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(Lepidoptera: Scythrididae)

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New records of Scythrididae from the Turanian region, with descriptions of seven new species (Lepidoptera: Scythrididae)

K. Nupponen

Abstract

A list of 31 species embracing 365 specimens of the family Scythrididae from the Turanian region is presented. The material was collected during 5-VII-2006 and 1-9-V-2008 in Uzbekistan, and 29-IV / 18-V-2008 in southwestern Kazakhstan. Seven new species are described: *Scythris angustella* Nupponen, sp. n., *S. caballoides* Nupponen, sp. n., *S. falkovitshi* Nupponen, sp. n., *S. omerica* Nupponen, sp. n., *S. timoi* Nupponen, sp. n., *S. tugaiensis* Nupponen, sp. n. and *S. turanica* Nupponen, sp. n. One unknown species is reported but not formally described because only a single female is available. The previously unknown females of *Scythris anchophylli* Falkovitsh, 1969 and *S. tytrella* Falkovitsh, 1969 are described. Four species are reported as new to Uzbekistan and seven species as new to Kazakhstan. The known distribution range of each species is given.

KEY WORDS: Lepidoptera, Scythrididae, Turanian region, new species, first records, Uzbekistan, Kazakhstan.

Nuevos registros de Scythrididae de la región de Turania, con descripción de siete nuevas especies (Lepidoptera: Scythrididae)

Resumen

Se presenta una lista de la región de Turania de 31 especies procedentes de una muestra de 365 especímenes de la familia. El material fue colectado durante el 5-VII-2006 y el 1-9-V-2008 en Uzbekistán, y del 29-IV / 18-V-2008 en el suroeste de Kazajistán. Se describen siete nuevas especies: *Scythris angustella* Nupponen, sp. n., *S. caballoides* Nupponen, sp. n., *S. falkovitshi* Nupponen, sp. n., *S. omerica* Nupponen, sp. n., *S. timoi* Nupponen, sp. n., *S. tugaiensis* Nupponen, sp. n. y *S. turanica* Nupponen, sp. n. Se registra una nueva especie pero no se describe formalmente, porque sólo se dispone de un ejemplar hembra. Se describen las hasta ahora desconocidas hembras de *Scythris anchophylli* Falkovitsh, 1969 y *S. tytrella* Falkovitsh, 1969. Cuatro especies se registran como nuevas para Uzbekistán y siete especies como nuevas para Kazajistán. Se da la distribución de cada especie.

PALABRAS CLAVE: Lepidoptera, Scythrididae, región de Turania, nuevas especies, primeros registros, Uzbekistán, Kazajistán.

Introduction

The scythridid fauna of the Turanian region is moderately poorly known. In the 1960's, Dr. M. I. Falkovitsh made thorough investigations of Lepidoptera in the deserts of Uzbekistan and Turkmenistan, and described numerous new species, among them 20 taxa of the family Scythrididae (FALKOVITSH, 1969, 1972, 1979, 1986). Later on, PASSERIN d'ENTRÈVES & ROGGERO (2007) examined materials collected by Falkovitsh and described previously unknown females of three species. *S. vadimi* Sachkov, 2002 was described from Syr-Darya Valley, southern Kazakhstan (SACHKOV, 2002). NUPPONEN & IVINSKIS (2008) examined Scythrididae collected in the 1980's from Turkmenistan, and described previously unknown females of four species. Additionally, seven further species have

recently been described from southeastern Kazakhstan (BENGTSSON, 1997b; NUPPONEN *et al.*, 2005).

The present article is based on new materials of Scythrididae collected during three separate expeditions in July, 2006 and May, 2008: The Estonian and Finnish-Estonian expeditions to Uzbekistan and Pavel Gorbunov's expedition to the Ustyurt Plateau, southwestern Kazakhstan.

Material and methods

The Finnish-Estonian expedition to Uzbekistan was made during 1-9-V-2008. The investigated area is situated in the central and eastern parts of the country. The habitats were mainly desert steppes and semideserts, but also foothill steppe slopes and a riverside wood at the western bank of the River Syr-Darya (Figs. 1-5). Altogether 27 species embracing 321 specimens of scythridids were recorded during the trip. The majority of the material was collected by artificial light at night, and only three species were discovered by sweeping during daytime. The Estonian expedition to the mountain range of Uzbekistan was made in July, 2006. Only eleven specimens and three species of Scythrididae were recorded, all of them by light at low altitude during the last night of the trip.

Between 29-IV / 18-V-2008, Mr. Pavel Gorbunov made a collecting trip to the semideserts of southwestern Kazakhstan (Fig. 6). Later he donated to the author some material of Microlepidoptera for study. The material was collected by light traps and included several interesting species, among them 9 species embracing 33 specimens of scythridids.

List of scythridid species

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

Falkovitshella ammobia (Falkovitsh, 1972)

Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 3-V-2008, 6 ♂♂, K. Nupponen & R. Haverinen leg.

Distribution: Mongolia, Uzbekistan.

Remarks: PASSERIN d'ENTRÈVES & ROGGERO (2007) established a new genus *Falkovitshella* and transferred seven species from the genus *Scythris* to the new genus, among them *S. ammobia* Flkv. and *S. physalis* Flkv.

Falkovitshella asema (Falkovitsh, 1972)

Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 1 ♂, K. Nupponen & R. Haverinen leg.

Distribution: Turkmenistan, Uzbekistan.

Remarks: See Remarks of *F. ammobia* above.

Falkovitshella hypolepta (Falkovitsh, 1972)

Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 1 ♂, K. Nupponen & R. Haverinen leg.

Distribution: Uzbekistan.

Remarks: See Remarks of *F. ammobia* above.

Falkovitshella physalis (Falkovitsh, 1972)

Uzbekistan, Buchara district, 40° 54' 45.0" N 64° 38' 58.7" E, 140 m, road Zafazabad-Zezavshan 110 km W, 1-V-2008, 5 ♂♂, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 2 ♂♂, K. Nupponen & R. Haverinen leg., 3 ♂♂, A. Selin leg. Two genitalia preparations preserved in glycerol.

Distribution: Mongolia, Uzbekistan.

Remarks: See Remarks of *F. ammobia* above.

Scythris anchophylli Falkovitsh, 1969

Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 2-V-2008, 23 ♂♂, 1 ♀, 3-V-2008, 5 ♂♂, 1 ♀, K. Nupponen & R. Haverinen leg.; Ibidem, 2-V-2008, 6 ♂♂, A. Selin leg., 2 ♂♂, A. Pototski leg. Genitalia slide: K. Nupponen prep. no. 4/28-XII-2008 ♀. Five genitalia preparations preserved in glycerol. SW-Kazakhstan, 42° 57' N 54° 41' E, 128 m, Ustyurt Res., Kendyrli, 9-V-2008, 1 ♂, P. Gorbunov leg. Genitalia slide: K. Nupponen prep. no. 1/31-XII-2008.

Distribution: Kazakhstan, Uzbekistan.

Remarks: The previously unknown female genitalia of the taxon are illustrated and described below. **New to Kazakhstan.**

Female genitalia (Fig. 7). Sterigma anteriorly bulbous; posterior portion straight and narrow, almost twice length of basal part, distally bifurcate, prongs diverging. Sternum VII rectangular, twice wider than high; posterior margin with U-shaped medial incision; anterior margin medially concave. Apophyses anteriores 0.5 × length of apophyses posteriores.

***Scythris angustella* Nupponen, sp. n.**

Type material. Holotype ♂ (Fig. 8): Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, K. Nupponen & R. Haverinen leg. In coll. T. & K. Nupponen. Paratypes (2 ♂♂): Idem, 1 ♂.; Ibidem, 4-V-2008, 1 ♂, A. Selin leg. Genitalia slide: K. Nupponen prep. no. 1/21-XII-2008. One genitalia preparation preserved in glycerol. In colls. T. & K. Nupponen and A. Selin.

Diagnosis: Externally *S. angustella* Nupponen, sp. n. resembles several white, black speckled species, like *F. ammobia*, *S. anchophylli*, *S. dicroa* Falkovitsh and *S. falkovitshi* Nupponen, sp. n. (see below), but may be separated from those by elongate and narrow forewings. In the male genitalia, diagnostic characters are a bifurcate aedeagus, a robust and heart-shaped uncus, and broad valvae with a semicircular basal process and a large longitudinal flap. See also Remarks.

Description: Wingspan 12.5-13 mm. Head white, fuscous dash in neck. Neck tuft mixed with white and dark fuscous. Collar, scape, haustellum and legs white with a few fuscous scales. Antenna pale brown, ciliate. Labial palp white; upper surface of segment II sparsely mixed with pale fuscous. Thorax white mixed with dark fuscous. Abdomen dorsally pale beige, ventrally white. Forewing elongate and narrow; dark brown and fuscous scales forming the following pattern: distinct spots subbasally below and above fold, in fold at 0.2, 0.35 and 0.55, at 0.2 in dorsum, at 0.3 and 0.5 near costa and at cell end; cilia line dark brown; sparsely scattered dark scales exist over the wing. Hindwing pale fuscous.

Male genitalia (Figs. 9-10): Uncus robust, basally straight, distal portion wide, heart-shaped, medioposterior incision narrow and deep; subbasally a small, sclerotized and pointed process, attached to both lateral margins (socii?). Gnathos base wide, small rounded bulge posterolaterally at each side, and medioposteriorly two robust, digitate, furrowed and sclerotized processes; distal arm attached to base by sclerotized band, rather short, basal half tapered, distally slender, tip pointed. Tegumen medially with longitudinal, sclerotized band; anterior margin incised. Aedeagus longer than uncus, rather thick, basally straight, distally bifurcate, arms pointed and curved, one thin, the other thick, one third shorter and basally curved 90. Valva broad, more or less club-shaped; basal margin serrate; costal margin with semicircular basal process; longitudinal sclerotized ridge near dorsal margin at outer surface from base to middle of widened distal portion; longitudinal flap near dorsal margin from 1/3 to subapical area; apically small transverse flap. Vinculum rectangular. Sternum VIII subpentagonal, posterior margin with deep and wide medial incision, posterior prongs thin and apically pointed; anterior margin concave; at middle a sclerotized, transverse reinforcement. Tegumen

VIII rather membranous subrectangular plate, anterior margin concave and sclerotized, anterior corners elongated.

Female genitalia: Unknown.

Bionomy: The habitat is an edge of a large saline desert with halophytic vegetation (Fig. 2). The specimens came to artificial light at night.

Distribution: Uzbekistan. Only known from the type locality.

Etymology: Latin *angustus* = narrow. From the narrow and somewhat elongate forewings of the new taxon.

Remarks: PASSERIN d'ENTRÈVES & ROGGERO (2007) established a new genus *Falkovitshella* and transferred seven species from the genus *Scythris* to the new genus. However, there are several other species in North Africa and Central Asia, which might fulfil the criteria of the genus *Falkovitshella* too, but unfortunately they were not included in the phylogenetic analysis. *S. angustella* Nupponen, sp. n. and *S. falkovitshi* Nupponen, sp. n. (see below) are tentatively assigned to the *canescens*-group of the genus *Scythris*, until a complete analysis of the relationships between the genus *Falkovitshella*, the *canescens*-group and some related Central Asian taxa is made.

Scythris asthena Falkovitsh, 1972

Uzbekistan, Buchara district, 40° 54' 45.0" N 64° 38' 58.7" E, 140 m, road Zafazabad-Zezavshan 110 km W, 1-V-2008, 4 ♂♂, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 2 ♂♂, 1 ♀, K. Nupponen & R. Haverinen leg. Three genitalia preparations preserved in glycerol.

Distribution: Turkmenistan, Uzbekistan.

Scythris astragali Falkovitsh, 1969

Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 3 ♂♂, K. Nupponen & R. Haverinen leg., 2 ♂♂, A. Pototski leg.

Distribution: Turkmenistan, Uzbekistan.

Scythris bagdadiella Amsel, 1949

Uzbekistan, Sidaryo district, 41° 01' 30.5" N 68° 36' 28.7" E, 260 m, Syr-Darya river, Tugai forest, 9-V-2008, 9 ♂♂, 3 ♀♀, K. Nupponen & R. Haverinen leg., 1 ♂, 1 ♀, A. Selin leg., 1 ♂, A. Pototski leg.; Ibidem, 5-VII-2006, 1 ♂, 2 ♀♀, A. Selin leg. One genitalia preparation preserved in glycerol.

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

Remark: **New to Uzbekistan.**

***Scythris caballoides* Nupponen, sp. n.**

Type material. Holotype ♂ (Fig. 11): Uzbekistan, Sidaryo district, 41° 01' 30.5" N 68° 36' 28.7" E, 260 m, Syr-Darya river, Tugai forest, 9-V-2008, K. Nupponen & R. Haverinen leg. Genitalia slide: K. Nupponen prep. no. 1/18-XII-2008. In coll. T. & K. Nupponen. Paratypes (4 ♂♂, 1 ♀): Idem, 1 ♀; Ibidem, 5-VII-2006, 4 ♂♂, A. Selin leg. Genitalia slide: K. Nupponen prep. no. 2/18-XII-2008. One genitalia preparation preserved in glycerol. In colls. T. & K. Nupponen and A. Selin.

Diagnosis: Externally *S. caballoides* Nupponen, sp. n. differs from related species (see Remarks) by presence of a pale longitudinal streak on the forewings. The male genitalia of *S. caballoides* indicate its close relationship to *S. tugaiensis* Nupponen, sp. n. (see below). A short, spoon-shaped gnathos, subapically inwards curved prongs of the uncus shape of the 8th sternal and tergal segments separate *S. caballoides* from all related species. In the female genitalia of *S. caballoides*, the oval sterigma and two transverse sclerotizations in sternum V are characteristic.

Description: Wingspan 11-12.5 mm. Head, tegula, thorax, labial palp and legs mixed with beige and brown. Neck tuft, collar and haustellum pale beige. Antenna brown, scape beige. Abdomen

dorsally fuscous, ventrally dirty white. Forewing densely mixed with dark brown and greyish white; broad and rather indistinct creamy white streak in fold from base to subapical area; more or less distinct narrow spots below fold at 0.25 and 0.5, and small one at 0.7 near dorsum. Hindwing fuscous.

Male genitalia (Figs. 12-13): Uncus bifurcate, prongs broad, subapically curved 80 inwards; apical portion laterally expanded with triangular flap at middle; outer lateral margin of prongs with a longitudinal flap. Gnathos spoon-shaped, distinctly shorter than uncus. Tegumen anteriorly enlarged. Aedeagus short and thick, tapered and slightly bent, basally with diverging extensions. Valva very short and broad, digitate and setose, basal half slightly tapered outwards, tip blunt. Sternum VIII basically subtrapezoid, posteriorly with two huge, broad, asymmetrical, diverging processes; both processes with longitudinal, rounded apical flap; anterior corners elongated; anterior margin with a pair of irregular processes. Tergum VIII subtrapezoid, asymmetrical; digital processes posterolaterally and medioposteriorly, the former being almost twice longer than the latter; the other posterolateral process reduced to elongated bulge; anterior margin slightly elongated.

Female genitalia (Fig. 14): Sterigma oval, small, attached to rather weakly sclerotized subrectangular plate. Ostium situated at posterior 0.25 of sterigma. Sternum VII semicircular, anterior margin slightly convex. Sternum VI subrectangular, twice wider than high, anterior and posterior margins concave. Sternum V with pair of transverse oval sclerotizations and sclerotized posterior margin. Apophyses anteriores $0.6 \times$ length of apophyses posteriores.

Bionomy: The habitat is a riverside wood, surrounded by desert steppes (Fig. 4). The specimens came to artificial light at night. See also Remarks of *S. timoi* Nupponen, sp. n. below.

Distribution: Uzbekistan. Only known from the type locality.

Etymology: The name of the taxon alludes to shape of tergum VIII in the male abdomen, resembling head of a horse (*Equus caballus*) at dorsal view.

Remarks: The male genitalia of *S. caballoides* Nupponen, sp. n. indicate its relationship with *S. tugaiensis* Nupponen, sp. n. (see below), *S. bagdadiella* and a few Arabian species (*S. abyanensis* Bengtsson, 2002, *S. beccella* Bengtsson, 2002, *S. capnofasciae* Bengtsson and 2002, *S. taizae* Bengtsson, 2002; see BENGTTSSON, 2002). However, shape of the 8th sternal and tergal segments are quite heterogeneous among those species, and it is doubtful whether all of them belong to the same species-group.

Scythris capitalis (Erschoff, 1874)

Uzbekistan, Jizzax district, 40° 12' 12.6" N 67° 06' 26.2" E, 802 m, Karabaganaly village 6 km E, 7-V-2008, 3 ♂♂, 2 ♀♀, K. Nupponen & R. Haverinen leg.

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

Scythris caroxylella Falkovitsh, 1969

Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 19 ♂♂, 1 ♀, K. Nupponen & R. Haverinen leg., 3 ♂♂, 1 ♀, A. Pototski leg., 2 ♂♂, A. Selin leg. Six genitalia preparations preserved in glycerol. SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, 1 ♀, P. Gorbunov leg.; SW-Kazakhstan, 43° 24' N 54° 33' E, 142 m, Ustyurt Res., Mametkazgan, 11-V-2008, 5 ♂♂, P. Gorbunov leg. One genitalia preparation preserved in glycerol.

Distribution: Kazakhstan, Uzbekistan.

Remarks: **New to Kazakhstan.** The report of *S. caroxylella* from Mongolia is based on misidentification of *S. fluxilis* (see NUPPONEN 2005a; PASSERIN d'ENTRÈVES & ROGGERO 2007).

Scythris cirra Falkovitsh, 1969

Uzbekistan, Buchara district, 40° 54' 45.0" N 64° 38' 58.7" E, 140 m, road Zafazabad-Zezavshan 110 km W, 1-V-2008, 8 ♂♂, 1 ♀, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 1 ♂, K. Nupponen & R. Haverinen leg., 1 ♂, A. Pototski leg., 2 ♂♂, A. Selin leg. Genitalia slide: K. Nupponen prep. no. 5/28-

XII-2008 ♀. One genitalia preparation preserved in glycerol. SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, 1 ♀, P. Gorbunov leg. Genitalia slide: K. Nupponen prep. no. 1/30-XII-2008.

Distribution: Kazakhstan, Mongolia, Turkmenistan, Uzbekistan.

Remark: **New to Kazakhstan.**

Scythris deresella Falkovitsh, 1969

SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, 2 ♂♂, P. Gorbunov leg. One genitalia preparation preserved in glycerol.

Distribution: Kazakhstan, Uzbekistan.

Remark: **New to Kazakhstan.**

Scythris dicroa Falkovitsh, 1972

Uzbekistan, Buchara district, 40° 54' 45.0" N 64° 38' 58.7" E, 140 m, road Zafazabad-Zezavshan 110 km W, 1-V-2008, 7 ♂♂, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 5 ♂♂, 2 ♀♀, K. Nupponen & R. Haverinen leg., 6 ♂♂, 2 ♀♀, A. Pototski leg., 2 ♂♂, 3 ♀♀, A. Selin leg. Fifteen genitalia preparations preserved in glycerol.

Distribution: Uzbekistan.

Scythris falkovitshi Nupponen, sp. n.

Type material. Holotype ♂ (Fig. 15): Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, K. Nupponen & R. Haverinen leg. Genitalia slide: K. Nupponen prep. no. 1/28-XII-2008. In coll. T. & K. Nupponen. Paratypes (3 ♂♂): Idem, 1 ♂; Ibidem, 4-V-2008, A. Pototski leg. Genitalia slide: K. Nupponen prep. no. 2/02-IV-2009. One genitalia preparation preserved in glycerol. In colls. T. & K. Nupponen and A. Pototski.

Diagnosis: Externally *S. falkovitshi* Nupponen, sp. n. is similar to *S. anchophylli*, and may be confused also with several other white, black speckled species, like *F. ammobia*, *S. dicroa* and *S. angustella*. Examination of genitalia is needed for safe determination. A bifurcate uncus, a sigmoid aedeagus and rounded processes at costal margin of the valvae in the male genitalia separate *S. falkovitshi* Nupponen, sp. n. from closely related species.

Description: Wingspan 10-10.5 mm. Head, collar, haustellum, scape and labial palp white. Neck tuft mixed with white and dark brown. Antenna pale brown. Thorax white; dark brown scales forming four more or less distinct dashes anteriorly and distinct horseshoe-shaped figure posteriorly. Abdomen dorsally beige, ventrally creamy white. Legs: femur white, tarsus and tibia creamy white, except inner surface and tibia of forelegs dark brown. Forewing ground colour creamy white; dark brown scales forming the following pattern: distinct spots in fold at 0.2, 0.35 and 0.55, at 0.15 and 0.3 in costa, at 0.25 in dorsum; three more or less incomplete oblique fascia at midwing, at 0.7 and subapically. Hindwing pale fuscous.

Male genitalia (Figs. 16-17): Uncus bifurcate plate, prongs thin and distally slightly bent outwards; subbasally elongated backwards; at middle two longitudinal flaps. Gnathos base posteriorly with small, bifurcate, sclerotized extension; distal arm short, basal half tapered, distally slender, tip pointed. Tegumen with short and thick mediolateral processes; anterior margin incised; medially longitudinal, sclerotized band. Aedeagus 0.45 × length of valva, sigmoid, distal 0.2 thinner than basal 0.8. Valva club-shaped; costal margin with conspicuous rounded process at 1/3 from base; longitudinal sclerotized ridge medially at outer surface from base to middle of widened distal portion. Vinculum subrectangular, distally slightly elongated plate. Sternum VIII subpentagonal, posterior margin with deep medial incision, posterior extensions thick and apically blunt; anterior margin concave; at middle a sclerotized, transverse reinforcement. Tergum VIII rather membranous appears trapezoid plate, anterior margin concave and sclerotized.

Female genitalia: Unknown.

Bionomy: The habitat is an edge of a large saline desert with halophytic vegetation (Fig. 2). The specimens came to artificial light at night.

Distribution: Uzbekistan. Only known from the type locality.

Etymology: The species is dedicated to Dr. M. I. Falkovitsh, a Russian lepidopterist who discovered several new taxa of Scythrididae from the deserts of Uzbekistan in the 1960's.

Remark: See Remarks of *S. angustella* Nupponen, sp. n. above.

Scythris fluxilis Falkovitsh, 1986

Uzbekistan, Buchara district, 40° 54' 45.0" N 64° 38' 58.7" E, 140 m, road Zafazabad-Zezavshan 110 km W, 1-V-2008, 4 ♂♂, 1 ♀, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 2-V-2008, 24 ♂♂, 3-V-2008, 48 ♂♂, K. Nupponen & R. Haverinen leg., 2-V-2008, 7 ♂♂, 3-V-2008, 18 ♂♂, A. Selin leg., 3-V-2008, 8 ♂♂, A. Pototski leg. Four genitalia preparations preserved in glycerol.

Distribution: Mongolia, Uzbekistan.

Remarks: See Remarks of *S. caroxylella* above.

Scythris hostilis K. Nupponen, 2005

Uzbekistan, Samarkand district, 39° 53' 24.3" N 67° 15' 05.5" E, 1170 m, Gobdun-Tau mountains, Badbad Say, 7-V-2008, 1 ♂, 4 ♀♀, K. Nupponen & R. Haverinen leg., 1 ♀, A. Selin leg.; Uzbekistan, Jizzax district, 39° 44' 17.0" N 68° 17' 34.7" E, 1400 m, Margusor mountains, near Besh-Kuvi village, 8-V-2008, 3 ♂♂, K. Nupponen & R. Haverinen leg., 5 ♂♂, 2 ♀♀, A. Pototski leg., 1 ♀, A. Selin leg. One genitalia preparation preserved in glycerol.

Distribution: SE Kazakhstan, Uzbekistan.

Remarks: The species occurs in mountain steppes. The known localities lie at an elevation of 1000-1400 m. a. s. l. **New to Uzbekistan.**

Scythris lycii Falkovitsh, 1969

Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 3-V-2008, 2 ♂♂, K. Nupponen & R. Haverinen leg., 1 ♂, A. Selin leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 1 ♀, K. Nupponen & R. Haverinen leg. One genitalia preparation preserved in glycerol.

Distribution: Turkmenistan, Uzbekistan.

Scythris nanophyti Falkovitsh, 1979

Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 3-V-2008, 1 ♂, K. Nupponen & R. Haverinen leg. Genitalia slide: K. Nupponen prep. no. 1/03-XII-2008.

Distribution: Uzbekistan.

***Scythris onerica* Nupponen, sp. n.**

Type material. Holotype ♂ (Fig. 18): SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, P. Gorbunov leg. Genitalia slide: K. Nupponen prep. no. 1/29-XII-2008. In coll. T. & K. Nupponen.

Diagnosis: Externally *S. onerica* Nupponen, sp. n. is a characteristic species. It resembles *S. kailai* Bengtsson, 1997, but differs from that by its larger size and more distinct white pattern on the forewings. The male genitalia also resemble those of *L. kailai* to some extent, but differ in many details, like a well developed uncus-gnathos complex. *S. onerica* sp. n. is readily separated from other known scythridids by a peculiar spinose basal plate of the valva and shape of the 8th sternal segment and the valva.

Description: Wingspan 11 mm. Head, antenna, neck tuft, tegula, thorax and legs dark brown. Antenna ciliate. Collar, haustellum and labial palp brown, slightly paler than thorax. Forewing blackish brown; narrow creamy white streak in fold from base to 0.4, distally enlarged to a spot; rather large spot of same colour at cell end forming incomplete oblique fascia. Hindwing dark fuscous.

Male genitalia (Figs. 19-20): Uncus two diverging and clavate processes, attached at basal 0.3 by thin membrane. Gnathos base subrectangular, posterior corners elongated and densely spinose; distal arm $1.3 \times$ length of uncus, tapered and slightly bent at distal half, tip pointed. Aedeagus exceeds half length of valva, thin and tapered, bent subbasally and at 0.8. Valva long and rather broad, apical 0.25 strongly elongated, narrow, apex pointed; costal margin convex and folded from 0.3 to 0.9; dorsal margin triangularly extended subbasally, median part concave, apically a triangular and forwards pointed extension; terminal margin widely U-shaped. Vinculum a quadrangular plate. Sternum VIII semicircular, margins folded, anterior corners widely rounded, posterolaterally small triangular extensions; medioposterior process robust and digitate, as long as basal part of sternum VIII. Tergum VIII rectangular, almost three times wider than high.

Female genitalia: Unknown.

Bionomy: The habitat is a desert steppe (Fig. 6). The specimen came to artificial light at night.

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

Etymology: The name of the new species refers to the type locality.

Remarks: *S. onerica* Nupponen, sp. n. cannot be assigned to any known species-group.

Scythris pallidella Passerin d'Entrèves & Roggero, 2006

Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 2-V-2008, 1 ♂, K. Nupponen & R. Haverinen leg. Genitalia slide: K. Nupponen prep. no. 1/12-XII-2008.

Distribution: Mongolia, Uzbekistan.

Remark: **New to Uzbekistan.**

Scythris pruinata Falkovitsh, 1972

Uzbekistan, Buchara district, 40° 54' 45.0" N 64° 38' 58.7" E, 140 m, road Zafazabad-Zezavshan 110 km W, 1-V-2008, 3 ♂♂, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 1 ♂, K. Nupponen & R. Haverinen leg.. One genitalia preparation preserved in glycerol.

Distribution: Iran, Uzbekistan.

Scythris pudorinella (Möschler, 1866)

Uzbekistan, Jizzax district, 40° 20' 34.2" N 67° 05' 18.4" E, 1200 m, Nuratau Mountains, W from pass, 7-V-2008, 1 ♂, K. Nupponen & R. Haverinen leg., 1 ♂, A. Selin leg. Two genitalia preparations preserved in glycerol.

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

Remark: **New to Uzbekistan.**

Scythris satyrella (Staudinger, 1880)

SW-Kazakhstan, 42° 57' N 54° 41' E, 128 m, Ustyurt Res., Kendyrli, 9-V-2008, 2 ♂♂, 1 ♀, P. Gorbunov leg.

Distribution: Iran, Kazakhstan, Russia, Turkey, Turkmenistan.

Remark: **New to Kazakhstan.**

Scythris timoi Nupponen, sp. n.

Type material. Holotype ♂ (Fig. 21): Uzbekistan, Sidaryo district, 41° 01' 30.5" N 68° 36' 28.7"

E, 260 m, Syr-Darya river, Tugai forest, 9-V-2008, K. Nupponen & R. Haverinen leg. Genitalia slide: K. Nupponen prep. no. 2/03-XII-2008. In coll. T. & K. Nupponen. Paratypes (5 ♂♂): Idem, 1 ♂; Ibidem, 5-VII-2006, 4 ♂♂, A. Selin leg. In colls. T. & K. Nupponen and A. Selin.

Diagnosis: Externally *S. timoi* Nupponen, sp. n. may be separated from other related scythruidids by indistinct white dashes on the forewings. In the male genitalia, diagnostic characters are a conspicuous triangular tooth of the valva, a hood-shaped base of the gnathos and the quadrangular uncus (see also Remarks).

Description: Wingspan 11.5-12 mm. Head, neck tuft, collar, tegula, thorax and haustellum dark brown with scattered white scales. Antenna dark brown. Labial palp: segment I white; segment II dark brown, basal and terminal parts and upper surface densely mixed with white; segment III dark brown, upper surface basally with few white scales. Legs dark brown, more (femur) or less (tibia and tarsus) mixed with white. Abdomen dorsally fuscous, ventrally white mixed with fuscous scales. Forewing dark brown, with three indistinct white dashes: in fold at 0.25 and 0.45 and at cell end; sparsely scattered white scales exist over the wing. Hindwing dark fuscous.

Male genitalia (Figs. 22-23): Uncus quadrangular, posterior corners rounded, margins widely sclerotized; mid-posteriorly two minute, parallel bulges. Gnathos base large, hood-shaped; distal arm 1.5 × length of uncus, basally thick, bent and tapered, tip pointed. Tegumen wider than high. Aedeagus 1.3 × length of valva, bent and tapered. Valva broad, slightly tapered at basal 0.4; bent outwards at 0.4, distal 0.6 of equal width and straight; triangular extension apically at dorsal margin, large triangular tooth subapically at middle of valva; indistinct transverse flap apically. Sternum VIII subpentagonal, posteriorly elongated, posterior margin with deep V-shaped medial incision, prongs apically pointed; anterior margin concave. Tergum VIII subrectangular, 2.7 × wider than high, posterior margin convex.

Female genitalia: Unknown.

Bionomy: The habitat is a riverside wood, surrounded by desert steppes (Fig. 4). The specimens came to artificial light at night. See also Remarks.

Distribution: Uzbekistan. Only known from the type locality.

Etymology: The species is dedicated to my brother Timo Nupponen.

Remarks: The new taxon shares some features of the *cicadella*-, *knochella*- and *elenae*-groups (see BENGTSOON, 1997a; NUPPONEN *et. al.*, 2000; NUPPONEN, 2003), but the uncus-gnathos complex and details in distal part of the valva do not coincide with those groups. Until a female of *S. timoi* Nupponen, sp. n. is found, the taxon cannot be assigned to any species group.

The dominating plant in the type locality is *Phragmites communis*, and diversified low vegetation exists mainly at roadsides and moist patches. Trees and bushes occur more or less frequently, the most conspicuous of them being subtropical poplars (*Populus diversifolia*, *Populus pruinosa*), *Tamarix spp.* (*T. laxa*, *T. hispida*), *Elaeagnus angustifolia* and *Lycium dasystemum*. In the Tugai forest, the area of virgin wood has been rapidly reduced during the last decades, due to agricultural influence and timber cutting. In the 19th century riverside woods covered large areas in the Syr-Darya valley and were inhabited even by large animals like tigers. If the destruction of woods is continued as present, the Tugai woods will disappear over the next 20-30 years.

Scythis tsherkessella Falkovitsh, 1969

Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 2-V-2008, 4 ♂♂, 2 ♀♀, 3-V-2008, 1 ♀, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 3 ♂♂, K. Nupponen & R. Haverinen leg., 1 ♂, A. Pototski leg. Two genitalia preparations preserved in glycerol. SW-Kazakhstan, 42° 57' N 54° 41' E, 128 m, Ustyurt Res., Kendyrlı, 29-IV-2008, 1 ♂, 9-V-2008, 7 ♂♂, 2 ♀♀, P. Gorbunov leg.; SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, 1 ♂, P. Gorbunov leg.; SW-Kazakhstan, 43° 24' N 54° 33' E, 142 m, Ustyurt Res., Mametkazgan, 11-V-2008, 1 ♀, P. Gorbunov leg. Three genitalia preparations preserved in glycerol.

Distribution: Kazakhstan, Turkmenistan, Uzbekistan.

Remarks: The specimens from Kazakhstan are externally darker than those from Uzbekistan, due to a widespread greyish suffusion on the forewings. **New to Kazakhstan.**

***Scythris tugaiensis* Nupponen, sp. n.**

Type material. Holotype ♂ (Fig. 24): Uzbekistan, Sidaryo district, 41° 01' 30.5" N 68° 36' 28.7" E, 260 m, Syr-Darya river, Tugai forest, 9-V-2008, K. Nupponen & R. Haverinen leg. Genitalia slide: K. Nupponen prep. no. 3/18-XII-2008. In coll. T. & K. Nupponen. Paratype (1 ♀): Idem. Genitalia slide: K. Nupponen prep. no. 4/18-XII-2008. In coll. T. & K. Nupponen.

Diagnosis: Externally *S. tugaiensis* Nupponen, sp. n. resembles several white, black speckled scythridids occurring in the same region, e. g. *S. anchophylli*, *S. angustella*, *S. dicroa* and *S. falkovitshi*, but differs from those by larger and less numerous spots on the forewings. *S. tugaiensis* is readily separated from related species (see Remarks) by the shape of segment VIII and a long gnathos in the male genitalia. The female genitalia of *S. tugaiensis* differ from those of a closely related *S. caballoides* by the circular sterigma and absence of two parallel sclerotizations in sternum V.

Description: Wingspan 10.5 mm. Head, neck tuft, collar, tegula and thorax white, densely mixed with grey and dark brown. Antenna pale brown, scape white with a few dark brown scales. Labial palp: segment I white; segments II and III white, lower surface mixed with dark brown. Legs white, forelegs mixed with white. Abdomen in male dorsally fuscous, ventrally white; in female dorsally whitish grey, segments IV-VI pale yellow, ventrally dirty white. Forewing creamy white; dark brown scales forming eight more or less distinct spots: costal spots basally and at 0.4, in fold at 0.2 and 0.45, above fold at 0.55, dorsally at 0.65, longish ones subapically near costa and apically; scattered dark brown scales exist over the wing, more densely at costal and dorsal areas. Hindwing fuscous, basally paler.

Male genitalia (Figs. 25-26): Uncus bifurcate, prongs long and broad, distal half bent. Gnathos arm twice longer than uncus, curved and robust, distally a laterally extended rounded plate. Tegumen anteriorly enlarged. Aedeagus short and straight, very thick and tapered. Valva short, digitate and setose, basal half slightly tapered outwards, tip blunt. Sternum VIII subtrapezoid, distally with two tapered and apically blunt processes; lateral margins slightly concave; anterior margin with a pair of robust, parallel and elongated processes. Tergum VIII subtrapezoid, posteriorly hood-shaped, anterior margin deeply concave; conspicuous, digitate lateral arms on each margin subbasally and subposteriorly.

Female genitalia (Fig. 27): Sterigma subrectangular, rather weakly sclerotized plate with elongate anterior corners and concave anterior margin; posterolateral areas more sclerotized. Ostium small, circular, situated at middle of sterigma. Sternum VII subrectangular, 1.6 × as wide as high. Apophyses anteriores 0.75 × length of apophyses posteriores.

Bionomy: The habitat is a riverside wood, surrounded by desert steppes (Fig. 4). The specimens came to artificial light at night. See also Remarks of *S. timoi* Nupponen, sp. n. above.

Distribution: Uzbekistan. Only known from the type locality.

Etymology: The name of the new species refers to the type locality.

Remarks: The male genitalia of *S. tugaiensis* Nupponen, sp. n. indicate its relationship with *S. caballoides*, *S. bagdadiella* and a few Arabian species (*S. abyanensis* Bengtsson, 2002, *S. beccella* Bengtsson, 2002, *S. capnofasciae* Bengtsson, 2002, *S. taizae* Bengtsson, 2002). However, shape of the 8th sternal and tergal segments are quite heterogeneous among those species, and it is doubtful whether all of them belong to the same species-group.

***Scythris turanica* Nupponen, sp. n.**

Type material. Holotype ♂ (Fig. 28): SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, P. Gorbunov leg. Genitalia slide: K. Nupponen prep. no. 2/28-XII-2008. In coll. T. & K. Nupponen.

Diagnosis: Externally *S. turanica* Nupponen, sp. n. may be confused with several pale, small

scythruids. In the male genitalia of *S. turanica*, diagnostic characters are strongly sclerotized pegs in the apical part of the valva and shape of the 8th sternal segment. See also Remarks.

Description: Wingspan 12 mm. Head, neck tuft, collar, tegula, thorax, haustellum and labial palp creamy white, collar slightly paler than head. Antenna pale brown. Legs: tibia and tarsus of foreleg pale brown, otherwise creamy white. Forewing creamy white; sparsely scattered pale brown scales exist over the wing, more densely at apical area, and forming small indistinct spots at 0.4 below fold, 0.55 at middle of wing and 0.7 near costa. Hindwing pale fuscous.

Male genitalia (Figs. 29-30): Uncus bifurcate prong, arms straight, outer margin curved inwards subapically. Gnathos base subbasally with spinose protrusions; distal arm almost as long as uncus, thin, tapered and subapically slightly bent. Tegumen with sclerotized longitudinal medial ridge. Aedeagus longer than valva, thin and evenly curved. Valva straight; basal 0.45 broad and tapered, costal margin straight at apical half; apex with small triangular and forwards pointed flap; dorsal margin widely concave, with large sub-oval flap from 0.4 to 0.9; apical 0.1 covered by strongly sclerotized pegs. Vinculum subrectangular, posterior corners elongated. Sternum VIII subpentagonal, anterior margin concave; sclerotized irregular processes mediolaterally; posterior handle robust and strongly asymmetrical, one lateral side widely extended, terminally one long and two short, thick processes. Tergum VIII subhexagonal; anterior margin concave and sclerotized, corners elongated; laterally bulged; posterior margin medially straight.

Female genitalia: Unknown.

Bionomy: The habitat is a desert steppe (Fig. 6). The specimen came to artificial light at night.

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

Etymology: The species name refers to the bioregion where the new taxon was discovered.

Remarks: The male genitalia of *S. turanica* Nupponen, sp. n. resemble to some extent those of *S. pruinata*. However, strongly sclerotized pegs in the apical part of the valva do not fit in with the *canescens*-group. At the moment *S. turanica* sp. n. cannot be assigned to any known species-group.

Scythis tytrella Falkovitsh, 1969

Uzbekistan, Buchara district, 40° 44' 59.6" N 63° 47' 07.5" E, 404 m, Kuldchuktau mountains, Churuk village 7 km N, 3-V-2008, 2 ♂♂, 1 ♀, K. Nupponen & R. Haverinen leg.; Uzbekistan, Buchara district, 40° 34' 30.8" N 64° 07' 03.4" E, 195 m, Turt Kuduk village 20 km SW, 4-V-2008, 2 ♂♂, K. Nupponen & R. Haverinen leg., 2 ♂♂, A. Pototski leg., 1 ♂, A. Selin leg. Genitalia slide: K. Nupponen prep. no. 3/28-XII-2008 ♀. SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, 3 ♂♂, 1 ♀, P. Gorbunov leg.; SW-Kazakhstan, 42° 57' N 54° 41' E, 128 m, Ustyurt Res., Kendyrlii, 29-IV-2008, 1 ♂, 1 ♀, P. Gorbunov leg. Three genitalia preparations preserved in glycerol.

Distribution: Kazakhstan, Uzbekistan.

Remarks: **New to Kazakhstan.** The previously unknown female genitalia of the taxon is illustrated and described below.

Female genitalia (Fig. 31): Sterigma subrectangular, 1.5 × as high as wide, sub-posteriorly slightly wrinkled, anterior corners elongated. Segment VIII large, quadrangular and sclerotized. Sternum VII subtriangular, posteriorly cut-off; anterior margin sclerotized and slightly concave. Apophyses anteriores 0.45 × length of apophyses posteriores.

Scythis sp.

Material. 1 ♀ (Fig. 32): SW-Kazakhstan, 42° 37' N 54° 09' E, 12 m, Ustyurt Res., Oneri spring, 18-V-2008, P. Gorbunov leg. Genitalia slide: K. Nupponen prep. no. 2/31-XII-2008. In coll. T. & K. Nupponen.

External appearance: Wingspan 14 mm. Head, antenna, neck tuft, collar, tegula, thorax and legs dark brown, more or less densely mixed with dark brown and ochreous. Haustellum creamy white. Labial palp creamy white, lower and lateral surfaces of segments II and III medially dark brown. Abdomen dorsally pale yellow, ventrally dirty white, laterally mixed with dark brown and black scales. Forewing dark brown; three creamy white spots at middle of wing at 1/3, 0.5 and 0.75; narrow and

rather indistinct creamy white streak in fold; costal and apical areas densely sprinkled with creamy white scales; basal 2/3 of dorsal area mixed with grey; sparsely scattered ochreous scales exist over the wing. Hindwing pale fuscous, apical half of underside mixed with blackish.

Female genitalia (Fig. 33): Sterigma subrectangular, $1.5 \times$ as high as wide, lateral and posterior margins widely sclerotized, posterior margin medially concave. Ostium situated at anterior 1/3 of sterigma. Sternum VII subquadrangular, posterior corners rounded; medioposteriorly with a semi-oval, weakly sclerotized process. Apophyses anteriores $0.65 \times$ length of apophyses posteriores.

Bionomy: The habitat is a desert steppe (Fig. 6). The specimen came to artificial light at night.

Remarks: A single female that is impossible to assign to any known species, neither by the external appearance nor by the characters in the genitalia. Further material, including males, is needed until the taxon can be determined at species level.

Discussion

Compared with the other regions in Asia, the scythruid fauna of Uzbekistan is basically moderately well known. Of the 27 species discovered by us, only 18 % (5/27) are undescribed. On the other hand, 80 % (16/20) of the species described from the region by Falkovitsh were discovered during one short trip. All of the five undescribed species are represented by only a few specimens in our material, which indicates that there still remain numerous rare and local species to be discovered in large deserts of Uzbekistan. Results from corresponding investigations of Scythruidae in the other regions show that scythruids are overlooked in the whole Eastern Palaearctic region. The portion of undescribed species from all recorded species was 30 % (5/17) in the Altai Mountains, 41 % (16/39) in the southern Urals, 43 % (13/30) in southern Buryatia, and even 71 % (5/7) in SE-Kazakhstan (NUPPONEN, 2003, 2005b, 2007; NUPPONEN *et. al.*, 2000; NUPPONEN & NUPPONEN, 2001; NUPPONEN *et. al.*, 2005a).

The distribution range of many species occurring in Uzbekistan is probably much larger than we know to date. Several desert steppe species described from Uzbekistan have already been discovered in Mongolia, despite a very limited material available from that region (see PASSERIN d'ENTRÈVES & ROGGERO, 2006). Some of the species recorded by us might be Turanian endemics, like those occurring in riverside forests. European species seem to be absent from the study area. We recorded only one 'European' species, *S. bagdadiella* Amsel, which is known from the southern Urals (NUPPONEN, 2006). It is remarkable that most of the scythruid species recorded by us were exclusively nocturnal, which is a common property of the species of this family in southern deserts. In steppe regions, most scythruids are diurnal, but sweeping at daylight did not give any results in Uzbekistan.

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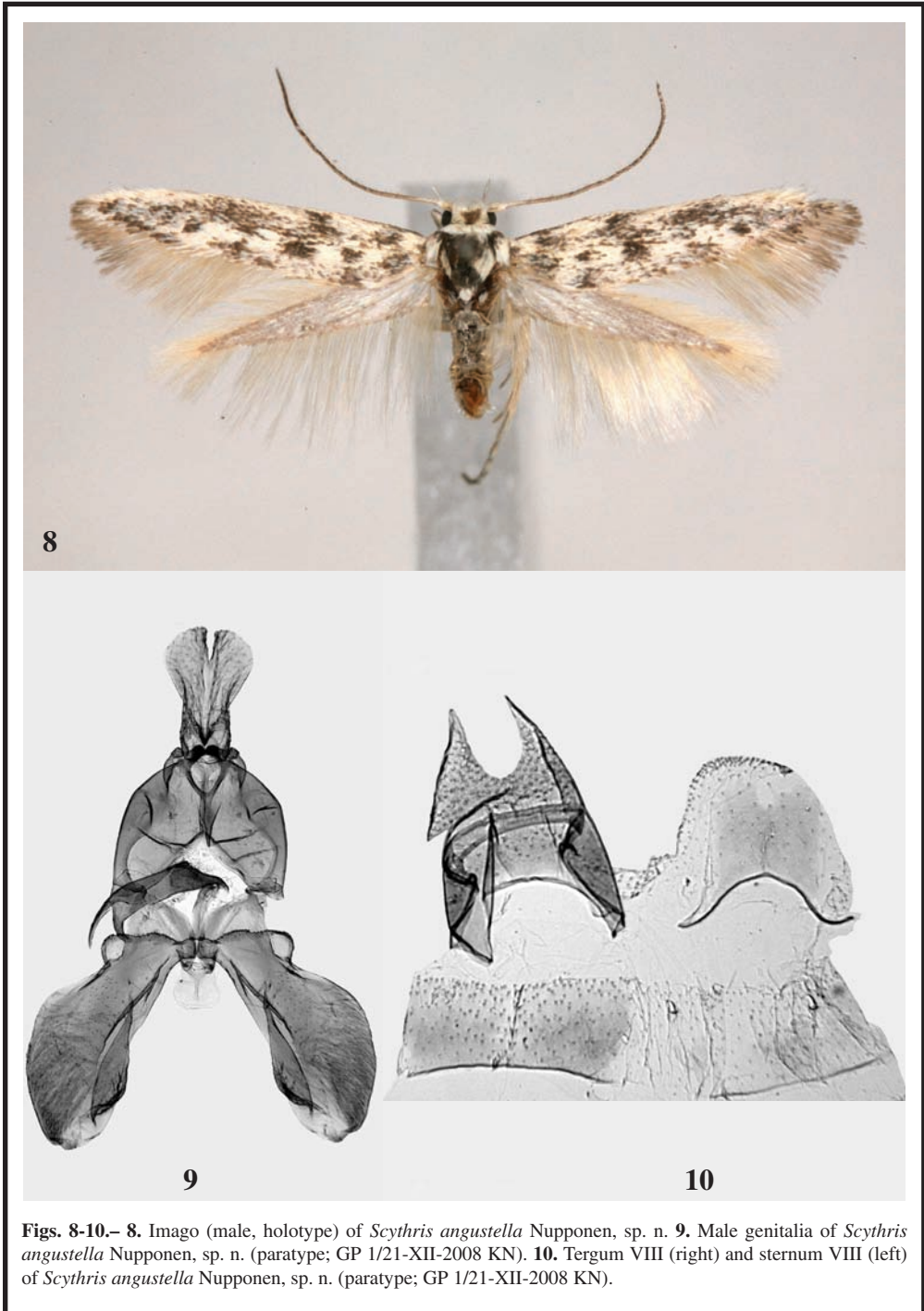
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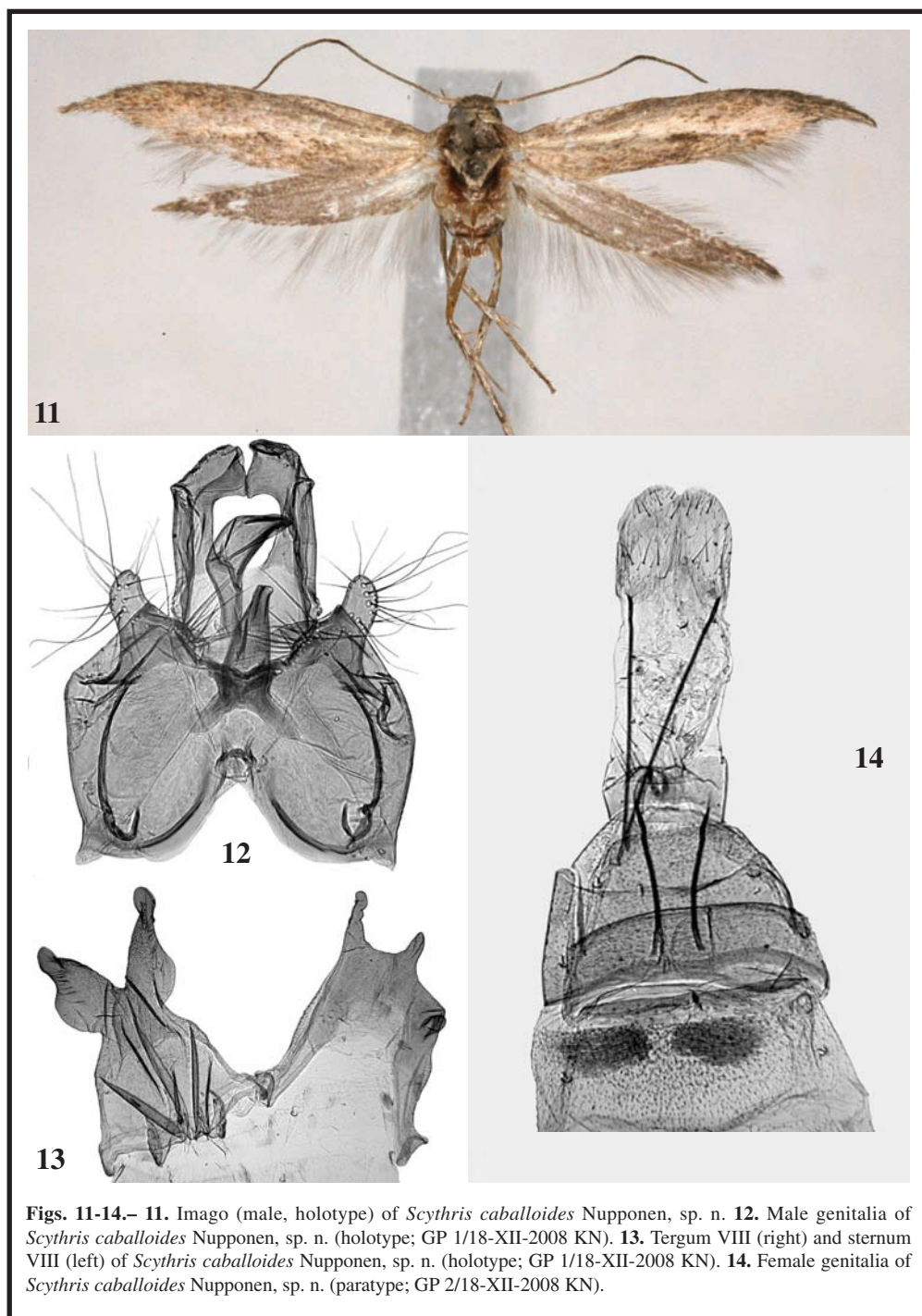
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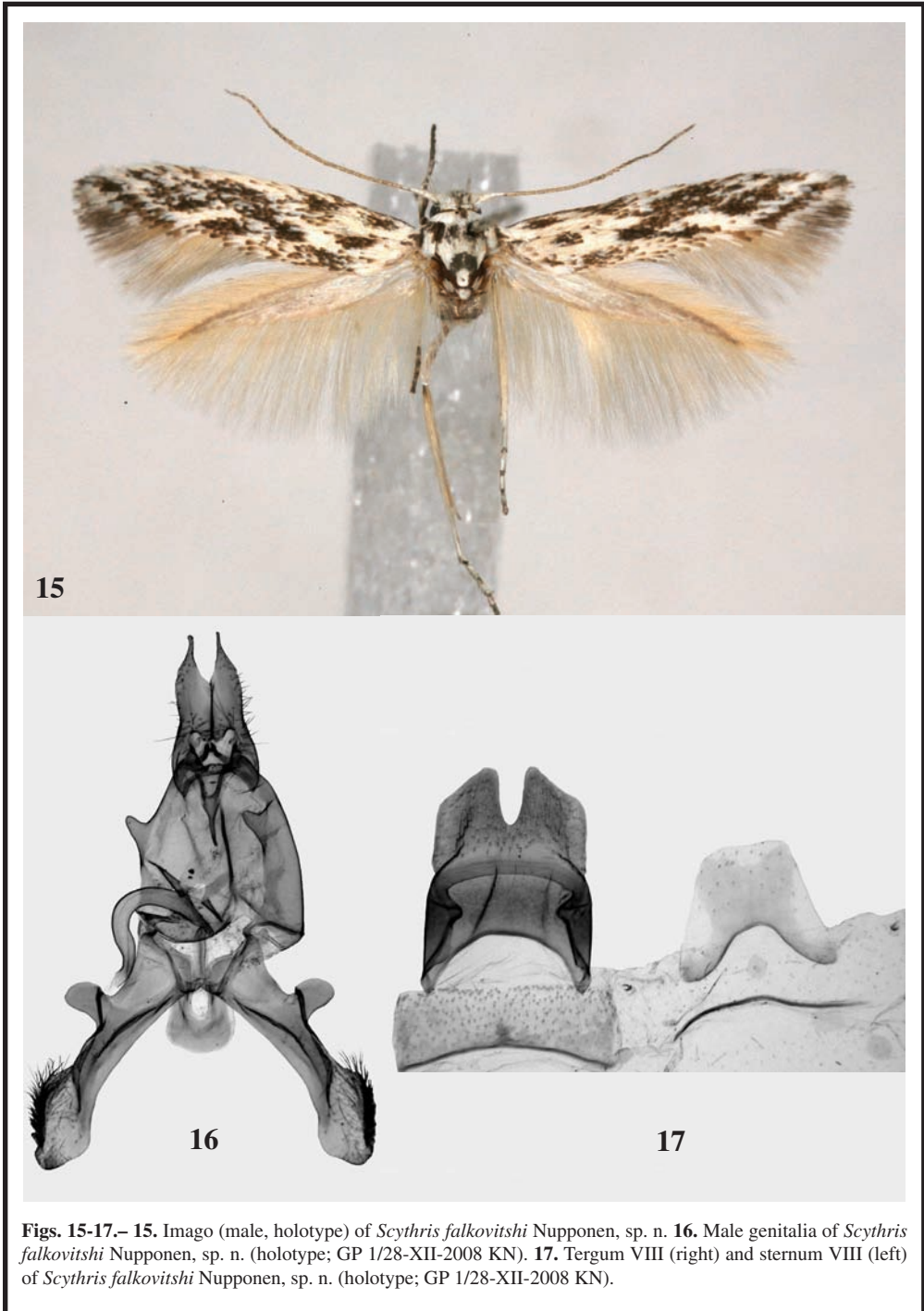


Figs. 1-6.— **1.** Uzbekistan, Kuldchuktau mountains near Churuk village. A habitat of eight scythruid species reported in the present article. **2.** A saline desert near Turt Kuduk village, Uzbekistan. A habitat of *S. angustella* Nupponen, sp. n., *S. falkovitchi* Nupponen, sp. n. and several other interesting scythruids. **3.** A sandy semidesert at roadside between Zafazabad and Zezavshan, Buchara district, Uzbekistan. A habitat of six scythruid species reported in the present article. **4.** The Tugai woods in the Syr-Darya valley, Uzbekistan. A habitat of *S. cabaloides* Nupponen, sp. n., *S. timoi* Nupponen, sp. n. and *S. tugaiensis* Nupponen, sp. n. **5.** Uzbekistan, Badbad-Say in Gbdun-Tau mountains (1170 m. a. s. l.). A habitat of *S. hostilis* Nupponen, 2005. (Photos 1-5: K. Nupponen). **6.** A desert steppe and saline desert in Ustyurt plateau, Oneri in SW Kazakhstan. A habitat of *S. onerica* Nupponen, sp. n. and *S. turanica* Nupponen, sp. n. (Photo 6: P. Gorbunov).

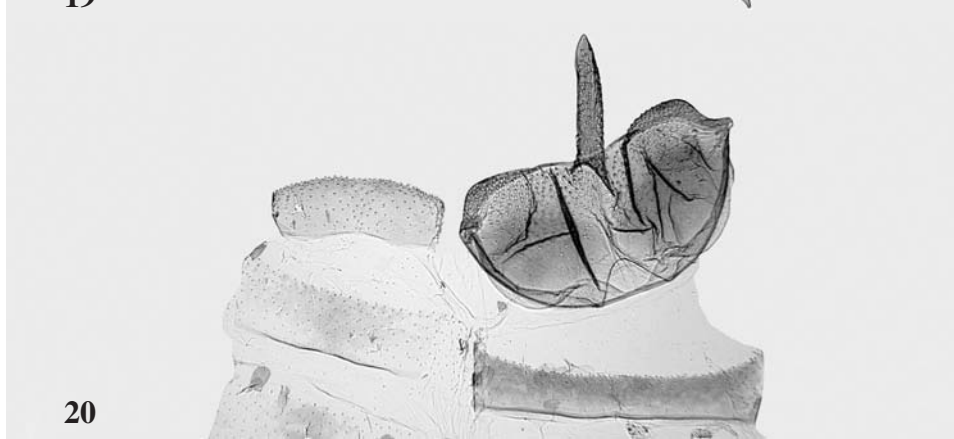
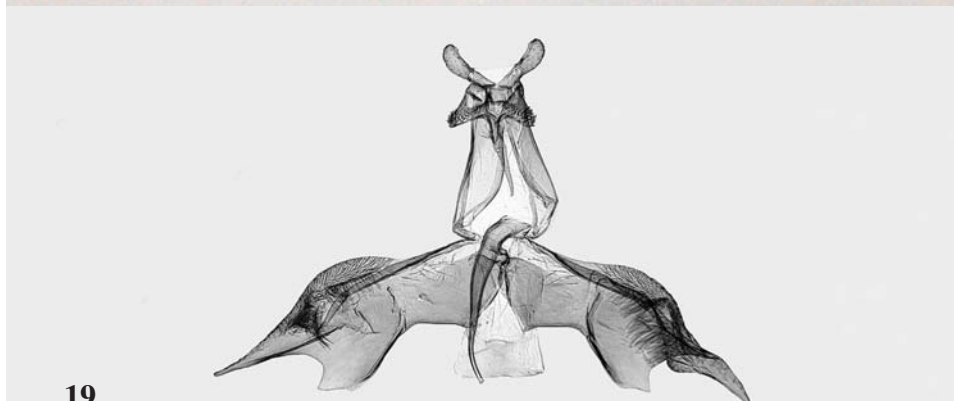




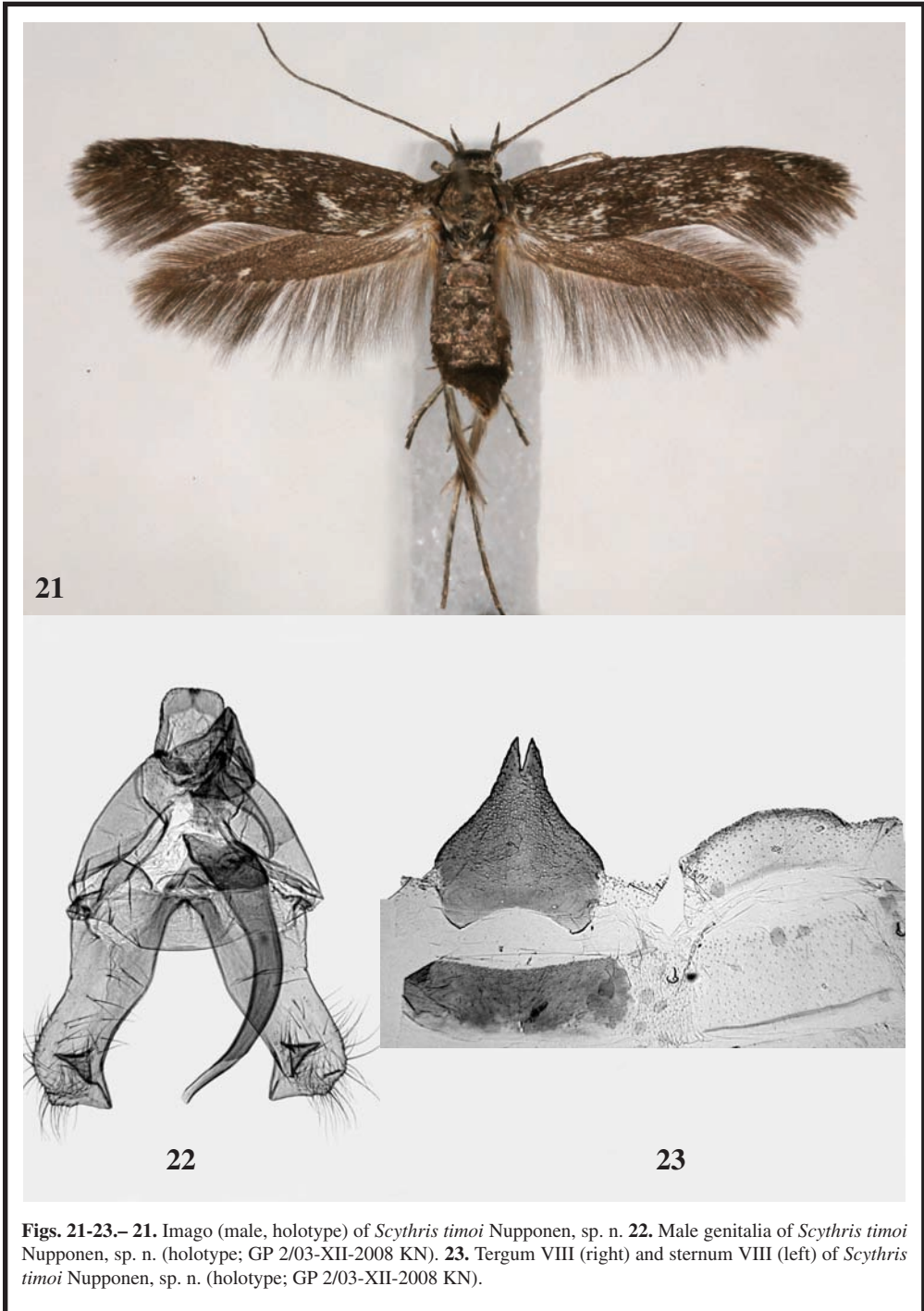
Figs. 11-14.— 11. Imago (male, holotype) of *Scythris caballoides* Nupponen, sp. n. 12. Male genitalia of *Scythris caballoides* Nupponen, sp. n. (holotype; GP 1/18-XII-2008 KN). 13. Tergum VIII (right) and sternum VIII (left) of *Scythris caballoides* Nupponen, sp. n. (holotype; GP 1/18-XII-2008 KN). 14. Female genitalia of *Scythris caballoides* Nupponen, sp. n. (paratype; GP 2/18-XII-2008 KN).



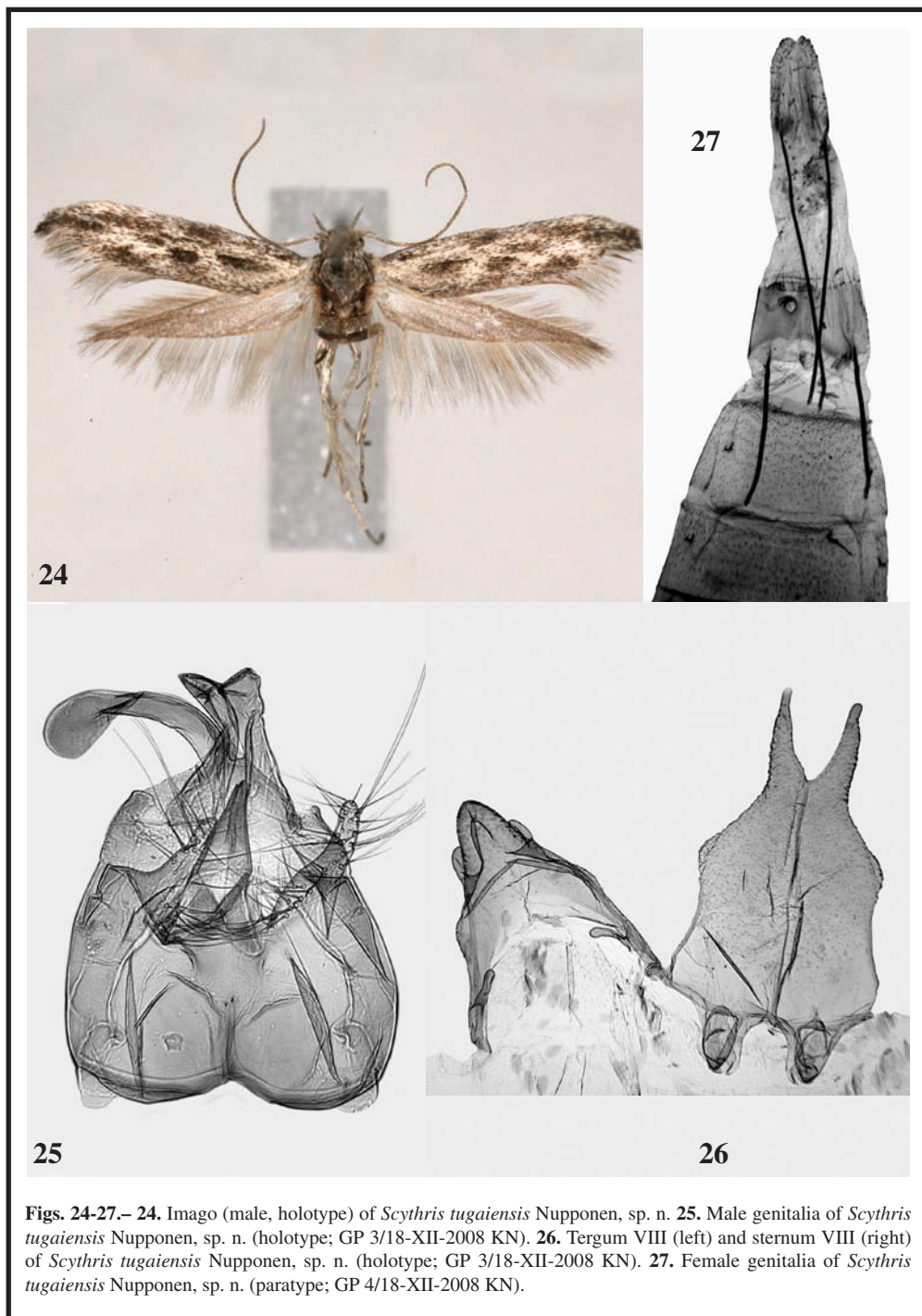
Figs. 15-17.— 15. Imago (male, holotype) of *Scythris falkovitshi* Nupponen, sp. n. 16. Male genitalia of *Scythris falkovitshi* Nupponen, sp. n. (holotype; GP 1/28-XII-2008 KN). 17. Tergum VIII (right) and sternum VIII (left) of *Scythris falkovitshi* Nupponen, sp. n. (holotype; GP 1/28-XII-2008 KN).

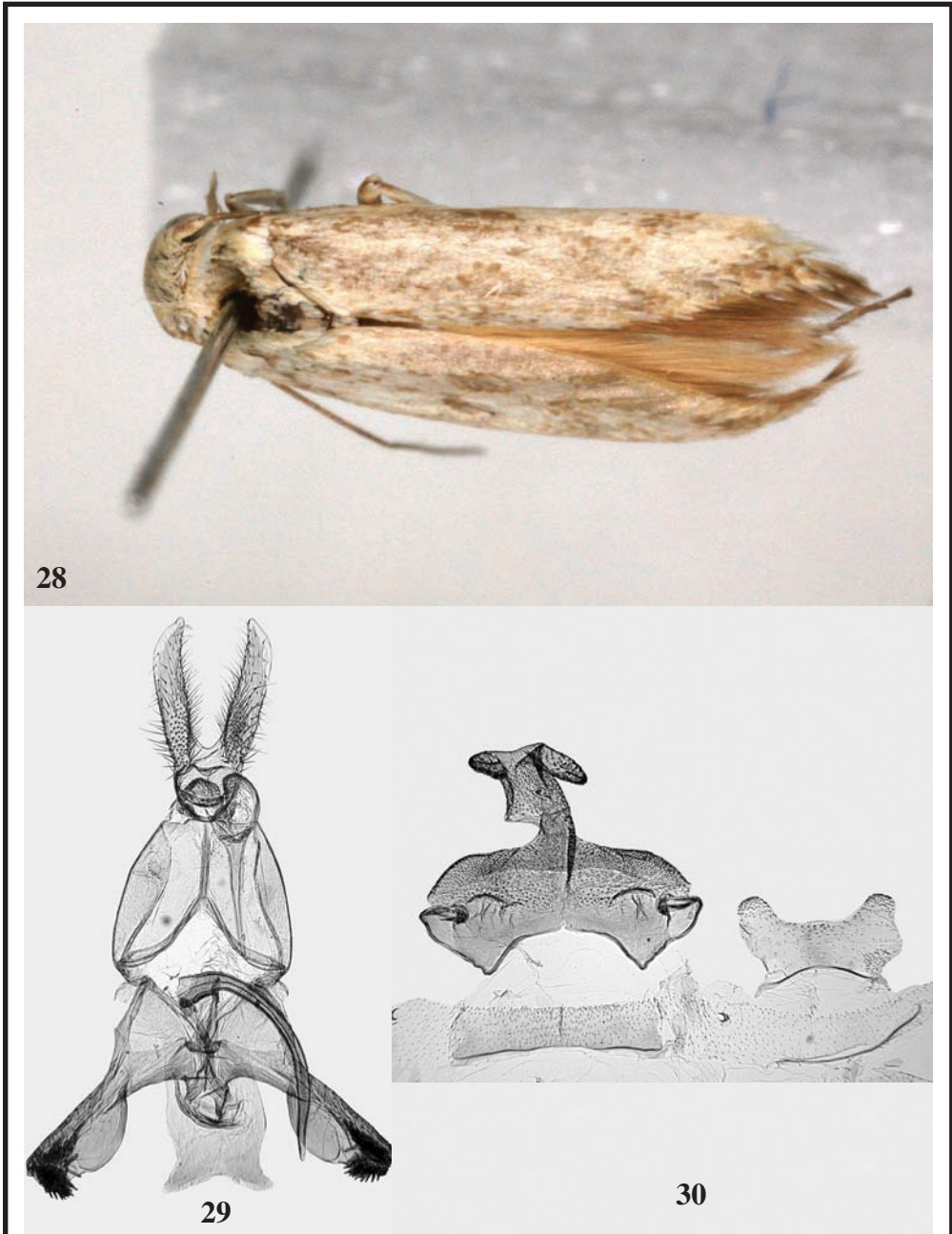


Figs. 18-20.— 18. Imago (male, holotype) of *Scythris onerica* Nupponen, sp. n. 19. Male genitalia of *Scythris onerica* Nupponen, sp. n. (holotype; GP 1/29-XII-2008 KN). 20. Tergum VIII (left) and sternum VIII (right) of *Scythris onerica* Nupponen, sp. n. (holotype; GP 1/29-XII-2008 KN).

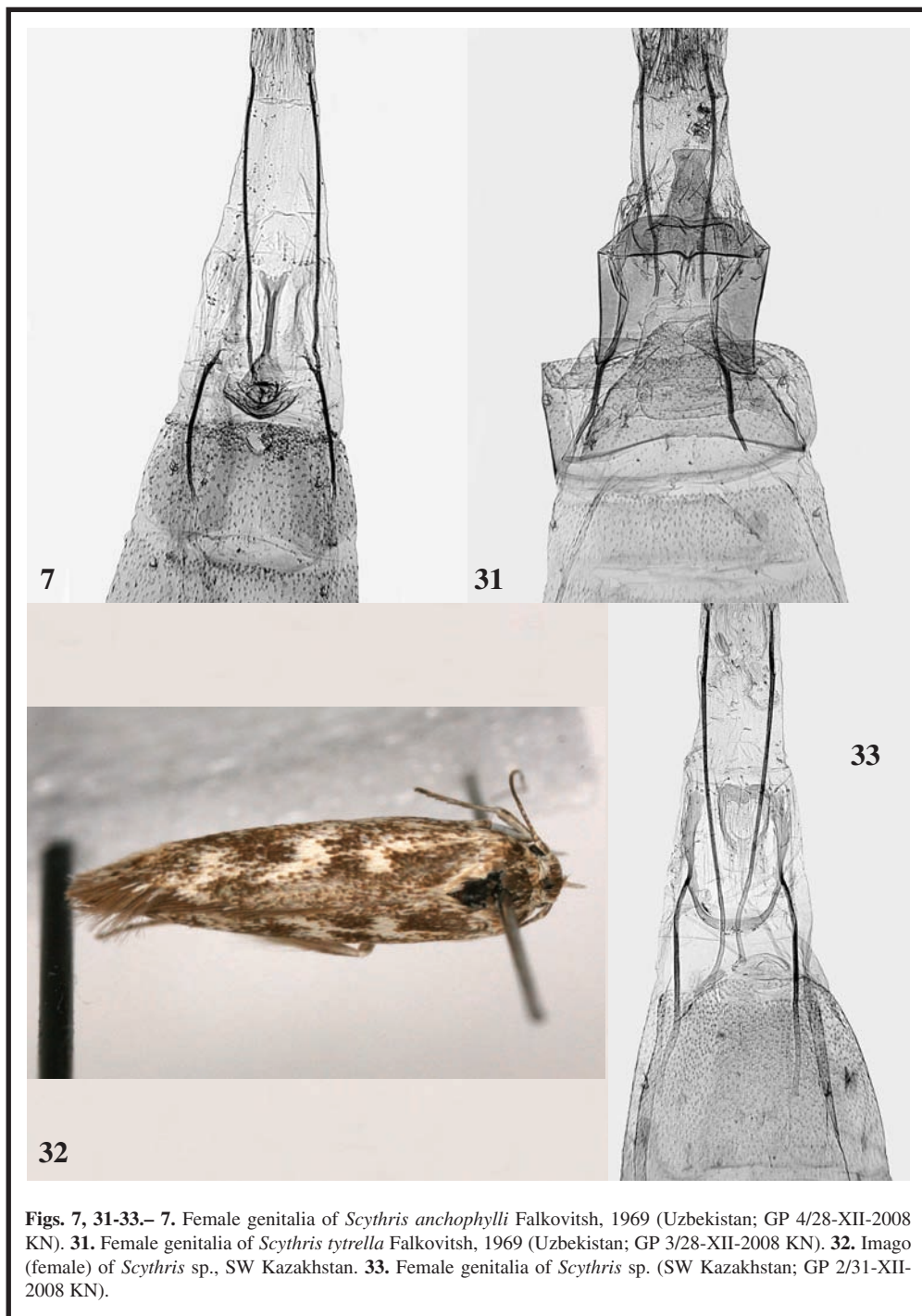


Figs. 21-23.— 21. Imago (male, holotype) of *Scythris timoi* Nupponen, sp. n. 22. Male genitalia of *Scythris timoi* Nupponen, sp. n. (holotype; GP 2/03-XII-2008 KN). 23. Tergum VIII (right) and sternum VIII (left) of *Scythris timoi* Nupponen, sp. n. (holotype; GP 2/03-XII-2008 KN).





Figs. 28-30.— 28. Imago (male, holotype) of *Scythris turanica* Nupponen, sp. n. 29. Male genitalia of *Scythris turanica* Nupponen, sp. n. (holotype; GP 2/28-XII-2008 KN). 30. Tergum VIII (right) and sternum VIII (left) of *Scythris turanica* Nupponen, sp. n. (holotype; GP 2/28-XII-2008 KN).



Figs. 7, 31-33.— 7. Female genitalia of *Scythris anchophylli* Falkovitsh, 1969 (Uzbekistan; GP 4/28-XII-2008 KN). 31. Female genitalia of *Scythris tytrella* Falkovitsh, 1969 (Uzbekistan; GP 3/28-XII-2008 KN). 32. Imago (female) of *Scythris* sp., SW Kazakhstan. 33. Female genitalia of *Scythris* sp. (SW Kazakhstan; GP 2/31-XII-2008 KN).