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Notes on Scythrididae from the Turanian region, with one new synonym and descriptions of seven new species (Lepidoptera: Scythrididae)

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Abstract

A list of 20 species embracing 238 specimens of the family Scythrididae from the Turanian region is presented. The material was collected during 27-IV-21-V-2010 and 15-IX-11-X-2010 in Kazakhstan, and 17-VII-8-VIII-2010 in Kyrgyzstan. Seven new species are described: *Bactrianoscythris fenestratella* Nupponen, sp. n., *Scythris angustibasella* Nupponen, sp. n., *S. astacoides* Nupponen, sp. n., *S. haverineni* Nupponen, sp. n., *S. polella* Nupponen, sp. n., *S. salinella* Nupponen, sp. n. and *S. trifurcella* Nupponen, sp. n. *Scythris turanica* Nupponen, 2010 is synonymized with *S. cirra* Falkovitsh, 1969, syn. n. Seven species are reported as new to Kazakhstan and two as new to Kyrgyzstan. The known distribution range of each species is given.
KEY WORDS: Lepidoptera, Scythrididae, new species, new synonym, first records, Turanian region, Kyrgyzstan, Kazakhstan.

Notas sobre Scythrididae de la región de Turan, con una nueva sinonimia y descripción de siete nuevas especies (Lepidoptera: Scythrididae)

Resumen

Se presenta una lista de 20 especies aceptadas de 238 especímenes de la familia Scythrididae de la región de Turan. El material fue colectado durante el 27-IV / 21-V-2010 y 15-IX / 11-X-2010 en Kazajstán, y el 17-VII / 8-VIII-2010 en Kyrgyzistán. Se describen siete nuevas especies: *Bactrianoscythris fenestratella* Nupponen, sp. n., *Scythris angustibasella* Nupponen, sp. n., *S. astacoides* Nupponen, sp. n., *S. haverineni* Nupponen, sp. n., *S. polella* Nupponen, sp. n., *S. salinella* Nupponen, sp. n. y *S. trifurcella* Nupponen, sp. n. *Scythris turanica* Nupponen, 2010 es sinonimia de *S. cirra* Falkovitsh, 1969, syn. n. Siete especies se citan como nuevas para Kazajstán y dos como nuevas para Kyrgyzistán. Se da el rango de distribución para cada especie.
PALABRAS CLAVE: Lepidoptera, Scythrididae, nuevas especies, nueva sinonimia, primeras citas, región de Turan, Kyrgyzistán, Kazakstán.

Introduction

The scythridid fauna of the Turanian region was subsequently treated and published data on the subject listed by NUPPONEN (2009, 2010). The present article is based on new materials of Scythrididae collected during the Finnish-Estonian expedition in Kyrgyzstan in July-August 2010 and two Finnish-Russian expeditions in southern and southwestern Kazakhstan in May and September-October 2010.

Material and methods

The Finnish-Estonian expedition to Kyrgyzstan was made during 17-VII / 7-VIII-2010. The investigated area is situated in southern and central parts of the country, Alai and Trans-Alai Mountains and SW part of the Tien-Shan Mountains (Fig. 1). The habitats were alpine meadows, mountain steppes and semideserts at high altitudes up to 4200 m a.s.l. (Figs. 2-4). The Finnish-Russian expeditions to Kazakhstan were made during 27-IV / 21-V-2010 and 15-IX / 11-X-2010. The investigated areas covered a large area in southern and western parts of the country, from Ustyurt plateau and Emba River basin eastwards to the Karatau Mountains, Syr-Darya valley and NE Kyzylkum desert, altogether 12400 km by car (Fig. 1). The habitats in Kazakhstan were mainly various kinds of steppes and deserts at low altitudes (down to -4 m a.s.l. in Solyenyi spring, SW Kazakhstan), but also tugai woods and saline semideserts (Fig. 5-7).

Altogether 20 species embracing 238 specimens of scythridids were recorded during the trips. The majority of the material was collected by sweeping and netting during daytime. Only a few specimens came to artificial light at night.

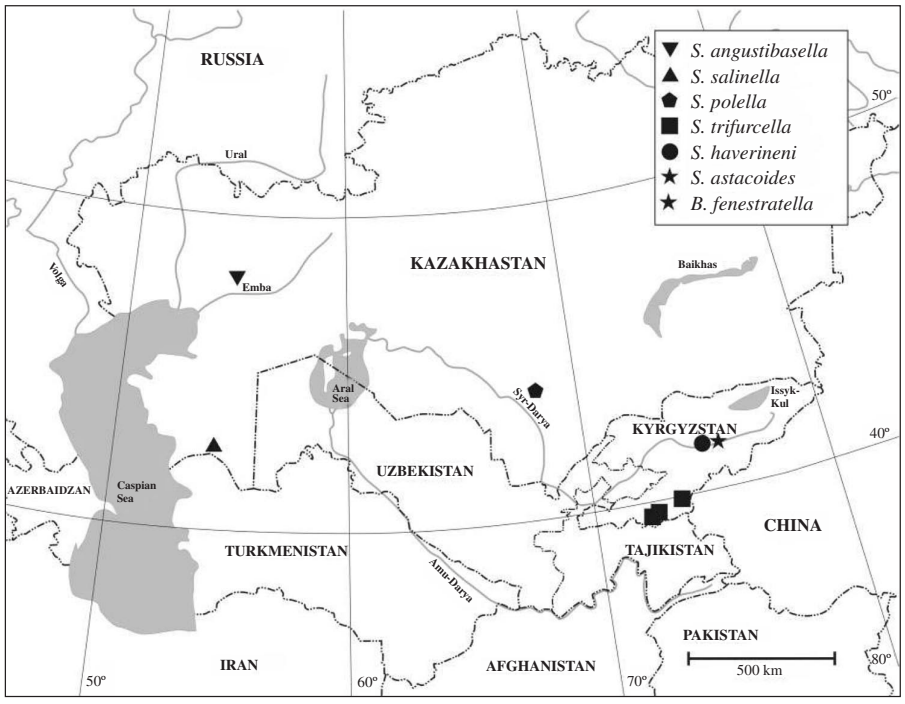

Fig. 1.– Collecting sites of the species newly described in the present article.

List of scythridid species

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

Apostibes griseolineata Walsingham, 1907

S Kazakhstan, 43º 47' 03" N 68º 03' 15" E, 540 m, Karatau mts., Turkestan town 50 km N, 8-V-2010, 1 ♂, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 4 / 30-XI-2010.

Distribution: Afghanistan, Algeria, Israel, Kazakhstan, Libya, Saudi-Arabia, Tajikistan, Tunisia, Uzbekistan.

Remark: The species was recently reported as new to Kazakhstan from SW part of the country (NUPPONEN, 2010). The present record is the northernmost one known.

Bactrianoscythris fenestratella Nupponen, sp. n.

Type material. Holotype: ♂ (Fig. 8): Kyrgyzstan, 41º 25' 42.4" N 74º 55' 13.8" E, 1620 m, Naryn river valley, near Ak-Tal village, 3-VIII-2010, K. Nupponen leg. In coll. T. & K. Nupponen.

Paratypes 10 ♂♂, 1 ♀): Idem, 7 ♂♂, 1 ♀; Ibidem, 3-VIII-2010, 3 ♂♂, A. & A. Selin leg. Genitalia slides: K. Nupponen prep. no. 2 / 22-XI-2010 (♂), 6 / 30-XI-2010 (♀). In colls. T. & K. Nupponen and A. Selin.

Diagnosis: Externally *B. fenestratella* Nupponen, sp. n. is a typical member of the genus *Bactrianoscythris* (see PASSERIN d'ENTRÈVES & ROGGERO, 2009). It most resembles *B. khinjani* Passerin d'Entrèves & Roggero, 2009 and *B. ginevrae* Passerin d'Entrèves & Roggero, 2009, but differs by an overall darker brown colouration of the wings, from the latter also by a distinct hyaline spot on the hindwings. In the male genitalia of *B. fenestratella*, a well developed uncus separates it from all other species of the genus except *B. ginevrae*. *B. fenestratella* differs from *B. ginevrae* by presence of a medioventral semicircular protrusion and absence of a sharp projection in the inner distal margin of the valvae, and by robust, club-shaped distal prongs of sternum VIII. In the female genitalia of *S. fenestratella*, a robust U-shaped sterigma is a diagnostic character.

Description: Wingspan 15-17 mm. Head, collar, neck tuft, haustellum, scape and thorax olive brown mixed with creamy white. Labial palp: segment I creamy white, II and III olive brown with scattered creamy white scales. Abdomen in male dorsally olive brown, ventrally creamy white; in female dorsally black except segments VI-VIII pale beige, ventrally creamy white, anal tuft yellowish white. Legs olive brown, more (hindlegs) or less (fore- and midlegs) mixed with creamy white. Forewing olive brown; creamy white longitudinal streak in midwing from base to 0.5, from 0.5 towards cell end gradually mixed by the ground colour; four indistinct black spots: at 0.4 below fold, at 0.55 above fold, above tornus and at cell end. Hindwing fuscous in male, black in female; a hyaline spot at 0.25 from base in the middle of wing.

Male genitalia (Figs. 18-19): Uncus well developed, 1.75 times longer than broad, bifurcate, prongs broad and blunt at apex, dorsally attached to a pouch-like complex structure. Gnathos asymmetrical; basal portion posterolaterally elongated, medioposterior extension furrowed; distal arm basally broad, distal 2/3 slender and downcurved, apex pointed. Tegumen triangular. Juxta basally triangular, distally elongated toward joint to base of aedeagus. Aedeagus long and slender, 1.5 x length of valva, downcurved, distal 0.1 bent. Valvae slightly asymmetrical, long and rectilinear, basal half folded at middle; ventral margin medially with semicircular protrusions; apex of valvae rounded, left one cut off, right one elongated at ventral margin. Vinculum broad, almost as long as tegumen, distal margin rounded. Sternum VIII triangular; apex bifid, prongs robust and club-shaped, *in situ* directed upwards, diverging when flattened on a slide; anterior margin with deep and wide V-shaped notch. Tergum VIII subrectangular, twice wider than high.

Female genitalia (Fig. 20): Sterigma strongly sclerotized, anterior portion broadly U-shaped, posterior shanks connected by rectangular and medially narrowed reinforcement. Ostium heart-shaped, situated at middle of sterigma. Ductus bursae long and straight, slightly distended at 0.25, posterior quarter wrinkled. Sternum VI quadrangular, medioposteriorly membranous. Tergum VI quadrangular, anterior margin concave. Apophyses posteriores 1.3 x length of apophyses anteriores.

Bionomy: The habitat is a saline semidesert with halophytic vegetation. The specimens came to artificial light at night.

Distribution: Kyrgyzstan (Tien-Shan Mountains at Naryn valley). Only known from the type locality.

Etymology: Lat. *fenestratus* = windowed. The species name alludes to a hyaline spot on the hindwings (Fig. 9).

Remarks: *B. fenestratella* Nupponen, sp. n. belongs to the recently established genus *Bactrianoscythris* Passerin d'Entrèves & Roggero, 2009, embracing now eight Palaearctic species. Based on characteristics in the male genitalia (a well developed uncus, shape of the valvae and the aedeagus), *S. ginevrae* Passerin d'Entrèves & Roggero, 2009 is the closest relative of *S. fenestratella*.

Scythris angustibasella Nupponen, sp. n.

Type material. Holotype: ♂ (Fig. 10): Kazakhstan, 47º 27' 24.1" N 55º 06' 45.9" E, 95 m, Emba river 40 km NW, Aktolagai chalk hills, 16-V-2010, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 2 / 30-XI-2010. In coll. T. & K. Nupponen.

Diagnosis: By the external appearance *S. angustibasella* Nupponen, sp. n. may be mixed with several small, brown scythridids. A pale ground colour of the forewings may help to identify the species, but possibly it only reflects a chalk white colour of the ground in the locality where the moth was discovered (Fig. 5). The male genitalia of *S. angustibasella* indicate its relationship with the *elenae* species-group, embracing three species. *S. angustibasella* is readily separated from those by the basally narrowed valvae, a slightly meandering aedeagus and a reduced basal plate of the gnathos.

Description: Wingspan 9.5 mm. Head, collar, neck tuft, haustellum, scape, thorax and legs pale brown mixed with creamy white. Labial palp creamy white, except lower surface of segment III pale brown. Abdomen dorsally blackish brown mixed with pale fuscous; ventrally dirty white; anal tuft dirty white. Forewing pale brown; scattered creamy white scales exist over the wing, more densely in midwing forming indistinct blotches at 0.4 in fold, above tornus and subapically; dark brown spots at 0.25, 0.5, at cell end and apically. Hindwing pale fuscous.

Male genitalia (Figs. 21-22): Uncus stout, Y-shaped, posterior branches rather short, sub-oval, connected to each other by transverse sclerotization. Gnathos with rather stout basal arms; distal arm basally thick, rapidly tapering at 1/3, distally slender, tip pointed and slightly bent, subapically a small longitudinal dorsal process. Aedeagus as long as valva, thick, slightly meandering, tip cut off. Valva almost straight, rather broad, subbasally narrowed, distal portion from 0.3 to 0.9 of constant width, apically tapered and more or less pointed at ventral margin. Vinculum broad, 0.75 x length of tegumen, distally rounded. Sternum VIII triangular, anterior margin widely concave; medioposteriorly a small notch. Tergum VIII broad, X-shaped due to large posterior and anterior indentations.

Female genitalia: Unknown.

Bionomy: The holotype was found in mid-May by sweeping on *Artemisia* in the afternoon sunshine. The habitat is a chalk slope (Fig. 5).

Distribution: W Kazakhstan. Only known from the type locality.

Etymology: Lat. *angustus* = narrow; *basis* = base. The species name alludes to the subbasally narrowed valvae in the male genitalia.

Remarks: *S. angustibasella* Nupponen, sp. n. is tentatively placed in the *elenae*-group of the genus *Scythris*. For further notes on the group, see NUPPONEN *et al.* (2000), NUPPONEN (2003), NUPPONEN *et al.* (2005).

Scythris astacoides Nupponen, sp. n.

Type material. Holotype: ♂ (Fig. 11): Kyrgyzstan, 41º 25' 42.4" N 74º 55' 13.8" E, 1620 m, Naryn river valley, near Ak-Tal village, 3-VIII-2010, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1 / 30-XI-2010. In coll. T. & K. Nupponen.

Diagnosis: *S. astacoides* Nupponen, sp. n. is a sibling species of an undescribed species from Afghanistan (PASSERIN d'ENTRÈVES & ROGGERO, *in prep.*). Externally *S. astacoides* differs from

that by less contrast pattern on the forewings. In the male genitalia of *S. astacoides*, diagnostic characters are distally pointed prongs of the uncus; broad and dorsally angulated valvae with larger amount of stout pegs at ventral margin. There exist similar stout pegs in the male genitalia of *S. nielseni* Passerin d'Entrèves & Roggero, 2004 and an undescribed species from Israel (Bengtsson, *in prep.*) as well, but these species are readily separated from the former two by a much smaller uncus and shape of the valvae.

Description: Wingspan 11 mm. Head, collar, neck tuft, haustellum, scape, thorax and legs pale fuscous, more or less mixed with paler scales. Labial palp creamy white, distal half mixed with pale brown. Abdomen dorsally fuscous; ventrally segments I-IV pale grey, terminal half creamy white, anal tuft creamy. Forewing ground colour creamy white, scattered pale grey and pale fuscous scales exist over the wing; indistinct fuscous blotches basally and subbasally at dorsum, in fold at 0.4, at tornus, and a little glossy one at cell end. Hindwing pale fuscous.

Male genitalia (Figs. 23-24): Uncus large and robust, bifurcate, prongs basally united, ventral side extended forming a subbasal flap; distal 2/3 tapered and slightly bent, tip pointed. Gnathos base posterolaterally extended, basal arms rather stout; distal arm rather short and thin, of constant width, tip blunt. Aedeagus as long as uncus, slender, basal half curved 30º, distal half straight, tip bent. Valvae spatulate, broad, ventral margin straight, dorsal margin angulated at middle, tip obliquely cut off; distal half of ventral margin with >20 long and stout sclerotized pegs. Vinculum small, semicircular. Sternum VIII subtrapezoid, posterior margin slightly concave, anterior margin with large trapezoid medial incision; transverse reinforcement near middle. Tergum VIII hexagonal, laterally elongate, anterior and posterior margins concave.

Female genitalia: Unknown.

Bionomy: The habitat is a saline semidesert with halophytic vegetation (Fig. 4). The specimen came to artificial light at night.

Distribution: Kyrgyzstan (Tien-Shan Mountains at Naryn valley). Only known from the type locality.

Etymology: The species name alludes to a robust uncus in the male genitalia, reminiscent of claws of a crab (*Astacus astacus*).

Remark: *S. astacoides* Nupponen, sp. n. is tentatively placed in the heterogeneous *pascuella* species-group.

Scythris asthena Falkovitsh, 1972

S Kazakhstan, 44º 31' 15" N 68º 38' 25" E, 195 m, Muyunkum sands, Suzak settlement 40 km N, 10-V-2010, 4 ♂♂, 2 ♀♀, K. Nupponen leg.; Kazakhstan, 46º 24' 22" N 59º 35' 30" E, 180 m, Bozoi village 60 km E, Aral sea shore 7 km N, 13-V-2010, 1 ♂, K. Nupponen leg.; Kazakhstan, 47º 16' 58" N 55º 35' 50" E, 55 m, Emba river bank, near Mijaly village, 18-V-2010, 3 ♂♂, 2 ♀♀, K. Nupponen leg. One genitalia preparation preserved in glycerol.

Distribution. Kazakhstan, Turkmenistan, Uzbekistan.

Remark: **New to Kazakhstan**.

Scythris bagdadiella Amsel, 1949

S Kazakhstan, 42º 13' 36.4" N 68º 12' 39.5" E, 210 m, Syr-Darya river valley, Arys village 45 km W, 3-V-2010, 2 ♂♂, 2 ♀♀, K. Nupponen leg.

Distribution: Afghanistan, Algeria, Iraq, S Kazakhstan, Russia (S Ural), Turkey, Uzbekistan.

Remark: **New to Kazakhstan**.

Scythris caballoides Nupponen, 2009

S Kazakhstan, 42º 13' 36.4" N 68º 12' 39.5" E, 210 m, Syr-Darya river valley, Arys village 45 km W, 3-V-2010, 3 ♂♂, 1 ♀, K. Nupponen leg.

Distribution: Kazakhstan, Uzbekistan.

Remarks: The species is previously known only from the type locality in Uzbekistan, about 140

km SSE from the present locality. The species is so far recorded only from tugai forests in the Syr-Darya valley. **New to Kazakhstan**.

Scythris capitalis (Erschoff, 1874)

S Kazakhstan, 43º 47' 03" N 68º 03' 15" E, 540 m, Karatau mts., Turkestan town 50 km N, 7-V-2010, 13 ♂♂, 2 ♀♀, 8-V-2010, 16 ♂♂, 2 ♀♀, 9-V-2010, 4 ♂♂, K. Nupponen leg.; S Kazakhstan, 43º 56' 44.9" N 68º 14' 56.9" E, 900 m, Kulzhalykar mts., Suzak settlement 30 km S, 10-V-2010, 14 ♂♂, 2 ♀♀, K. Nupponen leg.; Kyrgyzstan, 39º 49' 51.6" N 73º 16' 15.4" E, 2725 m, Alai mts., Pamirsky trakt, near Ak-Bosogo village, 21-VII-2010, 2 ♂♂, 31-VII-2010, 2 ♂♂, 1-VIII-2010, 10 ♂♂, 2 ♀♀, K. Nupponen leg.; Kyrgyzstan, 39º 35' 29.0" N 72º 15' 32.1" E, 2820 m, Alai mts., Tengiz-Bai pass gate, 24-VII-2010, 2 ♂♂, 2 ♀♀, 25-VII-2010, 2 ♂♂, A. & A. Selin leg.

Distribution: Afghanistan, Kazakhstan, Kyrgyzstan, Turkey, Turkmenistan, Tajikistan, Uzbekistan.

Remarks: **New to Kazakhstan**.

Scythris cirra Falkovitsh, 1969

Scythris turanica Nupponen, 2010, **syn. n.**

Kyrgyzstan, 41º 25' 42.4" N 74º 55' 13.8" E, 1620 m, Naryn river valley, near Ak-Tal village, 3-VIII-2010, 4 ♂♂, 4 ♀♀, K. Nupponen leg., 1 ♂, A. & A. Selin leg. Genitalia slide: K. Nupponen prep. no. 3 / 22-XI-2010 (♂). One genitalia preparation (♀) preserved in glycerol; SW Kazakhstan, 42º 36' 25" N 54º 08' 34" E, 12-47 m, Ustyurt Nature Reserve, Onere spring, 23-IX-2010, 1 ♂, K. Nupponen leg. Genitalia preparation preserved in glycerol.

Distribution: Kazakhstan, Kyrgyzstan, Mongolia, Turkmenistan, Uzbekistan.

Remark: **New to Kyrgyzstan**. The description of *S. turanica* Nupponen, 2010 is based on a single male specimen collected from SW Kazakhstan. After examination of further material from Kazakhstan and Kyrgyzstan, it turned out that *S. turanica* is conspecific with *S. cirra* Falkovitsh, 1969. The mistake was due to a wrong interpretation of the genitalia photo in the original description, where the male genitalia are mounted on a slide without separating the 8th abdominal segment, and the valvae are in a diffcult position (pressed from dorsal side). Thus, *S. turanica* Falkovitsh, 1969 is a junior synonym of *S. cirra* Nupponen, 2010, **syn. n.**

Scythris clavella (Zeller, 1855)

Kazakhstan, 46º 24' 22" N 59º 35' 30" E, 180 m, Bozoi village 60 km E, Aral sea shore 7 km N, 14-V-2010, 1 ♂, K. Nupponen leg.

Distribution: C and S Europe east to SW Altai, N and SE Kazakhstan, Kyrgyzstan.

Scythris cultelloides Nupponen & Sinev, 2011

Kyrgyzstan, 39º 49' 51.6" N 73º 16' 15.4" E, 2725 m, Alai mts., Pamirsky trakt, near Ak-Bosogo village, 1-VIII-2010, 25 ♂♂, 13 ♀♀, K. Nupponen leg.; Kyrgyzstan, 39º 39' 49.9" N 73º 52' 01.1" E, 2930 m, Trans-Alai mts., Nura River, SW from Irkeshtam village, 30-VII-2010, 11 ♂♂, 6 ♀♀, K. Nupponen leg., 1 ♂, 1 ♀, A. Pototski leg., 2 ♂♂, A. & A. Selin leg.; Kyrgyzstan, 41º 32' 13.2" N 76º 28' 39.4" E, 2500 m, Tien-Shan mts., Eki-Naryn, 05-VIII-2010, 3 ♂♂, 1 ♀, K. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 3/13-I-2010 (♂), 2 / 20-XI-2010 (♂), 3 / 20-XI-2010 (♀).

Distribution: Kyrgyzstan (N Tien-Shan, Alai, Trans-Alai).

Remarks: The present material is included in the type series (see NUPPONEN & SINEV, 2011).

Scythris flaviventrella (Herrich-Schäffer, 1855)

Kyrgyzstan, 41º 32' 13.2" N 76º 28' 39.4" E, 2500 m, Tien-Shan mts., Eki-Naryn, 05-VIII-2010, 4 ♂♂, 4 ♀♀, K. Nupponen leg.; Kyrgyzstan, 41º 25' N 76º 20' E, 2500 m, 30 km E Naryn, steppe/ river canyon, 28-VII-1990, 3 ♂♂, 1 ♀, L. Kaila & K. Mikkola leg. Genitalia slides: K. Nupponen prep. no. 1 / 8-I-2010 (♀), 2 / 8-I-2010 (♂). One genitalia preparation preserved in glycerol.

Distribution: C and S Europe, Turkey, Russia (S Ural, Altai), Kyrgyzstan.

Remarks: The specimens from Kyrgyzstan are externally more glossy than those from Europe and Turkey. However, there are no differences in the genitalia between specimens originated from different regions. **New to Kyrgyzstan**.

***Scythris haverineni* Nupponen, sp. n.**

Type material. Holotype: ♂ (Fig. 12): Kyrgyzstan, 41º 28' 16.5" N 74º 28' 28.5" E, 1890 m, Tien-Shan mts., Fergana range, near Kindik village, 3-VIII-2010, K. Nupponen leg. In coll. T. & K. Nupponen.

Paratypes (5 ♂♂, 3 ♀♀): Idem. Genitalia slides: K. Nupponen prep. no. 4 / 22-XI-2010 (♂), 1 / 24-XI-2010 (♀). In coll. T. & K. Nupponen.

Diagnosis: Externally *S. haverineni* Nupponen, sp. n. is difficult to separate from several small, dark scythridids, e.g. *S. trifurcella* Nupponen, sp. n. (see below). Densely scattered dirty white scales on the forewings may help to identify the moth. The male genitalia of *S. haverineni* resemble those of species in the *subfasciata* species-group, but differ by a long and strongly curved aedeagus, a distally bifurcate gnathos, the uncus without medioposterior incision and a square tergum VIII. In the female genitalia, diagnostic characters are shape of the sterigma and a reinforced convex anterior margin of sternum VI.

Description: Wingspan 9-9.5 mm. Head, collar, neck tuft, haustellum, scape and thorax dark brown, more or less densely mixed with dirty white and pale beige. Labial palp: segment I white; segments II and III dark brown, basal half of II and upper and lateral surfaces more or less covered by pale brownish white scales. Abdomen dorsally fuscous, ventrally dirty white. Legs: femur white, tibia and tarsus dark brown, more (tibia) or less (tarsus) suffused with white. Forewing dark brown with densely scattered dirty white scales. Hindwing fuscous.

Male genitalia (Figs. 25-26): Uncus quadrangular, margins reinforced. Gnathos base a subtrapezoid, furrowed plate; distal part rather short, tapered, distally bifurcate, branches pointed to opposite directions. Aedeagus long and slender, strongly curved, slightly tapered at 0.25, tip pointed. Valva subtriangular, basally very broad; distal portion straight, short and tapered, apex blunt. Vinculum semicircular, short. Sternum VIII subtrapezoid, anterior margin deeply concave; posterior margin bifurcate, prongs distally club-shaped and converging. Tergum VIII square with very deep anterior excavation.

Female genitalia (Fig. 27): Sterigma a rectangular plate, anterior margin deeply concave and uneven. Ostium situated at anterior margin of sterigma. Ductus bursae posteriorly funnel-shaped. Sternum VI subpentagonal; anteriorly widely convex, margin with sclerotized reinforcement; posterior margin straight with semicircular medial incision. Sternum VI rectangular, 0.75 x as high as wide. Apophyses posteriores 1.7 x length of apophyses anteriores.

Bionomy: The specimens were swept on *Helianthemum* sp. in the afternoon sunshine in early August. The habitat is a mountain steppe (Fig. 2).

Distribution: Kyrgyzstan (Tien-Shan mts.). Only known from the type locality.

Etymology: The species is dedicated to Risto Haverinen, Vantaa, Finland, who was my companion on the expedition in Kyrgyzstan.

Remarks: *S. haverineni* Nupponen, sp. n. is tentatively placed in the *subfasciata* species-group.

Scythris hostilis Nupponen, 2005

S Kazakhstan, 43º 49' 54" N 67º 51' 26" E, 440 m, Karatau mts., Talap village 20 km N, 5-V-2010, 1 ♀, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 7 / 30-XI-2010.

Distribution: Kazakhstan, Uzbekistan.

Scythris parafluxilis Passerin d'Entrèves & Roggero, 2007

S Kazakhstan, 43º 47' 03" N 68º 03' 15" E, 540 m, Karatau mts., Turkestan town 50 km N, 8-V-2010, 1 ♂, K. Nupponen leg. (Fig. 13). Genitalia slide: K. Nupponen prep. no. 8/30-XI-2010 (Figs. 28-29).

Distribution: Kazakhstan, Mongolia.

Remarks: The description of *S. parafluxilis* Passerin d'Entrèves & Roggero, 2007 is based on two female specimens collected from W Mongolia. The female genitalia are very similar to those of *S. fluxilis* Falkovitsh, 1986, but the male genitalia have so far been unknown. In 2010, I discovered a single male specimen of the *caroxylella* species-group in Karatau Mountains, S Kazakhstan. The genitalia of the specimen are typical for the *caroxylella*-group, but several details do not coincide with any of the known species of the group. The genitalia of the Kazakh specimen are very close to those of *S. fluxilis*, but differ by following details: the aedeagus 0.6 x length of valva (in *fluxilis* aedeagus is longer than valva); distal lobes of the uncus elongated, longer than in *fluxilis*; basal half of the gnathos higher and narrower than in *fluxilis*, distal part thick, tip strongly elongated upwards; sternum VIII more elongate than in *fluxilis*, anterior margin straight (widely incised in *fluxilis*). Although the genitalia of the species in the *caroxylella*-complex are close to each other, they are very constant inside each species. For further details of the complex, see NUPPONEN (2010) and PASSERIN d'ENTRÈVES & ROGGERO (2007). With a little doubt I regard the Kazakh specimen as *parafluxilis*. **New to Kazakhstan**.

Scythris polella Nupponen, sp. n.

Type material. Holotype: ♂ (Fig. 14): S Kazakhstan, 43º 49' 54" N 67º 51' 26" E, 440 m, Karatau mts., Talap village 20 km N, 6-V-2010, K. Nupponen leg. In coll. T. & K. Nupponen.

Paratypes (10 ♂♂, 10 ♀♀): Idem. Genitalia slides: K. Nupponen prep. no. 1 / 22-XI-2010 (♂), 2 / 24-XI-2010 (♀). In coll. T. & K. Nupponen.

Diagnosis: *S. polella* Nupponen, sp. n. is a sibling species of *S. astragali* Falkovitsh, 1969. Externally *S. polella* differs from *S. astragali* by much darker forewings with a distinct longitudinal pale streak, and smaller size of the moth. The genitalia of the two species are quite similar to each other in both sexes. The diagnostic characters in the male genitalia of *S. polella* are an equally thick basal half of the gnathos (asymmetrically swollen in *S. astragali*) and a shorter valva with a larger triangular medial bulge. The female genitalia of *S. polella* differ from those of *S. astragali* by a well defined and distally pointed cross section at middle of segment VIII, presence of a twisted transverse sclerotization in anterior portion of the sterigma, and longer anterior apophyses (reduced in *astragali*).

Description: Wingspan 11-11.5 mm. Head, collar, neck tuft, haustellum, scape, labial palp and thorax olive brown, more or less mixed with paler scales. Legs dirty whitish brown, forelegs and tarsus darker. Abdomen dorsally olive brown, posterior margin of each segment with paler scales; ventrally dirty creamy white. Forewing olive brown; cream coloured longitudinal streak in fold from base to 0.75, broadening at apical 0.25 and bordered by dark brown; small cuneate and oblique dark brown extension on creamy streak dorsally at 0.35; scattered creamy and dirty white scales at apical half of wing; apical 0.25 of costa narrowly cream coloured. Hindwing fuscous.

Male genitalia (Figs. 30-31): Uncus short and broad flap. Gnathos almost twice longer than tegumen, straight and robust, basal half of constant width, distal half tapered, tip narrow and drop-like. Tegumen posterolaterally enlarged. Aedeagus 0.6 x length of gnathos, almost straight, basal half of constant width, distal half tapered, subapically bent. Valva short and broad, incurved; medially a triangular bulge; tip pointed and slightly elongate. Sternum VIII semicircular, posterior margin folded, anterior margin medially concave. Tergum VIII arched, slightly asymmetrical.

Female genitalia (Fig. 32): Sterigma forming a longitudinal, chute shaped and distally pointed cross section at middle of segment VIII; anterior process basically trapezoid, at posterior margin twisted sclerotization with two triangular extensions pointed to different directions. Sternum VII rectangular, anterior margin concave. Apophyses anteriores directed laterally, 0.1 x length of long apophyses posteriores.

Bionomy: The habitat is a mountain steppe at low altitude (Fig. 6). The specimens were swept on low vegetation in the afternoon sunshine.

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

Etymology: Lat. *polus* = pole. From a pole-like gnathos in the male genitalia.

Remarks: *S. polella* Nupponen, sp. n. and *S. astragali* Falkovitsh, 1969 are connected to the *martini* species-group, which includes two Spanish species: *S. martini* Bengtsson, 1991 and *S. bengtbengtssoni* Vives, 1994. The species in the group share some specific characters, like a reduced uncus, a very long and straight gnathos, and an enlarged tegumen in the male genitalia, and a longitudinal cross section at middle of segment VIII in the female genitalia. *S. alceella* Junnilainen, 2002 from Central Turkey belongs to this group as well. The external appearance and the genitalia of both sexes of *S. astragali* are illustrated for comparison (Figs. 15, 33-35).

Scythris pudorinella (Möschler, 1866)

S Kazakhstan, 43º 47' 03" N 68º 03' 15" E, 540 m, Karatau mts., Turkestan town 50 km N, 6-V-2010, 4 ♂♂, 7-V-2010, 1 ♂, 8-V-2010, 2 ♂♂, 1 ♀, K. Nupponen leg. One genitalia preparation preserved in glycerol.

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

Remark: **New to Kazakhstan**.

Scythris rotundella Nupponen, 2010

Kazakhstan, 47º 16' 58" N 55º 35' 50" E, 55 m, Emba river bank, near Mijaly village, 18-V-2010, 1 ♂, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 1 / 8-I-2011.

Distribution: Kazakhstan, Uzbekistan.

Remark: The species is previously known only from the Kuldzhuktau Mountains, Central Uzbekistan, about 900 km to the southeast from the present locality. **New to Kazakhstan**.

Scythris salinella Nupponen, sp. n.

Type material. Holotype: ♂ (Fig. 16): SW Kazakhstan, 42º 36' 25" N 54º 08' 34" E, 12-47 m, Ustyurt Nature Reserve, Onere spring, 23-IX-2010, K. Nupponen leg. Genitalia slide: K. Nupponen prep. no. 3 / 30-XI-2010. In coll. T. & K. Nupponen.

Diagnosis: Externally *S. salinella* Nupponen, sp. n. can be mixed with *S. fissurella* Bengtsson, 1996 and some other pale and monochromatic species. In the male genitalia of *S. salinella*, diagnostic characters are a thick and distally curved aedeagus, a large scoop-like uncus, and an arched and medioterminally bristled tergum VIII (see also Remarks).

Description: Wingspan 13.5 mm. Head, collar, neck tuft, haustellum, scape, labial palp and thorax white. Antenna pale brown, serrate. Legs creamy white. Abdomen: segments I-V pale beige, VI-VIII creamy white. Forewing white without pattern. Hindwing creamy white, margins slightly darker at distal 1/3, fringes pale fuscous.

Male genitalia (Figs. 36-37): Uncus large, subtriangular, scoop-like, elongated and broadened towards apex. Gnathos reduced. Aedeagus as long as uncus, thick, basal 4/5 straight, distally curved 90º, apex strongly sclerotized. Valvae small cup-shaped flaps, attached to vinculum. Vinculum large, triangular, distally pointed, margins reinforced; medially a strongly sclerotized rectangular process. Sternum VIII rectangular, 4.5 times broader than high. Tergum VIII two narrow and curved sclerotizations forming an arch, posteriorly connected by a rectangular membrane; both sclerotizations terminally with a bunch of long bristles, directed forward at medioposterior part of the arch.

Female genitalia: Unknown.

Bionomy: The specimen came to artificial light at night in late September. The habitat is a saline desert with halophytic vegetation and moist patches around the spring (Fig. 7).

Distribution: SW Kazakhstan. Only known from the type locality.

Etymology: Lat. *salinus*, pertaining to salt. The species name refers to the habitat on a saline desert where the species was discovered.

Remarks: The male genitalia of *S. salinella* Nupponen, sp. n. resemble to some extent those of

species in the Arabian *elachistoides* species-group (see BENGTSSON, 2002a, 2002b). However, shape of the aedeagus and abdominal segment VIII do not fit in with this group. At the moment *S. salinella* cannot be assigned to any known species-group.

Scythris trifurcella Nupponen, sp. n.

Type material. Holotype: ♂ (Fig. 17): Kyrgyzstan, 39º 40' 57.3" N 72º 32' 00.5" E, 3500 m, Alai mts., near Kashka-Suu village, 22-VII-2010, K. Nupponen leg. In coll. T. & K. Nupponen.

Paratypes (2 ♂♂, 1 ♀): Kyrgyzstan, 39º 25' 09.4" N 72º 18' 40.3" E, 3600 m, Trans-Alai mts., Aram-Kungei, 27-VII-2010, 2 ♂♂, K. Nupponen leg.; Kyrgyzstan, 39º 49' 51.6" N 73º 16' 15.4" E, 2725 m, Alai mts., Pamirsky trakt, near Ak-Bosogo village, 21-VII-2010, 1 ♀, K. Nupponen leg. Genitalia slides: K. Nupponen prep. no. 3 / 24-XI-2010 (♂), 5 / 30-XI-2010 (♀). In coll. T. & K. Nupponen.

Diagnosis: Externally *S. trifurcella* Nupponen, sp. n. is difficult to separate from several small, dark scythridids, e.g. *S. haverineni* Nupponen, sp. n. (see above). The male genitalia with a distally trifurcate aedeagus and large anterolateral extensions of the tegumen are unmistakable. In the female genitalia, diagnostic characters are large lateral processes attached to the sterigma.

Description: Wingspan 10-10.5 mm. Head, collar, neck tuft, haustellum, scape and thorax dark brown, mixed with few paler scales. Labial palp: segment I dirty whitish ochreous; segments II and III dark brown, upper and lateral surfaces densely mixed with dirty whitish ochreous. Abdomen dorsally dark brown; ventrally in male grey with sparsely scattered paler scales, in female basally dark brown and segments V-IX dirty creamy. Legs fuscous mixed with dirty greyish white and pale ochreous. Forewing blackish brown with densely scattered dirty greyish white scales; in fold few pale ochreous scales at basal half; indistinct black spot at cell end. Hindwing fuscous.

Male genitalia (Figs. 38-39): Uncus bent, short and thin, tip pointed. Gnathos reduced. Tegumen anterolaterally with large oval extensions, attached to robust, horn-like and apically pointed lateral processes with dentate inner margin. Aedeagus 2/3 x length of valva, thick, distally trifurcate, two of the branches parallel and bent, third one shorter and distally obliquely cut off. Valva basally broad; distal half of constant width, rather narrow but robust, upcurved, tip blunt. Sternum VIII subrectangular, three times wider than high, posterior margin convex. Tergum VIII sub-pentagonal, 2.5 times wider than high, anterior margin widely incurved, posterior margin slightly convex.

Female genitalia (Fig. 40): Sterigma bell-shaped, posterolaterally attached to two large, parallel, drop-like processes with chute-shaped outer lateral margins. Sternum VI rectangular, 0.6 x as high as wide, posterior corners rounded. Apophyses posteriores 1.7 x length of apophyses anteriores.

Bionomy: The habitats are xerothermic mountain steppes with *Artemisia* as a dominant plant (Fig. 3). The species occurs only at high altitudes (2700-3600 m a.s.l.). The specimens were discovered by sweeping on *Artemisia* in the afternoon sunshine in late July.

Distribution: S Kyrgyzstan (Alai and Trans-Alai Mountains).

Etymology: Lat. *tri* = three; *furca* = a fork. The species name alludes to the peculiar, distally trifurcate aedeagus in the male genitalia.

Remarks: The characteristics in the male and female genitalia of *S. trifurcella* Nupponen, sp. n. do not indicate its relationship to any known species-group. The female specimen was discovered in a different locality than the males. A blackish brown tone of the forewings is equal in all four specimens, and all of them were swept on *Artemisia* in similar xerothermic habitats. Furthermore, chute-shaped outer lateral margins of posterolateral process of the sterigma in the female genitalia fit well with oval lateral extensions of the tegumen in the male genitalia. Thus, I consider that all four specimens belong to the species described here.

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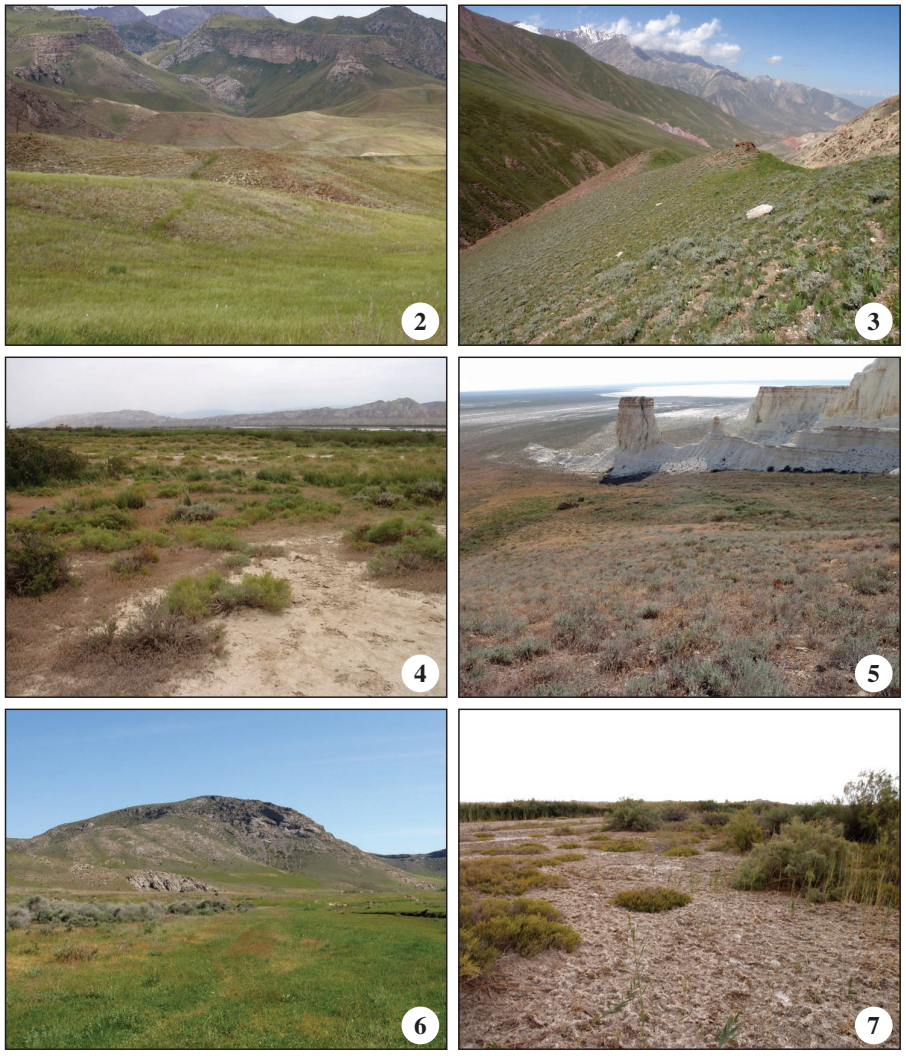
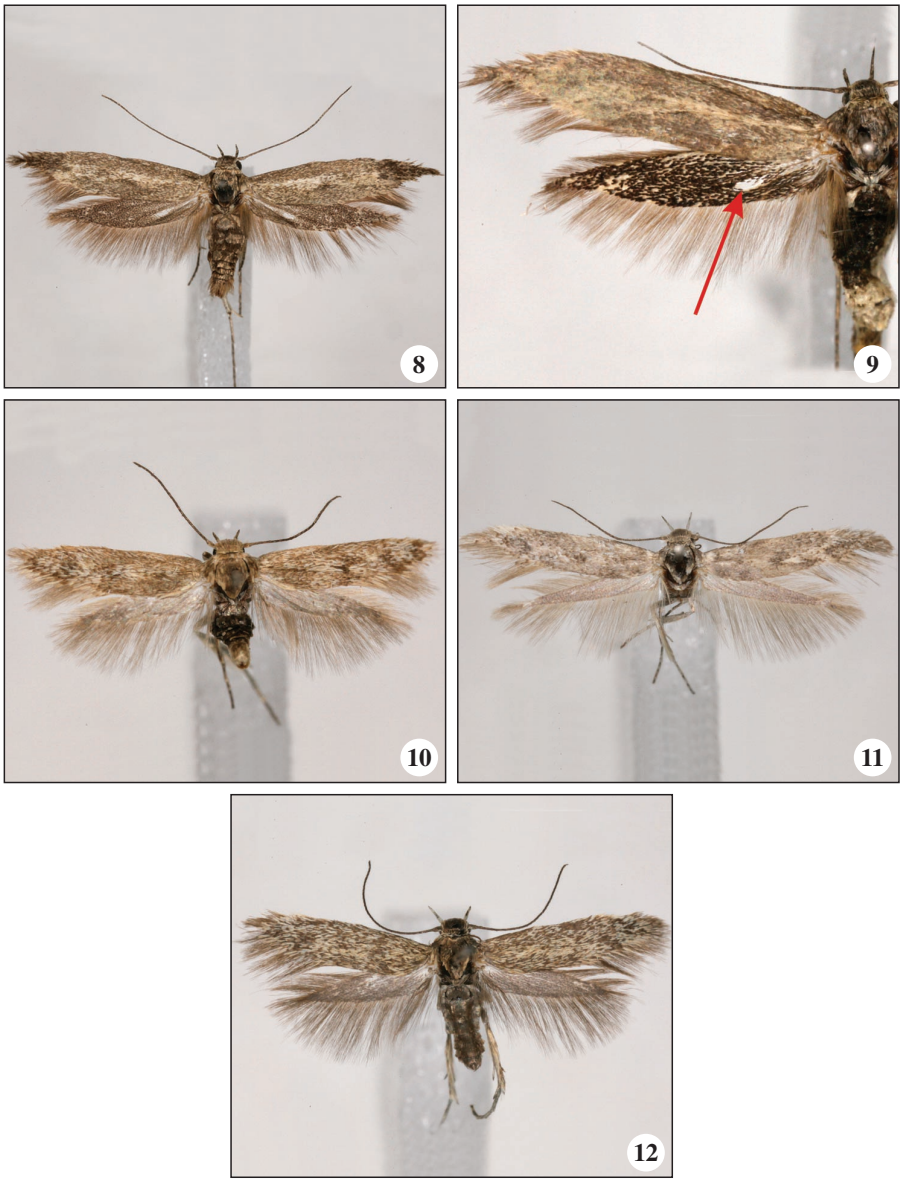
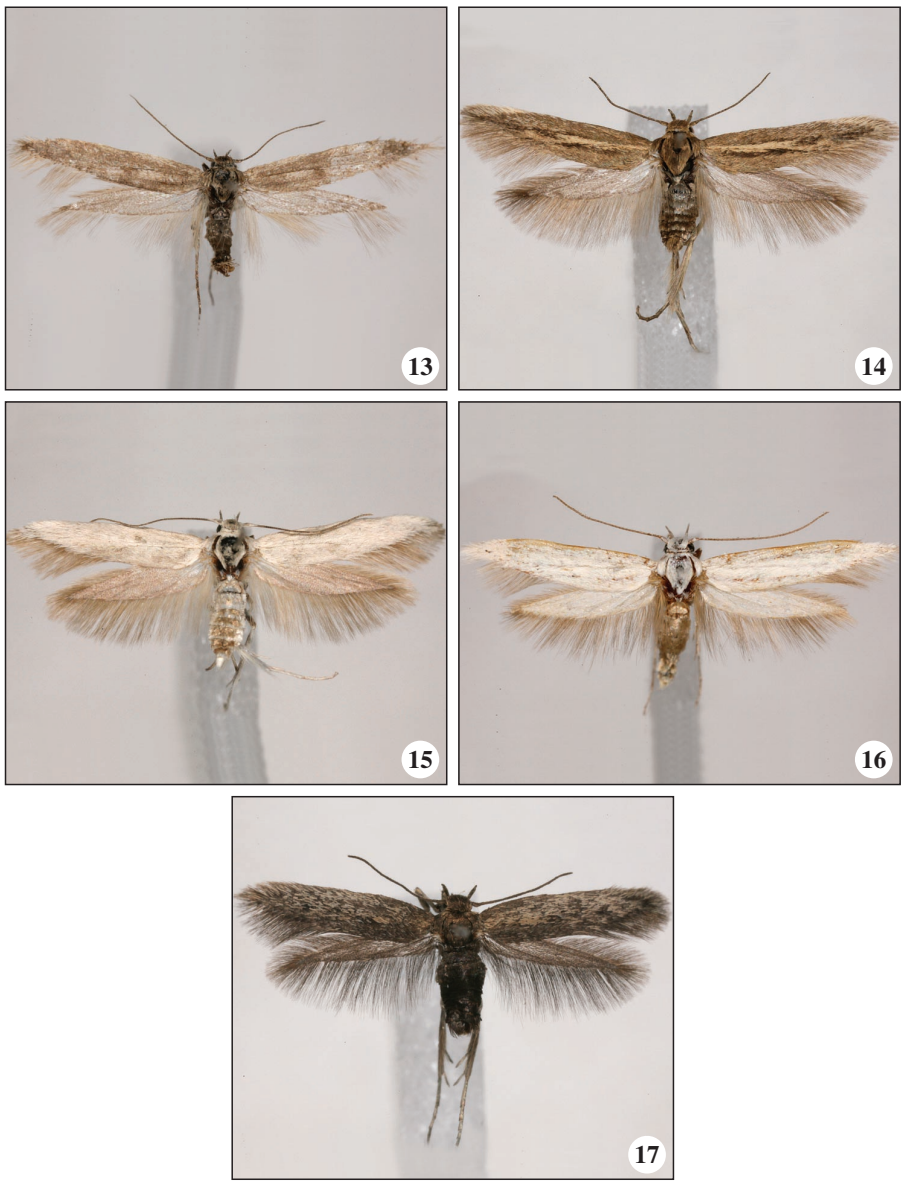


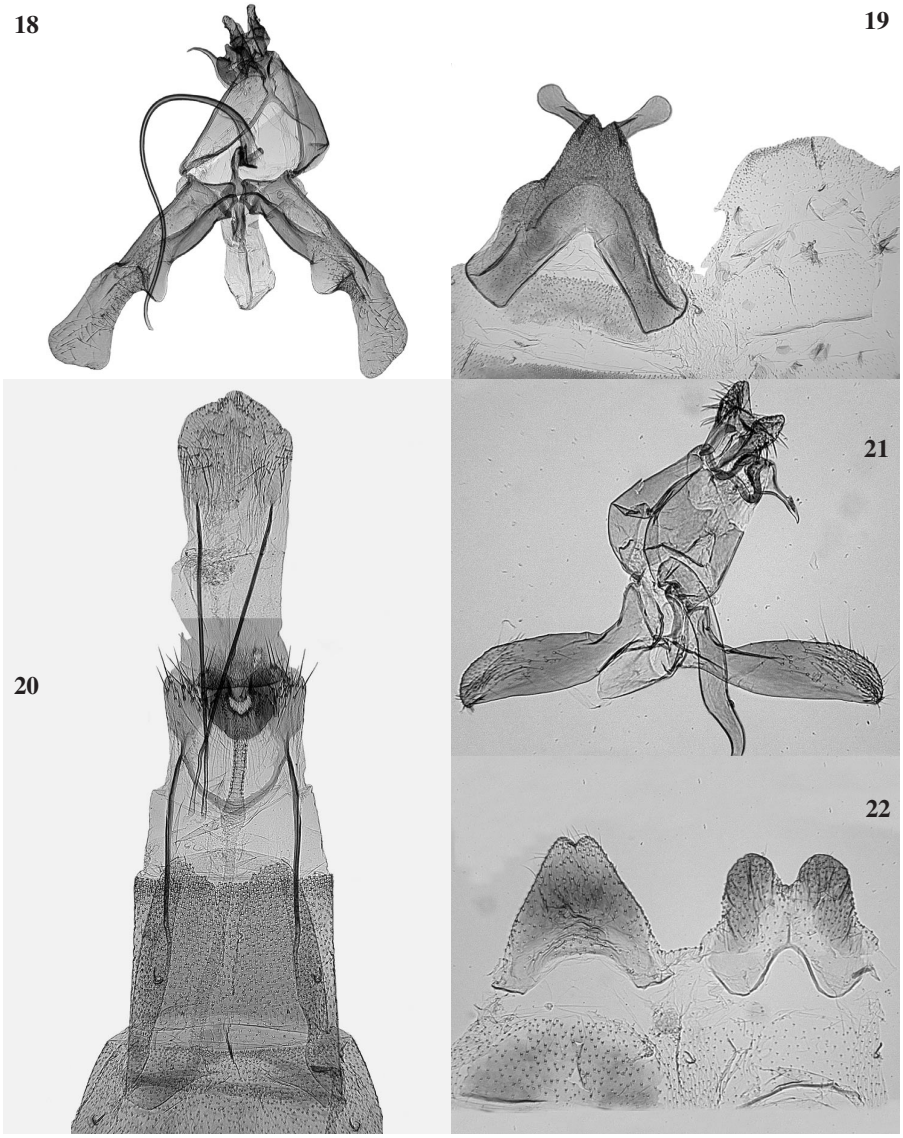
Figs. 2-7.– 2. Mountain steppes at 1890 m a.s.l. by Kindik village, SW Tien-Shan Mountains, Kyrgyzstan. A habitat of *Scythris haverineni* Nupponen, sp. n. (Photo: K. Nupponen). **3.** *Artemisia*-steppe at 3600 m a.s.l. in a famous Aram-Kungei, Trans-Alai Mountains, S Kyrgyzstan. A habitat of *Scythris trifurcella* Nupponen, sp. n. (Photo: K. Nupponen). **4.** Saline semidesert at 1620 m a.s.l. by Ak-Tal village, Naryn valley, Kyrgyzstan. A habitat of *Bactrianoscythris fenestratella* Nupponen, sp. n. and *Scythris astacoides* Nupponen, sp. n. (Photo: K. Nupponen). **5.** Chalk steppes at Aktolagai hills, W Kazakhstan. A habitat of *Scythris angustibasella* Nupponen, sp. n. (Photo: K. Nupponen). **6.** Steppe slopes at Karatau Mountains, S Kazakhstan. A habitat of *Scythris polella* Nupponen, sp. n. (Photo: K. Nupponen). **7.** Saline desert at Onere spring, Ustyurt Nature Reserve, SW Kazakhstan. A habitat of *Scythris salinella* Nupponen, sp. n. (Photo: K. Nupponen).



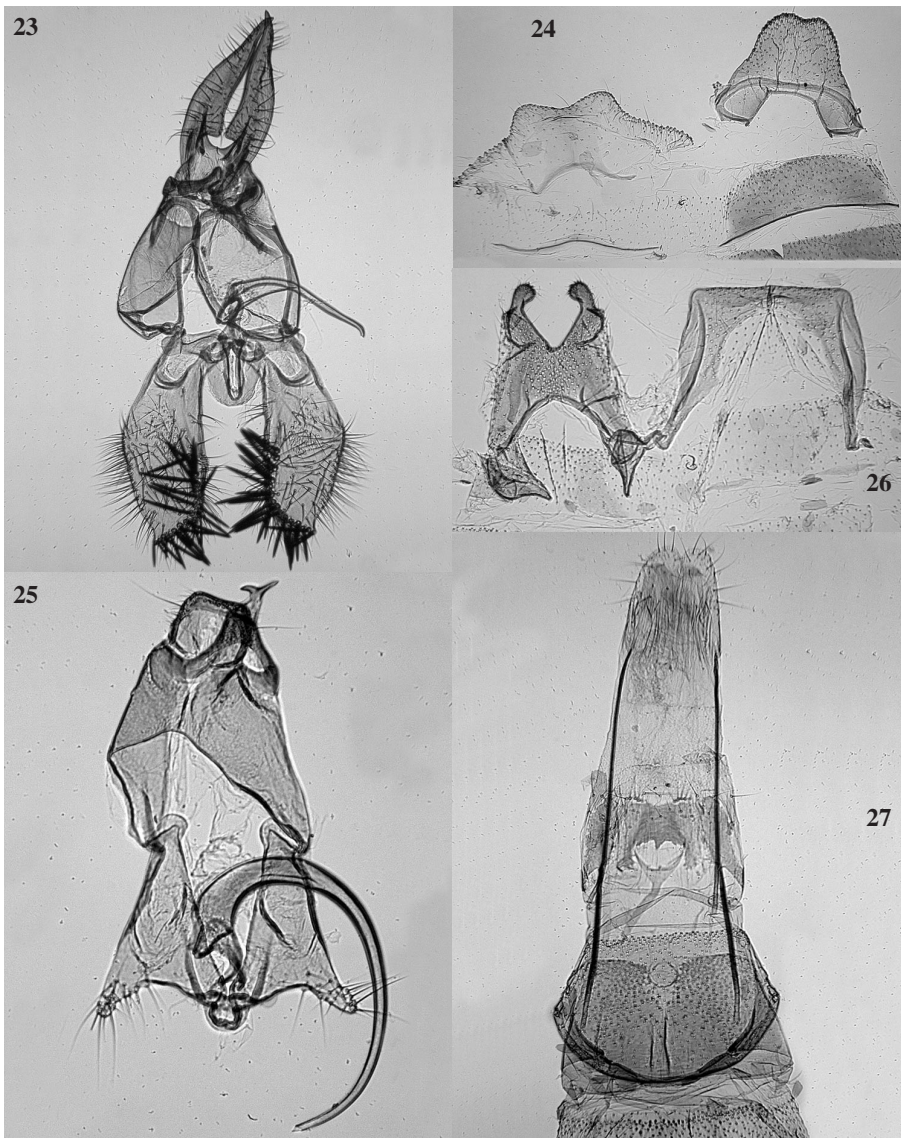
Figs 8-12.– 8. Imago (male, holotype) of *Bactrianoscythris fenestratella* Nupponen, sp. n. **9.** A characteristic hyaline spot on the hindwing of *Bactrianoscythris fenestratella* Nupponen, sp. n. (female, paratype; hyaline spot pointed by an arrow). **10.** Imago (male, holotype) of *Scythris angustibasella* Nupponen, sp. n. **11.** Imago (male, holotype) of *Scythris astacoides* Nupponen, sp. n. **12.** Imago (male, holotype) of *Scythris haverineni* Nupponen, sp. n.



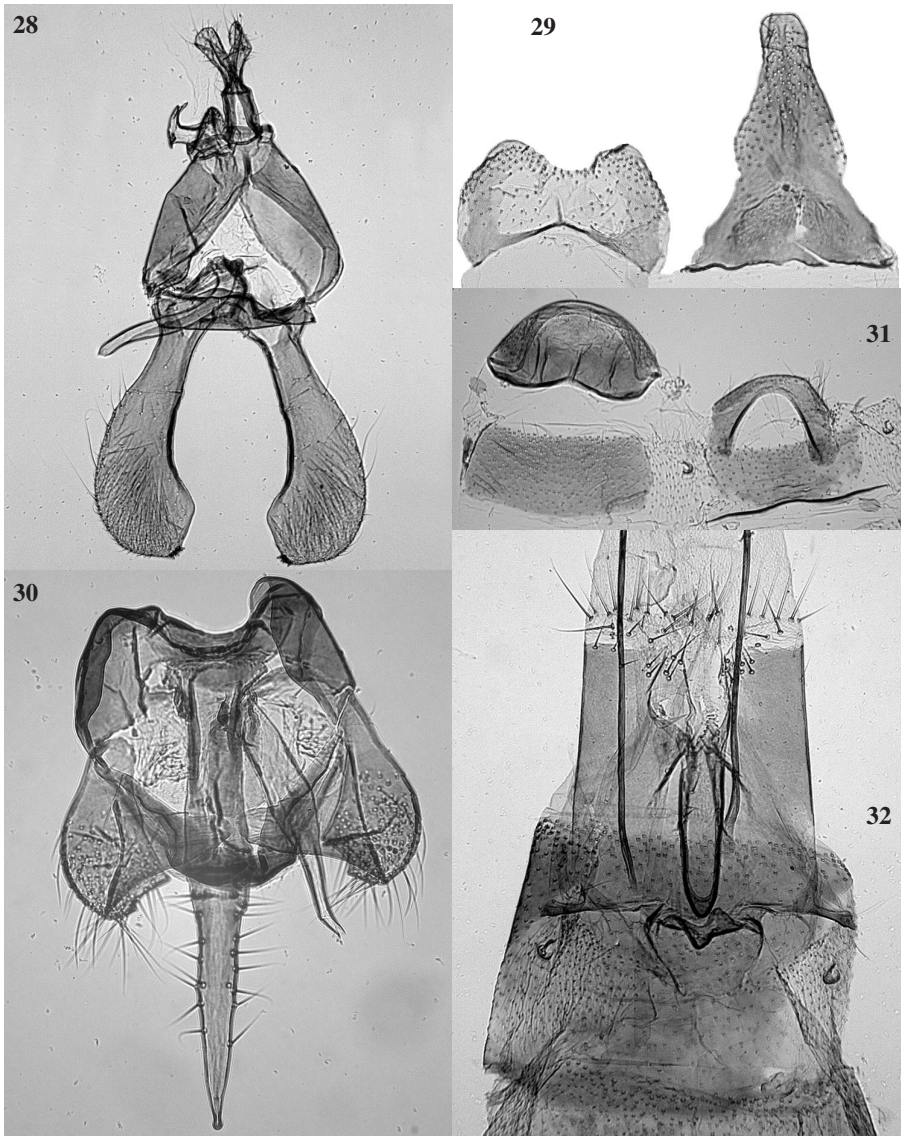
Figs. 13-17.– 13. Imago (male) of *Scythris parafluxilis* Passerin d'Entrèves & Roggero, 2007. **14.** Imago (male, holotype) of *Scythris polella* Nupponen, sp. n. **15.** Imago (male) of *Scythris astragali* Falkovitsh, 1969 (Uzbekistan). **16.** Imago (male, holotype) of *Scythris salinella* Nupponen, sp. n. **17.** Imago (male, holotype) of *Scythris trifurcella* Nupponen, sp. n.



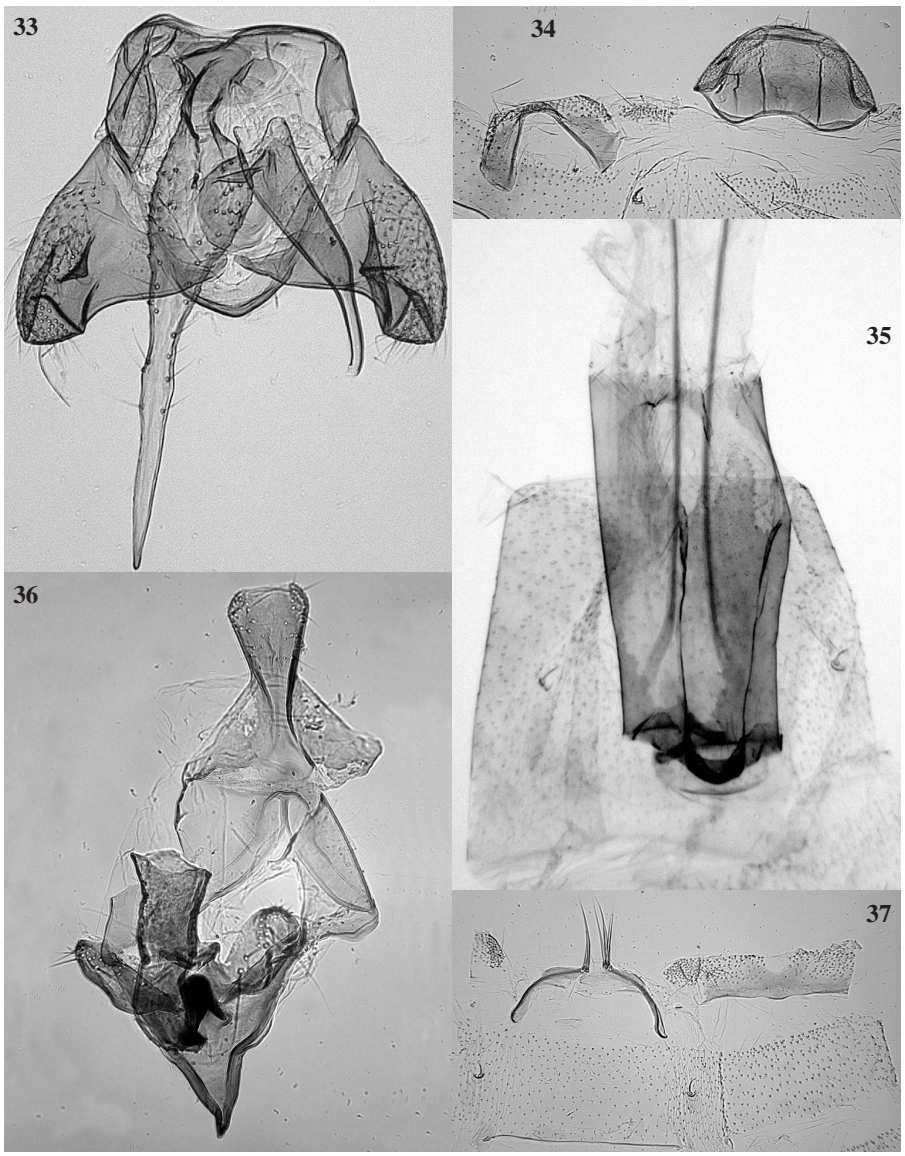
Figs. 18-22.– 18. Male genitalia of *Bactrianoscythris fenestratella* Nupponen, sp. n. (paratype; GP 2/22-XI-2010 KN). **19.** Tergum VIII (right) and sternum VIII (left) of *Bactrianoscythris fenestratella* Nupponen, sp. n. (paratype; GP 2/22-XI-2010 KN). **20.** Female genitalia of *Bactrianoscythris fenestratella* Nupponen, sp. n. (paratype; GP 6/30-XI-2010 KN). **21.** Male genitalia of *Scythris angustibasella* Nupponen, sp. n. (holotype; GP 2/30-XI-2010 KN). **22.** Tergum VIII (right) and sternum VIII (left) of *Scythris angustibasella* Nupponen, sp. n. (holotype; GP 2/30-XI-2010 KN).



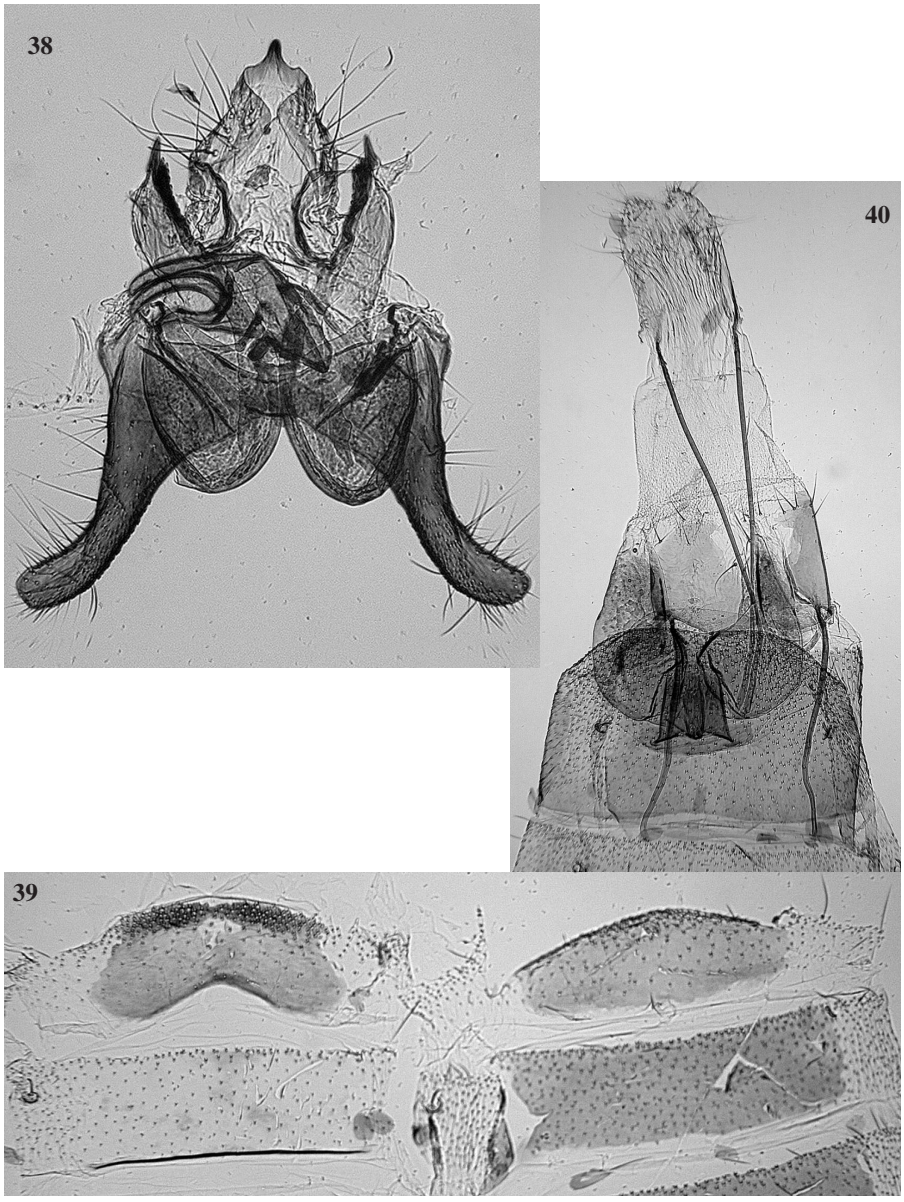
Figs. 23-27.– 23. Male genitalia of *Scythris astacoides* Nupponen, sp. n. (holotype; GP 1/30-XI-2010 KN). **24.** Tergum VIII (left) and sternum VIII (right) of *Scythris astacoides* Nupponen, sp. n. (holotype; GP 1/30-XI-2010 KN). **25.** Male genitalia of *Scythris haverineni* Nupponen, sp. n. (paratype; GP 4/22-XI-2010 KN). **26.** Tergum VIII (right) and Sternum VIII (left) of *Scythris haverineni* Nupponen, sp. n. (holotype; GP 4/22-XI-2010 KN). **27.** Female genitalia of *Scythris haverineni* Nupponen, sp. n. (paratype; GP 1/24-XII-2010 KN).



Figs. 28-32.– 28. Male genitalia of *Scythris parafluxilis* Passerin d'Entrèves & Roggero, 2007 (GP 8/30-XI-2010 KN). **29.** Tergum VIII (left) and sternum VIII (right) of *Scythris parafluxilis* Passerin d'Entrèves & Roggero, 2007 (GP 8/30-XI-2010 KN). **30.** Male genitalia of *Scythris polella* Nupponen, sp. n. (paratype; GP 1/22-XI-2010 KN). **31.** Tergum VIII (right) and sternum VIII (left) of *Scythris polella* Nupponen, sp. n. (paratype; GP 1/22-XI-2010 KN). **32.** Female genitalia of *Scythris polella* Nupponen, sp. n. (paratype; GP 2/24-XI-2010 KN).



Figs. 33-37.– 33. Male genitalia of *Scythris astragali* Falkovitsh, 1969 (Turkmenistan; GP 5/22-XI-2010 KN). **34.** Tergum VIII (left) and sternum VIII (right) of *Scythris astragali* Falkovitsh, 1969 (Turkmenistan; GP 5/22-XI-2010 KN). **35.** Female genitalia of *Scythris astragali* Falkovitsh, 1969 (Turkmenistan; GP 6/05-IV-2006 KN). **36.** Male genitalia of *Scythris salinella* Nupponen, sp. n. (holotype; GP 3/30-XI-2010 KN). **37.** Tergum VIII (left) and sternum VIII (right) of *Scythris salinella* Nupponen, sp. n. (holotype; GP 3/30-XI-2010 KN).



Figs. 38-40.– 38. Male genitalia of *Scythris trifurcella* Nupponen, sp. n. (paratype; GP 4/24-XI-2010 KN). **39.** Tergum VIII (left) and sternum VIII (right) of *Scythris trifurcella* Nupponen, sp. n. (paratype; GP 4/24-XI-2010 KN). **40.** Female genitalia of *Scythris trifurcella* Nupponen, sp. n. (paratype; GP 5/30-XI-2010 KN).