzina Eupistidae polski. *Documenta Physiographica Poloniae* 32 [1952]: 293 pp. + 38 pls.
- Toll S. 1957. Etude de quelques Coleophoridae d'Afrique du Nord et de leurs genitalia (Lepidoptera) (suite et fin). *L'Entomologiste* 13: 95-105.
- Toll S. 1959. Coleophoriden aus Iran und Iraq der Ausbeute E. P. Wiltshire [Lepidoptera: Coleophoridae]. *Bulletin de la Société Entomologique d'Egypte* 43: 331-346.
- Toll S. 1961a. Studien über die Genitalien einiger Coleophoridae. XVIII (Lepidoptera). *Annales Zoologici* [Warszawa] 19: 209-227.
- Toll S. 1961b. Zoologische Ergebnisse der Mazedonienreisen Friedrich Kasys. I. Teil. Lepidoptera, Coleophoridae. *Sitzungsberichte der Österreichischen Akademie der Wissenschaften, Mathematisch-Naturwissenschaftliche Klasse, Abteilung I*, 170: 279-304 + 1 pl.
- Toll S. 1961c. Studien über die Genitalien einiger Coleophoridae XX. Beschreibung neuer Coleophoridae aus Österreich, Bulgarien, Spanien und Portugal. *Zeitschrift der Wiener Entomologischen Gesellschaft* 46 [Band 72]: 161-168.

- Toll S. 1962. Materialien zur Kenntnis der paläarktischen Arten der Familie Coleophoridae (Lepidoptera). *Acta Zoologica Cracoviensia* 7: 577-720 + 133 pls.
- Toll S., Amsel H.G. 1967. Coleophoriden aus Afghanistan (Lepidoptera: Coleophoridae). *Beiträge zur Naturkundlichen Forschung in Südwestdeutschland* 26 (3, Afghanistan-Heft): 5-16.
- Turati E. 1924. Spedizione Lepidotterologica in Cirenaica 1921-1922. *Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale in Milano* 63: 21-191.
- Walsingham Lord T. de G. 1899. Description of a British *Coleophora* new to science. *The Entomologist's Monthly Magazine* 35: 201-202.
- Zeller P.C. 1839. Versuch einer naturgemäßen Eintheilung der Schaben. *Isis* 1839: 167-220.
- Zeller P.C. 1849. Beitrag zur Kenntniss der Coleophoren. *Linnaea Entomologica* 4: 191-416.