



## New species of plume moths (Lepidoptera: Pterophoridae) from Ecuador. Part 2

## Новые виды пальцекрылок (Lepidoptera: Pterophoridae) из Эквадора. Часть 2

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**Abstract.** Five new species of plume moths (Lepidoptera: Pterophoridae) are described from Ecuador: *Platyptilia azuayensis* sp. nov., *Hellinsia juliae* sp. nov., *H. razboinikovi* sp. nov., *H. muratovi* sp. nov., and *H. elini* sp. nov. Two species of Pterophoridae, *Quadriptilia obscurodactyla* Gielis, 1994 and *Stenoptilodes brevipennis* (Zeller, 1874), are recorded from Ecuador for the first time.

**Резюме.** Описываются пять новых видов пальцекрылок (Lepidoptera: Pterophoridae) из Эквадора: *Platyptilia azuayensis* sp. nov., *Hellinsia juliae* sp. nov., *H. razboinikovi* sp. nov., *H. muratovi* sp. nov. и *H. elini* sp. nov. Два вида Pterophoridae, *Quadriptilia obscurodactyla* Gielis, 1994 и *Stenoptilodes brevipennis* (Zeller, 1874) приводятся для фауны Эквадора впервые.

**Key words:** South America, Ecuador, biodiversity, plume moths, Lepidoptera, Pterophoridae, new records, new species

**Ключевые слова:** Южная Америка, Эквадор, биоразнообразие, пальцекрылки, Lepidoptera, Pterophoridae, новые указания, новые виды

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### Introduction

In the first part of our work on the plume moths of Ecuador (Ustjuzhanin et al., 2021), five species new to science were described. To date, we have processed another part of the material from Ecuador, collected in different years by different specialists: Ron Brechlin and Victor Sinyaev in 2012, Victor Sinyaev and Oleg Romanov in 2013, and Vyacheslav Doroshkin in 2021. In this material, we found five more new species and two species that are new to the mainland fauna of Ecuador.

### Material and methods

We used a MBR-1 microscope and a Canon DS126291 camera to capture images. Sergey Kovtunovich (Dnepropetrovsk, Ukraine) prepared composite reconstructions depicting the general appearance of the specimens. All the holotypes are deposited in the collection of the Zoological Institute of the Russian Academy of Sciences in St Petersburg, Russia (ZISP), while some of the paratypes and other examined specimens are stored in ZISP and in the collection of P. Ustjuzhanin and

V. Kovtunovich in Novosibirsk and Moscow, Russia (CUK). For identifications, we used descriptions and illustrations available in previous publications (Gielis, 2006, 2011, 2012, 2014; Ustjuzhanin et al., 2021). The abbreviation “gen. pr. No.” is used for numbers of the genitalia preparations.

## Results

### Order Lepidoptera

### Family Pterophoridae

Genus *Platyptilia* Hübner, [1825]

#### *Platyptilia azuayensis* sp. nov.

(Figs 1–2)

*Holotype*. Male, **Ecuador**, *Azuay Prov.*, 5 km road La Paz-Ona, 3020 m a.s.l., 3°21'50"S 79°11'31"W, 6.II.2012, R. Brechlin & V. Sinyaev leg. (ZISP, gen. pr. No. 1993).

*Paratype*. Same data as for holotype, 1 male (CUK).

**Description.** Head and thorax grey, tegulae slightly transparent. Frons with elongate conical extension. Labial palpi grey, straight, apically acute, 2.5 times as long as longitudinal diameter of eye. Antennae thin, dark grey. Wingspan 22–24 mm (21 mm in holotype). Fore wing ash grey. First lobe with two light parallel lines passing from lobe base and ending in its apical portion; costal line thinner. Fringe inside cleft with dark brown filiform scales. Fringe along outer margin of fore wing basally light, distally slightly darkened. Hind wings light grey. Fringe along anal margin of third lobe light grey, with sparse dark filiform scales. Hind legs light grey.

Male genitalia. Valves symmetric, elongated, of equal width. Saccus broadened basally, smoothly narrowing medially and distally. Uncus broadened medially, acute apically. Tegumen bilobed. Arms of anellus symmetric, narrow, rod-like. Saccus strongly arcuate. Aedeagus curved almost at right angle, basal process directed distally, perpendicular to aedeagus. Cornuti absent.

Female unknown.

**Comparison.** In the wing characters, namely the ash grey colour, the absence of the costal triangle, the presence of light longitudinal lines, and the long labial palpi, the new species does not exhibit any resemblance to its congeners in the South American fauna. However, its male geni-

talia are typical for the genus *Platyptilia*, without any noticeable distinctive characters.

**Flight period.** February.

**Distribution.** Ecuador.

**Etymology.** The specific name is derived from the name of the Province of Azuay.

Genus *Hellinsia* Tutt, 1905

#### *Hellinsia juliae* sp. nov.

(Figs 3–4)

*Holotype*. Male, **Ecuador**, *Imbabura Prov.*, Intag area, 3075 m a.s.l., 0°15'35"S 78°26'34"W, 15–18.I.2013, V. Sinyaev & O. Romanov leg. (ZISP, gen. pr. No. 1994).

*Paratype*. Same data as for holotype, 1 male (CUK).

**Description.** Head with collar of light yellow scales and setae. Thorax and tegulae brown yellow. Labial palpi pale yellow, thin, with several tiny brownish scales, 1.5 times as long as longitudinal diameter of eye. Antennae light yellow. Wingspan 19–21 mm (21 mm in holotype). Fore wings light greenish yellow, shiny. Costal margin basally and medially slightly darkened, with brown scales. Apical portion of first lobe and its outer fringe brown. Fringe inside cleft and along outer margin of second lobe bright white. Hind wings light, unicolorous, shiny, with bright white fringe along margins of all lobes. Hind legs pale yellow.

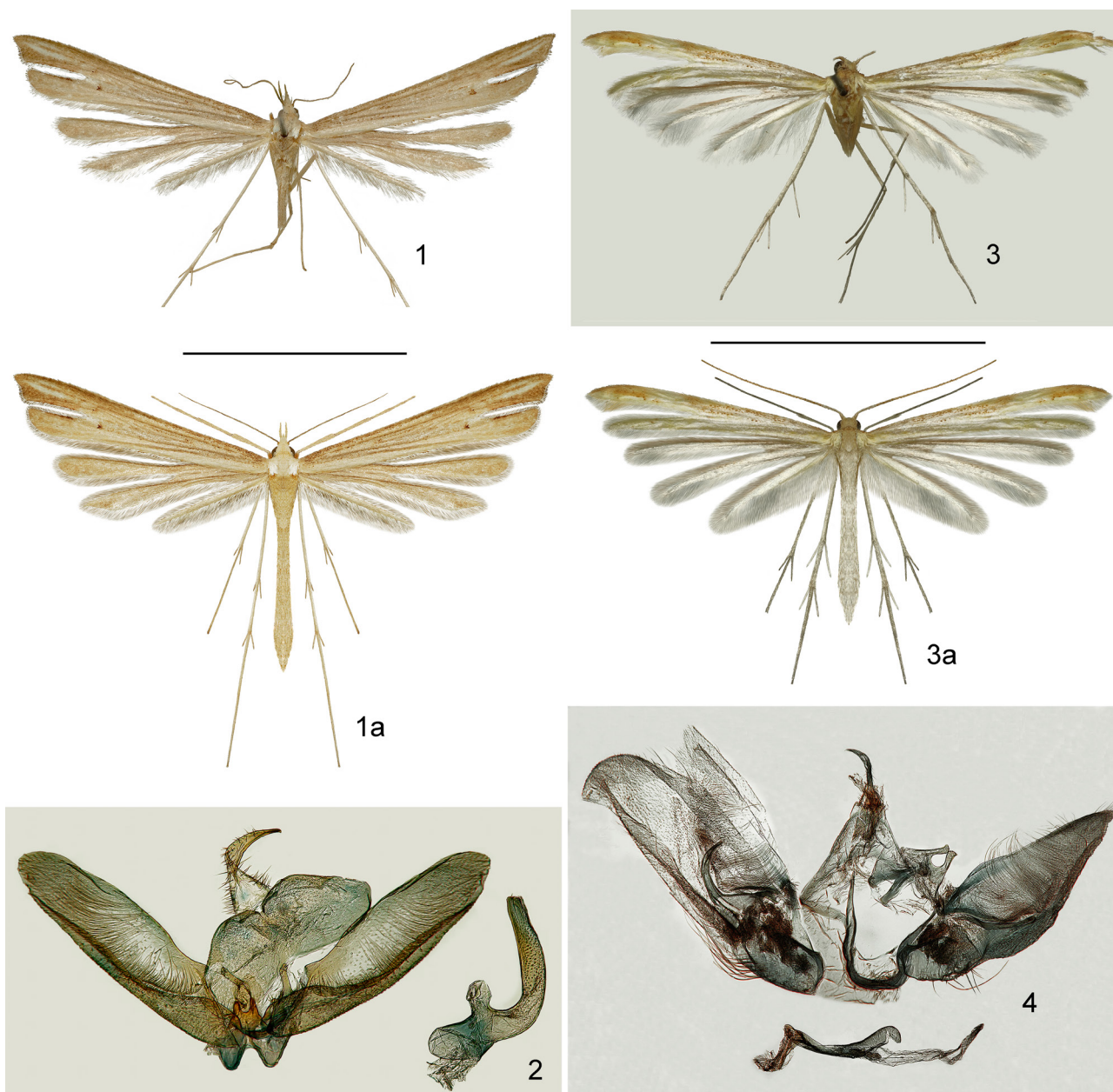
Male genitalia. Valves asymmetric. Left valve noticeably wider than right one. Saccular process on left valve arcuate, acute apically, located in medial part of valve, almost as long as uncus. Right valve narrowing apically. Saccular process on right valve narrow, ribbon-like, reaching middle of valve. Uncus broadened in middle part, acute apically. Arms of anellus short, almost straight, of equal length. Aedeagus arcuate, less than 0.5 times as long as left valve.

Female unknown.

**Comparison.** In the male genitalia (the arcuate saccular process on the left valve), the new species is similar to *Hellinsia elena* Ustjuzhanin et Kovtunovich, 2021, but differs in the asymmetrically shaped valves, short and thin arms of the anellus, and external characters of the adults: the wingspan in the new species is 19–21 mm (*vs.* 27–33 mm in *H. elena*).

**Distribution.** Ecuador.

**Flight period.** January.



**Figs 1–4.** *Platyptilia azuayensis* sp. nov. (1–2) and *Hellinsia juliae* sp. nov. (3–4). 1, 3, adults in dorsal view, holotypes; 1a, 3a, reconstructed images of adults in dorsal view; 2, 4, male genitalia, holotypes. Scale bars: 10 mm (1, 1a, 3, 3a).

**Etymology.** The species is named in honor of Yulia Valerievna Sachkova (Samara, Russia), a zoologist and malacologist (1968–2017).

***Hellinsia razboinikovi* sp. nov.**  
(Figs 5–6)

**Holotype.** Male, **Ecuador**, *Napo Prov.*, 10.5 km W of Guamani, 0°43'21.1"S, 77°42'24.5", 1100 m a.s.l., 6.XI.2021, V. Doroshkin leg. (ZISP, gen. pr. No. 1995).

**Description.** Head with light brown scales, thorax and tegulae light yellow. Head light yellow near base of antennae. Labial palpi pale yellow, short, thin, as long as longitudinal diameter of eye. Antennae light brown, striate. Wingspan 16 mm. Fore wings light brownish yellow, with a distinct dark brown spot at cleft base. Costal margin darkened, with brown scales forming elongated spot at level of basal third of first lobe. Apex of first lobe



with two distinct brown dots located obliquely along costa and inner margin of lobe. Fringe inside cleft and along outer margin of second lobe light brown. Hind wings unicolourous, pale yellow. Hind legs greyish yellow, interspersed with brown scales.

Male genitalia. Valves asymmetric. Left valve slightly wider than right one. Saccular process of left valve quite thin, slightly wavy, located in middle part. Sacculus of right valve distally with claw-like, slightly curved process having two basal branches. Arms of anellus of equal length, right arm basally and medially wider than left one. Uncus narrow, thin, slightly curved. Aedeagus thick, almost straight, apically acute, just less than 0.5 times as long as left valve. Saccus arcuate.

Female unknown.

**Comparison.** In the external characters of the adults, the new species is similar to *Hellinsia angulofuscus* (Gielis, 1991), but it clearly differs in a unique combination of characters of the male genitalia: the left saccular process is thin and slightly sinuous, while the right one is claw-like, with two basal branches, and the aedeagus with a pointed apex.

**Distribution.** Ecuador.

**Flight period.** November.

**Etymology.** The species is named after the animal graphic artist and entomologist Alexander Valentinovich Razboinikov (Chelyabinsk, Russia).

### *Hellinsia muratovi* sp. nov.

(Figs 7–8)

**Holotype.** Male, **Ecuador**, *Pichincha Prov.*, Camping Bella Vista, 2230 m a.s.l., 0°00'41"S, 78°41'17"W, 5–19.III.2012, R. Brechlin & V. Sinyaev leg. (ZISP, gen. pr. No. 1996).

**Paratype.** Same data as for holotype, 1 male (CUK).

**Description.** Head, thorax, and tegulae light grey, densely interspersed with tiny brown scales, creating mottled coloring. Labial palpi pale yellow, with spots of brown scales medially and apically, as long as longitudinal diameter of eye. Antennae light brown, striate. Wingspan 20–23 mm (20 mm in holotype). Fore wings brown grey, with diffuse dark brown patches at cleft base and medially. Costal margin with tiny dark brown scales. Costa of first lobe with distinct black elongated spot. First lobe apically with two small spots of

black scales separated by a small patch of white scales. Second lobe covered with black scales basally and apically. Fringe inside cleft dark grey to black; fringe along outer margin of fore wing yellowish grey. Hind wings unicolourous, yellowish grey. Hind legs pale yellow, with scattering of dark scales at bases of spurs. Tips of spurs noticeably darkened.

Male genitalia. Valves asymmetric. Saccular process on left valve smoothly crescent-shaped, almost reaching apex of valve. Saccular process on right valve rod-like, located along its inner margin. Distinct curved spike located in middle of this process, with apex directed toward valve base. Arms of anellus quite narrow, rod-like, of equal length. Uncus slightly curved. Saccus wide, slightly arcuate. Aedeagus slightly curved, 0.67 times as long as valve, without cornuti.

Female unknown.

**Comparison.** In the male genitalia, namely the shape of the saccular process on the left valve, the rod-like arms of the anellus, and the slightly curved aedeagus without cornuti, the species is similar to *Hellinsia surinamensis* (Sepp, 1855), but differs in the saccular process on the right valve, which has an acute spike and a wide, slightly arcuate saccus.

**Distribution.** Ecuador.

**Flight period.** March.

**Etymology.** The species is named after the zoologist and malacologist Igor Muratov (South Africa).

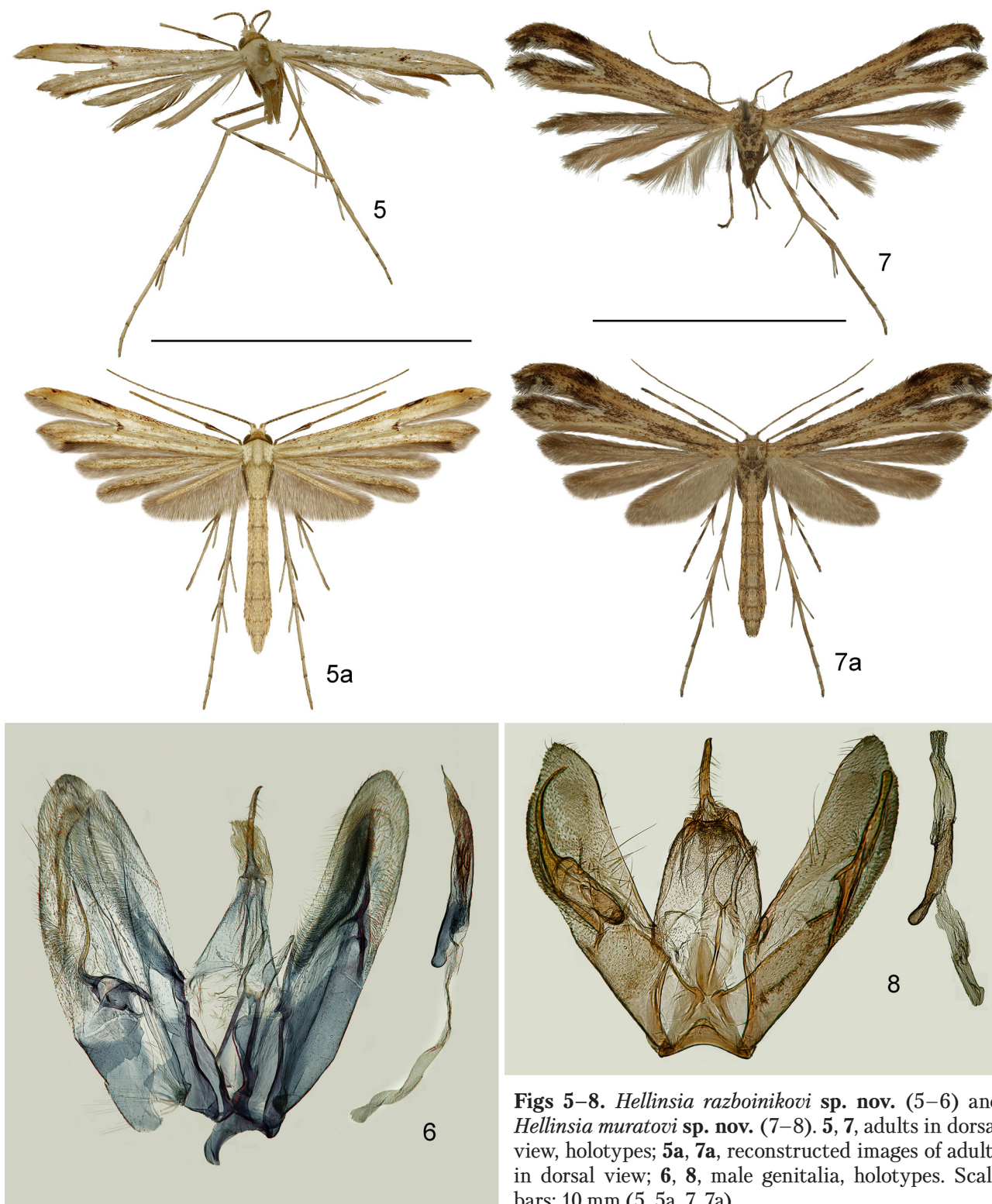
### *Hellinsia elini* sp. nov.

(Figs 9–11)

**Holotype.** Male, **Ecuador**, *Pichincha Prov.*, Camping Bella Vista, 2230 m a.s.l., 0°00'41"S, 78°41'17"W, 5–19.III.2012, R. Brechlin & V. Sinyaev leg. (ZISP, gen. pr. No. 1997).

**Paratypes.** **Ecuador**, *Pichincha Prov.*: same data as for holotype, 4 males, 2 females (ZISP, gen. pr. No. 1998; CUK); same data but 20.XII.2012, R. Brechlin & V. Sinyaev leg., 1 male (CUK); Nanegalito, Bella Vista, 2370 m a.s.l., 3.IV.2021, collector unknown, 1 male (CUK).

**Description.** Head, thorax, and tegulae yellow. Collar on head light brown. Labial palpi straight, yellow, equal to longitudinal diameter of eye. Antennae yellowish brown. Wingspan 18–23 mm (19 mm in holotype). Fore wings cream-coloured, transitioning to bright ochraceous distally on

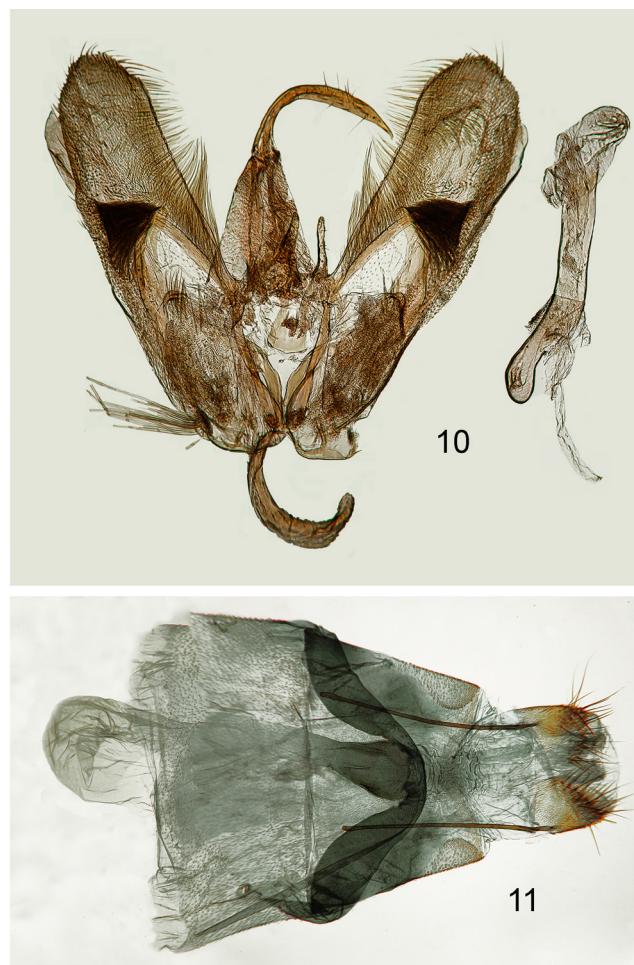
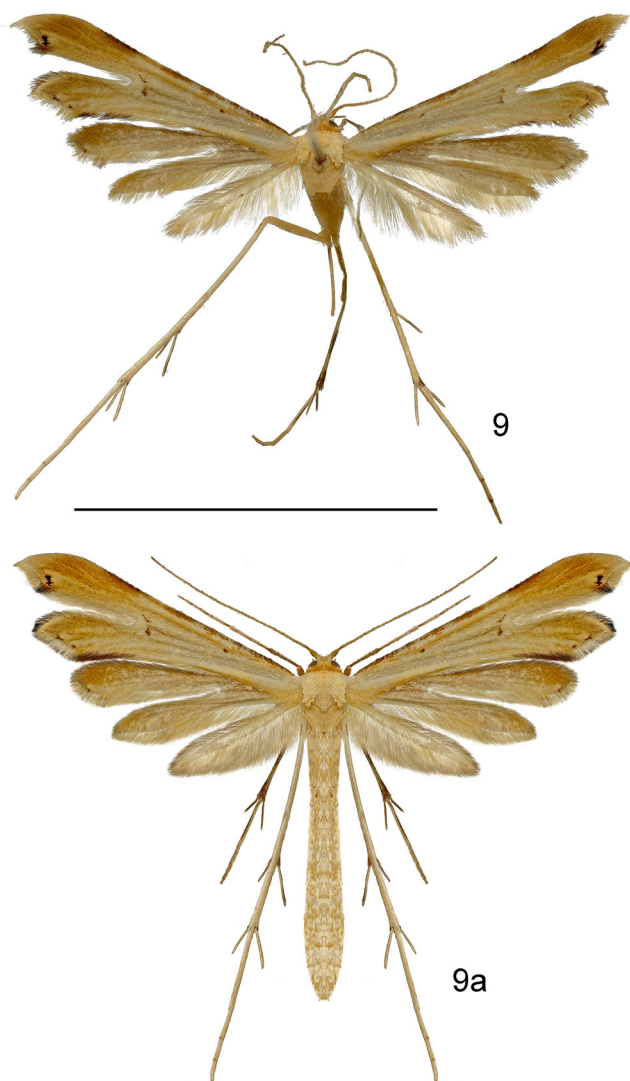


**Figs 5–8.** *Hellinsia razboinikovi* sp. nov. (5–6) and *Hellinsia muratovi* sp. nov. (7–8). 5, 7, adults in dorsal view, holotypes; 5a, 7a, reconstructed images of adults in dorsal view; 6, 8, male genitalia, holotypes. Scale bars: 10 mm (5, 5a, 7, 7a).

lobes. Double spot of brown scales located at cleft base. Small brown spot located on fore wing distally between cleft and wing base. Costal margin with longitudinal spot of brown scales, those being

more distinct at level of cleft base. Anal angle of first lobe with spot of black scales, adjacent fringe scales also black. First lobe apically without dark spot. Outer margin of second lobe with two small





**Figs 9–11.** *Hellinsia elini* sp. nov. **9**, adult in dorsal view, holotype; **9a**, reconstructed image of adult in dorsal view; **10**, male genitalia, holotype; **11**, female genitalia, paratype. Scale bar: 17 mm (9, 9a).

black longitudinal spots. Fringe inside cleft light yellow, second lobe apically with small tuft of black scales. Fringe of outer margin of fore wing second lobe black. Hind wings cream-coloured, with distal parts of first and second lobes being darker ochraceous. Outer margin of first lobe of hind wings with faint black spots. Hind legs pale yellow.

**Male genitalia.** Valves symmetric. Saccular processes on both valves appearing as blunt knobs located at a distance of one-third from valve bases. Valvae in middle part with distinct robust triangular tufts of hairs. Uncus arcuate, apically acute. Arms of anellus narrow, rod-like, of equal length. Saccus arcuate. Aedeagus 0.3 times as long as valvae, straight distally, with rounded phallobase, without cornuti.

**Female genitalia.** Papillae anales rounded. Posterior apophyses thin, long. Lamina ante-vaginalis quite wide, with double layer of cuticle appearing sclerotised. Antrum funnel-shaped, with wide base. Ductus wide, smoothly passing into pear-shaped bursa copulatrix. Signa absent.

**Comparison.** Externally, in the characters of the wings, the new species greatly resembles *Hellinsia gielisi* Ustjuzhanin et Kovtunovich, 2021, but differs in having a brighter colour and the absence of an apical brown spot on the first lobe of the fore wing. The new species is unique compared to similar species due to the presence of triangular bundles of robust spines on the valves and an unusual sclerotised ribbon-like band arching across the valves.

**Distribution.** Ecuador.

**Flight period.** March–April and December.

**Etymology.** The species is named after Sergei Yur'evich Elin (Ekaterinburg, Russia), an amateur biologist–entomologist.

## Pterophoridae species new to the fauna of Ecuador

### *Quadriptilia obscurodactyla* Gielis, 1994

*Material examined.* Ecuador, Carchi Prov., 8.83 km SE of Maldonado, 0°50'29.43"S, 78°3'24.96"W, 2422 m a.s.l., 30.X.2021, V. Doroshkin leg., 1 male (CUK).

**Distribution.** Colombia, Ecuador.

### *Stenoptilodes brevipennis* (Zeller, 1874)

*Material examined.* Ecuador, Napo Prov., 10.5 km W of Guamani, 0°43'21.1"S, 77°42'24.5"W, 1100 m a.s.l., 6.XI.2021, V. Doroshkin leg., 1 mal (CUK).

**Distribution.** Argentina, Bahamas, Bolivia, Ecuador, Galapagos Islands, Honduras, Mexico, Peru, Puerto Rico, Surinam, Venezuela, United States.

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