Russian Entomol. J. 30(3): 323–327

New species of plume moths (Lepidoptera: Pterophoridae) from China, Sichuan Province

Новые виды пальцекрылок (Lepidoptera: Pterophoridae) из провинции Сычуань, Китай

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KEY WORDS: biodiversity, new spevies, China.

КЛЮЧЕВЫЕ СЛОВА: биоразнообразие, новые виды, Китай.

ABSTRACT. Three new species of plume moths are described from southwestern China (Sichuan Province): *Platyptilia butvila* Ustjuzhanin, Kovtunovich et Saldaitis **sp.n.**, *Platyptilia duda* Ustjuzhanin, Kovtunovich et Saldaitis, **sp.n.**, and *Hellinsia alena* Ustjuzhanin, Kovtunovich et Saldaitis, **sp.n.** Additionally, the paper contains new data on the distribution of four other species of the family one of which, *Amblyptilia direptalis* (Walker, 1864) is reported from China for the first time.

РЕЗЮМЕ. Из юго-западного Китая (провинция Сычуань)описываются три новых для науки вида пальцекрылок: *Platyptilia butvila* Ustjuzhanin, Kovtunovich et Saldaitis **sp.n.**, *Platyptilia duda* Ustjuzhanin, Kovtunovich et Saldaitis, **sp.n.** и *Hellinsia alena* Ustjuzhanin, Kovtunovich et Saldaitis, **sp.n.** Так же приводятся четыре известных вида, один из которых, *Amblyptilia direptalis* (Walker, 1864), впервые обнаружен для Китая.

The Pterophoridae fauna of China is studied quite well, ca. 150 species are known from the country [Hao, Li, 2003, 2005, 2007, 2008; Hao et al., 2004, 2005a, b; Li et al., 2003]. During the entomological expedition in the high mountainous areas of Sichuan Province in 2009 the third author of the present paper collected seven Pterophoridae species three of which are new for science and described below. One more species collected is new for the fauna of China. The holotypes of the new species are deposited in the collection of the Zoological Institute St. Petersburg, Russia (ZISP).

Platyptilia butvila
Ustjuzhanin, Kovtunovich et Saldaitis, **sp.n.**
Figs 1–3.

TYPE MATERIAL: Holotype, ♂, (ZISP, gen. pr. N 1953) China, NW Sichuan, Chola Shan, Cho La pass, h — 4700m, 31°56′S, 98°55′E, 05.vii.2009, J. Butvila & A. Saldaitis leg.

DESCRIPTION: External characters (Fig.1). Wingspan 22 mm. Head, thorax and tegulae ash-grey. Labial palpi light-brown, long, straight, 1,5 times longer than longitudinal eye diameter, third segment apically acute. Antennae thin, dark-brown. Fore wings brown-grey. Costal margin darkened with brown scales. Fore wing apically elongated and acute. Distally, two white bands. First one — closer to apex, narrow, distinctly expressed only on first lobe, poorly developed on second lobe. Second one — wider than first, clearly expressed only on first lobe, almost invisible on second lobe. Costal triangle wide, its angle abutting base of cleft blunt, with oblique apex. At base of both lobes fringe dark-brown, on outer side of lobes — white. Inside cleft fringe white, only distally with brown hairs. Hind wings and their fringe grey-

How to cite this article: Ustjuzhanin P.Ya., Kovtunovich V.N., Saldaitis A., Streltzov A.N. 2021. New species of plume moths (Lepidoptera: Pterophoridae) from China, Sichuan Province // Russian Entomol. J. Vol.30. No.3. P.323–327. doi: 10.15298/rusentj.30.3.10

yellow, unicolorous. Poorly developed bundle of dark hairs in fringe of third lobe. Legs grey.

Male genitalia (Fig. 2). Valves relatively narrow, outer edge concave. Sacculus relatively narrow, distally acute. Uncus narrow, apically noticeably thicker. Anellus arms straight, wide. Saccus with wide outer notched edge. Inner edge of saccus arched. Aedeagus medially curved almost at right angle. Basal process of aedeagus long, pressed to caecum.

DIFFERENTIAL DIAGNOSIS. In the color of the wings and in the male genital structure, the new species is similar to *Platyptilia iberica* Rebel, 1935, from which it differs in the poorly expressed white band on the second lobe distally and in the poorly noticeable bundle of hairs in the fringe of the third lobe. In the genus *Platyptilia*, the genital structures are very uniform and poorly informative for species distinguishing. However, the new species differs from *P. iberica* in its arch-shaped saccus.

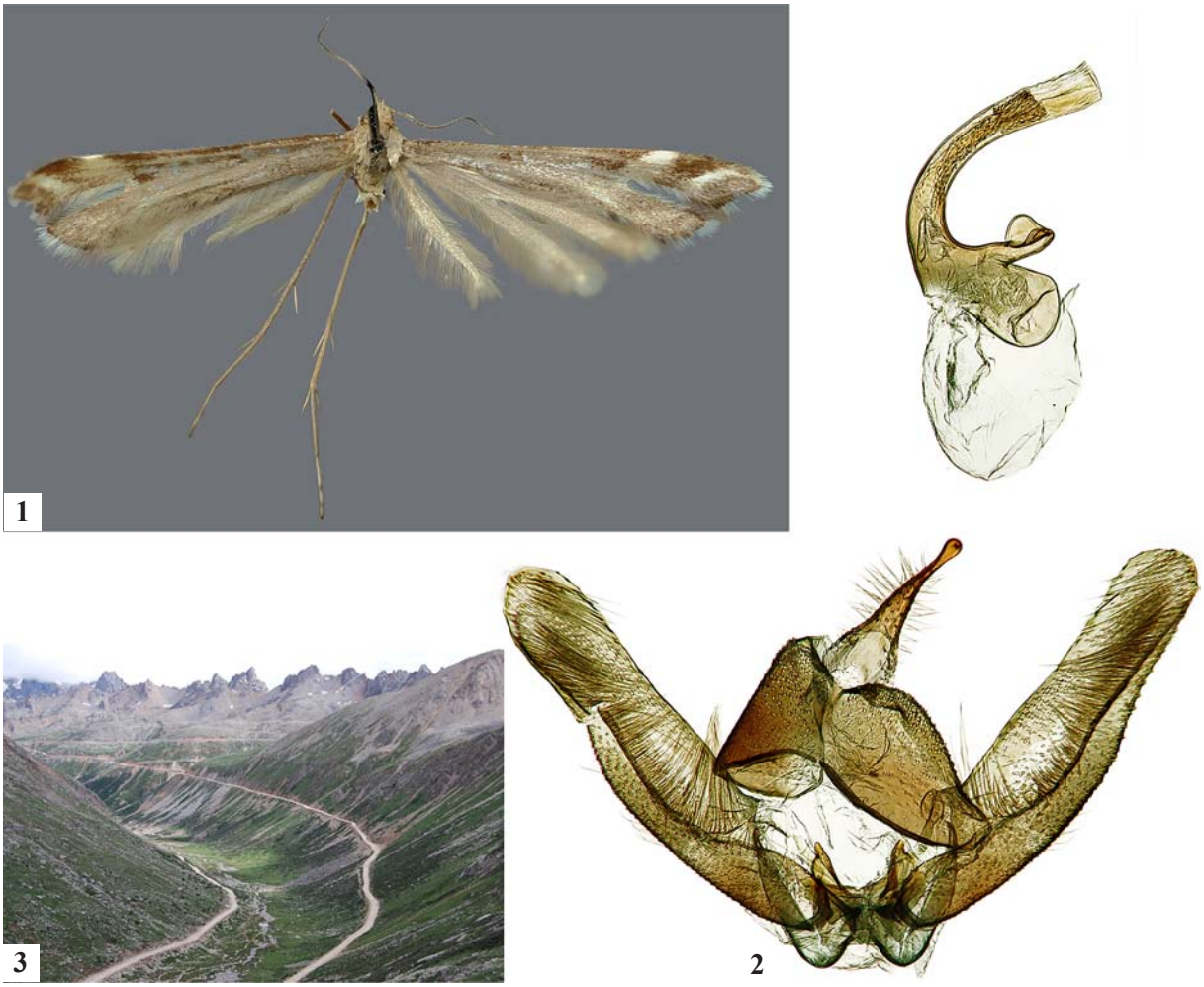
BIONOMICS. Single male was collected at light beginning of July in remote part of west China Sichuan province at Cho La pass near the Maniganggo. The new species was collected at altitudes ranging from 4400 to 4700 meters in alpine mountain zone dominated by various herbaceous vegetation and scarce shrubs (Fig. 3).

ETYMOLOGY. The new species is named after our colleague, prominent Lithuanian collector Rimantas Butvila (Joniškis, Lithuania).

Platyptilia duda Ustjuzhanin, Kovtunovich et Saldaitis, **sp.n.** Figs 4–6**.**

TYPE MATERIAL: Holotype — ♂, (ZISP, gen. pr. N 1954) China, W Sichuan, near Xinduqiao, h≈3640m, 30°04′S, 101°24′E, 28.vi.2009, J. Butvila & A. Saldaitis leg.

DESCRIPTION: External characters (Fig. 4). Wingspan 18 mm. Head, thorax and tegulae light-grey. Labial palpi light-brown, long, straight, 1,5 times longer than longitudinal eye diameter, third segment apically acute. Antennae thin, dark-brown. Fore wings brown-grey, with alternating brown and white scales on costal edge, wing apically bluntly rounded. Clearly expressed bright white band at cleft base on both lobes. Distally the same band poorly expressed. Costal triangle apically acute. At base of both lobes fringe dark-brown, on outer side of lobes — white. Fringe inside cleft white, only distally with brown hairs. Hind wings grey-yellow, unicolorous. Fringe on third lobe with individual patches of dark-brown hairs, without visible bundle of scales which is often



Figs 1–3. *Platyptilia butvila* Ustjuzhanin, Kovtunovich et Saldaitis **sp.n.**: 1 — habitus (holotype, ZISP); 2 — male genitalia (holotype, ZISP, gen.pr. Nr 1953); 3 — biotope, China, NW Sichuan, Chola Shan, Cho La pass, h≈4700m. Photo by A. Saldaitis.

Рис. 1–3. *Platyptilia butvila* Ustjuzhanin, Kovtunovich et Saldaitis **sp.n.**: 1 — внешний вид (голотип, ZISP); 2 — гениталии самца (Holotype, ZISP, gen.pr. Nr 1953); 3 — биотоп, Китай, СЗ Сычуань, Чола-Шань, перевал Чо-Ла, h≈4700м. Фото А. Салдаитиса.

observed in specimens of this genus. Legs light-grey with brown portions of scales.

Male genitalia (Fig. 5). Valves narrow, outer edge concave. Sacculus relatively narrow, basally noticeably wider than medially and distally. Uncus narrow, apically noticeably thicker. Anellus arms straight, narrow, short. Saccus with wide outer edge. Inner edge of saccus with narrow deep cut. Aedeagus medially curved almost at right angle. Basal process of aedeagus long, pressed to caecum.

DIFFERENTIAL DIAGNOSIS. In the wings color and male genital structure, the new species resembles *Platyptilia calodactyla* (Denis et Schiffermüller, 1775), from which it differs in the expressed white band at the cleft base on both lobes of the fore wings, and in the absence of the noticeable bundle of hairs in the fringe on the outer side of the third lobe of hind wings. In the male genitalia, the new species differs from *P. calodactyla* in the narrow deep cut on the inner side of the saccus and in the short and narrow anellus arms.

BIONOMICS. Single male was collected at light on 28.VI.2009 in remote part of west China Sichuan province near Xinduqiao. The new species was collected at altitudes ranging 3600 meters in mountain mixed forests dominated by various conifer trees, bushes and rhododendron (Fig. 6).

ETYMOLOGY. The new species is named after our colleague Juozas Dûda (Joni□kis, Lithuania), prominent Lithuanian collector and director of the World Insect Gallery.

Hellinsia alena
Ustjuzhanin, Kovtunovich et Saldaitis, **sp.n.**
Figs 7–9.

TYPE MATERIAL: Holotype — ♂, (ZISP, gen. pr. N 1955) China, NW Sichuan, near Derge, h≈3400m, 31°49′S, 98°34′E, 04.vii.2009, J. Butvila & A. Saldaitis leg.

DESCRIPTION: External characters (Fig. 7). Head, thorax and tegulae yellow-grey. Labial palpi brown, apically acute, equal to longitudinal eye diameter in length. Antennae yellowish-brown. Wingspan 20 mm. Fore wings light-greenish-yellow, interspersed with tiny brownish scales. Two brown strokes distally on costal edge of first lobe. Fringe inside cleft light-yellow, almost white. Hind wings brownish-grey, unicolorous, noticeably darker than fore wings.

Male genitalia (Fig. 8). Valves asymmetric, left noticeably wider than right. Harpe on left valve thin, long, extending beyond middle of valve in length, apically smoothly bent almost at right angle. Anellus arms distally extended, apically acute, right arm wider than left one. Uncus thin, smoothly curved, apically acute. Aedeagus medially slightly concave, almost twice shorter than valve, distally with cluster of tine cornuti.

Female unknown.

DIFFERENTIAL DIAGNOSIS. In the light-greenish-yellow color of the wings and absence of the dark strokes along the outer edge of the second lobe, the species is similar to *Hellinsia osteodactyla* (Zeller, 1841), but differs in the two brown strokes on the wing costal edge distally and in the absence of the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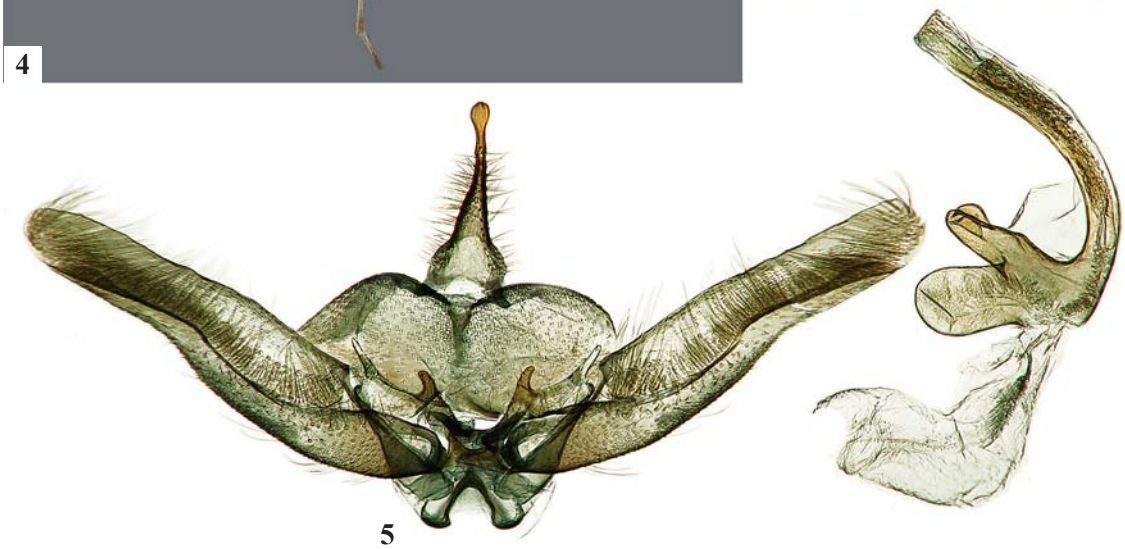
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Figs 4–6. *Platyptilia duda* Ustjuzhanin, Kovtunovich et Saldaitis**, sp.n.**: 4 — habitus (holotype, ZISP); 5 — male genitalia (holotype, ZISP, gen.pr. Nr 1954); 6 — biotope, China, W Sichuan, near Xinduqiao, h≈3640m. Photo by A. Saldaitis.

Рис. 4–6. *Platyptilia duda* Ustjuzhanin, Kovtunovich et Saldaitis**, sp.n.**: 4 — внешний вид (голотип, ZISP); 5 — гениталии самца (голотип, ZISP, gen.pr. Nr 1954); 6 — биотоп, Китай, З Сычуань, near Xinduqiao, h≈3640м. Фото А. Салдаитиса.

noticeable dark spot at the cleft base. The male genitalia of the new species are similar to those of *Hellinsia distincta* (Herrich-Schäffer, 1855), but differ in the long bent harpe on the left valve and in the cluster of tiny cornuti in the aedeagus distally, while in *H. distincta,* the harpe on the left valve is almost straight, bent only slightly, and the aedeagus lacks cornuti.

BIONOMICS. Single male was collected at light beginning of July in the remote part of West China Sichuan Province near the Derge. The new species was collected at altitude ranging 3400 meters in a dry, narrow and stony river valley sparsely covered by mixed bushes (Fig. 9).

ETYMOLOGY. The species is dedicated to Alena Kazakevich (Lida, Belarus) for her deep understanding and support of the entomological activities of the third author.

Amblyptilia direptalis (Walker, 1864)

MATERIAL EXAMINED. China, NW Sichuan, SW slopes of Erlang Shan Mt. 30 km E from Luding, h≈1920m, 29°49′S, 102°15′E, 21.x.2009, A. Saldaitis leg.

DISTRIBUTION. Africa (Rep. S. Africa, Zimbabwe, Malawi, Tanzania, Democratic Republic of the Congo, Kenya, Ethiopia), India, Sri Lanka, China (NW Sichuan).

NOTE. First record for China.

Stenoptilodes taprobanes (Felder et Rogenhofer, 1875)

MATERIAL EXAMINED. 1 female, China, NW Sichuan, SW slopes of Erlang Shan Mt. 30 km E from Luding, h≈1920m, 29°49′S, 102°15′E, 21.x.2009, A. Saldaitis leg.

DISTRIBUTION. Widespread throughout tropical and subtropical regions.

Stenoptilia pneumonanthes (Buttner, 1880)

MATERIAL EXAMINED. 3 ♂♂, China, NW Sichuan, near Maniganggo, h≈3860m, 31°47′S, 99°23′E, 30.vi.2009, J. Butvila & A. Saldaitis leg.

DISTRIBUTION. Europe, European part of Russia, South Siberia, Yakutia, Kazakhstan, China (Shanxi, Xinjiang, Sichuan).

Hellinsia fuscomarginata Arenberger, 1991

MATERIAL EXAMINED. 2 males, China, W Sichuan, road Yaan/Kangding Erlang Shan Mt., h≈2000m, 29°87′S, 102°30′E, 08.vii.2009, J. Butvila & A. Saldaitis leg.

DISTRIBUTION. Nepal, China (Sichuan), India.

Figs 7–9. *Hellinsia alena* Ustjuzhanin, Kovtunovich et Saldaitis**, sp.n.**: 7 — habitus (Holotype, ZISP); 8 — male genitalia (Holotype, ZISP, gen.pr. Nr 1955); 9 — biotope: China, NW Sichuan, near Derge, h≈3400m. Photo by A. Saldaitis.

Рис. 7–9. *Hellinsia alena* Ustjuzhanin, Kovtunovich et Saldaitis**, sp.n.**: 7 — внешний вид (голотип, ZISP); 8 — гениталии самца (голотип, ZISP, gen.pr. Nr 1955); 9 — биотоп: Китай, СЗ Сычуань, близ Дерге, h≈3400м. Фото А. Салдаитиса.

Discussion

The nature of China is unique and rich due to the diversity of natural zones and landscapes, and despite the Pterophoridae fauna of China is studied quite well it will surely be supplemented with other species new for science and the region. Poorly studied mountainous regions of China may increase a number of species known from the country by two or three dozens.

Acknowledgments. We thank to Alena Kazakevich (Lida, Belarus), Juozas Dûda (Joni□kis, Lithuania) and Rimantas Butvila (Joni□kis, Lithuania) for them enthusiastic companionship during the China trips and type localities pictures. We are grateful to Anton Volynkin (Leominster, UK) for help in the preparation of the manuscript. We are especially grateful to Sergey Reshetnikov (Novosibirsk, Russia) for the photos of the adults of the new species.

Competing interests. The authors declare no competing interests.

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