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Noteworthy records of Scythrididae from the Palaearctic region, with descriptions of two new species from Spain (Lepidoptera: Scythrididae)

K. Nupponen

Abstract

New records of 30 little known species of the family Scythrididae from the Palaearctic region are presented. Two new species are described from Spain: *Scythris latilineella* Nupponen, sp. n. and *S. lobella* Nupponen, sp. n. Taxonomic problems with females of *Scythris aciella* Bengtsson, 1997, *S. felixi* Bengtsson & Sutter, 1996 and *S. nieukerkeni* Bengtsson, 1989 are dealt with. The previously unknown females of *S. martini* Bengtsson, 1991, *S. paelopyga* (Staudinger, 1880) and *S. pseudolocustella* Passerin d'Entrèves & Vives, 1990 are described. The male genitalia of *S. rubioi* (Agenjo, 1962) are redescribed, and adults of *S. paelopyga* and *S. rubioi* are illustrated for the first time. New records of 21 little-known species are listed.

KEY WORDS: Lepidoptera, Scythrididae, new species, noteworthy records, Palaearctic region.

Registros notables de Scythrididae de la región Palaearctica, con las descripciones de dos nuevas especies de España (Lepidoptera: Scythrididae)

Resumen

Se presentan 30 nuevos registros de especies poco conocidos de la familia Scythrididae de la región Paleártica. Se describen dos nuevas especies de España: *Scythris latilineella* Nupponen, sp. n. y *S. lobella* Nupponen, sp. n. Se describen y solucionan problemas taxonómicos con hembras de *Scythris aciella* Bengtsson, 1997, *S. felixi* Bengtsson & Sutter, 1996 y *S. nieukerkeni* Bengtsson, 1989. Se describen las previamente desconocidas hembras de *S. martini* Bengtsson, 1991, *S. paelopyga* (Staudinger, 1880) y *S. pseudolocustella* Passerin d'Entrèves & Vives, 1990. Se redescubre la genitalia del macho *S. rubioi* (Agenjo, 1962) y se ilustran por primera vez los adultos de *S. paelopyga* y *S. rubioi*. Se listan 21 nuevos registros de especies poco conocidas.

PALABRAS CLAVE: Lepidoptera, Scythrididae, nuevas especies, registros notables, región Palaearctica.

Introduction

Since 1994, I have intensively studied the Scythrididae fauna of the Palaearctic region. The majority of the results of these investigations have already been published in 22 separate articles. However, records of species comprising various kinds of hitherto unresolved taxonomical problems have remained unpublished, as well as noteworthy records of few little known species. Recent studies on the material revealed interesting results, including discovery of two undescribed species. The results of these studies are summarized in the present paper.

Material and methods

The material originates from the Palaearctic region, from Spain to Tunisia and Turkey, and eastwards to the Baikal region. Most of the specimens resulted from fieldwork by Kari and Timo Nupponen during 1997–2013. Additionally, a few interesting specimens from Turkey and Russian Far East were donated to me by Nikolay Savenkov, and some from NE China by Aidas Saldaitis and Alessandro Floriani. The collected material is generally deposited in the research collection of the author. All sequence data with GenBank accession numbers are available through public dataset DSCYPA13 in the BOLD database at www.boldsystems.org.

Descriptions of new species

Scythris latilineella Nupponen, sp. n.

Type material: Holotype ♂ (Fig. 1): Spain, 40° 25' N 1° 04' W, Teruel 9 km NNE, Villalba Baja, 960–1030 m a.s.l., 13-VI-2008, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 3/20-XI-2008. DNA sample (Lepid. Phyl., green label): KN00226. In coll. T. & K. Nupponen. Paratypes (4 ♂♂, 2 ♀♀): Idem, 1 ♂, 1 ♀; Spain, 40° 27' N 1° 02' W, Teruel 13 km N, 975–1000 m a.s.l., 1-VI-2006, 3 ♂♂, 1 ♀, T. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 3/24-XI-2008 (♀). DNA samples (Lepid. Phyl., green labels): KN00225 ♀, KN00227 (♂). In colls. T. & K. Nupponen (3 ♂♂, 2 ♀♀) and coll. A. Vives / Museo Nacional de Ciencias Naturales, Madrid, Spain (1 ♂).

Description: Wingspan 9.5–11.5 mm. Head dark brown, laterally with white scales. Haustellum dark brown mixed with white. Collar, tegula and antenna dark brown. Neck tuft pale/whitish brown, distinctly paler than head. Flagellum 0.65 x length of forewing. Labial palp: segment I cream white, segments II and III dark brown mixed with white. Thorax dark brown, dorsally edged by cream white. Legs dark brown, more or less covered by pale beige and dirty white scales. Abdomen dorsally fuscous, ventrally cream white, anal tuft pale beige. Forewing dark brown; broad and distinct pale yellowish white streak in fold from base to cell end, cut by blackish brown dash at 0.6; few yellowish white scales along margins at apical half of the wing, forming small apical spot in some specimens. Hindwing dark fuscous.

Male genitalia (Figs. 7–8): Uncus a pentagonal hood with semicircular lateral processes. Basal plate of gnathos arched and robust; gnathos arm stout, thorn-like, bent. Phallus 1.15 x length of valva, almost of even width, slightly bent at middle. Valva stout and very broad, subbasally wrinkled; apical half dorsally extended, twice broader than base, terminal margin cut at right angle, tip ventrally elongated and pointed. Sternum VIII subtriangular; posteriorly elongated, with shallow posteromedial indentation; each lateral margin post-medially slightly notched; anterior margin concave. Tergum VIII subrectangular, membranous, anterior corners extended.

Female genitalia (Figs. 9–10): Sterigma stout, U-shaped, posterior tips with small oval sclerotization attached to each other by weakly sclerotized narrow belt; anteromedially extended rectangularly. Sternum VII rectangular; posterior margin medially incised; anterior margin reinforced. Apophyses anteriores 2/3 x length of apophyses posteriores.

Diagnosis: Externally *S. latilineella* Nupponen, sp. n. differs from the other species of the *cidarella* species-group by rather broad forewings with more distinct, paler and broader streak in fold, resembling several species of the *knochella*-group, particularly *S. iberica* Jäckh, 1978. The genitalia of both sexes exhibit characteristics typical of the *cidarella*-group. The male genitalia of *S. latilineella* are close to those of *S. ventosella* Chrétien, 1907 and *S. moldavicella* Caradja, 1905, but differ by much broader valvae terminally cut at right angle, arched basal plate of gnathos (posteriorly flat and laterally elongated in *ventosella*), semicircular lateral processes of uncus (much longer and horn-shaped in *moldavicella*) and a more elongated sternum VIII with smaller lateral notches. The female genitalia are almost identical with those of *S. ventosella*, but differ by the anteriorly slightly extended sterigma. In *S. moldavicella* the sterigma is medioposteriorly extended and sclerotized posterior tips are much larger.

Bionomy: The specimens were swept in sunshine during middle part of the day in early June. The habitat is a xerothermic rocky slope with sparse vegetation. The species occurs sympatrically with *Scythris antisymmetrica* K. Nupponen, 2009.

Distribution: C Spain. Only known from two patches located close to each other.

Etymology: The name of the species alludes to the broad streak in fold on the forewing; Latin *latus* = broad; *linea* = a line.

Remarks: *S. latilineella* Nupponen, sp. n. belongs to the *cicadella* species-group. The DNA barcode sequence (COI) of three specimens was analysed to ensure that the new taxon is separable from its closest relatives, all of which having similar structure of the genitalia. The three DNA barcodes of *S. latilineella* are identical to each other, with genetic distance (minimum pairwise distance, Kimura 2 Parameter) to closely related species as follows: *S. ventosella* Chrétien, 1907, 3.13 %, *S. cicadella* (Zeller, 1839), 3.44 %, *S. potentillella* (Zeller, 1847), 4.44 %, *S. knochella* (Fabricius, 1794), 5.07 % and *S. heinemanni* (Möschler, 1869), 7.42 %. The present case conspicuously reveals effectiveness of the DNA barcoding in confirming the status of closely related and superficially similar species.

***Scythris lobella* Nupponen, sp. n.**

Type material: Holotype: ♂ (Fig. 2): Spain, 37° 00-02' N 2° 23-26' W, Almería 20 km N, 320-360 m a.s.l., 14-IV-2013, T. Nupponen leg. In coll. T. & K. Nupponen. Paratypes (7 ♂♂): Ibidem, 25-IV-2012, 1 ♂, 13-IV-2013, 4 ♂♂, 14-IV-2013, 1 ♂, T. Nupponen leg.; 26-IV-2009, 1 ♂, T. & K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1/30-XII-2009. In colls. T. & K. Nupponen (6 ♂♂) and coll. A. Vives / Museo Nacional de Ciencias Naturales, Madrid, Spain (1 ♂).

Description: Wingspan 7.5-8.5 mm. Head, scape, tegula and thorax dark brown with scattered dark beige scales. Neck tuft dark beige. Collar beige. Haustellum dark brown, laterally covered by cream white scales. Labial palp: segment I and basal half of segment II cream-coloured, otherwise dark brown mixed with beige. Flagellum dark brown, 0.7 x length of forewing. Legs dark brown, more (femur) or less (tibia and tarsus) mixed with pale beige. Abdomen dark fuscous, ventrally mixed with dirty white, anal tuft cream-coloured. Forewing dark fuscous, basally mixed with grey, apical area slightly darker; rather large but irregular dirty white patch at tornus, and subapical fascia of same colour; sparse dirty white scales in fold, on costa at 0.6 and apically; indistinct black spots in fold at 0.25, 0.4 and 0.7. Hindwing fuscous.

Male genitalia (Figs. 11-12): Uncus two robust and diverging prongs; apex tapered and bent, tip pointed; both prongs dorsally with a long subapical spine. Gnathos base a sclerotized rim with medioposterior digitate process, attached to anterolateral corners of tegumen; proximal arm long and slender, slightly bent, tip hooked. Tegumen extended posteriorly, with large subtriangular and slightly concave lateral lobes. Phallus 0.7 x length of valva, thick and straight, of even width, apex slightly tapered. Valvae curved, long and slender, basally swollen and basal half slightly tapered; apically four short and stout pegs; tip medially incised. Sternum VIII rectangular, 3.5 x wider than high, anterior margin medially concave. Tergum VIII rectangular, about 3 x wider than high, anterior margin medially concave.

Female genitalia: Unknown.

Diagnosis: Externally *S. lobella* Nupponen, sp. n. may be confused with several small, dark scythridids. It most resembles species in the *subfasciata* species-group, but differs by slender wings and more mottled forewings. The white scales are easily chafed away, and worn specimens of *S. lobella* Nupponen, sp. n. resemble some species of the family Gelechiidae (*Monochroa rumicetella* (Hofmann, 1868), *M. sepicolella* (Herrich-Schäffer, 1854), *Bryotropha* spp.) rather than Scythrididae. However, the hindwings of *S. lobella* lack a notch at dorsal margin. In the male genitalia of *S. lobella* Nupponen, sp. n., a peculiar shape of the uncus and slender valvae with apical pegs are unmistakable.

Bionomy: The specimens were swept at sunshine in the forenoon. The habitat is a xerothermic slope with sparse vegetation. Immature stages are unknown.

Distribution: S Spain. Only known from the type locality.

Etymology: The species name refers to the lateral lobes of tegumen in the male genitalia; Latin *lobus* = lobe.

Remarks: In the male genitalia of *S. lobella* Nupponen, sp. n., the large lateral lobes of the tegumen are reminiscent of those in the *martini* species-group. However, the shape of the peculiar uncus and the gnathos do not fit that group, neither does the external appearance of the moth. The new taxon forms its own group close to the *martini*-group.

Taxonomic accounts

Scythris aciella Bengtsson, 1997

Tunisia, 33° 51-53' N 7° 47-49' E, Tozeur 30 km W, Nefta env., 20-30 m a.s.l., 15-XI-2009, 2 ♂♂, 1 ♀, T. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 1/23-I-2010 (♂), 5/23-I-2010 (♀).

Distribution: Egypt, Lebanon, Tunisia. Yemen? (see Remarks).

Remarks: The external appearance of the present specimens is quite different from that of the holotype and the two specimens previously known from Tunisia (see BENGTTSSON, 1997, NUPPONEN, 2001). The forewings are dark fuscous with slight purplish hue and more or less sparsely scattered dirty white scales (Fig. 3). However, the male genitalia are identical to those of the holotype of *S. aciella*. The female genitalia of *Scythris parenthesesella* Bengtsson, 2002 match very well with those of *S. aciella*, and probably the two taxa are conspecific. The membranous ring in the 6th abdominal segment of *S. parenthesesella* (see BENGTTSSON, 2002, Fig. 89) is absent from the Tunisian female of *S. aciella*, but the ring may have been lost during preparation. Unfortunately the male of *S. parenthesesella* is unknown, and further material of *S. parenthesesella* is needed to confirm the expected synonymy.

Female genitalia (Figs. 13-14): Sterigma oval, anteriorly extended, lateral margins sclerotized. Sternum VII quadrangular, medioposteriorly indented, anterior margin medially shallowly incised. Apophyses anteriores 0.85 x length of apophyses posteriores.

Scythris felixi Bengtsson & Sutter, 1996

Material: Russia, S Buryatia, 51° 37' N 106° 46' E, 600 m a.s.l., Hamar Daban Mountains, bolshoi Sanzheevka river, Kharamsha village 2 km W, forest steppe, 27-VI-2002, 6 ♂♂, 28-VI-2002, 6 ♂♂, K. Nupponen leg.; Russia, S Buryatia, 51° 11-13' N 106° 10-12' E, 700 m a.s.l., Hamar Daban Mountains, Murtoy river, Gusinoe ozero village 6 km NW, forest steppe, 19-VI-2002, 30 ♂♂, 5 ♀♀, 22-VI-2002, 14 ♂♂, 1 ♀, 27-V-2006, 1 ♂, 4-VI-2006, 10 ♂♂, 2 ♀♀, K. Nupponen leg.; Russia, S Buryatia, 50° 58-59' N 106° 38-40' E, 550-600 m a.s.l., Chikoy valley, Novoselenginsk village 10 km S, sand dunes/sandy steppe, 24-VI-2002, 1 ♂, K. Nupponen leg.; Russia, Altai Mountains, 50° 35-40' N 86° 20-30' E, 700-800 m, near Kupchegen village, 7-VII-2000, 1 ♂, T. & K. Nupponen leg.; Russia, Altai Mountains, 50° 16-20' N 87° 50-55' E, 2000-2500 m a.s.l., Kuraisky hrebet, 27-VI-2000, 3 ♂♂, T. & K. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 1/2-X-2002 (♂), 1/7-X-2002 (♀), 2/8-X-2006 (♀), 1/4-I-2010 (♂). Five further genitalia preparations (4 ♂♂, 1 ♀) preserved in glycerol. DNA samples (Lepid. Phyl., green labels): KN00218 (♂, Buryatia), KN00219 (♂, Buryatia), KN00220 (♂, Buryatia), KN00221 (♂, Altai), KN00222 (♂, Altai), KN00223 (♀, Buryatia), KN00224 (♀, Buryatia).

Remarks: *Scythris felixi* Bengtsson & Sutter, 1996 was described from North Mongolia on the basis of one male and one female (BENGTTSSON & SUTTER, 1996). The specimens were collected from different localities, but considered to be conspecific as they were alike by the external appearance (Bengt Bengtsson, pers. comm.). Later on, I collected further material of the taxon during my expeditions to southern Siberia: four males from the Altai Mountains (NUPPONEN & NUPPONEN, 2001), and a long series of males and few females from southern Buryatia (NUPPONEN, 2003, 2007). While dissecting the Buryatian specimens, I noticed that the male genitalia fit well those of the holotype of *S. felixi*, but the female genitalia are completely different from those of the female paratype of *S. felixi*. As the majority of the Buryatian specimens - including all females - were collected in a small patch on a single steppe slope, I was convinced that the males and females belong to the same

taxon. With kind help of Bengt Bengtsson, I examined the type material of *S. felixi*, but because of scarcity of material from Mongolia we had no reliable tools to solve the problem. Thus, we decided to leave the case to be solved in the future.

During recent years, determination of difficult species by DNA barcode sequencing has become available in large scale. The method is also very useful for matching males and females correctly. So, I returned back to this unresolved case, and sent a few of my specimens for barcoding. As a result, the barcodes of Buryatian males and females are identical, and there is no doubt that they belong to the same taxon - *S. felixi*. The female of *S. felixi* is illustrated as *Scythris* sp. 2 in NUPPONEN (2003: 44, Fig. 43). The female genitalia are illustrated in Figs. 12-13. For further notes on the species, see BENGTTSSON & SUTTER (1996) and NUPPONEN (2003). *S. felixi* is placed in the *laminella* species-group, and the shape of the female genitalia of the Buryatian specimens support this opinion. By contrast, both the external appearance and the genitalia of the female paratype of *S. felixi* reveal that the moth belongs to the *terekholensis* species-group. The specimen is possibly conspecific with *S. erinacella* Nupponen, 2003, but this should be confirmed by the DNA analysis of both taxa.

Scythris martini Bengtsson, 1991

Spain, prov. Cuenca, Fuentes village 7 km ESE, 970-1100 m a.s.l., 21-V-2007, 1 ♂, 1 ♀, K. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 2/7-I-2009 (♀), 3/7-I-2009 (♂); Spain, prov. Teruel, Monteagudo del Castillo, 1530-1610 m a.s.l., 14-VI-2008, 1 ♂, 2 ♀♀, K. Nupponen leg. One genitalia preparation (♂) preserved in glycerol.

Distribution: Spain.

Remarks: The previously unknown female genitalia of the species are illustrated and described below. For further notes on the *martini* species-group, see BENGTTSSON (1997) and NUPPONEN (2011).

Female genitalia (Figs. 17-18): Sterigma large and weakly sclerotized, forming a longitudinal, chute-shaped cross section at middle of segment VIII; ostium oval, situated at posterior margin of sterigma. Sternum VII rectangular, 1.5 x wider than high, posterior margin incurvate. Apophyses anteriores directed anterolaterally, 0.1 x length of long apophyses posteriores.

Scythris nieukerkeni Bengtsson, 1989

Spain, prov. Teruel, Albarracín, 5 km E, 1050-1150 m a.s.l., 16-V-2004, 1 ♂, 2 ♀♀, T. Nupponen leg.; Spain, 40° 27' N 1° 02' W, Teruel 13 km N, 975-1000 m a.s.l., 29-V-2006, 1 ♂, T. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1/24-II-2013 (♀). One genitalia preparation preserved in glycerol.

Distribution: Spain.

Remarks: The previously unknown female genitalia of the species are illustrated and described below. The female genitalia illustrated by BENGTTSSON (1997: 271, Fig. 348 [slide: BÅB 2855]) as *S. langohri* Passerin d'Entrèves & Vives, 1990 are actually those of *S. nieukerkeni*. The identity of the female of *S. langohri* was regarded as uncertain, since the male was not recorded in the locality (BENGTTSSON 1997: 118). However, a male of *S. nieukerkeni* was found in the locality together with the female considered as *S. langohri* (see BENGTTSSON, 1997: 196, Plate 9, Figs 6 & 19). The female of *S. nieukerkeni* is sufficiently separated from the other superficially similar species by the underside of the hindwings, which are blackish brown at basal 2/3.

Female genitalia (Fig. 19): Sterigma triangular, anteriorly incurved; posteriorly a cylindrical sclerotization; ostium small, heart-shaped, situated subapically at sterigma. Sternum VII subrectangular, twice wider than high; posterior margin straight, anterior margin medially concave. Apophyses posteriores 2 x length of apophyses anteriores.

Scythris paelopyga (Staudinger, 1880)

Turkey, 38° 10-14' N 31° 12-19' E, prov. Konya, Aksehir 30 km SW, Sultan Daglari, 1100-1150

m a.s.l., 1-VIII-1997, 27 ♂♂, 11 ♀♀, 8-VI-2002, 1 ♂, T. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 3/25-IV-1998 (♂), 1/10-V-1998 (♀). Two genitalia preparations preserved in glycerol.

Distribution: Turkey.

Remarks: The moth is illustrated for the first time (Fig. 4), and the previously unknown female genitalia of the species are illustrated and described below. For further notes on the species, see PASSERIN d'ENTRÈVES & ROGGERO (2008).

Female genitalia (Fig. 18): Ostium roundish, rather large. Sterigma labiate, subtriangular and slightly asymmetrical, attached to ventral rim of ostium. Sternum VII rectangular, 1.5 x wider than high, posterior margin slightly wavy. Apophyses anteriores anterolaterally directed and very short. Apophyses posteriores long.

Scythris pseudolocustella Passerin d'Entrèves & Vives, 1990

Spain, prov. Almería 20 km N, 320-360 m a.s.l., 23-IV-2009, 10 ♂♂ 8 ♀♀, 26-IV-2009, 14 ♂♂ 4 ♀♀, T. & K. Nupponen leg.; Ibidem, 24-IV-2012, 7 ♂♂ 4 ♀♀, 13-IV-2013, 2 ♂♂, T. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 1/24-I-2010 (♀), 5/19-II-2012 (teratological ♂).

Distribution: S Spain.

Remarks: The previously unknown female genitalia of *S. pseudolocustella* are illustrated and described below. They are close to those of *S. subfasciata* (Staudinger, 1880), but differ by a more or less symmetrical sternum VII and almost straight anterior margin of the sterigma (deeply incurved in *S. subfasciata*).

The genitalia of one male are teratological. The abdominal segment VIII is normally developed, as well as the tegumen and uncus, and the gnathos is just swollen a little. By contrast, the valvae are separated from tegumen, reduced and fused to a sclerotized pouch, and the phallus is shortened and bent (Fig. 19).

Female genitalia (Fig. 20): Sterigma large, quadrangular; posterior margin medially deeply concave. Sternum VII pentagonal, posterior corners rounded. Apophyses anteriores half-length of apophyses posteriores.

Scythris rubioi (Agenjo, 1962)

Spain, prov. Cuenca, Fuentes village 7 km ESE, 970-1100 m a.s.l., 12-VI-2008, 1 ♂, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 2/20-XI-2008.

Distribution: C Spain.

Remarks: The species was previously known only by the holotype. The habitat is a steppe-like xerothermic gravelly slope with plenty of *Thymus* and *Helianthemum*. The external appearance of the moth is illustrated for the first time (Fig. 21). Wing span of the present specimen is 10 mm. Externally *S. rubioi* may be separated from other small, dark scythridids by narrow dull ash-brown forewings with sparsely scattered whitish fuscous scales in fold and at apical third. Redescription of the male genitalia is given below (cf. BENGTSSON, 1997: 157).

Male genitalia (Figs. 23-24): Asymmetrical. Uncus robust, hammer-shaped, apically strongly sclerotized and laterally extended. Gnathos longer than valva, slender and slightly sigmoid, basally swollen, tip shallowly hooked. Phallus 0.7 x length of valva, basically bottle-shaped, apical half asymmetrical, strongly sclerotized and tapered, tip bent. Tegumen with narrow posterolateral processes. Valvae symmetrical, knife-shaped with straight ventral margin; apical half sparsely bristled. Sternum VIII rectangular, 2.5 x wider than high. Tergum VIII subquadrangular; one posterior corner with shallow sclerotized patch, the other one widely sclerotized and extended with one digitate and one swollen and apically hooked process; lateral margins folded, anterior margin slightly concave.

Scythris sp.

Turkey, prov. Ankara, 40° 07' N 32° 01' E, 500 m, Köroğlu Dagları, Beypatsari 10 SE, 12-IX-

1983, 1 ♀, Werner Wolf leg. (coll. T. & K. Nupponen). Genitalia slide: K. Nupponen prep. no. 2/19-II-2012. (Figs. 6-25).

Distribution: C Turkey.

Remarks: The specimen belongs to an undescribed taxon, which is known by two females from Central Turkey. The genitalia of the other specimen are mounted on slide BÅB 588X (Bengt Bengtsson, pers. comm.). The species will be formally described later in another context.

New records

The species are listed alphabetically in generic and specific order. The known distribution of each species is given.

Enolmis seeboldiella (Agenjo, 1951)

Spain, prov. Huesca 50 km E, 3-VI-2006, 1 ♂, T. Nupponen leg.; Spain, prov. Zaragoza, Los Monegros, Gelsa 8 km NE, 270 m a.s.l., 21-V-2007, 2 ♂♂, K. Nupponen leg.

Distribution: Spain.

Scythris acipenserella K. Nupponen & T. Nupponen, 2000

Spain, prov. Soria, Soria 30 km SW, El Temeroso, 1000-1080 m a.s.l., 26-VI-2012, 1 ♂, T. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1/4-I-2013.

Distribution: Russia (S Ural, Altai Mts), Spain.

Remarks: The species has a disjointed distribution, with isolated populations in the Iberian Peninsula. In Spain *S. acipenserella* was hitherto known only from Sierra Nevada (Nupponen *et al.* 2003). The present record extends its range to Central Spain. The male genitalia of the Spanish specimen are illustrated (Fig. 26). The genitalia are quite complex, and it is difficult to mount them in a visual position. The overlapped organs become easily misinterpreted, particularly the phallus. Contrary to the original description (see NUPPONEN *et al.*, 2000), the phallus is thick and short (as long as diameter of the valva), straight and subapically sharply tapered.

Scythris alceella Junnilainen, 2002

Turkey, 38° 34-43' N 34 46-58' E, prov. Nevsehir, Ürgüp 3 km N, 1000-1200 m a.s.l., 10-VI-2002, 1 ♀, T. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1/19-II-2012.

Distribution: C Turkey.

Remark: The species was previously known by two type specimens, which were collected from the same region as the present specimen.

Scythris basistrigella (Staudinger, 1880)

Turkey, 38° 10-14' N 31° 12-19' E, prov. Konya, Aksehir 25 km SW, Sultan Daglari, 1400-1600 m a.s.l., 27-VII-1997, 1 ♂, T. Nupponen leg.; Turkey, 38° 34-43' N 34° 46-58' E, prov. Nevsehir, Ürgüp 3 km N, 1000-1200 m a.s.l., 12-VI-2002, 1 ♀, T. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 5/25-IV-1998 (♂).

Distribution: Turkey.

Scythris bengtssoni Patočka & Liška, 1989

Russia, S Ural, 51 15' N 58 08' E, 340 m a.s.l., Orenburg district, Orsk 40 km W, near Guberlja village, 26-VI-2003, 2 ♂♂, 7-VI-2011, 1 ♂, K. Nupponen leg.; Russia, Altai Mts., 50 35-40' N 86 20-30' E, 700-800 m a.s.l., near Kupchehen village, 15-VII-2001, 1 ♂, K. Nupponen leg. Genitalia preparation preserved in glycerol.

Distribution: Austria, Czech Republic, Hungary, Russia (S Ural, Altai, Far East), Slovakia, Switzerland.

Remarks: New to the Altai range. The Altaian specimen is the only one known from Siberia.

Scythris deprinsi Bengtsson, 2005

Turkey, 38° 34'-43' N 34° 46'-58' E, prov. Nevsehir, Ürgüp 5 km N, 1000-1200 m a.s.l., 29-VII-1997, 1 ♂, T. Nupponen leg. Genitalia preparation preserved in glycerol.

Distribution: Turkey.

Scythris jaeckhi Bengtsson, 1989

Greece, prov. Achaia, Peloponnesos, Mt. Chelmos, 2100 m a.s.l., 27-VI-2011, 8 ♂♂, 2-VII-2011, 5 ♂♂, 3 ♀♀, T. Nupponen leg.

Distribution: Armenia, Greece, Turkey.

Scythris lempkei Bengtsson & Langohr, 1989

Italy, Sardinia, Gennargentu Mts., Punta la Marmora 3 km S, 1300 m a.s.l., 29-VI-2007, 1 ♀, 30-VI-2007, 4 ♂♂, 3 ♀♀, T. Nupponen leg. One genitalia preparation preserved in glycerol.

Distribution: France, Spain, Mallorca, Sardinia.

Remark: New to Sardinia.

Scythris luxatiella K. Nupponen & Kaitila, 2000

Russia, S Ural, 51° 15' N 58° 08' E, 340 m a.s.l., Orenburg district, Orsk 40 km W, near Guberlja village, 7-VI-2011, 1 ♂, 1 ♀, K. Nupponen leg.

Distribution: Russia (S Ural).

Scythris mariannae Bengtsson, 1991

Spain, prov. Teruel, Corbalan village 1.5 km E, 1290 m a.s.l., 14-VI-2008, 1 ♂, 1 ♀, K. Nupponen leg. One genitalia preparation (♂) preserved in glycerol; Spain, prov. Cuenca, Fuentes village 7 km, ESE, 970-1100 m a.s.l., 10-VI-2008, 1 ♂, K. Nupponen leg.; Spain, prov. Soria, Soria 30 km SW, El Temeroso, 1000-1080 m a.s.l., 26-VI-2012, 1 ♂, T. Nupponen leg.

Distribution: Spain, France.

Remarks: In Spain *S. mariannae* was hitherto known only from a few localities in Andalusia. However, the species inhabits mountain ranges of Central Spain too.

Scythris mediella (Constant, 1885)

Italy, Sardinia, Gennargentu Mts., Bruncu Spina 1 km N, 1600-1800 m a.s.l., 3-VII-2007, 29 ♂♂, 11 ♀♀, T. Nupponen leg. One genitalia preparation preserved in glycerol.

Distribution: Corsica, Sardinia.

Scythris obscurella (Scopoli, 1763)

China, Inner Mongolia, 20 km NE from Arxan, 1200 m a.s.l., 30-VI-2008, 5 ♂♂, A. Floriani & A. Saldaitis leg.; China, Inner Mongolia, Big Chingan Mts., Arxan loc., 1500 m a.s.l., 8-9-VII-2008, 9 ♂♂, A. Floriani & A. Saldaitis leg.; China, Inner Mongolia, W slopes of Big Chingan Mts., near Dular loc., 1000 m a.s.l., 3-VII-2008, 2 ♂♂, A. Floriani & A. Saldaitis leg.

Distribution: Transpalearctic.

Remarks: New to China.

Scythris omelkoi Sinev, 2001

Russia, Far East, Primorskij Kraj, Shkotovo district, Anisimovka, 14-VII-1994, 1 ♂, N. Savenkov leg. (coll. T. & K. Nupponen). Genitalia preparation preserved in glycerol.

Distribution: Russia (S Siberia, Far East).

Scythris parafuscoaenea Bengtsson, 1991

Spain, prov. Teruel, Monteagudo del Castillo, 1530-1610 m a.s.l., 16-VII-2010, 8 ♂♂, 24-VI-2012, 1 ♂, 25-VI-2012, 3 ♂♂, 17-VII-2012, 1 ♂, T. Nupponen leg. One genitalia preparation (♂)

preserved in glycerol; Spain, prov. Soria, Soria 30 km SW, El Temeroso, 1000-1080 m a.s.l., 26-VI-2012, 1 ♂, 1 ♀, T. Nupponen leg. One genitalia preparation (♂) preserved in glycerol.

Distribution: France, Morocco, Portugal, Spain.

Scythris pudorinella (Möschler, 1866)

Russia, S Ural, 51° 15' N 59° 09' E, 220 m a.s.l., Orenburg district, Kumak river, 21-V-2012, 1 ♂, 22-V-2012, 1 ♂, K. Nupponen leg.

Distribution: Greece, Kazakhstan, Romania, Russia (S Ural, Lower Volga region, Altai Mts.), Turkey, Uzbekistan.

Scythris schawerdae Rebel, 1931

Italy, Sardinia, Gennargentu Mts., Punta la Marmora 3 km S, 1300 m a.s.l., 29-VI-2007, 2 ♂♂, 30-VI-2007, 2 ♂♂, T. Nupponen leg. One genitalia preparation preserved in glycerol; Italy, Sardinia, Gennargentu Mts., Bruncu Spina 1 km N, 1600-1800 m a.s.l., 3-VII-2007, 2 ♂♂, T. Nupponen leg.

Distribution: Corsica, Sardinia.

Remarks: New to Sardinia.

Scythris sublamina K. Nupponen & T. Nupponen, 2000

Russia, S Ural, 51° 15' N 59° 09' E, 220 m a.s.l., Orenburg district, Kumak river, 22-V-2012, 1 ♂, K. Nupponen leg.

Distribution: W Kazakhstan, Russia (S Ural, C Volga region).

Scythris tenuisquamata (Staudinger, 1880)

Turkey, 38° 34-43' N 34° 46-58' E, prov. Nevşehir, Ürgüp 3 km N, 1000-1200 m a.s.l., 30-VI-1998, 1 ♂, 10-VI-2002, 18 ♂♂, 1 ♀, 12-VI-2002, 4 ♂♂, T. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 2/15-XI-1998. One genitalia preparation preserved in glycerol.

Distribution: Turkey.

Scythris traugotti Bengtsson, 1991

Spain, prov. Almería, 20 km N, 320-360 m a.s.l., 3-VII-2003, 3 ♂♂, 19-V-2004, 3 ♂♂, T. Nupponen leg.; Spain, prov. Granada, Baza 12 km NW, 14-VI-2004, 2 ♂♂, T. Nupponen leg.; Spain, prov. Granada, Río de Baza, 17-VII-2010, 1 ♂, T. Nupponen leg.; Spain, prov. Granada, Baza 15 km NE, 22-VI-2012, 5 ♂♂, 3 ♀♀, T. Nupponen leg.; Spain, prov. Teruel, Monteagudo del Castillo, 1530-1610 m a.s.l., 24-VI-2012, 1 ♂, T. Nupponen leg.

Distribution: Spain.

Remarks: The species was hitherto known only from Andalusia, southern Spain. The discovery of the species from Teruel considerably extends its range in the Iberian Peninsula.

Scythris tuzensis Bengtsson, 2005

Turkey, prov. Ankara, 40° 07' N 32° 01' E, 500 m a.s.l., Köroğlu Dağları, Beypazari 10 SE, 12-IX-1983, 1 ♂, Werner Wolf leg. (coll. T. & K. Nupponen). Genitalia preparation preserved in glycerol.

Distribution: Armenia, Turkey.

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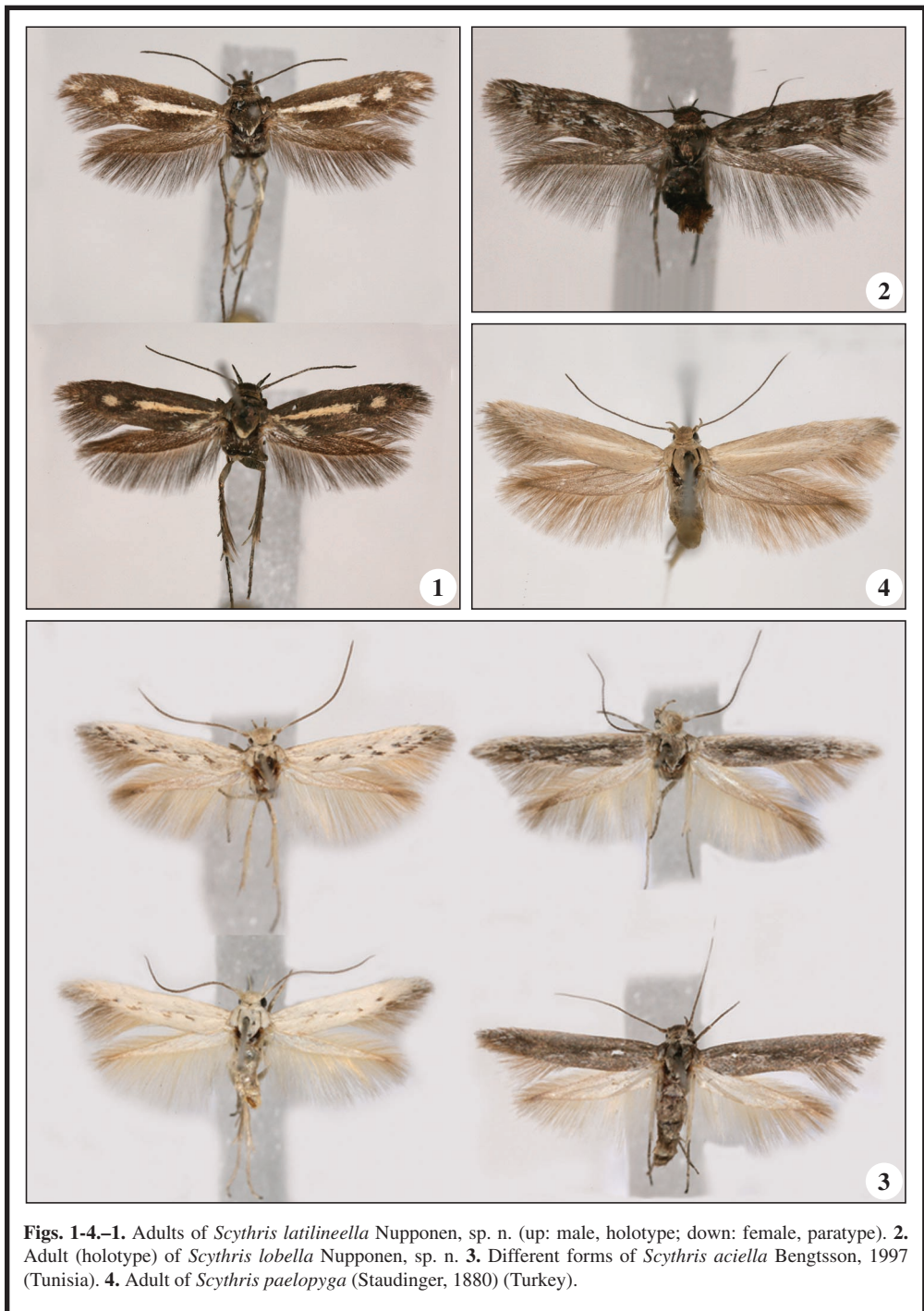
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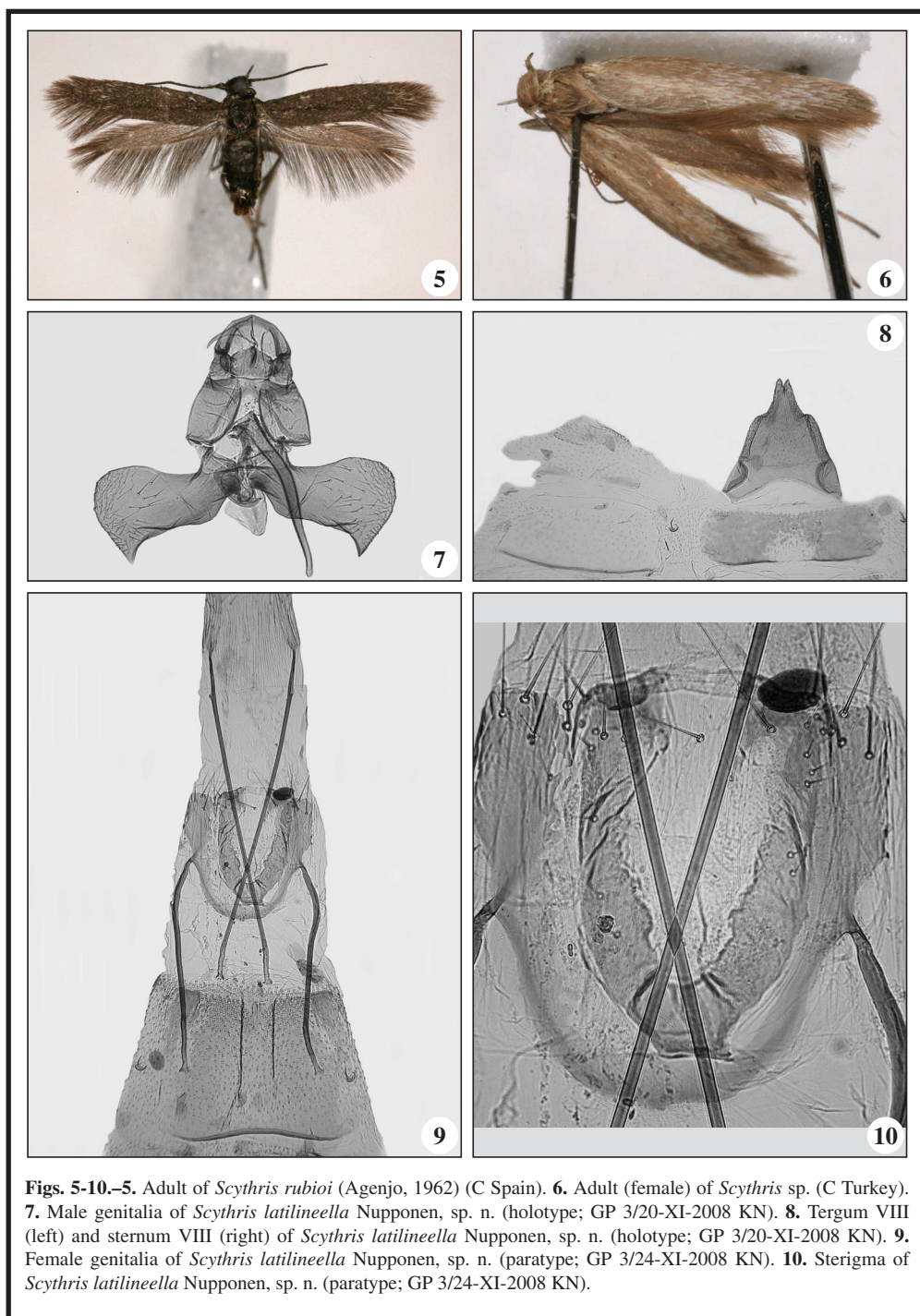
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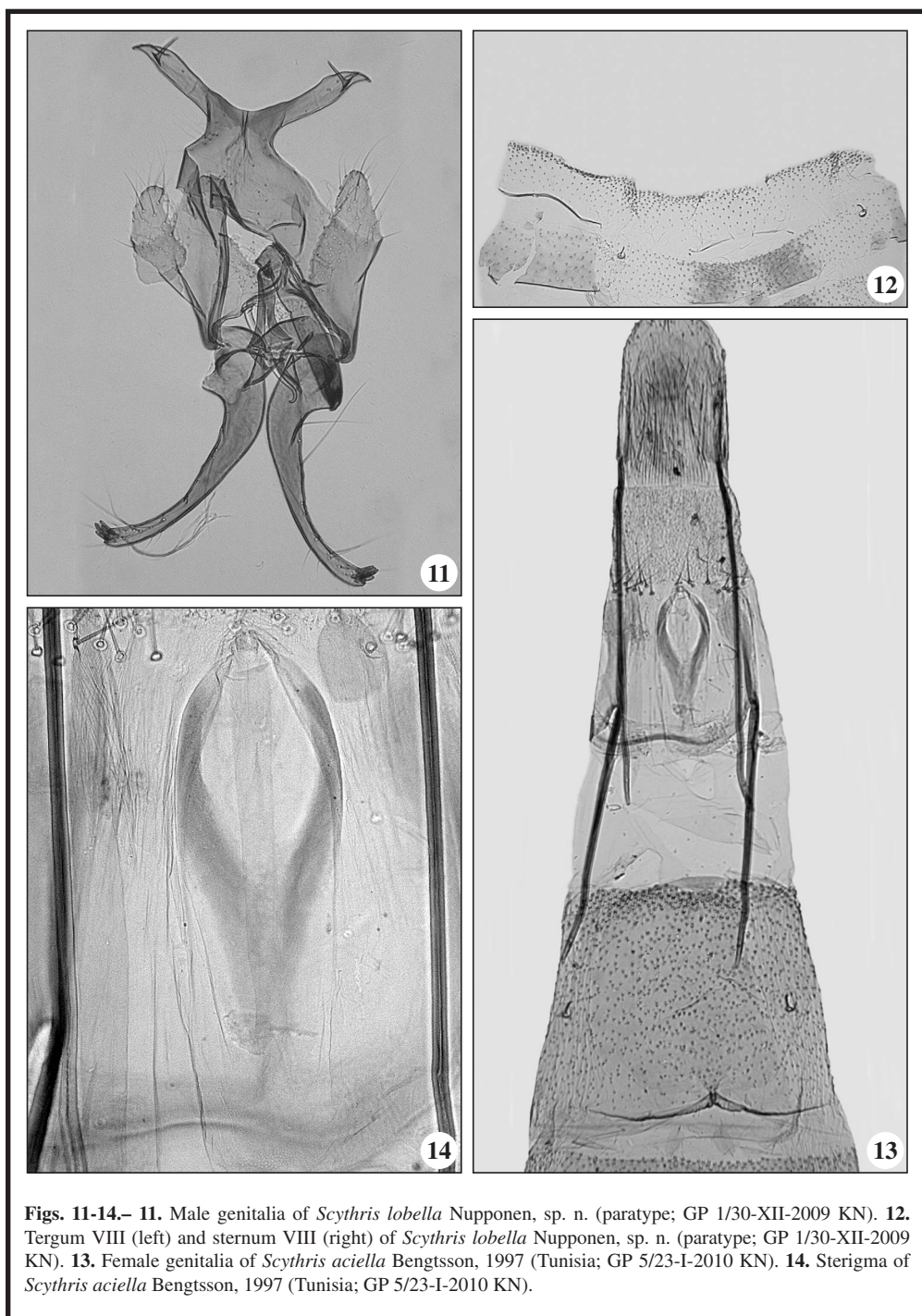
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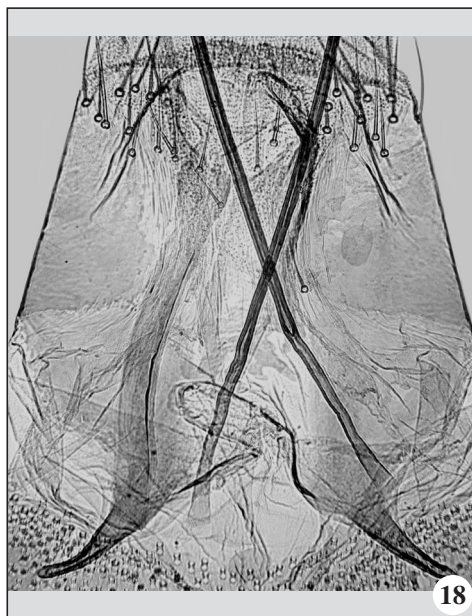
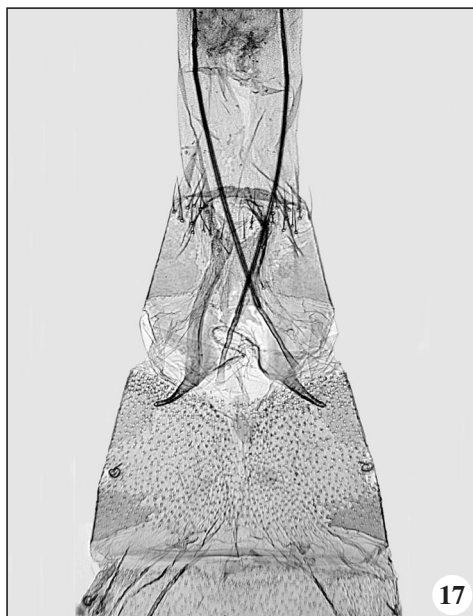
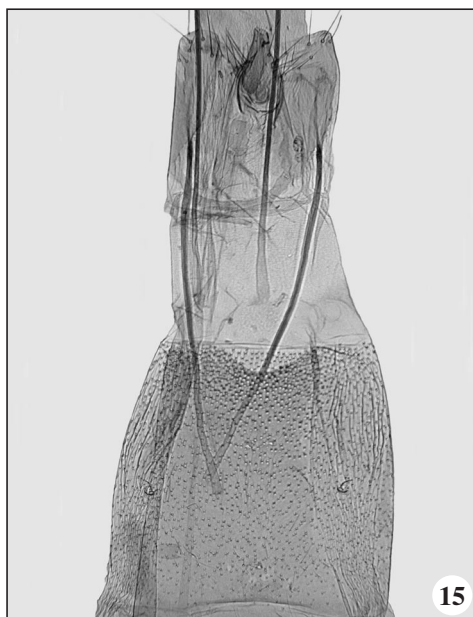


Figs. 1-4.—1. Adults of *Scythris latilineella* Nupponen, sp. n. (up: male, holotype; down: female, paratype). 2. Adult (holotype) of *Scythris lobella* Nupponen, sp. n. 3. Different forms of *Scythris aciella* Bengtsson, 1997 (Tunisia). 4. Adult of *Scythris paelopyga* (Staudinger, 1880) (Turkey).

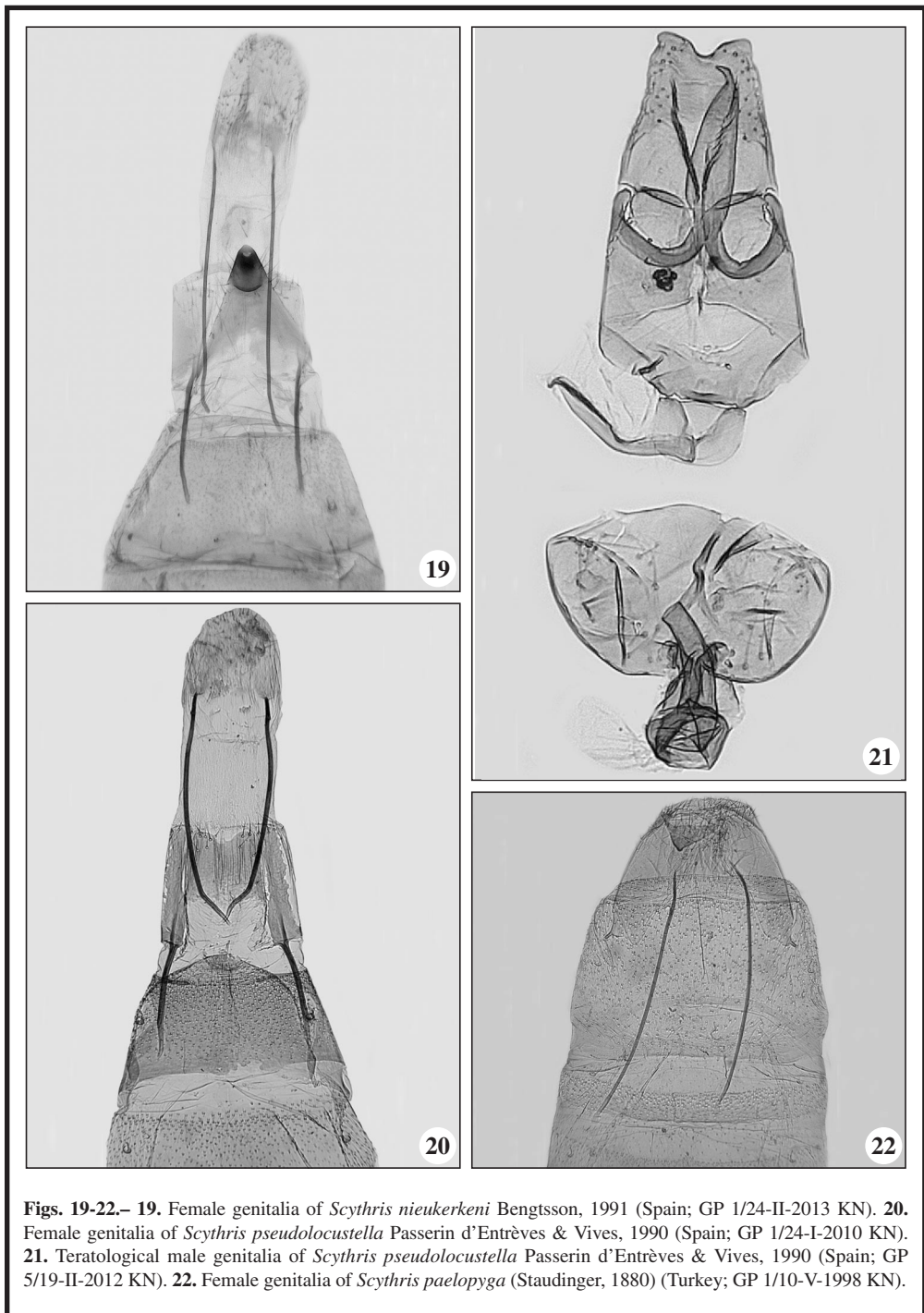




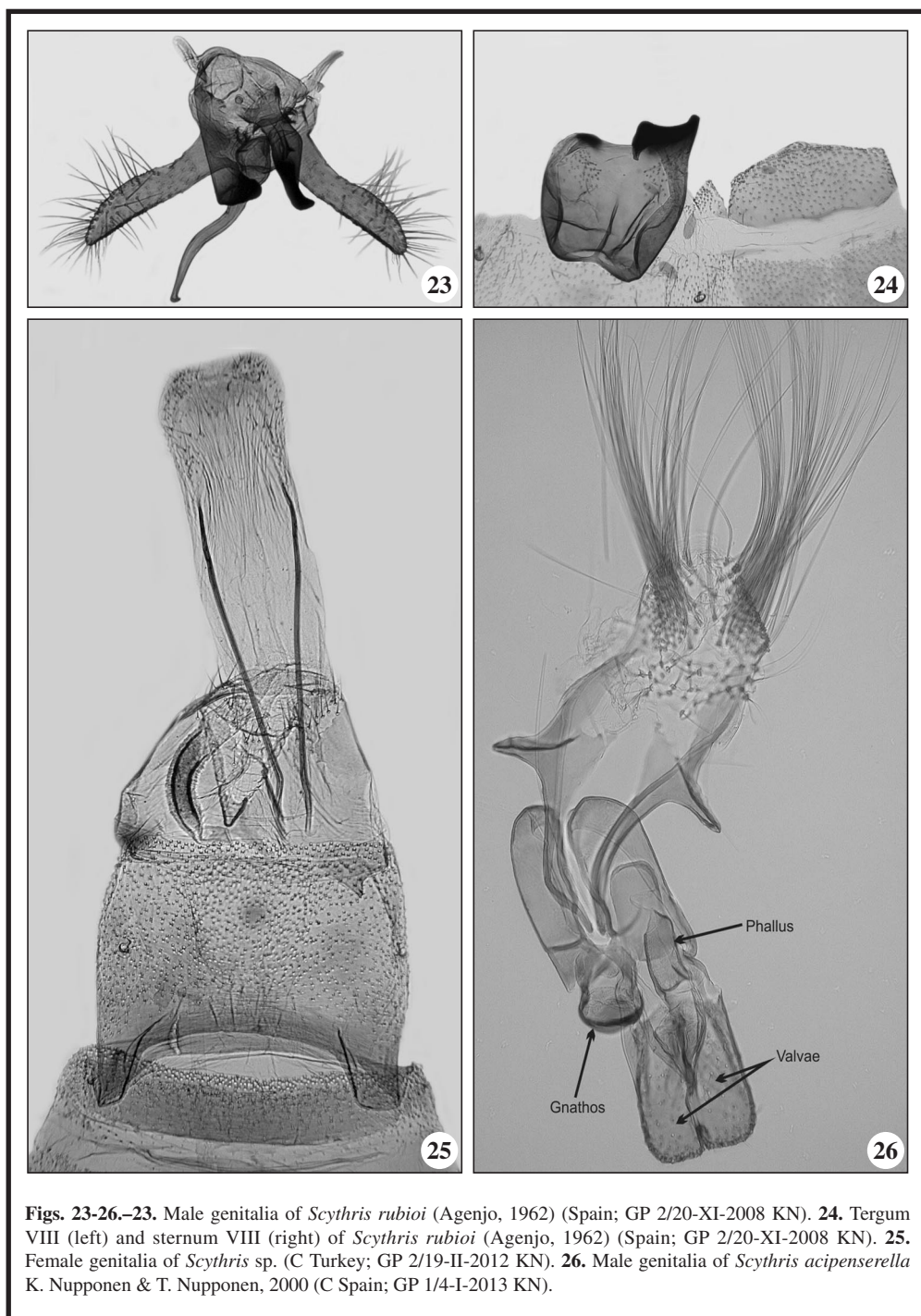
Figs. 11-14. 11. Male genitalia of *Scythris lobella* Nupponen, sp. n. (paratype; GP 1/30-XII-2009 KN). 12. Tergum VIII (left) and sternum VIII (right) of *Scythris lobella* Nupponen, sp. n. (paratype; GP 1/30-XII-2009 KN). 13. Female genitalia of *Scythris aciella* Bengtsson, 1997 (Tunisia; GP 5/23-I-2010 KN). 14. Sterigma of *Scythris aciella* Bengtsson, 1997 (Tunisia; GP 5/23-I-2010 KN).



Figs. 15-18.– 15. Female genitalia of *Scythris felixi* Bengtsson & Sutter, 1996 (S Buryatia; GP 1/7-X-2002 KN). 16. Sterigma of *Scythris felixi* Bengtsson & Sutter, 1996 (S Buryatia; GP 1/7-X-2002 KN). 17. Female genitalia of *Scythris martini* Bengtsson, 1991 (Spain; GP 2/7-I-2009 KN). 18. Sterigma of *Scythris martini* Bengtsson, 1991 (Spain; GP 2/7-I-2009 KN).



Figs. 19-22.— 19. Female genitalia of *Scythris nieukerkeni* Bengtsson, 1991 (Spain; GP 1/24-II-2013 KN). 20. Female genitalia of *Scythris pseudolocustella* Passerin d'Entrèves & Vives, 1990 (Spain; GP 1/24-I-2010 KN). 21. Teratological male genitalia of *Scythris pseudolocustella* Passerin d'Entrèves & Vives, 1990 (Spain; GP 5/19-II-2012 KN). 22. Female genitalia of *Scythris paelopyga* (Staudinger, 1880) (Turkey; GP 1/10-V-1998 KN).



Figs. 23-26.—23. Male genitalia of *Scythris rubioi* (Agenjo, 1962) (Spain; GP 2/20-XI-2008 KN). 24. Tergum VIII (left) and sternum VIII (right) of *Scythris rubioi* (Agenjo, 1962) (Spain; GP 2/20-XI-2008 KN). 25. Female genitalia of *Scythris* sp. (C Turkey; GP 2/19-II-2012 KN). 26. Male genitalia of *Scythris acipenserella* K. Nupponen & T. Nupponen, 2000 (C Spain; GP 1/4-I-2013 KN).