

A review of the genus *Holcophora* Staudinger, 1871, with description of three new species and new data on the taxonomy of the genus (Lepidoptera: Gelechiidae)

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Abstract

The genus *Holcophora* Staudinger, 1871, is revised. Three species are described as new: *Holcophora hispanica* Gastón & Vives sp. n. (Spain), *Holcophora rostrella* Bidzilya & Sattler, sp. n. (Mongolia, Turkmenistan) and *Holcophora centralasiae* Bidzilya & Karsholt, sp. n. (Afghanistan, Pakistan). The genera *Epimesophleps* Rebel, 1907, syn. n., *Spermanthrax* Meyrick, 1936, syn. n., are synonymized with *Holcophora* Staudinger, 1871. *Aponaea* (sic!) *pruinoseella* Chrétien, 1915, syn. n. and *Spermanthrax pycnostoma* Meyrick, 1936, syn. n. are synonymized with *Holcophora obtusipalpis* Walsingham, 1905. Three new combinations are proposed: *Holcophora molitor* (Walsingham, 1906), comb. n., *Holcophora symmocella* (Rebel, 1907), comb. n. and *Holcophora aphiridias* (Meyrick, 1925), comb. n. *Holcophora inderskella* (Caradja, 1920) is re-described, as the re-description by ADAMSKI & SATTLE (2019) refers to *H. rostrella* Bidzilya & Sattler, sp. n. The male and female genitalia of *H. molitor* and *H. symmocella* are described for the first time. *H. obtusipalpis* is recorded for the first time from Spain (Canary Islands) and Egypt, *H. inderskella* from Turkmenistan and Tadjikistan, and *H. molitor* from Bahrain, Saudi Arabia, United Arab Emirates and Iran.

KEY WORDS: Lepidoptera, Gelechiidae, *Holcophora*, new species, new combinations, Afghanistan, Iran, Mongolia, Pakistan, Turkmenistan, Spain.

Revisión del género *Holcophora* Staudinger, 1871, con descripción de tres especies nuevas y nuevos datos sobre la taxonomía del género (Lepidoptera: Gelechiidae)

Resumen

Se revisa el género *Holcophora* Staudinger, 1871. Se describen tres especies nuevas: *Holcophora hispanica* Gastón & Vives, sp. n. (España), *Holcophora rostrella* Bidzilya & Sattler, sp. n. (Mongolia, Turkmenistán) y *Holcophora centralasiae* Bidzilya & Karsholt, sp. n. (Afganistán, Irán, Pakistán). Se pasa a sinonimia el género *Epimesophleps* Rebel, 1907 y *Spermanthrax* Meyrick, 1936 con *Holcophora* Staudinger, 1871. Se pasa a sinonimia a *Aponaea* (sic!) *pruinoseella* Chrétien, 1915 y *Spermanthrax pycnostoma* Meyrick, 1936 con *Holcophora obtusipalpis* Walsingham, 1905. Se proponen tres nuevas combinaciones: *Holcophora molitor* (Walsingham, 1906) comb. n., *Holcophora symmocella* (Rebel, 1907) comb. n. y *Holcophora aphiridias* (Meyrick, 1925), comb. n. Se redescubre *Holcophora inderskella* (Caradja, 1920), como la redescipción por ADAMSKI & SATTLE (2019) referente a *H. rostrella* Bidzilya & Sattler, sp. n. Se describen por primera vez la genitalia del macho y de la hembra de *H. molitor* y *H. symmocella*. Se registra por primera vez para España (Islas Canarias) y Egipto a *H.*

obtusipalpis, *H. inderskella* de Turkmenistán y Tayikistán y *H. molitor* de Baréin, Arabia Saudí, Emiratos Árabes Unidos e Irán.

PALABRAS CLAVE: Lepidoptera, Gelechiidae, *Holcophora*, nuevas especies, nuevas combinaciones, Afganistán, Irán, Mongolia, Pakistán, Turkmenistán, España.

Introduction

From the time of its description almost to the present the genus *Holcophora* Staudinger, 1871, with the type species *H. stacies* Staudinger, 1871, was considered as monotypic. Recently, *Aponoea* Walsingham, 1905 (type species *Aponoea obtusipalpis* Walsingham, 1905) was synonymized with *Holcophora*, and *Blastobasis inderskella* Caradja, 1920, was transferred to that genus (ADAMSKI & SATTLER, 2019). These updates encouraged us to have a closer look at rich material of related taxa from different regions that was provisionally associated with *Holcophora/Aponoea*. Our study resulted in establishing two new generic synonyms: the monotypic *Spermanthrax* Meyrick, 1936 (type species *S. pycnostoma* Meyrick, 1936) syn. n. and the genus *Epimesophleps* Rebel, 1907 (type species *E. symmocella* Rebel, 1907), syn. n. as congeneric with *Holcophora* Staudinger, 1871. Based on the diagnosis of *A. obtusipalpis* provided by ADAMSKI & SATTLER (2019) we established that the northern African species *Aponaea* (sic!) *pruinosa* Chrétien, 1915, syn. n., and *S. pycnostoma* Meyrick, 1936, syn. n., are new synonyms of *A. obtusipalpis* whilst specimens from mainland Spain, although closely related to *H. obtusipalpis*, represent a separate species - *Holcophora hispanica* Gastón & Vives, sp. n. Our study of the holotype and other specimens of *Gelechia molitor* Walsingham, 1906, indicated the assignment of this species to *Holcophora*: *Holcophora molitor* (Walsingham, 1906) comb. n. We show that the re-description of *H. inderskella* by ADAMSKI & SATTLER (2019) refers to *H. rostellata* Bidzilya & Sattler, sp. n. Additionally, a new species, *Holcophora centralasiae* Bidzilya & Karsholt, sp. n., is described from Afghanistan and Pakistan. The diagnosis of *Holcophora* is improved by consideration of additional characters, and the systematic position of that genus within the subfamily Gelechiinae is briefly discussed. All eight species currently associated with *Holcophora* are diagnosed, and the data on their distribution and biology are summarised. Additional we briefly deal with *Epimesophleps aphridias* Meyrick, 1925, and formally transfer it to *Holcophora*. However, due to lack of material we are unable to discuss it in detail. We provide keys for species identification based on external and genitalia characters.

Materials and methods

Moths examined included type specimens as well as non-type specimens from the institutional and private collections listed below. Data from holotypes are cited exactly as on the labels of the specimens, whereas other material is organised in a standardized format rather than verbatim, viz., alphabetic after country and province, region etc.; material from the same province is listed chronologically. The photographs of the male genitalia are provided both in traditional ventral view and “unrolling” except for *H. symmocella*.

OB photographed pinned specimens and their genitalia as described by BIDZILYA *et al.* (2017).

Our terms for the male and female genitalia follow HODGES (1986) and PONOMARENKO (2008, 2009).

Our arrangement of the species within the genus *Holcophora* is based principally on similarities of the male genitalia.

Abbreviations of collections

MfN	Museum für Naturkunde, Berlin, Germany
MNCN	Museo Nacional de Ciencias Naturales, Madrid, Spain
MNHN	Muséum National d’Histoire Naturelle, Paris, France

NHMUK	Natural History Museum, London, United Kingdom
NHMB	Hungarian Natural History Museum, Budapest, Hungary
NHMV	Naturhistorisches Museum, Vienna, Austria
NMPC	National Museum, Prague, Czech Republic
RCFG	Research collection Friedmar Graf, Bautzen, Germany
RCJG	Research Collection Javier Gastón, Getxo, Vizcaya, Spain
RCMD	Research Collection Marek Dvořák, Smrěná, Czech Republic
RMHN	Naturalis Biodiversity Center, Leiden, The Netherlands
SMNK	State Museum of Natural History Karlsruhe, Karlsruhe, Germany
ZIN	Zoological Institute, Russian Academy of Sciences, Sankt-Petersburg, Russia
ZMKU	Zoological Museum, Kyiv Taras Shevchenko National University, Kyiv, Ukraine
ZMUC	Zoological Museum, Natural History Museum of Denmark, Copenhagen, Denmark

Other abbreviations

AV	Antonio Vives
comb. n.	new combination
gen. slide	genitalia slide
JG	Javier Gastón
KS	Klaus Sattler
OB	Oleksiy Bidzilya
OK	Ole Karsholt
syn. n.	new synonym
TL	Type locality
TS	Type species

Abbreviations on figures

cc - cucullus; gn - gnathos; sc - sacculus; cul - culcitula; tg pr - process of tegumen; un - uncus

Results

Check list of the species of *Holcophora*

- Holcophora hispanica* Gastón & Vives, **sp. n.**
Holcophora obtusipalpis (Walsingham, 1905)
 = *Mesophleps cinerellus* Turati, 1930
 = *Aponaea* (sic!) *pruinoseella* Chrétien, 1915, **syn. n.**
 = *Spermanthrax pycnostoma* Meyrick, 1936, **syn. n.**
Holcophora statices Staudinger, 1871
Holcophora inderskella (Caradja, 1920)
Holcophora centralasiae Bidzilya & Karsholt, **sp. n.**
Holcophora rostellata Bidzilya & Sattler, **sp. n.**
Holcophora molitor (Walsingham, 1906), **comb. n.**
Holcophora symmocella (Rebel, 1907), **comb. n.**
Holcophora aphridias (Meyrick, 1925), **comb. n.**

Generic descriptions

Holcophora Staudinger, 1871. *Berl. ent. Z.*, **14**(3/4): 313

TS: *Holcophora statices* Staudinger, 1871. *Berl. ent. Z.*, **14**(3/4): 313-314, by monotypy

= *Aponoea* Walsingham, 1904. *Entomologist's mon. Mag.*, **40**: 216, nomen nudum

= *Aponoea* Walsingham, 1905. *Entomologist's mon. Mag.*, **41**: 125

TS: *Aponoea obtusipalpis* Walsingham, 1905. *Entomologist's mon. Mag.*, **41**: 125, by original designation and monotypy. (Synonymized by ADAMSKI & SATTLER, 2019: 18)

= *Epimesophleps* Rebel, 1907. *Lepid. Südarabien u. Insel Sokótra*: 95. **Syn. n.**

TS: *Epimesophleps symmocella* Rebel, 1907. *Lepid. Südarabien u. Insel Sokótra*., 95, fig. 40, by monotypy

= *Aponaea*; Chrétien, 1915. *Ann. Soc. ent. Fr.*, **84**: 330, *lapsus calami*

= *Spermanthrax* Meyrick, 1936. *Exotic Microlepid.*, **4**(20): 624. **Syn. n.**

TS: *Spermanthrax pycnostoma* Meyrick, 1936. *Exotic Microlepid.*, **4**(20): 625, by monotypy

Generic diagnosis: The species of *Holcophora* are distinguished externally by a long labial palpus (up-curved or more or less porrect) with segment 3 usually shortened (1/5-1/3 length of segment 2), and segment 2 with brush of raised scales on its dorsal surface (Figs 1-12). The predominantly plain grey or pale forewing with indistinct markings and groups of raised scales (Figs 21-23) in conjunction with a weakly excavated hindwing termen are also diagnostic. The male genitalia of *Holcophora* usually are strongly modified. A tendency towards asymmetry in the dorsal sclerites of the male genitalia (uncus displaced laterally and turned anti-clockwise, tegumen bearing lateral process of irregular shape) is characteristic for most species. Additional diagnostic characters of the male genitalia are the presence of membranous lobes covered with long setae on both sides of the uncus base (culcitula), the usually shortened tegumen, the strongly reduced gnathos, anteromedially strongly broadened sacculus, weakly sclerotized distal part of the phallus with distinct lateral rod ending in short sclerite or long, strongly recurved apical process, and very long bulbous ejaculatorius. The female genitalia are characterized by the weakly modified, evenly sclerotized (except anterior margin) segment VIII with sternum usually deeply emarginated both anteriorly and posteriorly, the short, tubular colliculum, short apophyses anteriores and posteriores and the *Gelechia*-type signum.

Remarks: The systematic position of *Holcophora* within the Gelechiidae is uncertain and somewhat controversial. That is due to the strongly modified male genitalia and in parts still unresolved system of the family in general.

Staudinger placed the genus *Holcophora* originally between *Anarsia* Zeller, 1839, and *Hypatima* Hübner, [1825] ("Chelaria" Haworth, 1828"); it was subsequently included by MEYRICK (1925) in the *Dichomeris* group (now Dichomeridinae). In some regional catalogues and faunistic lists (KARSHOLT *et al.*, 1996; ELSNER *et al.*, 1999) it was tentatively placed in the tribe Chelariini, subfamily Gelechiinae, but no characters were given in support of that position. PONOMARENKO (2009) treated *Holcophora* as a member of the tribe Gelechiini within the subfamily Gelechiinae based on her study of the functional morphology of the male genitalia, and that concept was accepted by ADAMSKI & SATTLER (2019).

The subfamily Gelechiinae is considered as monophyletic based on the presence of mediobasal processes of the valva and on glands of the genital segment (PONOMARENKO, 2005: 73, 74, 90). KARSHOLT *et al.* (2013) following HUEMER & SATTLER (1995) recognized Gelechiinae based on the horizontal division of the male pregenital abdominal segment VIII into free dorsal and ventral flaps that permit wider opening of that segment for the extrusion of the genitalia during copulation. Although different authors proposed a different suite of autapomorphies, the monophyly of Gelechiinae (with tribes Gelechiini, Gnorimoschemini and Litini) is well supported by a molecular analysis (KARSHOLT *et al.*, 2013: 344), and the subfamily in this sense may be considered satisfactorily defined both morphologically and molecularly. Within Gelechiinae, the tribes Litini and Gnorimoschemini are considered as monophyletic by all authors. The third tribe, Gelechiini, is clustered with Gnorimoschemini based on the laterally dilated vinculum (PONOMARENKO, 2005). According to a molecular analysis Gelechiini are paraphyletic with respect to Litini and Gnorimoschemini (KARSHOLT *et al.*, 2013: 345). Thus, the monophyly of Gelechiini still remains unresolved.

Amongst characters that justify the placement of *Holcophora* as a member of Gelechiini, PONOMARENKO (2009: 140) listed the ridge-shaped tegumen without a ventral wall, the basally broadening valva and the well-developed muscle m 22 in the male genitalia. In our opinion the first two

characters are rather vague: the degree of “broadening” of the valva is subjective and difficult to estimate. The “ridge-shaped tegumen” seems also present in some genera of other tribes and can hardly be considered as phylogenetically significant. The reduced muscle m 22 is considered as one of the diagnostic character for Gelechiini (PONOMARENKO, 2005: 74), and its presence in *Holcophora* would contradict the placement of the genus in that tribe. However, Ponomarenko seems to contradict herself with regard to muscle m 22 the reduction of which she considers as a Gelechiini character in 2005 whereas in 2009 it is the well-developed m 22. Nevertheless, we agree with Ponomarenko that *Holcophora* cannot be placed in Dichomeridinae (including Chelariini) as proposed earlier but should be assigned to Gelechiini, a position that is supported by the characteristic *Gelechia*-type signum bursae. In view of the strongly modified male genitalia we are still unable to assign *Holcophora* to a convincing place within that tribe.

In Gelechiidae asymmetry in the male genitalia is known in a number of genera, e.g. *Caulastrocecis* Chrétien, 1931, *Horridovalva* Sattler, 1967 (Anomologinae), *Anarsia* Zeller, 1839 (Chelariini), *Coleotechnites* Chambers, 1880 (Litini), *Chionodes* Hübner, [1825], *Photodotis* Meyrick, 1911 (Gelechiinae), *Thiotricha* Meyrick, 1886 (Thiotrichinae) etc. In all these genera the asymmetry affects mainly the valvar complex, but the asymmetry in the uncus and tegumen of *Holcophora* appears to be unique in the family Gelechiidae. A reduced gnathos, characteristic of *Holcophora*, is found in many unrelated genera but most commonly in Anomologinae, Apatetrinae, and Litini of the Gelechiinae; it has not yet been found amongst Gelechiini. Another unique character of *Holcophora* is the rounded, densely setose lobes of the posterior margin of the tegumen on both sides of the uncus (Figs 65, 67, 76). Somewhat similar structures are known in some species of *Anarsia*, e.g. *A. spartiella* (Schrank, 1802) (Chelariini), and *Platyedra subcinerea* (Haworth, 1828) (Pexicopiini), however, their homology is uncertain. Ponomarenko suggested that these in *Holcophora* can be interpreted as the modified culcitula, a structure commonly present in some related genera of Gelechiini.

H. molitor and *H. symmocella* share a phallus with an unusually long, narrow, strongly recurved apex and uniquely modified, possibly androconial, scales on the apex of the sacculus (Figs 74-77). Similarly specialised scales were otherwise observed in Gelechiidae only in some species of *Anarsia* Zeller, 1839.

The long, strongly recurved process at the apex of the phallus in *H. molitor* and *H. symmocella* is a unique specialisation that indicates a closer relationship of these two species vis-à-vis the rest of the genus. The short ring-like male abdominal segment VIII in *Holcophora* (Figs 51-52) with laterally fused sternum and tergum is not characteristic for Gelechiinae, but was also observed in *Athrips* Billberg, 1820, the assignment of which to that subfamily is commonly accepted (HUEMER & KARSHOLT, 1999; PONOMARENKO, 2004; BIDZILYA, 2005). The raised scales on the forewing are found in all tribes of Gelechiinae, but occur also in some Pexicopiini (e.g. *Sitotroga exquisita* Bidzilya & Mey, 2011) and Dichomeridinae (*Dichomeris alacella* (Zeller, 1839)).

It appears that an appropriate position of *Holcophora* within the Gelechiidae cannot be satisfactorily established based alone on traditional morphological characters or on the functional morphology of the male genitalia. However, that genus shares more diagnostic characters (valva divided into cucullus and basally broadening sacculus, free phallus, *Gelechia*-type signum, raised scales on forewing) with Gelechiinae (Gelechiini) than with any other currently recognised Gelechiidae subfamily. The location of *Holcophora* within Gelechiini remains uncertain at this stage.

Description: Adult. Head smoothly scaled except dishevelled lateral tufts on neck and on base of antennae, scales plain grey or grey with brown tip; ocelli present; labial palpus (Figs 1-12) long, more or less porrect or moderately up-curved, segment 2 2 to 5 times as broad as segment 3, with distinct tuft of raised scales on dorsal surface (absent in *H. centralasiae* sp. n.), more or less uniformly coloured without distinct rings on outer surface, segment 3 usually short, 1/4-1/5 length of segment 2 (1/3-1/2 in *H. centralasiae* sp. n.), slender, acute; proboscis long; in *H. rostellata* sp. n. frons strongly modified, bearing crater-like structure with long, pointed central process (ADAMSKI & SATTLER, 2019: figs 10-13); antennal scape without pecten, 1.5-2 times as broad as adjacent part of flagellum, flagellomeres dark, grey to brown or black with white rings, denuded (*H. centralasiae* sp. n.), with short (*H. statices*) or longer (*H. obtusipalpis*, *H. hispanica* sp. n.) cilia in some species (Figs 13-17); thorax and tegulae

concolorous with head; forewing usually plainly coloured, pale, light grey to brown, scales with black tips, pattern, if present, represented by oblique basal fascia and diffuse markings in cell, in *H. statures* with more distinct black spots and streaks, raised scales usually gathered in small tufts distal to basal fascia and in middle of cell (Figs 21-23); fringe concolorous with ground colour of forewing; hindwing usually light grey to almost white, but dark, blackish-brown in *H. hispanica* sp. n. frenulum simple in male, composed of three acanthi in female (Fig. 20); anal zone of hindwing and dorsolateral surface of metathorax with brushes of androconial scales (Figs 18-20).

Abdomen: Male segment VIII as long as or slightly longer than segments III-VII (Figs 51-52), with tergum and sternum fused laterally, forming ring with posterior part of vinculum and anterior margin of tegumen; in female segment VII 1.5 times to twice as broad as segments II-VI; tergum I broader than long, stronger sclerotized in distal part; sternum II longer than broad, with distinct venulae and long apodemes (Figs 53-55); all segments bearing short hairs in addition to scales (Fig. 56). Male genitalia. Uncus short, triangular, bearing long setae (*H. hispanica* sp. n., *H. obtusipalpis*) or displaced laterally, narrow, hook-shaped, or long, narrow or moderately broad process, usually bent over posterior margin of tegumen; gnathos membranous lobe with straight posterior margin and reduced medial sclerite (*H. hispanica* sp. n., *H. obtusipalpis*, *H. statures*) or completely reduced; tegumen usually broader than long (except in *H. rostellata* sp. n.), with paired rounded lobes on distal margin at both sides of uncus densely covered with long setae (culcitula) in most of species, anteromedial emargination large, broadly rounded, lateral margins usually bearing processes of irregular shape; cucullus slender, straight or weakly curved, broadening apically in *H. rostellata* sp. n., strongly broadening in basal half (except in *H. rostellata* sp. n.) and fused basally with sacculus; sacculus broader than cucullus (except in *H. rostellata* sp. n.), its basal part distinctly broadening to form medially fused dorsal processes (transtilla), and weakly inflated ventral sclerites fused with vinculum anteriorly and with base of cucullus laterally, apex of sacculus simple or bifurcated, with specialized (?androconial) scales in *H. symmocella* and *H. molitor*; vinculum narrow, band-like; saccus stout, broad, long, triangular to sub-rectangular; phallus with distinctly swollen caecum, distal part membranous except for strongly sclerotized lateral rod(s) ending in short apical sclerite or long, strongly recurved process in *H. symmocella* and *H. molitor*, bulbous ejaculatorius long, anterior part of ductus ejaculatorius in some species with small ring-like sclerotization.

Female genitalia: Papillae anales ovate or sub-triangular, covered densely with short setae; apophyses posteriores slender, slightly longer than papillae anales, with distinctly swollen apex in *H. rostellata* sp. n.; apophyses anteriores 1/4-1/2 length of sternum VIII, straight, with broadening base in *H. statures*; tergum VIII sub-rectangular, evenly sclerotized except for strongly edged anterior margin, with deep broadly anteromedial emargination; sternum VIII weakly sclerotized, medially membranous, pair of spiracular openings present, anterior margin strongly sclerotized, narrow band-shaped or moderately broadening, straight or projecting anteriorly, with more or less distinct sclerites on both sides of ostium in some species; ostium opening near anterior margin of sternum VIII; antrum short, tubular or funnel-shaped, posterolaterally sclerotized, with medial sclerite in *H. obtusipalpis*, with indistinct transition to ductus bursae or well separated (*H. obtusipalpis*, *H. molitor*, *H. symmocella*) from it; ductus bursae long, slender, weakly broadening towards corpus bursae, or moderately broad (*H. molitor*, *H. symmocella*), ductus seminalis slender, arising from border between antrum and ductus bursae; corpus bursae egg-shaped to rounded, varying in size; signum plate rounded to rhomboid or sub-hexagonal, with serrated margins, medial zone varying considerably in width from narrow slit (*H. centralasiae* sp. n.) to large rounded plate occupying almost entire surface of signum plate (*H. rostellata* sp. n.), in *H. hispanica* sp. n. signum long lanceolate plate with serrated borders, pointing towards fundus bursae, and fixed by cylindrical process to wall of corpus bursae.

Notes: Despite some superficial similarity, most species of *Holcophora* can be distinguished by their wing pattern as well as colour and shape of the labial palpus. The female genitalia of *Holcophora* species have a rather similar ground plan. The most constant characters for species separation are found in the shape of the antrum, presence or absence of subostial sclerites (colliculum) and the comparative length of the ductus bursae and corpus bursae. The signum is also

diagnostic for most species, especially for *H. hispanica* sp. n. However, this structure varies considerably in some species and in such cases can only be used for species diagnosis in combination with other characters. Contrary to the rather uniform external appearance and female genitalia, the male genitalia of *Holcophora* show rather broad variation. Two species with symmetrical genitalia and a short triangular uncus (*H. hispanica* sp. n. and *H. obtusipalpis*) are in contrast to all other species which are characterized by the strong asymmetry of tegumen and uncus. *H. molitor* and *H. symmocella* can easily be recognized by the modified (? androconial) scales on the apex of the sacculus and by the phallus with a long, narrow, strongly recurved apex. All other species are easily distinguished by the shape of the uncus, processes of tegumen, phallus and other characters. Despite some considerable morphological variation the male genitalia of *Holcophora* species follow an identical ground plan that justifies their treatment as members of one genus. It is the reason for considering the monotypic *Spermanthrax* Meyrick, 1936 (type species *S. pycnostoma* Meyrick, 1936) and the genus *Epimesophleps* Rebel, 1907 (type species *E. symmocella* Rebel, 1907) as congeneric with *Holcophora* Staudinger, 1871.

Molecular data are available only for *H. obtusipalpis* and *H. hispanica* sp. n. (HUEMER *et al.*, 2020: suppl. data 2).

Biology: Host-plants: *Limoniastrum guyonianum* Durieu ex Boiss., *Limonium dichotomum* (Cav.) O. Kuntze, *Limonium meyeri* (Boiss.) O. Kuntze, and *Limonium pruinosum* (L.) Chaz. (Plumbaginaceae). Known for three of the eight species of *Holcophora*. The larva lives quite exposed on its host-plant.

The currently known *Holcophora* species occur in open country - grasslands, mountain steppe slopes, semideserts and deserts up to 2300 m in mountains of Central Asia.

Distribution: Palaearctic and Afrotropical regions.

Key to the species of *Holcophora* based on external characters

1. Head with prominent frontal modification (Fig. 46) *H. rostellata* sp. n.
- Head unmodified 2
2. Segment 2 of labial palpus dorsally with large triangular tuft of raised scales (Figs 1-4) 3
- Segment 2 of labial palpus dorsally unmodified or with short brush of raised scales in distal 1/3 (Figs 5-8, 10-12) 4
3. Forewing grey with randomly spread black scales, hindwing light grey (Figs 30-35) *H. obtusipalpis*
- Forewing dark grey with black scales concentrated mainly along veins, hindwing dark brown (Figs 24-29) *H. hispanica* sp. n.
4. Segment 2 of labial palpus covered dorsally with smooth scales (Fig. 7) ... *H. centralasiae* sp. n.
- Segment 2 of labial palpus dorsally with short brush of raised scales in distal 1/3 5
5. Forewing dark grey, contrasting, veins and fold mottled with light brown, black markings distinct, hindwing dark grey (Figs 36-38) *H. statices*
- Forewing light grey to light brown, plain, without light brown irroration along veins, black markings indistinct (Figs 42-44, 47-50) 6
6. Segment 2 of labial palpus weakly curved, far protruded forwards, 3 times as broad as segment 3 (Fig. 8) *H. inderskella*
- Segment 2 of labial palpus distinctly turned upwards, segment 2 twice breadth of segment 3 (Figs 10-12) 7
7. Apex of hindwing broadly rounded or just weakly pointed (Fig. 47) *H. symmocella*
- Apex of hindwing more pointed (Figs 48-50) *H. molitor*

Key to the species of *Holcophora* based on male genitalia

1. Genitalia symmetrical (Figs 57-62) 2

- Genitalia asymmetrical (Figs 63-77) 3
- 2. Anteromedial emargination of tegumen extending to 1/3 length of tegumen, cucullus about same width of sacculus (Figs 57-59) *H. hispanica* sp. n.
- Anteromedial emargination of tegumen extending to 1/2-2/3 length of tegumen, cucullus distinctly narrower than sacculus (Figs 60-62) *H. obtusipalpis*
- 3. Uncus placed medially, tegumen longer than broad (Figs 71-73) *H. rostellata* sp. n.
- Uncus placed on left corner of tegumen, tegumen as long as broad or broader than long 4
- 4. Sacculus covered apically with modified scales, apical sclerite of phallus long strongly recurved (Figs 74-77) 5
- Sacculus apically without modified scales, apical sclerite of phallus short, straight 6
- 5. Uncus rounded apically, without dorsal process, sacculus 3 times as broad as cucullus, saccus parallel-sided to 3/4 length (Fig. 77) *H. symmocella*
- Uncus pointed apically, with dorsal process, sacculus twice as broad as cucullus, saccus triangular (Figs 74-76) *H. molitor*
- 6. Uncus short, twice as long as broad, process on left margin of tegumen long, apex of phallus with two sclerites facing in opposite direction (Figs 68-70) *H. anderskella*
- Uncus long, considerably longer than broad, process on left margin of tegumen short or absent, apex of phallus with one sclerite (Figs 63-67) 7
- 7. Uncus sharply pointed, tegumen with short process on left margin and longer process on right margin, sacculus 3 times as broad as cucullus (Figs 65-67) *H. statices*
- Uncus not pointed, tegumen without process on left margin but short process on right margin, sacculus almost length of cucullus (Figs 63-64) *H. centralasiae* sp. n.

Key to the species of *Holcophora* based on female genitalia

- 1. Signum triangular (Figs 78-80) *H. hispanica* sp. n.
- Signum rhomboid, sub-hexagonal, ovate or rounded (Figs 81-95) 2
- 2. Signum of *Gelechia*-type, large, hexagonal, opposing edges strongly bent upwards and inwards (Figs 81-83) *H. obtusipalpis*
- Signum rounded, ovate or rhomboid (Figs 84-95) 3
- 3. Ductus bursae three times length of corpus bursae, signum rounded, with spiny edge (Figs 91-92) *H. rostellata* sp. n.
- Ductus bursae at most twice length of corpus bursae, signum different, if rounded, opposing edges bent moderately upwards and inwards (Figs 84-90, 93-95) 4
- 4. Signum rhomboid, edge with distinctive spine pointing towards fundus bursae (Figs 88-90) *H. centralasiae* sp. n.
- Signum ovate or rounded, posterior part narrow with serrated margin (Figs 86-87, 93-95) 5
- 5. Signum rounded with broad medial zone, antrum distinctly broader than adjacent part of ductus bursae, with short posteromedial sclerite, signum rounded (Figs 86-87) *H. anderskella*
- Signum ovate or rhomboid with narrow medial zone, antrum narrower or slightly broader than adjacent part of ductus bursae, without short posteromedial sclerite (Figs 84-85, 93-95) 6
- 6. Signum slightly broader than adjacent part of ductus bursae, anterior margin of sternum VIII comparatively broad, distinctly projecting anteriorly, corpus bursae 1/2 length of ductus bursae (Figs 84-85) *H. statices*
- Signum distinctly narrower than adjacent part of ductus bursae, anterior margin of sternum VIII narrow, weakly projecting anteriorly, corpus bursae about length of ductus bursae (Figs 93-95) .. 7
- 7. Sternum VIII with distinct anteromedial folds, medial ridge of signum of even width (Fig. 93) *H. molitor*
- Sternum VIII without anteromedial folds, medial ridge of signum constricted in middle (Figs 94-95) *H. symmocella*

Review of species

Holcophora hispanica Gastón & Vives, sp. n.

(Figs 1-2, 13, 24-29, 57-59, 77-79)

(= *Aponoea obtusipalpis* sensu Vives, 1992)

Material examined: Holotype 1 ♂, SPAIN, MADRID, El Regajal, Aranjuez, 489 m, 14-IX-1980, A. Vives leg. (gen. slide 1619AV), deposited in the collection AV/MNCN.

Paratypes: SPAIN, ALICANTE, La Marina, 6 m, 1 ♀, 15-22-IX-1999, J. Wolschrijn leg. (gen. slide 4068AV); La Marina, Platje el Pinet, 6 m, 1 ♀, 22-25-IX-2000, J. Wolschrijn leg. (gen. slide 4073AV); La Marina, Platje el Pinet, 6 m, 1 ♀, 16-IX-2001, J. Wolschrijn leg.; Santa Pola, Salt marshes, 1 km S of Balsares, 50 m, 1 ♀, 26-27-IX-2005; 1 ♂, 1 ♀, 12-VI-2007, J. Šumpich leg. (gen. slide 4070AV, 4072AV); Sierra de Orcheta, Finestrat env., 1 ♂, 28-IX-2005, J. Šumpich leg. (gen. slide 4071AV) (all AV/MNCN); Torrevieja, Lago Jardín, 1 ♀, 28-VI-1989, B. Bengtsson leg. (ZMUC); La Marina, Platje el Pinet, 1 ♂, 14-X-1998, J. Wolschrijn leg. (gen. slide 6539 H. Hendriksen); same data but 2 ♀♀, 10-16-IX-2001; same data 1 ♂, 2-X-2006 (all ZMUC); Santa Pola, 1 km South of Balsares, 50 m, 26-27-IX-2005, 5 ♂♂, 4 ♀♀, J. Šumpich leg. (all NMPC); same data but 27-IV-2008, 3 ♂♂, 1 ♀, J. Šumpich leg. (NMPC); same data but 1 ♂, 3 ♀♀, 21-X-2009, J. Šumpich leg. (NMPC); same data but 12-VI-2007, 2 ♀♀, J. Šumpich leg. (NMPC); Route 8 km North of Albaterra, 300 m, 4-VIII-2010, 1 ♂, 3 ♀♀, J. Šumpich leg. (NMPC). ALMERÍA, Pozo del Esparto, 0 m, 1 ♀, 10-IV-1979, J. Calle leg. (gen. slide 1492AV); Tabernas. env. Agüilla Salada [Alhamilla], 420 m, 2 ♂♂, 2-3-V-2008, J. Šumpich leg. (gen. slide 4064AV) (all AV/MNCN); Rambla de Tabernas, 300 m, 1 ♂, 28-V-2018, J. Gastón leg. (gen. slide 7268JG); same data but 2 ♂♂, 2 ♀♀, 25-X-2019, J. Gastón leg. (gen. slide 8021JG, 8022JG); same data but 2 ♀♀, 2-V-2017, J. Gastón leg. (gen. slide 8023JG) (all RCJG); Mini Hollywood, 230 m, 3 ♂♂, 6 ♀♀, 14-15-X-1992, M. Fibiger leg. (gen. slide 87/200B, 1365, 1405 H. Hendriksen, 69958, 69959 M. Ponomarenko) (ZMUC); 5 km N Carboneras, 10 m, 1 ♂, 16-X-1992, M. Fibiger leg.; 4 km SW Tabernas, 500 m, 2 ♀♀, 5-V-1997, P. Skou leg.; same data but 5 km SW Tabernas, 200 m, 1 ♂, 28-V-1998; same data but 1 ♂, 1 ♀, 18-25-IV-2000, B. Skule and P. Skou leg.; 3 km W Tabernas, Rambla de Tabernas, 400 m, 8 ♂♂, 20 ♀♀, 3-V-2000, P. Skou leg., genitalia slide 4444 H. Hendriksen; same data but 3.5 km SW Tabernas, 350 m, 1 ♂, 30-X-2005, B. Skule and P. Skou leg.; same data but 2 km W Tabernas, 400 m, 1 ♂, 15-V-2006, P. Skou leg.; above Tabernas, 600 m, 1 ♀, 23-VI-2008, G. Jeppesen leg. (all in ZMUC); Tabernas, 380 m, 3 ♂♂, 6-8-VII-2007, G. Jeppesen leg.; El Pozo de Esparto, 20 m, 1 ♀, 22-26-IV-2001, Skule and Skou leg.; same data but 1 ♀, 1-XI-2005; same data but 10 m, 2 ♀♀, 7-8-IV-2007, P. Skou leg.; same data but 4 ♂♂, 12-IX-2009, P. Skou leg.; El Pozo de Esparto, 20 m, 1 ♀, 22-26-IV-2001, B. Skule and P. Skou leg.; same data but 10 m, 2 ♀♀, 7-8-IV-2007, P. Skou leg.; same data but 4 ♂♂, 12-IX-2009, P. Skou leg. (all ZMUC); Tabernas, 380 m, N37° 02', W002° 23', 1 ♂, 6-8-VII-2007, G. Jeppesen leg. (gen. slide 86/200B) (RCOB); 3 km W Tabernas, 1 ♂, 1 ♀, 30-IX-2001, C. Gielis leg. (RMHN); Tabernas, Trockental, 342 m, 1 ♂, 1 ♀, 16-VI-2019, F. Graf leg. (RCFG) (Fig. 24-26); Tabernas environs, Rambla de Tabernas, 400 m, 7 ♂♂, 7 ♀♀, 2-3-V-2008 J. Šumpich leg. (NMPC); same data but 1 ♂, 1 ♀, 3-VIII-2010; same data but 18-19-X-2009, 1 ♂, M. Dvořák leg. (NMPC); same data but 29-IV-4-V-2009, 12 ♂♂, 31 ♀♀, M. Dvořák leg. (NMPC; RCMD); Sierra de Alhamilla, vicinity of Huebro, 700 m, 1 ♂, 20-21-V-1999, J. Šumpich leg. (NMPC); same data but 29-IV-2008, 11 ♂♂, 10 ♀♀, J. Šumpich leg. (NMPC); Sierra de Alhamilla, vicinity of Nijar, 560 m, 13-14-VI-2007, 1 ♂, J. Šumpich leg. (NMPC); same data but 9-V-2005, 6 ♀♀, J. Šumpich and M. Dvořák leg. (NMPC); Sierra Cabrera, Mojacar env., El Agua del Medio, 50-150 m, 2 ♀♀, 4-V-2008, J. Šumpich leg. (NMPC). GRANADA, Cam. Baza-Benamaurel, 15 km de Baza, 3 ♀♀, 16-VII-[19]87, G. Baldizzone and E. Traugott-Olsen leg. (gen. slide 3697AV, 3698AV, 3699AV) (AV/MNCN); 110 km NE Granada, Baza, 1 ♀, 18-IX-1973, M. and W. Glaser leg.; same data but 1 ♂, 1 ♂, 19-IX-1973, gen. slide 290/08OB (SMNK); same data but 1 ♂, 2 ♀♀, 25-26-IX-1973 (all ZMUC); Barranco del Espartal, Baza, 750 m, 1 ♀, 22-VIII-1999, J. Gastón leg. (gen. slide 7180JG) (RCJG). MADRID, Aranjuez, 1 ♀, 480 m, 1 ♀, 9-VI-2001, C. Gómez leg., ex l. *Limonium* (gen. slide 188AV); El Regajal,

Aranjuez, 489 m, 2 ♂♂, 3 ♀♀, 14-IX-1980, A. Vives leg.; Sotomayor, Aranjuez, 4 ♂♂, 2 ♀♀, 23-VIII-2002, A. Vives leg. (gen. slide 4065AV) (all AV/MNCN); Colmenar de Oreja, Valle de San Juan, 600 m, 1 ♂, 2 ♀♀, 12-13-X-2009, J. Šumpich leg. (NMPC). MÁLAGA, Camino de Ojén, 150 m, 1 ♀, 6-VI-1986, E. Traugott-Olsen leg. (ZMUC). MURCIA, Ajaque y Rambla Salada, Fortuna, 150 m, 1 ♂, 1-V-2019, M. Garre leg. (gen. slide 4067); Saladares del Guadalentín, Alhama de Murcia, 160 m, 1 ♀, 10-VII-2017, M. Garre leg. (gen. slide 4066AV) (all AV/MNCN); Alhama de Murcia, 30 m, 1 ♀, 9-X-1977, M. and W. Glaser leg. (gen. slide 291/08OB); same data but 1 ♀, 10-VI-1976, M. and W. Glaser leg. (gen. slide 164/19OB); same data but, 1 ♂, 2-X-1977 (gen. slide 120/20OB), Alhama de Murcia, Sierra Espuña, 2 ♀♀, 28-IX-1973, M. and W. Glaser leg. (gen. slide 170/19OB, 92/20OB); same data but, 1 ♂, 13-VI-1974 (gen. slide 93/20OB) (all in SMNK); 4 km W Águilas, 5 m, 1 ♂, 20-22-IX-1995, H. van der Wolf leg.; 1 ♂, same data but 15-IX-1997; 5 km W Águilas, 5 m, 4 ♂♂, 2 ♀♀, 15-IX-1999, C. Gielis leg.; 1 ♂, same data but 9-IV-2000; 2 ♂♂, same data but 27-IX-2001 (RMNH, ZMUC); 2 km S. of Bolnuevo, 5 m, 2 ♀♀, 28-30-IV-2000, P. Skou leg. (gen. slide 82/20OB); Bolnuevo by Mazarrón, 10 m, 1 ♂, 15-IV-2001, P. Skou and B. Skule leg. (gen. slide 81/20OB) (ZMUC).

Diagnosis: *H. hispanica* sp. n. can be recognized externally by the grey forewing with black suffusion along the veins in combination with the long porrect segment 2 of the labial palpus that bears a large triangular brush of raised scales on its dorsal surface. *H. obtusipalpis* differs in the lighter grey head, thorax and forewing with black scales randomly spread over the wing surface rather than concentrated along the veins as in *H. hispanica* sp. n. These species can also be separated by the hindwings that are dark brown in *H. hispanica* sp. n. but light grey in *H. obtusipalpis*. The symmetrical male genitalia with the triangular tegumen ending in a short uncus are characteristic. The main differences from the very similar *H. obtusipalpis* are the shorter anteromedial emargination of the tegumen extending to 1/3 of its length (to 1/2-2/3 in *H. obtusipalpis*), the cucullus that is wider than the sacculus (distinctly narrower in *H. obtusipalpis*), and the phallus with an egg-shaped rather than round caecum and with a distinct, though short apical arm (absent in *H. obtusipalpis*). The female genitalia are easily recognizable by the narrow triangular signum that is unique in the genus *Holcophora*.

Description: Adult (Figs 24-29). Head with labial palpus, thorax and tegulae covered with grey brown-tipped or black-tipped scales, frons lighter, grey; segment 2 of labial palpus long, porrect with large triangular brush of raised scales on upper surface, segment 3 about 1/5-1/4 length and 1/4-1/3 width of segment 2, acute, with white tip (Figs 1-2); antennal scape brown densely mixed with white, flagellomeres brown with narrow white rings, densely ciliated on ventral surface in male (Fig. 13); wingspan 14-20 mm, forewing covered with grey brown-tipped or black-tipped scales, latter usually weakly raised and concentrated mainly along veins, in fold and along termen; some specimens with additional white irroration in fold and along veins; fringe grey, black-tipped; hindwing and fringe dark brown.

Male genitalia (Figs 57-59): Uncus short, triangular, pointed, margins with few very long setae; gnathos lobe membranous; lobes of culcitula small, rounded, covered with long setae; tegumen triangular, with indistinct transition to uncus, anteromedial emargination very broad, rounded, extending to 2/3 length of tegumen; cucullus broad at base, distal part narrow, densely setose, slightly exceeding tip of uncus, apex rounded or weakly pointed; sacculus slightly shorter, at base distinctly broader than cucullus, distal half 1/2 width of basal half and 1.5x width of cucullus, outer margin evenly curved, apex setose, weakly bifurcated; vinculum narrow; saccus stout, broad, tapered towards rounded apex; phallus as long as tegumen and uncus, caecum strongly swollen, egg-shaped, half as long as phallus, distal part parallel-sided, 1/2-1/3 width of caecum, with lateral sclerotized rod ending in narrow apical sclerite (apical arm), bulbus ejaculatorius twice as long as phallus, broadening anteriorly.

Female genitalia (Figs 77-79): Papillae anales sub-triangular, covered densely with setae; apophyses posteriores slender, slightly longer than papillae anales; apophyses anteriores 1/2 length of segment VIII and apophyses posteriores, straight; tergum VIII broadly emarginated anteriorly, anteromedial emargination broad, strongly edged, extending to 1/2 length of tergum VIII; sternum VIII with distinctly sclerotized, narrow, anteriorly emarginated anterior margin, subostial sclerites distinct, triangular; antrum short, funnel-shaped, with indistinct transition to long ductus bursae that widens

towards variously shaped corpus bursae; signum 1/3-1/2 length of corpus bursae, triangular, with serrated margins, fixed by short process to small rounded or elongated basal plate, sometimes with two anteriorly projecting processes on wall of corpus bursae.

Biology: The host-plant is *Limonium dichotomum* (Cav.) O. Kuntze (Plumbaginaceae) (GÓMEZ DE AIZPÚRUA, 2007). The larvae were observed feeding quite exposed on that plant and ready to “jump” off of disturbed. Adults fly from April to July and in September-October, probably in two generations.

Distribution: Only known from Spain, present in the provinces of Alicante, Almería, Granada, Madrid and Murcia.

Etymology: Named after the place of collecting of the type series “*Hispanica*” (Spanish).

Holcophora obtusipalpis (Walsingham, 1905)

(Figs 3-4, 14-15, 20, 23, 31, 36-41, 60-62, 80-82)

Aponaea obtusipalpis Walsingham, 1905. *Entomologist's mon. Mag.*, **41**: 125

TL: Biskra, ALGERIA

= *Mesophleps cinerellus* Turati, 1930. *Atti Mus. Civ. Hist. Nat. Milano*, **69**(1): 80, pl. 2, fig. [unnumbered] (synonymized by LI & SATTLER, 2012)

TL: Barce, Bengasi, LIBYA

= *Aponaea* (sic!) *pruinoseella* Chrétien, 1915. *Ann. Soc. ent. Fr.*, **84**: 330. **Syn. n.**

TL: Gafsa, TUNISIA

= *Spermanthrax pycnostoma* Meyrick, 1936. *Exotic Microlepid.*, **4**(20): 625. **Syn. n.**

TL: El Goléa, ALGERIA

Material examined: ALGERIA, Lectotype of *Aponaea obtusipalpis* ♀, Biskra, 7-III-1903 (Walsingham, n° 96644) (NHMUK). Hammam-es-Salahin, 1 ♂, 16-V-1903, Walsingham leg. (SMNK). Hammam-es-Salahin, 14-V-1903, 1 ♂, Walsingham leg., 89897, Walsingham Collection, 1910-427. Photo/Gen. prep. J. Šumpich 18/025 (NHMB). Biskra, ex *Limoniastrum*, 16-IV-1906, Walsingham leg., 1 ♂, Walsingham Collection, 1910-427. Photo/Gen. prep. J. Šumpich 18/024 (NHMB); “St. Germain”, 1 ♂ (gen. slide 35/05OB) (MNHN). EGYPT, Mersa Matruh, Light Trap, Egypt Ministry of Agriculture, coll. Kasim, 1 ♀, 27-VIII-1935, *Nothris albidella* Rbl., ♀, Type (NHMV), Type photo 2013 (NHMV). LIBYA, Lectotype of *Mesophleps cinerellus* ♂, Cyrenaica, Banghâzi (“Bengasi”), 21-III-1922, Krüger leg. (NHMUK); LIBYA, Cyrenaica, 1 ♂, III, G. C. Krüger leg.; Gharian, Wadi El Hira, 3 ♂♂, 1 ♀, 22-III-22-IV-1982, U. Seneca leg. (all ZMUC). SPAIN, Gran Canaria, Teide, 2 ♀♀, XI-1958, Pinker leg. (gen. slide 151/19OB) (SMNK). TUNISIA, Gafsa, ex *Statice pruinosa* L., V-VI em VII (CHRÉTIEN, 1915) (MNHN); Oase Tozeur, 3 ♂♂, 3 ♀♀, 28-IV-11-V-1981, M. and W. Glaser leg.; Oase Tozeur, 3 ♂♂, 2 ♀♀, 28-IX-10-X-1980, M. and W. Glaser leg. (gen. slide 78/20OB ♀, 80/20OB ♂, 119/20OB ♂, 29/21OB ♂); 15 km S v. Hammamet, 1 ♀, 11-13-VII-1979, M. and E. Arenberger leg. (gen. slide 179/19OB) (all SMNK); Nefta area, 8 ♂♂, 1 ♀, 14-16-III-1986 (gen. slide 972OB ♂, 100/20OB ♀; same data but 4 ♂♂, 12 ♀♀, 1-4-V-1988, O. Karsholt leg. (gen. slide 66/20OB ♀, 71/20OB ♂, 4429 H. Hendriksen); Douz, 1 ♂, 15-IV-1983, J. Sunesen leg. (all in ZMUC).

Diagnosis: *H. obtusipalpis* can be recognized externally by the greyish-white forewing densely mixed with brown, usually without distinct markings, in combination with the long porrect segment 2 of the labial palpus bearing a large triangular brush of raised scales on its dorsal surface. *H. hispanica* sp. n. has a similar labial palpus but differs in having a dark greyish black rather than light grey forewing with black-tipped scales concentrated along the veins (randomly spread over the wing surface in *H. obtusipalpis* - but see remarks under Variation). Furthermore, the hindwing in *H. hispanica* sp. n. is dark brown in contrast to light grey in *H. obtusipalpis*. The male genitalia are recognizable by the triangular symmetrical tegumen and the short triangular uncus. For differences from *H. hispanica* sp. n. see under that species. In the female the ductus bursae is clearly separated from the antrum/colliculum, and the large signum is of typical *Gelechia* structure with the opposite edges raised and curved inwards to form a medial groove. In *H. symmocella* and *H. molitor* the antrum/colliculum is similarly separated from the ductus bursae; however, their signa, although also of the *Gelechia* type, are smaller and of a different shape.

Description: Adult (Figs 30-35). Head with labial palpus, thorax and tegulae covered with white brown-tipped scales, frons white with slight light brown shade, segment 2 of labial palpus long, porrect with large triangular brush of raised scales on upper surface, segment 3 about 1/5-1/4 length and 1/4-1/3 width of segment 2, acute, with white tip, scape brown densely mixed with white (Figs 3-4), flagellomeres ringed brown and white, in male densely ciliated on ventral surface (Fig. 14-15); wingspan 16-21 mm, forewing uniformly covered with white to cream or light grey scales with dark brown or black tips, diffuse brown spots in fold, along termen and/or in cell corner; indistinct light brown oblique fascia from / of costal margin to middle of fold expressed in some specimens, fringe grey brown-tipped; hindwing and fringe light grey.

Variation: There is extensive variation in the degree of brown of the basal fascia and the number of dark-tipped scales. The latter are usually spread randomly over the wings, but in some specimens they are concentrated along the veins.

Male genitalia (Figs 60-62): Uncus short, triangular, pointed, margins covered with long setae; gnathos lobe membranous, with straight posterior margin; culcitula absent; tegumen triangular, with indistinct transition to uncus, anteromedial emargination broad, rounded, extending to 1/2-1/3 length of tegumen; cucullus broad at base, distal part narrow, straight or weakly curved, densely setose, slightly exceeding top of uncus, apex rounded or pointed; sacculus at base distinctly broader than cucullus, distal half 1/2 width of basal half, slightly narrower than cucullus, extending to about top of cucullus, outer margin gradually bent, apex setose, weakly bifurcated, pointed; vinculum narrow; saccus stout, at base very broad, gradually narrowed towards rounded or pointed apex, far exceeding top of pedunculus; phallus as long as tegumen plus uncus, caecum strongly swollen, rounded, half as long as phallus, distal part parallel-sided or tapered, 1/2-1/3 width of caecum, with lateral sclerotized rod ending in narrow triangular apical arm, bulbus ejaculatorius 2-3 times as long as phallus.

Female genitalia (Figs 80-82): Papillae anales ovate to sub-triangular, covered densely with short setae; apophyses posteriores slender, slightly longer than papillae anales; apophyses anteriores 1/2 length of sternum VIII and 1/2-1/3 length of apophyses posteriores, straight, with weakly broadened base; tergum VIII broadly emarginated anteriorly, anteromedial emargination broad, strongly edged, extending to 1/2 length of tergum VIII; sternum VIII with distinctly sclerotized, narrow, weakly projecting anterior margin; antrum tubular, sclerotized posteriorly, with triangular medial sclerite, distinctly separated from ductus bursae which is gradually broadening towards rounded or ovate corpus bursae; signum plate sub-hexagonal, divided by narrow, medially constricted ridge into short posterior and long anterior parts.

Biology: The host-plants are *Limonium pruinosum* (L.) Chaz. ("*Statice pruinosus*") (CHRÉTIEN, 1915: 330) and, probably, *Limoniastrum guyonianum* Durieu ex Boiss. (Plumbaginaceae) (WALSINGHAM, 1905: 126; CHRÉTIEN, 1917: 480). Adults were collected from March to April, in July and again in September-October, probably in two or three generations.

Distribution: Spain: Canary Islands (new record), Algeria, Tunisia, Libya and Egypt (new record).

Remarks: *Aponoea obtusipalpis* was described by Walsingham from male and female collected in Biskra. The female "Type ♀ (96644)" was designated as the lectotype (ADAMSKI & SATTLER, 2019: 23). *Aponoea* (sic!) *pruinosa* Chrétien, 1915, was described from an unspecified number of specimens from Gafsa in Tunisia, bred from larvae feeding in May and June on *Limonium pruinosum* (L.) Chaz., the adults emerging in July. *Spermanthrax pycnostoma* Meyrick, 1936, was described from a single specimen collected by the "Comandant D. Lucas" from El Goléa in Algeria.

Nothris albidella Rebel is an unavailable manuscript name only found in the NHMV collection. A type was labelled by Rebel but the name was never made nomenclaturally available.

Holcophora statices Staudinger, 1871

(Figs 5-6, 16, 19, 27, 29, 32, 36-38, 65-67, 84-85)

Holcophora statices Staudinger, 1871. *Berl. ent. Z.*, **14**(3/4): 313-314

TL: Sarepta [Volgograd, Krasnoarmeysk], RUSSIA

Material examined: UKRAINE, Odessa region, Tatarbunary distr., 3 km N of Lebedivka vill., 45°50'52"N 30°8'22"E, 2 ♂♂, 1 ♀, 9-V-2020, E. Khalaim leg.; Ukraine, Odessa region, Tatarbunary distr., 6 km SE of Prymos'ke vill., 45°40'30"N 29°52'11"E, 2 ♂♂, 12-VIII-19, E. Khalaim leg.; Donetsk region, Khomutovskaya Steppe Nature Reserve, 5 ♂♂, 11-12-14-V-1996, O. Bidzilya leg. (gen. slide 25/210B ♂); Donetsk region, Novoazovsk, sea shore, 1 ♂, 8-V-1996, O. Bidzilya leg.; Zaporizhzhaya region, Melitopol distr., vil. Troitske env., 1 ♂, 8-IV-2016, at light, A. Zhakov leg.; Zaporizhzhaya region, Priazovskiy distr., Stepanovka 1-ya, 1 ♂, 28-VIII-2011, at light, A. Zhakov leg.; Zaporizhzhaya region, Priazovskiy distr., Stepanovskaya kosa, 1 ♂, 9-V-1998, A. Zhakov leg.; Crimea, Chauda, 40 km E of Pheodosia, e.la. *Limonium meyeri*, 2 ♂♂, 3 ♀♀, 17-VI-2002, 22-VII-2002, Yu. Budashkin leg. (gen. slide 51/030OB ♀, 27/210OB ♀) (all ZMKU). RUSSIA, Lectotype, S Russia, Volgograd, Krasnoarmeysk ("Sarepta"), 1 ♂, H. Christoph leg. (MfN); Lower Volga reg., prov. Volgograd, distr. Pallasovka, lake Elton, loc. Tschernavka, 1 ♂, 3-8-V-2004, E. Rutjan leg.; Volga reg., prov. Saratov, distr. Krasnyi Kut, prope pag. Djakovka, vall. fl. Ersulan, 1 ♂, 12-13-V-2004, E. Rutjan leg.; Stavropolskiy krai, Neftekumsk env., 44° 40' N, 44° 54' E, 1 ♂, 21-VI-2004, at light, I. Kostjuk leg. (gen. slide 123/200B) (all ZMKU); Dagestan, Temir-Goi, Temir-Khan-Sh. Okrug, saline near lake, at light, 1 ♀, 5-VIII-1924, M. Rjabov leg. (gen. slide 101/200B) (ZIN); Orenburg district, near Burannoe village, 2 ♂♂, 20-VI-1999, K. and T. Nupponen leg. (ZMUC).

Diagnosis: A rather variable species. Specimens with contrasting brown irroration along veins and black markings can easily be recognized. Paler, uniformly greyish brown specimens may be confused with worn specimens of *H. inderskella* when occurring sympatrically in western Kazakhstan. In that case the darker head and tegulae in combination with the longer cilia on the male antennae in *H. statice* (Fig. 16) are diagnostic. The male genitalia are distinguished by the strong, narrow, hook-shaped uncus bent over the tegumen, in combination with the broad sacculus and slightly asymmetrical saccus. Other species of *Holcophora* have a less sclerotized uncus and a sacculus that is less than 4-5 times as broad as the cucullus. The very short and basally broadened apophyses anteriores, the shortly sclerotized antrum and broad anterior margin of sternum VIII are characteristic for the female genitalia of *H. statice* and unique in *Holcophora*.

Description: Adult (Figs 36-38). Head, thorax and tegulae dark, covered with brown grey-tipped scales, labial palpus weakly upturned, dark brown densely mixed with white, without white rings, with brush of raised scales in distal half, segment 3 1/4 length and 1/2-1/3 width of segment 2, acute with white tip (Figs 5-6); scape dark brown, flagellomeres brown and white ringed, densely pubescent ventrally in male (Fig. 16); wingspan 18-21 mm, forewing greyish brown to greyish black, veins distinctly mottled with light brown and more sparsely with black or white, two black streaks in fold, at 1/3 under costal margin, and in cell, termen black-spotted, fringe grey, brown-tipped with brown medial line; hindwing greyish black with grey fringe.

Variation: Specimens may look uniformly greyish brown or more contrasting depending on the degree of light brown or black suffusion along the veins.

Male genitalia (Figs 65-67): Uncus strong, hook-shaped, pointed, placed on left posterolateral corner of tegumen, bent over posterior margin of tegumen; gnathos belt-shaped, well sclerotized, with short triangular medial sclerite; lobes of culcitula large, rounded, covered with long setae; tegumen trapezoid, about as long as broad at base, posterior margin with distinct medial emargination; digitate process at 3/4 on left margin and longer process at 1/3-1/2 of right margin, anteromedial emargination broadly rounded, extending to about 1/2 length of tegumen; sacculus in middle 4-5 times as broad as cucullus, slightly narrowed basally and towards strongly sclerotized bifurcated pointed apex, extending to top of cucullus; cucullus slender, weakly curved, vinculum narrow; saccus broad, sub-triangular to parallel-sided to about 3/4 length, extending beyond top of pedunculus; phallus slightly shorter than tegumen, caecum rounded, moderately swollen, 1/3 length of phallus, distal part straight, with sclerotized rod along one side ending in sub-triangular apical arm, bulbus ejaculatorius slightly longer than phallus.

Female genitalia (Figs 84-85): Papillae anales sub-triangular, elongated, covered densely with

short setae; apophyses posteriores slender, 1.5-2 times as long as papillae anales; apophyses anteriores very short, 1/4-1/3 length of sternum VIII, straight, with strongly broadened basal half; tergum VIII broadly emarginated anteriorly, anteromedial emargination broad, strongly edged, extending to 1/2 length of tergum VIII; sternum VIII with distinctly sclerotized, broadening anterior margin with broad triangular anteromedial projection; antrum short, funnel-shaped, shortly sclerotized posteriorly with gradual transition to ductus bursae; ductus bursae long, slender, gently widening towards corpus bursae, coiled before its entrance; corpus bursae rounded or ovate; signum plate ovate to rhomboid, with weakly serrated margins, medial ridge displaced posteriorly, separated by very narrow posterior part from broad anterior part that bears short medial sclerite at posterior margin, sometimes medial ridge absent but substituted by narrow median transverse fold.

Biology: The larvae were recorded feeding without a shelter on leaves and flowers of *Limonium meyeri* (Boiss.) O. Kuntze (Plumbaginaceae) in the Crimea. Pupation takes place without a cocoon in leaf-litter, with the pupa fixed at its posterior end to the substrate. Adults occur predominantly in halophytic habitats in May-June and again from the end of July to September in two generations (BUDASHKIN, 2014: 20).

Distribution: Across the Palaearctic Region from S France, Hungary, Rumania, S Ukraine, Russia: S and E of European part, Omsk region (PONOMARENKO & KNYAZEY, 2020: 281), W Kazakhstan (CARADJA, 1920: 115), Iran (WIESER *et al.*, 2002) to W China.

Remarks: *H. statices* was described by Staudinger from 15 specimens of both sexes, which he had received from H. Christoph under the manuscript name *Ypsolophus statices*. As there was only one female amongst the 15 specimens caught Staudinger concluded that Christoph might not have bred the species but collected the adults from *Limonium* “*Statices*” flowers.

Holcophora inderskella (Caradja, 1920)

(Figs 8, 18, 42-44, 68-70, 86-87)

Blastobasis inderskella Caradja, 1920: 122. *Dt. ent. Z., Iris*, **34**(1-2): 122

LT: Oz Inder [Salt Lake Inderbora], KAZAKHSTAN

Material examined: KAZAKHSTAN, Lectotype ♂ [damaged], Oz Inder [‘Indersky Salzsteppe’], 22-VI-1907, [Bartel leg.], designated by Popescu-Gorj (1992: 156) (MGAB); Paralectotype, ♀ [damaged], same data (MGAB); 20 km S Kzyl-Orda, 1 ♀, 6-IX-2000, P. Ustjuzhanin leg. (gen. slide 50/03OB); 145 km NW Alma-Ata, Ili river right bank, Mynbulak, 2 ♀♀, 18-VI-1998, M. Falkovitsh leg. (gen. slide 184/19OB); same data, 3 ♀♀, but 28-V-1990, “physophora” (gen. slide 77/20OB); SE Kazakhstan, Uigur distr., 15 km NW Chundzha, Yasenevaya roshcha loc., at light, 1 ♂, 15-V-1991, P. Ustjuzhanin leg. (gen. slide 48/03OB) (all ZMKU); Charyn Valley, 1080 m, 1 ♂, 18-V-2003, U. Jürivete and A. Potoski leg.; NW of Uch-Aral, 400 m, 1 ♂, U. Jürivete and A. Potoski leg. (all ZMUC) KYRGYZSTAN, Naryn River Valley, 1619 m, 1 ♂, 1 ♀, 3-VIII-2010, A. Potoski leg. (gen. slide 5373OK) (ZMUC). TADZHIKISTAN, Staraya Pristan’, 12 km S of Dzhilinkul’ on the Vahsh river, at light, 3 ♂♂, 2 ♀♀, 25-29-V-1949, Yu. Shchetkin leg. (gen. slide 98/20 ♂; 121/20OB ♂); same data, 1 ♀, but 28-V-1949 (all ZMKU); Gissarskiy khrebet, Dzhaz-Kurgan vic., Surhandarya river bank, at light, 1 ♀, 14-IV-1966, A. Danilevskiy leg. (ZIN). TURKMENISTAN, Ispas, 70 km NW Tchardzhou, 1 ♀, 2-VI-1965, M. Falkovitsh leg. (ZIN)

Diagnosis: The species is characterized by a creamy grey forewing with veins distinctly mottled with dark and an oblique white basal fascia edged outwardly with brown. *H. inderskella* is similar to the sympatrically occurring *H. rostellata* sp. n., but differs in the unmodified head, shorter segment 3 of the labial palpus (1/4 length of segment 3 in contrast to 3/4 in *H. rostellata* sp. n.), presence of raised scales on the upper surface of segment 2, and the usually less distinct brown pattern distal of the basal fascia. *H. molitor* and *H. symmocella* can be separated by the upcurved rather than almost straight and forward-directed segment 2 of the labial palpus and the shorter, narrower segment 3. The male genitalia are easily recognizable by the broad, straight uncus, long left and right processes of the tegumen, the asymmetrical valva and the phallus with paired narrow apical processes. The antrum that is broader

than the ductus bursae and the big (longer than ductus bursae) corpus bursae are diagnostic in the female genitalia.

Description: Adult (Figs 42-44). Head covered with white brown-tipped scales, frons almost white; segment 2 of labial palpus weakly curved, white densely mixed with brown, lower surface entirely white with raised white or white brown-tipped scales in distal 1/3; segment 3 short, straight, about 1/4 length and 1/3 width of segment 2, white mixed with brown, apex white, acute (Fig. 8); scape brown with white apex, flagellomeres white and brown-ringed; thorax and tegulae concolorous with head; wingspan 15-19 mm, ground colour of forewing white with weak cream or light brown shade, veins mottled with black to dark brown, black scales form diffuse small spots or short streaks in fold, in cell and along termen, an oblique white fascia broadly edged outwardly with light brown from 1/3 of costal margin to middle of fold; fringe white and brown-tipped; hindwing greyish brown, fringe light brown at base, distally light grey to white.

Male genitalia (Figs 68-70): Uncus lobe comparatively broad, elongate, densely covered with setae, situated on left posterolateral corner of tegumen; culcitula reduced to very short membranous humps with some setae; gnathos an indistinct membranous ring; tegumen as broad at base as long, sub-rectangular in posterior part, with distinct digitate process at 1/2 on left margin and large triangular lobe extending from right posterolateral corner; anteromedial emargination broad, extending to about 1/2 length of tegumen, posterior margin straight; valva with asymmetrical cucullus: right one slightly broader than left one, with pointed apex and short subapical triangular tooth on inner margin; sacculus in distal part about twice as broad as cucullus, with bifurcated apex extended to top of cucullus, basal part distinctly broadened; vinculum narrow; saccus broad, almost entirely parallel-sided, apex rounded, extended far beyond top of pedunculus; phallus as long as tegumen, caecum rounded, moderately swollen, 1/2 length and slightly broader than phallus, distal part straight, with distinct sclerotized paired rod along one side ending posteriorly in short triangular process on left side and longer, narrower process on right side, bulbus ejaculatorius twice as long as phallus.

Variation: One male from Tadzhikistan (gen. slide 98/200B) differs in the basally constricted uncus, and the considerably broader right cucullus.

Female genitalia (Figs 86-87): Papillae anales ovate, covered densely with setae; apophyses posteriores slender, about same length as papillae anales; apophyses anteriores 1/3 length of sternum VIII, straight; tergum VIII broadly emarginated anteriorly, anteromedial emargination broad, strongly edged, extending to 1/2 length of tergum VIII; sternum VIII with distinctly sclerotized, weakly broadened anterior margin slightly projecting anteriorly with two short triangular humps; antrum broad with distinct lateral sclerotization, broader than adjacent part of ductus bursae; ductus bursae moderately broad, of even width; corpus bursae weakly or considerably elongated, longer than ductus bursae; signum plate rounded, with distinctly serrated margins, medial zone from 1/3 to 3/4 width of signum.

Biology: Early stages and host-plant unknown. One of the examined specimens bears an additional label "physophora". It is unclear whether this name refers to a larval host-plant (*Suaeda physophora* Pall.) or something else. Adults were collected from mid-April to mid-June and again in early September, probably in two generations.

Distribution: Kazakhstan, Tadzhikistan, Turkmenistan.

Remarks: *Blastobasis inderskella* was described by Caradja from two "males" from "Oz Inder" ("Indersky Salzsteppe") - now Salt Lake Inderbora (Indersky Salt Lake) in the Atyrau region of West Kazakhstan (for details see ADAMSKI & SATTTLER, 2019). The type specimens are pale, greyish brown (ADAMSKI & SATTTLER, 2019: figs 14-15) and match better the above cited specimens from Kazakhstan, Turkmenistan and Tadzhikistan rather than the more contrasting greyish-black specimens from Mongolia figured as *H. inderskella* in ADAMSKI & SATTTLER (2019: figs 9-13). Moreover, the Mongolian specimens have a prominent frontal modification of the head. Both lectotype and paralectotype of *B. inderskella* lack the heads, so that it is impossible to confirm the presence or absence of a head modification in those specimens. However, it may be significant that this rather

prominent structure was not mentioned in the original description. This fact may serve as an additional argument for considering the externally similar specimens without head modification to be conspecific with *B. anderskella*. The specimens with modified head from Mongolia and Turkmenistan are described below as a new species.

***Holcophora centralasiae* Bidzilya & Karsholt, sp. n.**

(Figs 7, 17, 39-41, 63-64, 88-90)

Material examined: Holotype 1 ♀, AFGHANISTAN, 10 km NW v. Kabul, 1900 m, 25-VI-1965, F. Kasy and E. Vartian leg. (NHMV).

Paratypes: same data as for holotype, 1 ♂ (SMNK); same data as for holotype but 14-VI-1965, 2 ♂♂, 2 ♀♀ (gen. slide 55/180B ♂; 124/200B ♂) (SMNK, NHMV); 40 km SW v. Kabul, 2300 m, 1 ♀, 29-VI-1965, F. Kasy and E. Vartian leg. (NHMV); Kabulschlucht, 22 km östl. Kabul, 1650 m, 1 ♀, 5-12-VI-1966, H. Amsel leg. (gen. slide 64/180B) (SMNK). PAKISTAN, 80 km NW v. Quetta, 2100 m, 1 ♀, 15-V-1965, F. Kasy and E. Vartian leg. (gen. slide 359/190B) (all SMNK).

Material not included in the type series: IRAN, Eifandagheh-Dji., Loft, 1 ♀, 20-IV-1977, Saf.-Zairi (gen. slide 32/210B) (SMNK).

Diagnosis: A rather variable species that can be recognized by its narrow light grey forewing with dense brown suffusion and absence of distinct fasciae, tufts of scales and other markings that are usually characteristic for other *Holcophora* species. A slender segment 2 of the labial palpus without dorsal brush of raised scales is also diagnostic. A weakly curved uncus of even width, the sacculus of almost the same length as the cucullus and the tegumen with a short right lateral process are characteristic for the male genitalia. The female genitalia can easily be distinguished by its rhomboid signum with an extremely narrow medial ridge and broad posterior and narrow, elongated anterior part.

Description: Adult (Figs 39-41). Head, thorax and tegulae covered with white brown-tipped scales; labial palpus almost straight or slightly curved, directed upwards, white densely mixed with brown, segment 2 with diffuse white basal, medial and apical ring, upper surface white; segment 3 with white apex, acute, about 1/3 length and 1/2 width of segment 2 (Fig. 7); scape light brown densely mixed with white, flagellomeres brown, broadly white ringed; wingspan 15-18.5 mm, ground colour of forewing white to light grey with brown-tipped scales forming dense irroration along veins, in middle of cell and under fold, an indistinct brown dot at 1/2 of fold, two dots in middle of cell, fringe white and brown-tipped; hindwing light grey with brown suffusion along margins and veins, fringe grey.

Variation. Some specimens look almost uniformly brown with white irroration in fold and under costal margin.

Male genitalia (Figs 63-64): Uncus long, weakly bent, of even width with slightly pointed apex, placed on left posterolateral corner of tegumen; gnathos as narrow sclerotized ring, without medial sclerite; culcitula reduced; tegumen trapezoid, about as long as broad at base, posterior margin straight, short inwardly curved fold at 1/3 on left margin and short triangular process at 1/3 of right margin, anteromedial emargination broadly rounded, extending to about 1/2 length of tegumen; cucullus inflated at base, distal part slender, of even width, slightly narrower than sacculus; sacculus gradually bent, weakly narrowing towards strongly sclerotized bifurcated pointed apex extending to top of cucullus; vinculum narrow; saccus broad, sub-triangular to parallel-sided to 1/2 length, extending far beyond top of pedunculus; phallus as long as tegumen, caecum rounded, moderately swollen, 1/2 as long and 1.5 times as broad as phallus, distal part straight, with sclerotized apically weakly broadening rod along one side; bulbus ejaculatorius as long as phallus.

Female genitalia (Figs 88-90): Papillae anales ovate to sub-triangular, covered densely with short setae; apophyses posteriores slender, slightly longer than papillae anales; apophyses anteriores 1/3 length of sternum VIII, straight; tergum VIII broadly emarginated anteriorly, anteromedial

emargination broad, strongly edged, extending to 1/2 length of tergum VIII; sternum VIII with distinctly sclerotized, weakly projecting anterior margin; antrum short, tubular with indistinct transition to ductus bursae; ductus bursae long, slender, weakly broadening towards corpus bursae; corpus bursae ovate, elongated, comparatively narrow; signum plate rhomboid, with distinct spike pointing towards fundus bursae.

Biology: Early stages and host-plant unknown. Adults were collected from late April to late June at altitudes up to 2100 m a.s.l.

Distribution: Afghanistan, Pakistan, Iran (?).

Remarks: A single female from Iran matches externally the type specimens but is excluded from the type series due to the small rounded rather than rhomboid signum (Fig. 90).

Etymology: The specific name reflects the distribution of this new species in some countries of Central Asia.

***Holcophora rostrella* Bidzilya & Sattler, sp. n.**

(Figs 9, 21-22, 28, 30, 45-46, 71-73, 91-92)

(= *Holcophora inderskella* sensu Adamski & Sattler, 2019)

Material examined: Holotype 1 ♂, MONGOLIA, Gobi Altaj aimak, Zachuj Gobi, 10 km N von Chatan chajrchan Gebirge, 1150 m, Exp. Dr. Z. Kaszab, 1966 | Nr. 594, 27-VI-1966 (NHMB). Paratypes: 2 ♂♂, 1 ♀, same data as for holotype (gen. slide 72/200B ♀, 73/200B ♂) (NHMB); Gobi Altaj aimak, Zachuj Gobi, 10 km N of Chatan, Chajrchan mountains, 1150 m, 27-VI-1966, Z. Kaszab leg., 2 ♂♂ (gen. slide no. 14883) (NHMUK). TURKMENISTAN, Repetek, SE Karakumy, 19-VI-1982, at light, V. Krivohatskiy leg., 1 ♂ (gen. slide 91/110B); Repetek, at light, 2-VIII-1983, V. Krivohatskiy leg., 1 ♀ (gen. slide 91/110B); same data, but 12-V-1983, Falkovitsh leg., 1 ♂ (gen. slide 122/200B); same data but 1-V-1983, 1 ♂ (gen. slide 30/210B) (ZIN).

Diagnosis: This species is characterized by the creamy grey forewing with dark veins and a greyish brown patch in the middle of the cell. The distinct modification of the frontal part of the head is the most prominent feature for separating *H. rostrella* sp. n. from the externally similar *H. inderskella*. For additional differences from *H. inderskella* see under that species. The male genitalia can unmistakably be recognized by the elongated tegumen with gradual transition to the medially placed uncus, the right process of the tegumen that is fused with the uncus, the long and slender cucullus and the phallus with the bent distal part and long bulbus ejaculatorius. The distally club-shaped apophyses anteriores and posteriores, a long (3x length of corpus bursae) and twice coiled ductus bursae and rounded signum with a large rounded medial zone are characteristic for the female genitalia. The ductus bursae of other *Holcophora* species is shorter, up to twice the length of the corpus bursae, the apophyses anteriores and posteriores are distally not or at most slightly club-shaped and the medial zone of the signum is smaller.

Description: Adult (Figs 45-46). Head covered with white brown-tipped scales, frons white with distinct modification (for details see ADAMSKI & SATTLER, 2019: 19, figs 10-13); segment 2 of labial palpus slightly curved, covered with white brown-tipped scales, diffuse white ring at base, in middle and at apex, upper surface entirely white; segment 3 about fl length and 2/3 width of segment 2, white densely mixed with brown, apex white, acute (Fig. 9); scape brown with white apex, flagellomeres white and brown-ringed; thorax and tegulae concolorous with head; wingspan 16-21 mm, ground colour of forewing white to pale white with weak cream shade, veins mottled with brown, oblique brown fascia edged inwardly with white from 1/3 of costal margin to middle of fold bearing four tufts of brown scales, short basal oblique fascia with two tufts of brown scales, additional paired tufts of scales in middle and in corner of cell (Fig. 22), greyish brown pattern of irregular shape from outer border of middle fascia along middle width to 1/2 length; cilia white brown-tipped; hindwing greyish brown, with elongate patch of dark brown scales in middle length under costal margin in male (Fig. 21), fringe light brown at base, light grey to white in distal part.

Male genitalia (Figs 71-73): Uncus sub-rectangular, twice as long as broad, posterior margin distinctly sclerotized; gnathos reduced; culcitula absent; tegumen elongated, twice as long as broad at base, with gradual transition to uncus, left margin with sclerotized inwardly curved fold in distal 2/3, long digitate process at 2/3 on right margin, posteromedial emargination rounded, extending to 1/3 length of tegumen; cucullus slender to 3/4 length, apex distinctly widened and densely covered with setae, extending to top of uncus; sacculus slender, straight, extending to 2/3 of cucullus; vinculum narrow; saccus broad, triangular, extending far beyond top of pedunculus; phallus as long as tegumen, caecum distinctly swollen, rounded, 1/2 length and 2-3 times width of phallus, distal part slightly curved, with sclerotized rod along one side and distinct apical spine, bulbus ejaculatorius three times length of phallus.

Female genitalia (Figs 91-92): Papillae anales ovate, covered densely with short setae; apophyses posteriores slender, twice as long as papillae anales, distinctly club-shaped distally; apophyses anteriores 1/2 length of segment VIII, straight, rod-shaped; tergum VIII broadly emarginated anteriorly, anteromedial emargination broad, strongly edged, extending to 1/2 length of tergum VIII; sternum VIII with distinctly sclerotized, broadening anterior margin weakly projecting anteriorly; antrum short, colliculum tubular, transition to ductus bursae gradual; ductus bursae long, slender, twice coiled and gently widening towards spherical corpus bursae; signum plate simple, rounded, edged with strong spines.

Biology: Host-plant unknown. Adults were collected from mid-May to early August.

Distribution: Turkmenistan and Mongolia.

Remarks: A very detailed description of the adults, accompanied by SEM scans of the head of this species was provided by ADAMSKI & SATTLER, 2019 (as *H. inderskella*).

Etymology: The specific name derives from Latin “*rostrum*” meaning beak, snout, and reflects the beak-shaped frontal part of the head of this new species.

Holcophora molitor (Walsingham, 1896), **comb. n.**

(Figs 10, 48-50, 74-76, 93)

Gelechia molitor Walsingham, 1896, in Walsingham & Hampson. *Proc. zool. Soc. Lond.*, **1896**: 278

TL: Aden, YEMEN

Material examined: Holotype of *Gelechia molitor* ♂, Aden, 12-4-[18]95 | Type | 2239, Wlsm. 1896 | *Gelechia molitor* Wlsm., *Proc. Zool. Soc. Lond.*, 1896, 278, Type, ♂ | B.M. Genitalia slide No. 7071, ♂ (NHMUK). IRAN, Dalaki, 130 m, 4 ♂♂, 4 ♀♀, 20-III-1973, H. Amsel leg. (gen. slide 168/19 ♂, 169/19 ♀; 83/20 ♂, 84/20 ♀; 85/20 ♂. SAUDI ARABIA, Jurdeh, desert. No 1031 ♂, 23-IV-1960, E. Wiltshire leg. (gen. slide 94/200B) (SMNK). SAUDI ARABIA, Jeddah, Northern Creek, 2 ♀♀, IX-XII-1979, U. Seneca leg.; same data but 1 ♂, 2 ♀♀, 15-IV-1980 (gen. slide 53700K) (all ZMUC). UNITED ARAB EMIRATES, 8 km N Fujairah, 0 m, 1 ♂, 1 ♀, 22-II-2006, leg. C. Gielis, genitalia slide 6060, 6061 H. Hendriksen (RMNH, ZMUC).

Diagnosis: *H. molitor* is a light, yellowish brown species, with usually distinct light brown basal oblique fasciae, two brown spots in the cell and a comparatively large number of black-tipped scales scattered over the wing. For the differences from the externally most similar *H. symmocella* see under that species. The male genitalia are characterized by the long bent uncus, the sacculus covered apically with modified scales, and the phallus with a long, strongly curved apical arm. *H. symmocella* shares with *H. molitor* the above characters but can be separated by the apically rounded rather than pointed uncus without process, the narrower sacculus, longer and narrower saccus and differently shaped sclerite in the bulbus ejaculatorius. The female genitalia can be recognized by the presence of lateral folds in the membranous zone of sternum VIII in combination with triangular subostial sclerites and a corpus bursae that is longer than the ductus bursae. *H. symmocella* is most similar in the female genitalia but can be separated by the absence of anteromedial folds on sternum VIII and a narrower corpus bursae.

Description: Adult (Figs 48-50). Head, thorax and tegulae covered with brown-tipped scales; labial palpus recurved, white densely mixed with brown, segment 3 about 1/4 length and 1/3 width of segment 2, acute, segment 2 with group of raised white brown-tipped scales in distal half on upper surface (Fig. 10); scape white mixed with brown, flagellomeres white and brown-ringed; thorax and tegulae concolorous with head; wingspan 14.5-17 mm, forewing covered with white scales with light brown tips, fold lighter, almost white, diffuse oblique light brown fascia from 1/4 of costal margin to end of fold, two diffuse brown spots in cell, black-tipped scales usually randomly spread over wing, but forming indistinct small black spots in fold, two black spots under basal 1/3 of costal margin and some black spots at apex of wing in some specimens, fringe white, brown-tipped; hindwing white, shaded with light brown along margins, fringe white.

Male genitalia (Figs 74-76): Uncus long, slender, broadest in middle, with short subapical process, bent over posterior margin of tegumen; gnathos reduced; lobes of culcitula distinct, rounded, covered with long setae; tegumen trapezoid, about as long as broad at base, left margin with distinct inwardly curved sclerotized fold extending anteriorly from base of uncus to about anterior margin of tegumen narrow apically rounded digitate process at 1/3 on left margin and slightly longer process at 1/3 of right margin, short triangular process at right posterior corner, anteromedial emargination broadly rounded, extending to middle of tegumen about 1/2 length of tegumen; cucullus slender, straight, slightly narrowing apically, sacculus in middle about twice as broad as cucullus, extending to 2/3 length of cucullus, with medially curved inner and basally curved outer margin, apex narrowing, densely covered with modified scales; vinculum narrow; saccus broad, sub-triangular, apex rounded, extending beyond tip of pedunculus; phallus as long as tegumen, caecum rounded to ovate, distinctly swollen, slightly less than 1/2 length of phallus, distal part straight, about 1/2 width of caecum, with paired sclerotized rod along one side ending in sub-triangular apical sclerite and long thin almost circular apical arm, bulbus ejaculatorius twice as long as phallus.

Female genitalia (Fig. 93): Papillae anales sub-triangular, covered densely with short setae; apophyses posteriores slender, slightly longer than papillae anales; apophyses anteriores 1/2 length of segment VIII, straight; tergum VIII broadly emarginated anteriorly, anteromedial emargination broad, strongly edged, extending to 1/2 length of tergum VIII; sternum VIII with distinctly sclerotized, narrow straight anterior margin with paired triangular sclerite on both sides of ostium and distinct anteromedial folds; antrum short, tubular, distinctly sclerotized colliculum, with distinct transition to ductus bursae; ductus bursae short, moderately broad, gently widening towards corpus bursae; corpus bursae large, rounded, longer than ductus bursae; signum plate rounded weakly prolonged, with finely serrated margins, medial zone ovate, 1/3 width of signum plate.

Biology: Host-plant unknown. Adults were collected from March to April and from September to December, probably in two generations.

Distribution: Palaearctic and Afrotropical regions: Bahrain (new record), South Iran (new record), Saudi Arabia (new record), United Arab Emirates (new record), Yemen.

Remarks: *Gelechia molitor* was described from a single male collected on 12th April 1895 in Aden (Yemen).

Holcophora symmocella (Rebel, 1907), **comb. n.**

(Figs 11-12, 47, 77, 94-95)

Epimesophleps symmocella Rebel, 1907. *Lepid. Südarabien u. Insel Sokótra*: 95, fig. 40 [1931. *Denkschr. Akad. Wiss. Wien, Math.-naturwiss. Kl.*, **71**(2): 125, fig. 40.]

TL: Socotra, [Maaleh], Djebel Bedu, YEMEN

Material examined: SOCOTRA ARCHIPELAGO, Abd al Kuri Island, Towanie vol. env., 12° 10'N, 52° 13' E, 1 ♂, 8 ♀♀, 25-27-II-2008, A. Saldaitis leg. (gen. slide 94/110B ♂, 175/190B ♀); Samha island W, 12° 09'N, 052° 59' E, 1 ♀, 23-24-II-2008, A. Saldaitis leg. (all ZMKU).

Diagnosis: *H. symmocella* is well distinguished externally by the light yellowish white forewing

with two large diffuse yellowish brown spots in the cell and the rounded apex of the hindwing. *H. molitor* is very similar externally but can be separated by the more pointed apex of the hindwing, the usually distinct oblique basal fascia, the smaller brown (rather than large yellowish brown) spots in the cell, the darker, brown (rather than yellowish brown) suffusion along the veins, and the usually larger number of black-tipped scales. The male genitalia are characterized by the long bent uncus, the sacculus that is covered apically with modified scales, and the phallus with a long strongly curved apical arm. For differences from *H. molitor* see under that species. The female genitalia can be recognized by the moderately broad ductus bursae with a distinct transition to the antrum and the large (longer than ductus bursae) corpus bursae. *H. molitor* differs in the presence of anteromedial folds on sternum VIII and the bigger, spherical rather than oval corpus bursae.

Description: Adult (Fig. 47). Head and thorax white, tegulae white to light yellow; labial palpus slightly curved, white with diffuse narrow rings formed by brown-tipped scales, segment 3 about 1/4 length and 1/3 width of segment 2, acute, segment 2 with group of raised scales in distal half on upper surface (Figs 11-12); scape white, flagellomeres with with indistinct greyish brown apical rings; wingspan 13-14 mm. Forewing light, yellowish white, fold, veins in apical 1/3 and costal area slightly darker, yellowish brown, two diffuse yellowish brown spots in cell; fringe yellowish white, brown-tipped; hindwing and fringe white.

Variation. Some specimens with slightly raised black-tipped scales randomly scattered over the wing.

Male genitalia (Fig. 77): Uncus long, slender, broadening distally, with rounded apex, placed on left posterolateral corner of tegumen, bent over posterior margin of tegumen; gnathos reduced; lobes of culcitula rounded, covered with long setae; tegumen trapezoid, about as long as broad at base, left margin with distinct inwardly curved sclerotized fold extended anteriorly from base of uncus to about half length, narrow, apically rounded digitate process at 1/2 on left margin and twice length of process at middle of right margin, long triangular process at right posterior corner of tegumen, anteromedial emargination broad with straight posterior edge, extending to about 1/2 length of tegumen; cucullus slender, straight, sacculus in middle about twice as broad as cucullus, extended to 3/4, with medially bent inner and basally bent outer margin, narrowed apex densely covered with modified scales; vinculum narrow; saccus elongated, parallel-sided to 3/4, then narrowing towards rounded apex, extending far beyond the top of pedunculus; phallus as long as tegumen, caecum rounded, distinctly swollen, about 1/2 length of phallus, distal part straight, about 1/2 width of caecum, with paired sclerotized rod along one side ending in long narrow almost circular apical arm, bulbus ejaculatorius twice length of phallus.

Female genitalia (Figs 94-95): Papillae anales sub-triangular, covered densely with short setae; apophyses posteriores slender, slightly longer than papillae anales; apophyses anteriores 1/2-1/3 length of segment VIII, straight; tergum VIII broadly emarginated anteriorly, anteromedial emargination broad, strongly edged, extending to fi length of tergum VIII; sternum VIII with distinctly sclerotized, slightly widening anterior margin and distinct triangular sclerites on both side of ostium; antrum short, with tubular, distinctly sclerotized colliculum; ductus seminalis leaving ductus bursae distant from antrum/colliculum; ductus bursae short, moderately broad, slightly widening towards corpus bursae; corpus bursae large, ovoid, longer than ductus bursae; *Gelechia*-type signum ovoid to rhomboid, with serrated margin, raised opposite edges moderately curved inwards, leaving medial groove about 1/3 width of signum.

Biology: Host-plant unknown. Adults were collected in January and late February. The type series was found by sweeping in grassy places (REBEL, 1907: 125).

Distribution: Only known from the Socotra archipelago (Yemen).

Remarks: *Epimesophleps symmocella* was described from three males and one female collected by O. Simony on 12th January 1899 on the island of Socotra. The type-specimens could not be traced in Rebel's collection in NHMV.

Appendix: Unresolved taxon

Holcophora aphridias (Meyrick, 1925), **comb. n.**

Epimesophleps aphridias Meyrick, 1925, *Bull. Soc. ent. Egypte*, **9**: 210

TL: Wadi Gerrawi, EGYPT

Remarks: The status of this species is dubious. *Epimesophleps aphridias* was described by Meyrick from a single female collected by Alfieri in April amongst *Astragalus*. The holotype could not be traced; it is not found in Meyrick's collection. GAEDE (1937: 424), followed by *The Global Lepidoptera Index*, erroneously attributed the authorship of *Epimesophleps aphridias* to Rebel.

Acknowledgements

We thank Dr Szolt Bálint (NHMB, Budapest, Hungary), Dr Amparo Blay (MNCN, Madrid, Spain), Dr Sabine Gaal-Haszler (NHMV, Vienna, Austria), Dr David Lees (NHMUK, London, UK), Dr Wolfram Mey (MfN, Berlin, Germany), Dr Robert Trusch and Michael Falkenberg (SMNK, Karlsruhe, Germany) and Dr Sergei Sinev (ZIN, Sankt-Petersburg, Russia), for providing access to type specimens and other research material under their care. Moreover we thank Dr José Calle (Murcia, Spain), Manuel Garre (Murcia, Spain), Cees Gielis (Lexmond, The Netherlands), Carlos Gómez de Aizpúrua (Madrid, Spain), Friedmar Graf (Bautzen, Germany), Gert Jeppesen (Idestrup, Denmark), Jan Šumpich (NMPC, Prague, Czech Republic), Peder Skou (Vester Skerninge, Denmark), Bjarne Skule (Veksø, Denmark), Peter Ustjuzhanin (Novosibirsk, Russia), Hugo van der Wolf (Nuenen, The Netherlands), Jacques B. Wolschrijn (Twello, The Netherlands) for loan and/or donation of material for this study. Friedmar Graf provided the photographs of a living *H. hispanica* sp. n. shown on figs 24-26. The work was supported by the Ukrainian State Budget Program "Support for the Development of Priority Areas of Scientific Research" (Code: 6541230) (O. Bidzilya).

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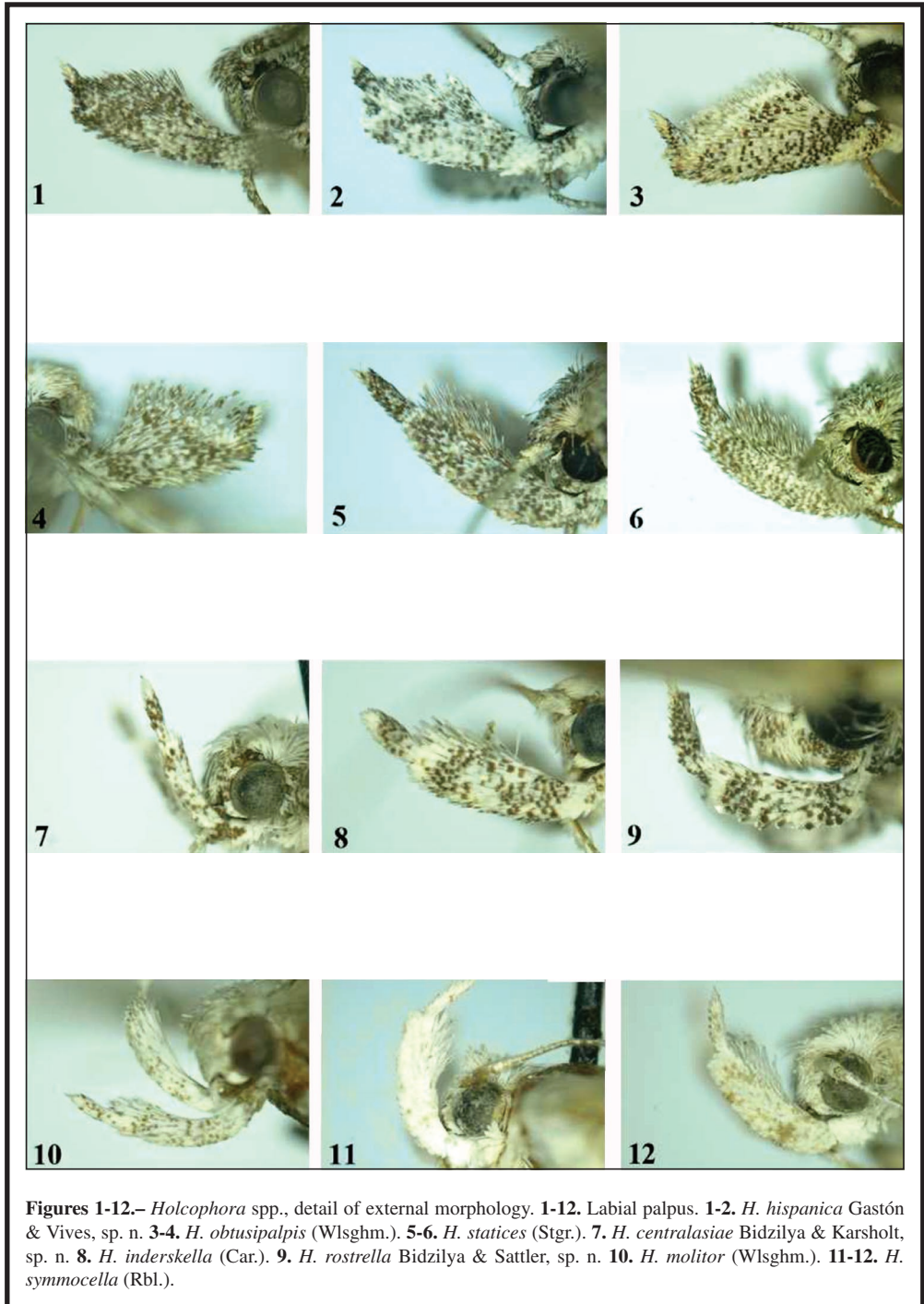
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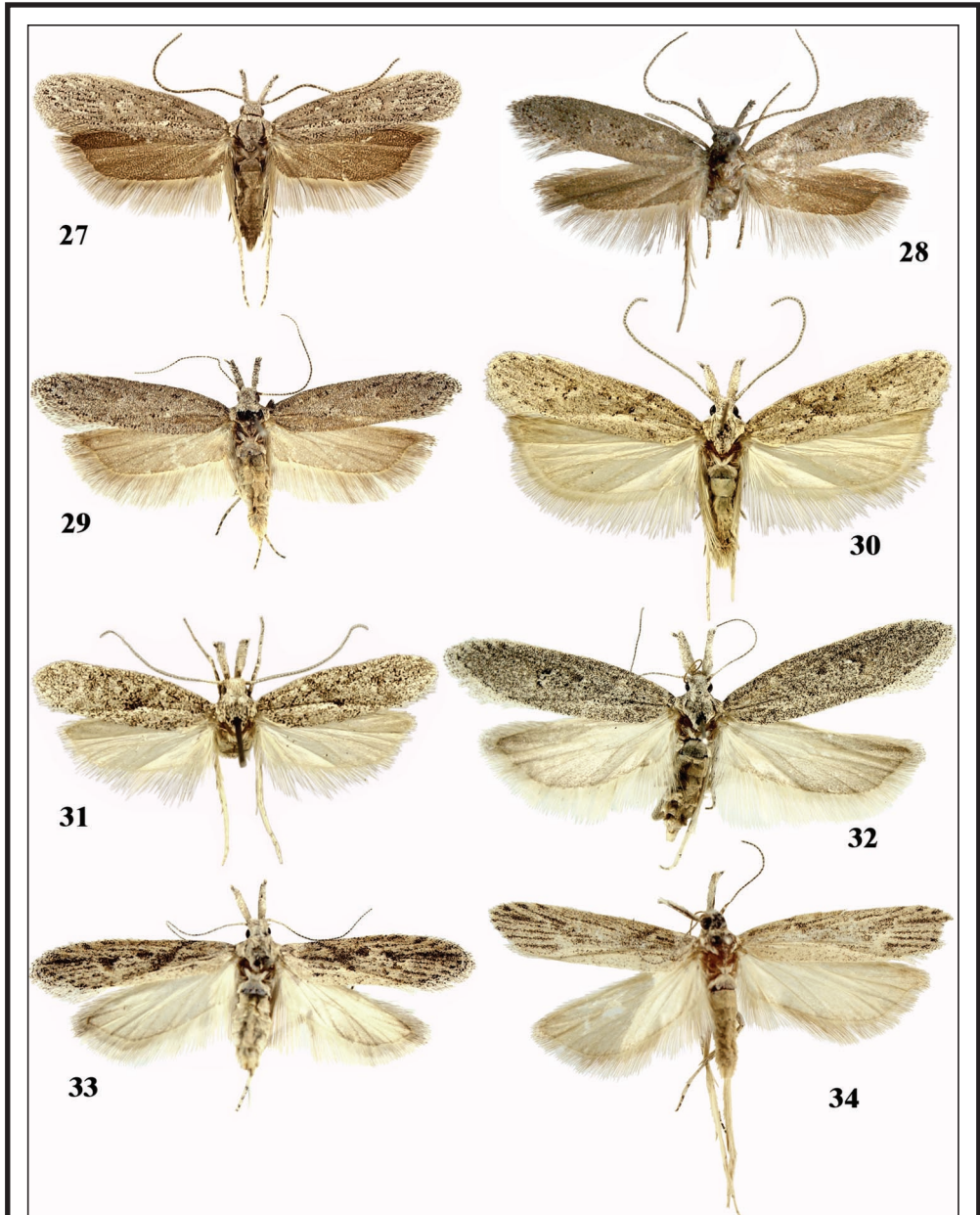
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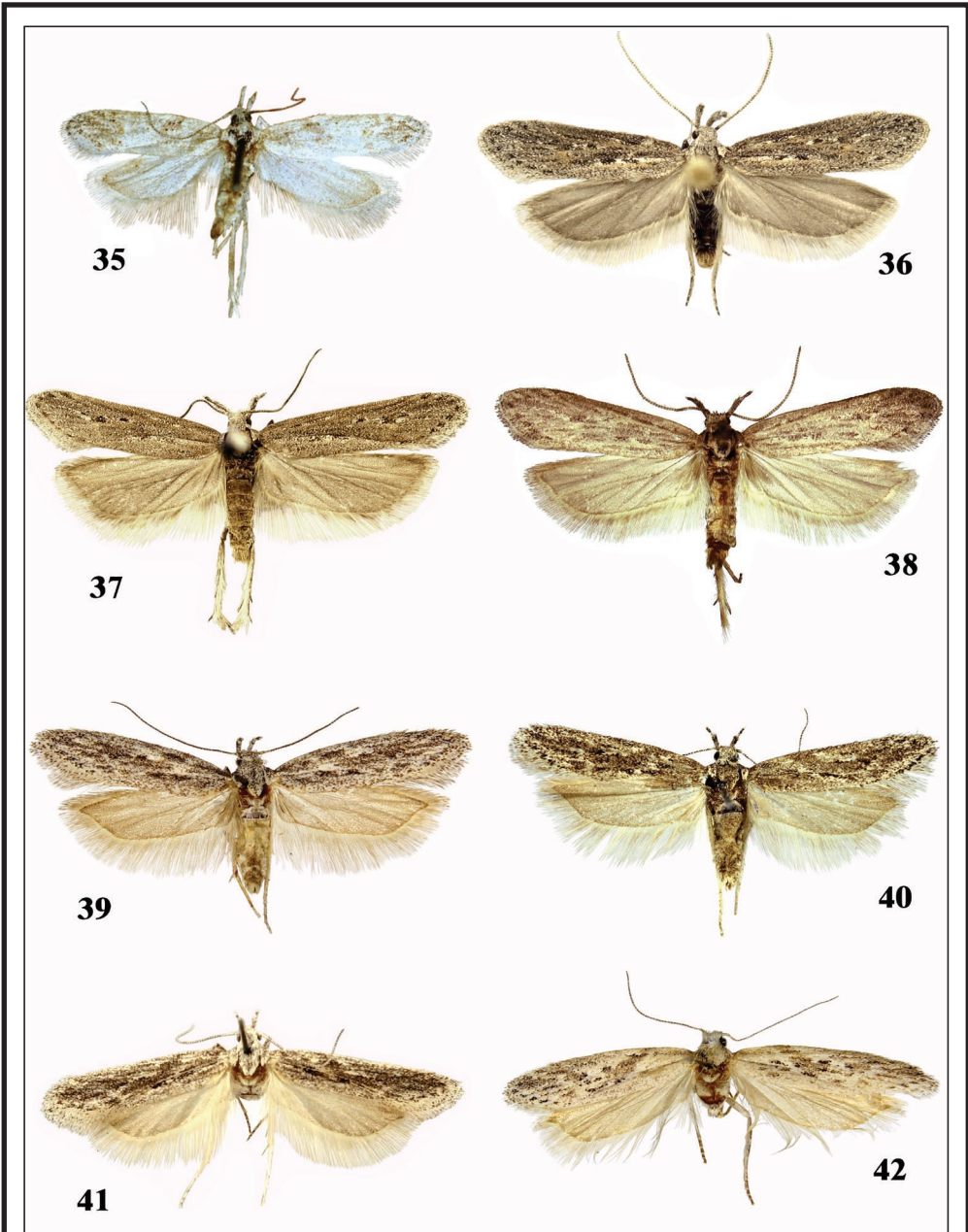
(Recibido para publicación / *Received for publication* 29-V-2020)
(Revisado y aceptado / *Revised and accepted* 30-IV-2021)
(Publicado / *Published* 30-VI-2021)



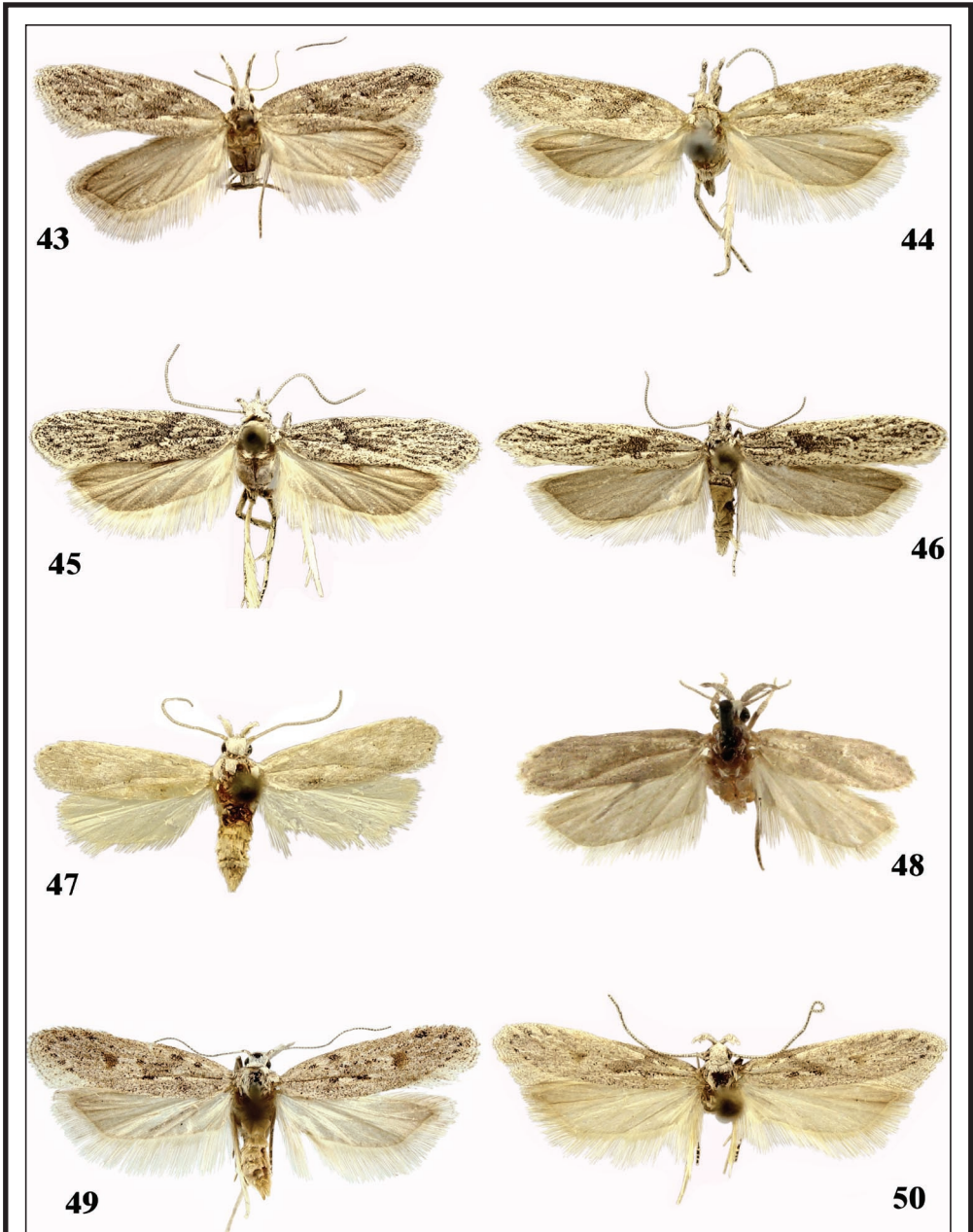




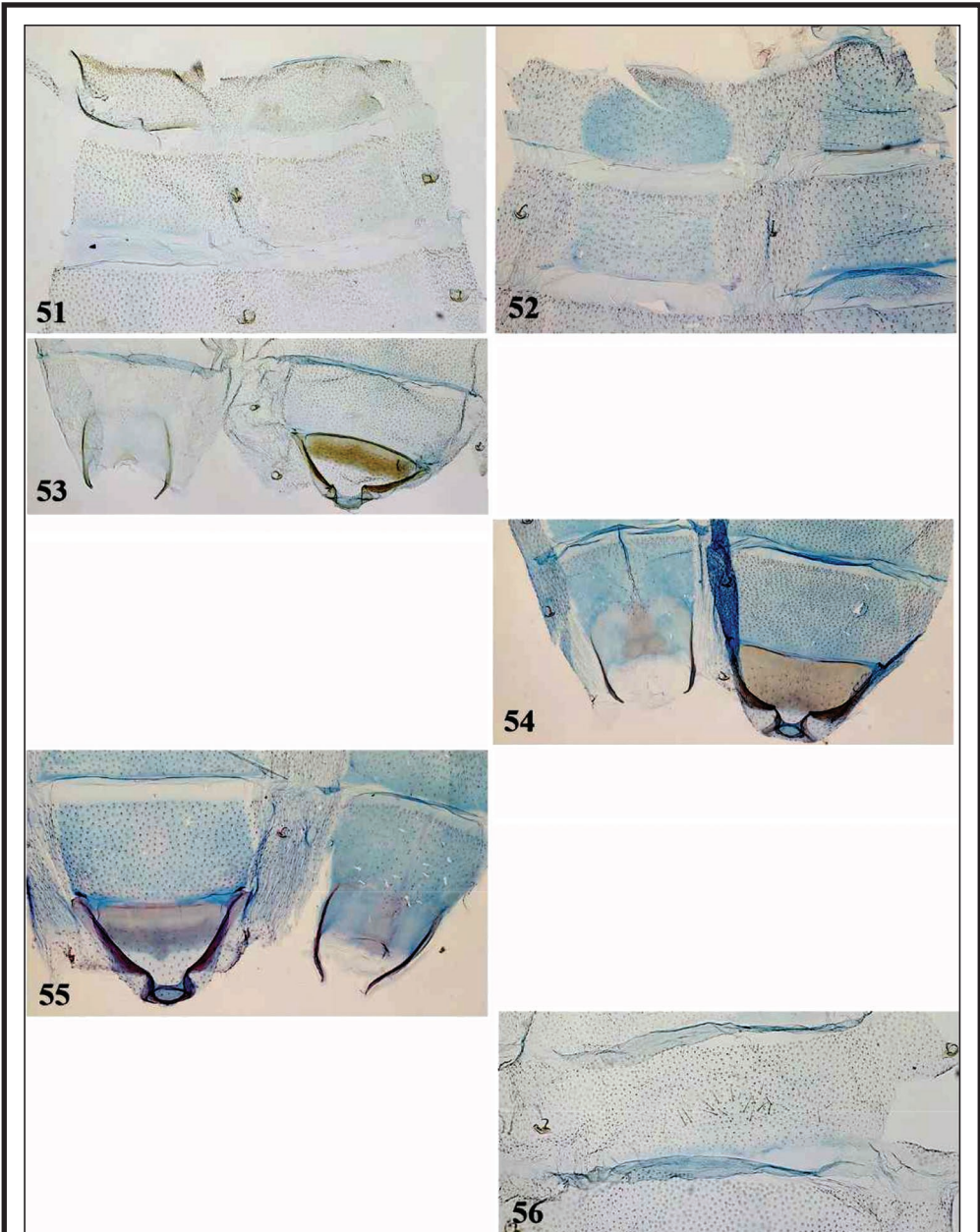
Figures 27-34.— *Holcophora* spp., adults. **27-29.** *H. hispanica* sp. n., Spain. **27.** Alhama de Murcia, male (gen. slide 120/200B). **28.** Madrid, Aranjuez, El Regajal, 489 m, 14-IX-1980, Holotype, male (gen. slide 1619AV). **29.** Almería, Mini Hollywood, female (gen. slide 87/200B). **30-34.** *H. obtusipalpis*, Tunisia. **30.** Oase Tozeur, male. **31.** 15 km S of Hammamet, female (gen. slide 17/19OB). **32.** Nefta, female (gen. slide 100/200B). **33.** Nefta, female (gen. slide 66/200B). **34.** Nefta, male (gen. slide 71/200B).



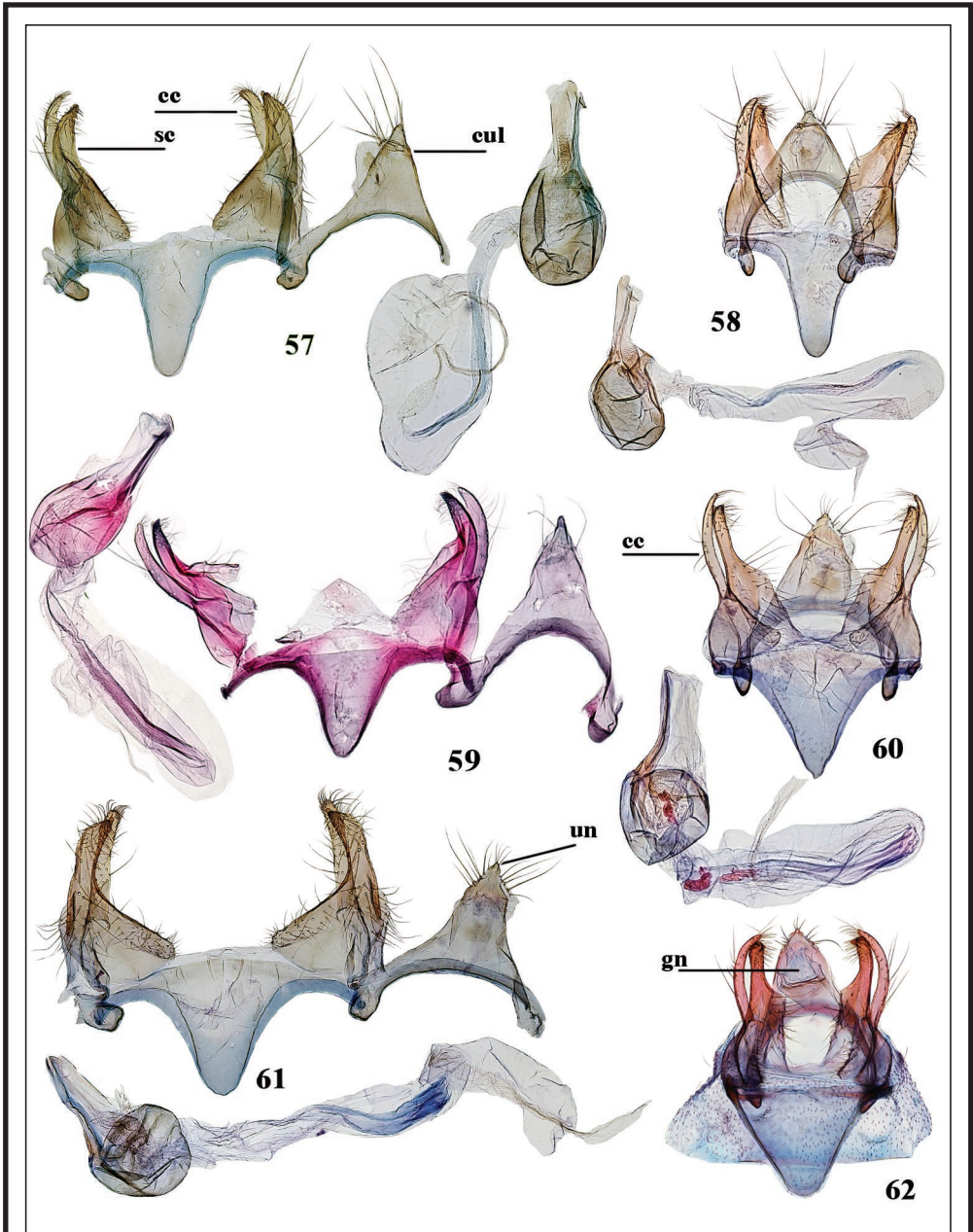
Figures 35-42.— *Holcophora* spp., adults. **35.** *H. obtusipalpis*, Tunisia, Gafsa, Syntype of *Aponaea* (sic!) *pruinoseella*, male. **36-38.** *H. statices*, Ukraine. **36.** Odessa reg., male. **37-38.** Crimea, Chauda, males. **39-41.** *H. centralasiae* sp. n., Afghanistan **39.** Holotype, male. **40.** 22 km E of Kabul (gen. slide 64/18OB). **41.** 10 km NW of Kabul, male. **42.** *H. anderskella*, Kazakhstan, Mynbulak, female (gen. slide 148/19OB).



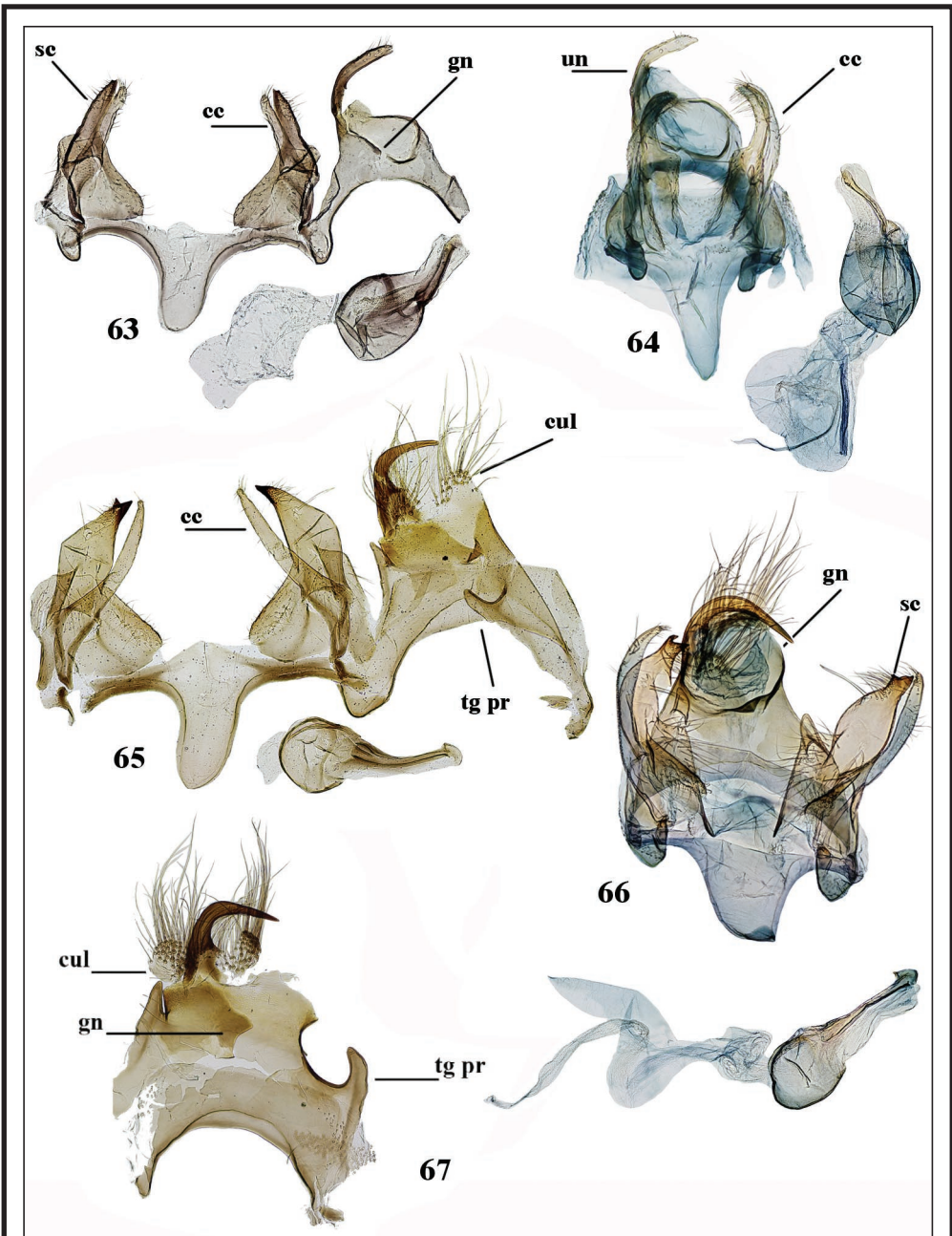
Figures 43-50.— *Holcophora* spp., adults. **43-44.** *H. inderskella*, **43.** Tadzhikistan, Dzhar-Kurgan, female. **44.** Tadzhikistan, Staraya Pristan', female. **45-46.** *H. rostrella* sp. n. **45.** Turkmenistan, Repetek, male (gen. slide 91/110B). **46.** Mongolia, Holotype, male. **47.** *H. symmocella*, Sokotra, female. **48-50.** *H. molitor*. **48.** Yemen, Aden, holotype, male. **49-50.** S Iran, Dalaki, **49.** Female. **50.** Male.



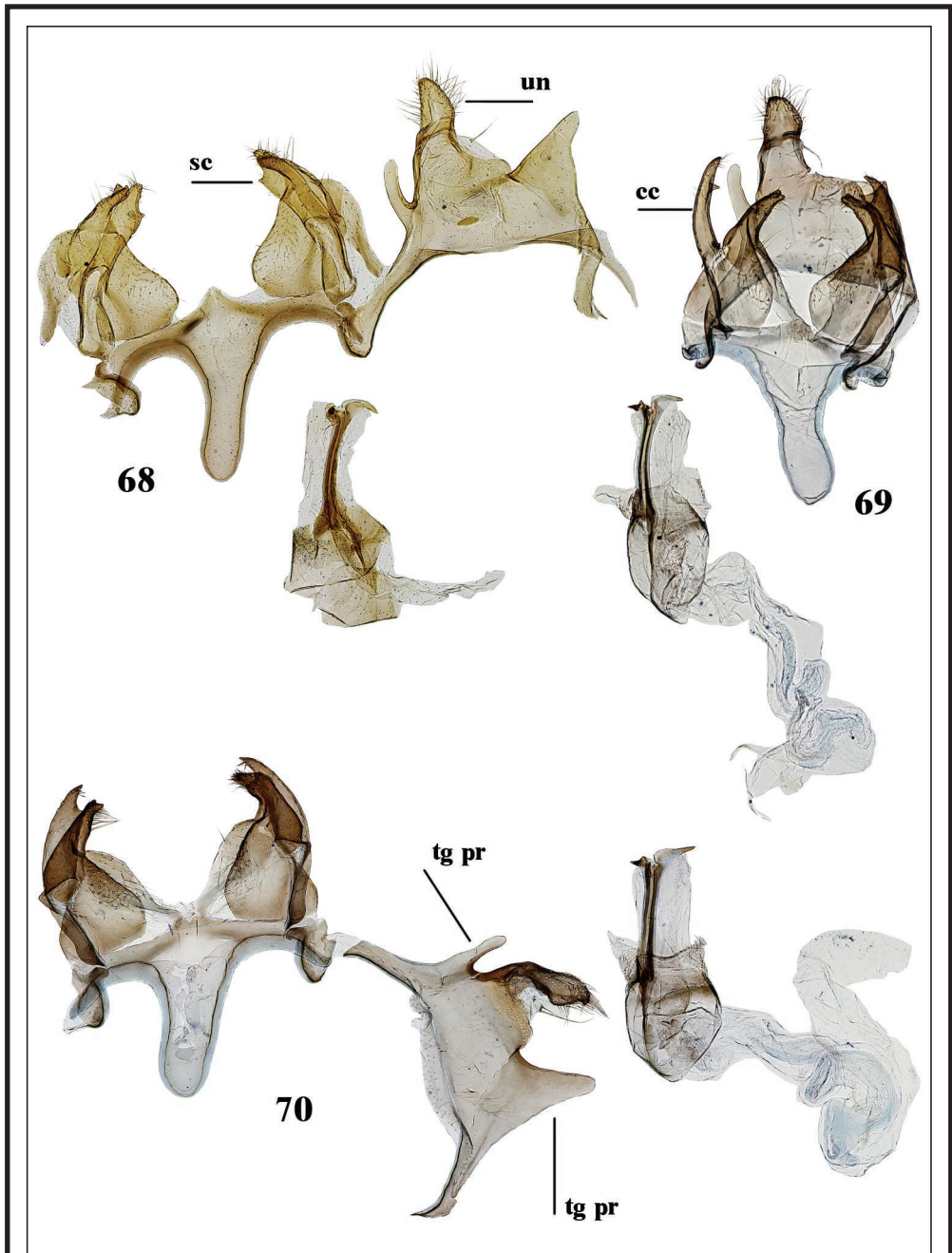
Figures 51-56.– *Holcophora* spp., abdominal segments. **51.** *H. statices*, Ukraine, male, segments VI-VIII (gen. slide 26/21OB). **52.** *H. rostrella* sp. n., Turkmenistan, male, segments VII-VIII (gen. slide 30/21OB). **53.** *H. statices*, Ukraine, female, segments I-II (gen. slide 27/21OB). **54.** *H. rostrella* sp. n., Turkmenistan, male, segments I-II (gen. slide 30/21OB). **55.** *H. obtusipalpis*, Tunisia, male, segments I-II (gen. slide 29/21OB). **56.** *H. statices*, Ukraine, female tergum V with group of hairs in middle (gen. slide 27/21OB).



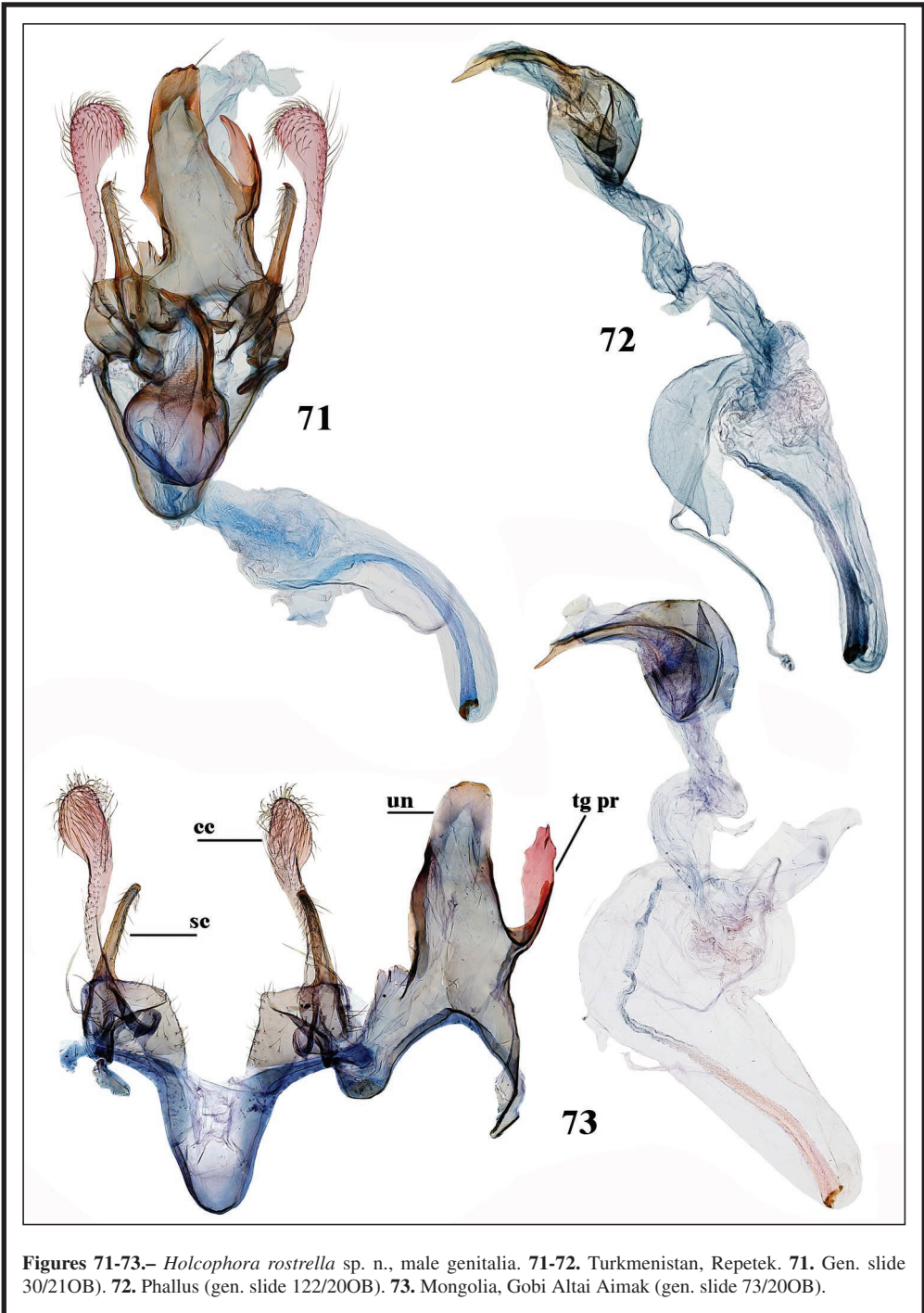
Figures 57-62.— *Holcophora* spp., male genitalia. **57-59.** *H. hispanica* sp. n., **57.** Spain, Murcia, Bolnuevo by Mazarrón (gen. slide 91/200B). **58.** Alhama de Murcia (gen. slide 120/200B). **59.** Madrid, Aranjuez, El Regajal, Holotype (gen. slide 1619AV). **60-62.** *H. obtusipalpis*, Tunisia, Oase Tozeur. **60.** Gen. slide 119/200B. **61.** Gen. slide 80/200B. **62.** Gen. slide 29/210B.



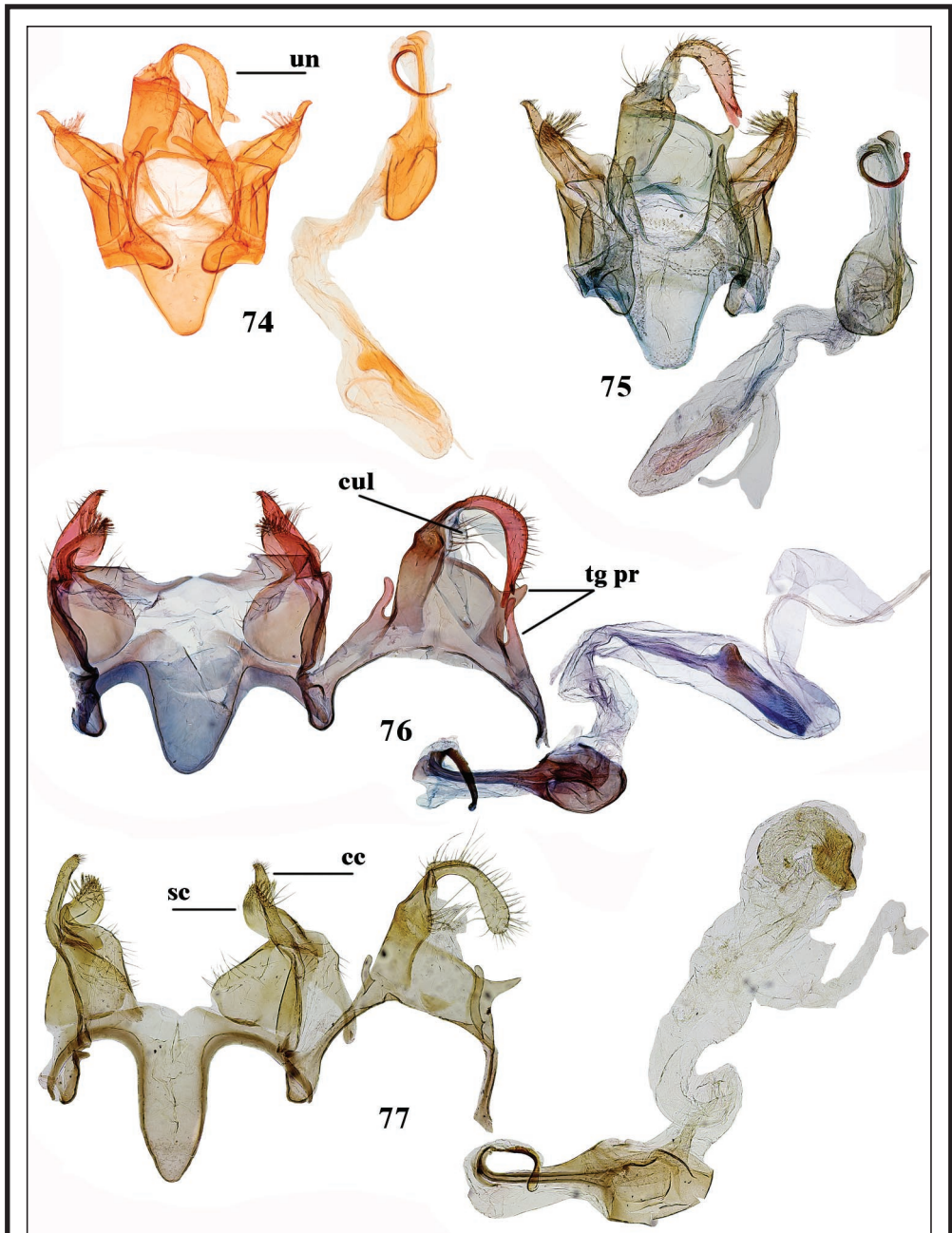
Figures 63-67.– *Holcophora* spp., male genitalia. **63-64.** *H. centralasiae* sp. n., Afghanistan, **63.** Gen. slide 55/18OB. **64.** Gen. slide 124/20OB. **65-67.** *H. statices*. **65.** Crimea (gen. slide 49/03OB). **66.** Russia, Stavropolskiy kray (gen. slide 123/20OB). **67.** Ukraine, Donetsk reg. (gen. slide 25/21OB).



Figures 68-70.— *Holcophora anderskella*, male genitalia. 68. Kazakhstan, Chundzha env. (gen. slide 48/03OB). 69-70. Tadjikistan, Staraya Pristan'. 69. Gen. slide 121/200B. 70. Gen. slide 98/200B.



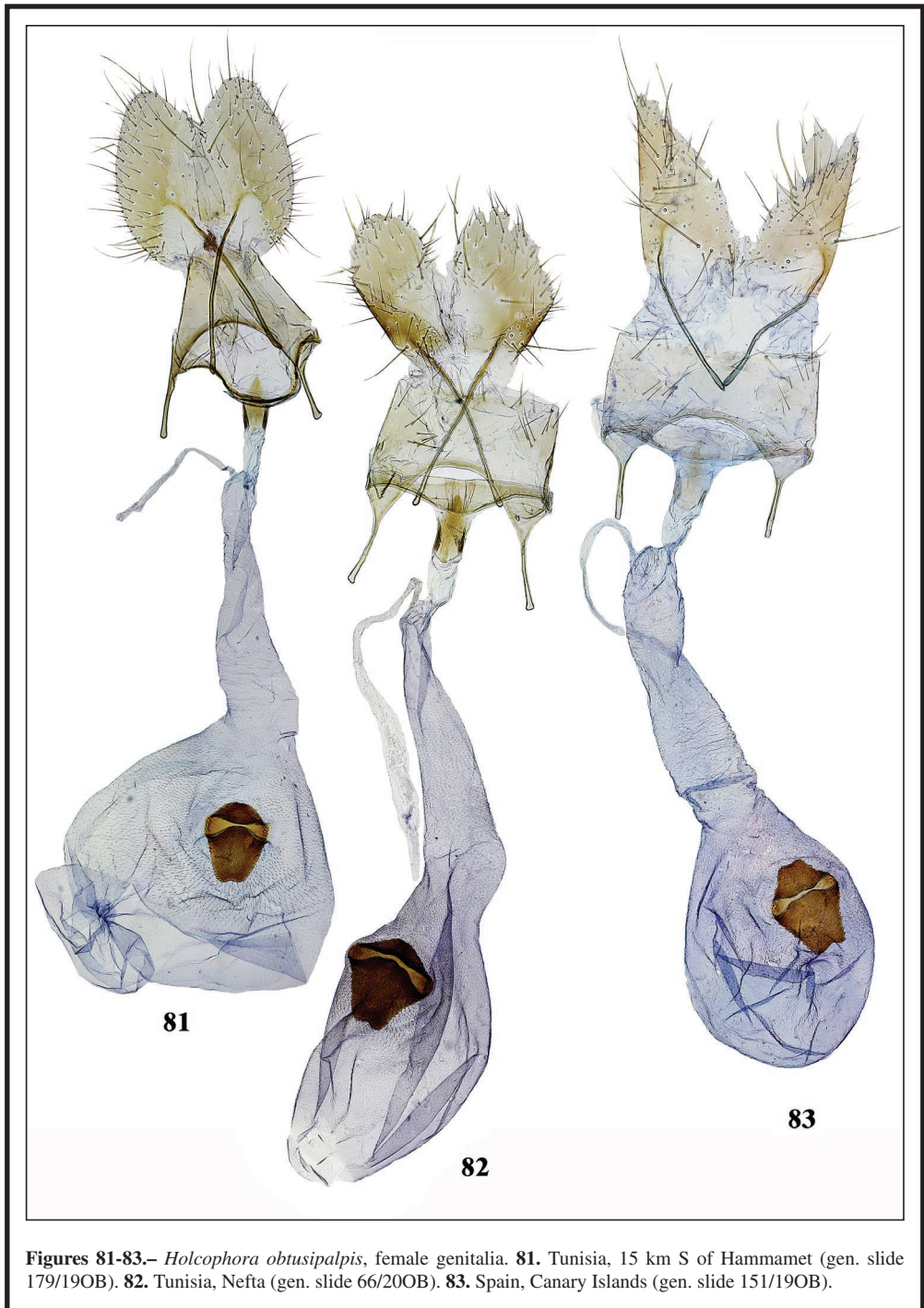
Figures 71-73.– *Holcophora rostrella* sp. n., male genitalia. **71-72.** Turkmenistan, Repetek. **71.** Gen. slide 30/21OB). **72.** Phallus (gen. slide 122/20OB). **73.** Mongolia, Gobi Altai Aimak (gen. slide 73/20OB).



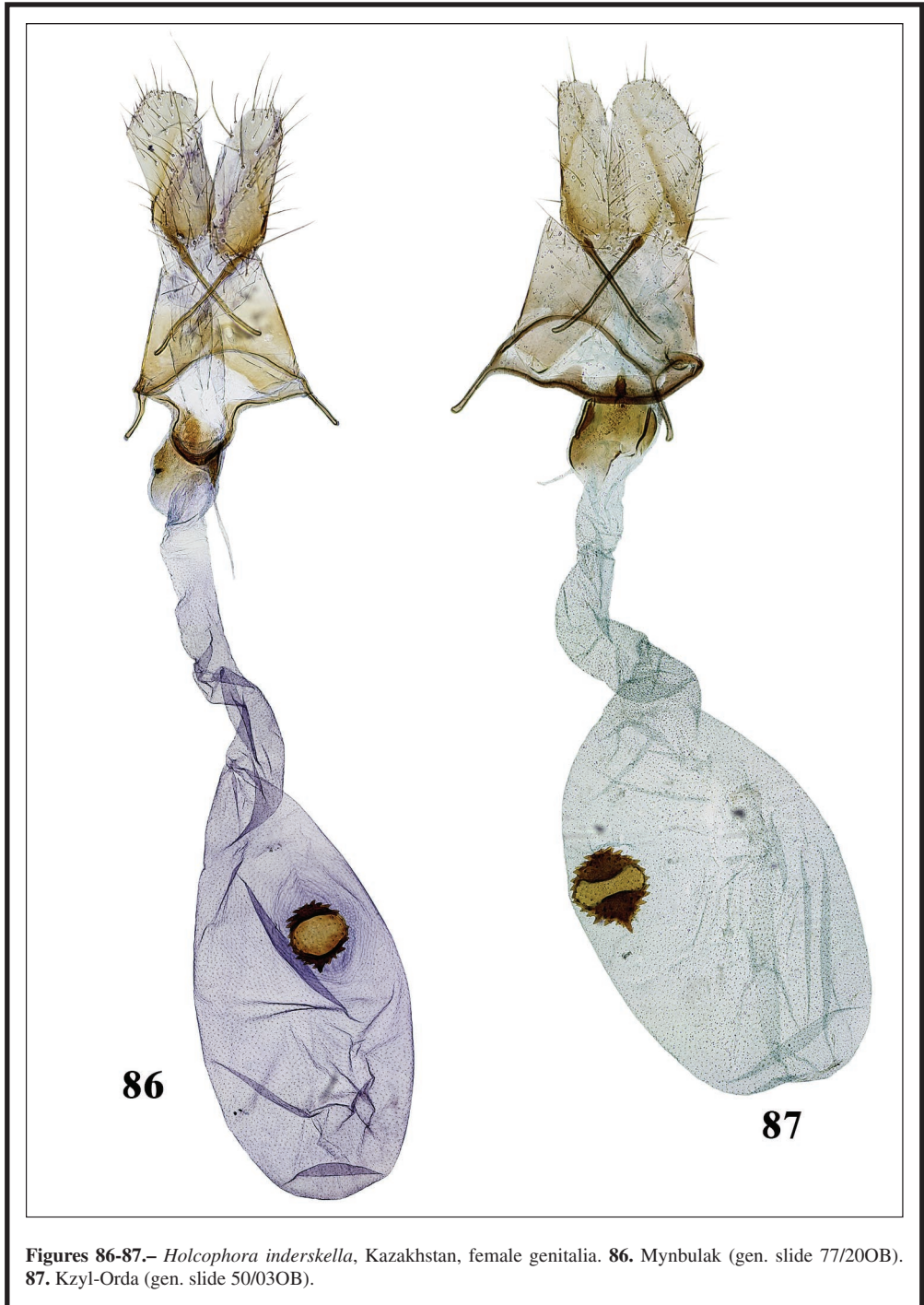
Figures 74-77.– *Holcophora* spp., male genitalia. 74-76. *H. molitor*. 74. Holotype, Aden (gen. slide 7071). 75. S Iran, Dalaki (gen. slide 83/20OB). 76. Bahrain (gen. slide 94/20OB). 77. *H. symmocella*, Sokotra (gen. slide 94/11OB).

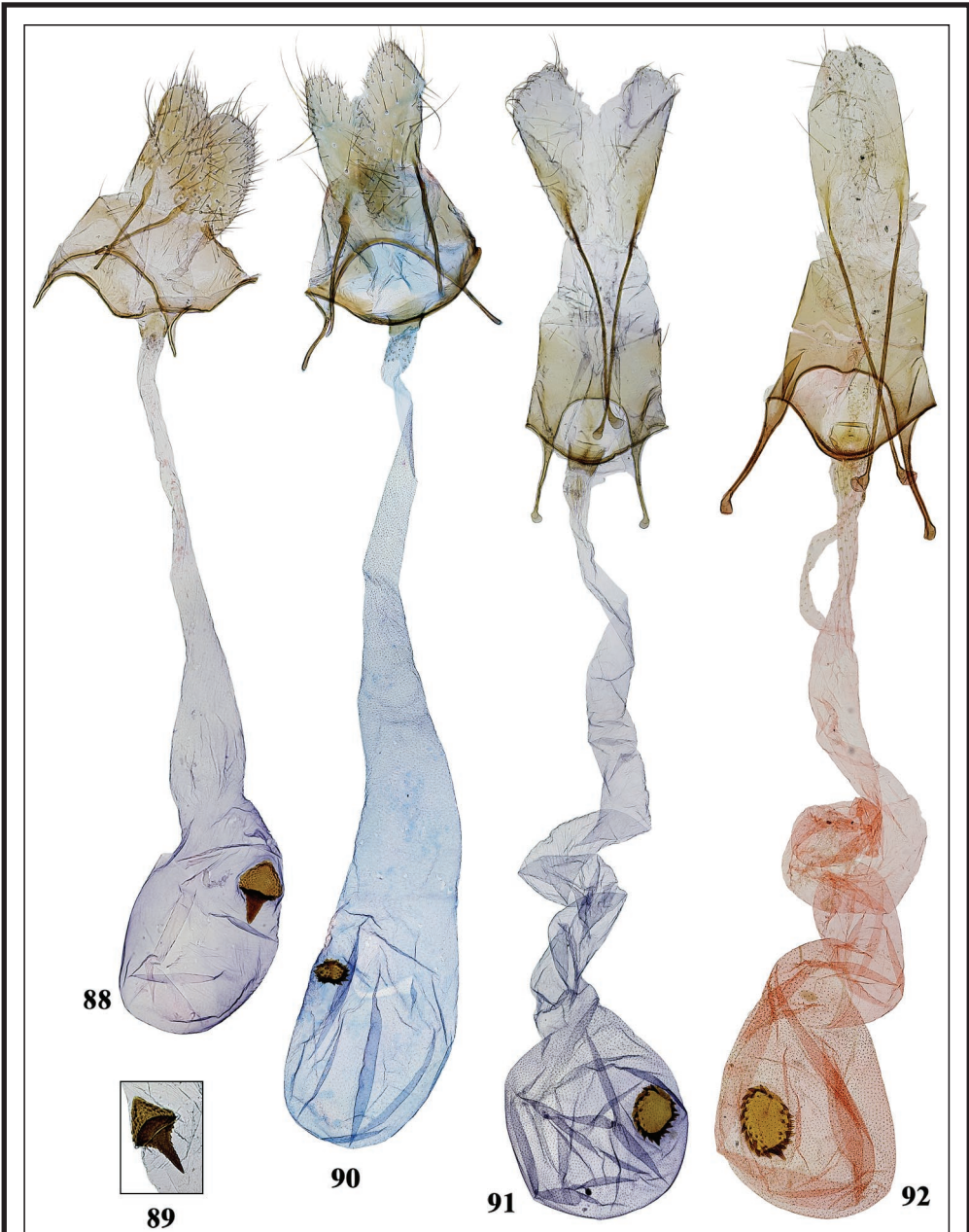


Figures 78-80.– *Holcophora hispanica* sp. n., Spain, female genitalia. **78.** Almería, Mini Hollywood (gen. slide 87/20OB). **79.** Murcia, Alhama de Murcia (gen. slide 170/19OB). **80.** Murcia, Alhama de Murcia (gen. slide 164/19OB).









Figures 88-92.– *Holcophora* spp., female genitalia. **88-90.** *H. centralasiae* sp. n. **88.** Pakistan, 80 km NW Quetta (gen. slide 359/19OB). **89.** Signum, Afghanistan, 22 km E of Kabul (gen. slide 64/18OB). **90.** Iran, Eifandagheh-Dji (gen. slide 32/21OB). **91-92.** *H. rostellata* sp. n. **91.** Kazakhstan, Mynbulak (gen. slide 77/20OB). **92.** Turkmenistan, Repetek (gen. slide 91/11OB).

