

New species of Pterophoridae from the Philippines (Insecta: Lepidoptera)

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Abstract

Three new species from the Philippines are described: *Nippoptilia jakobi* Ustjuzhanin & Kovtunovich sp. nov.; *Hellinsia zurilinae* Ustjuzhanin & Kovtunovich sp. nov.; *Pterophorus aurora* Ustjuzhanin & Kovtunovich sp. nov. One species, *Asiaephorus sythoffi* (Snellen, 1903), is recorded from the Philippines for the first time.

Keywords: Insecta, Lepidoptera, Pterophoridae, new species, new records, biodiversity, Mindanao, Luzon, Philippine Islands.

Nuevas especies de Pterophoridae de Filipinas (Insecta: Lepidoptera)

Resumen

Se describen tres nuevas especies de Filipinas: *Nippoptilia jakobi* Ustjuzhanin & Kovtunovich sp. nov.; *Hellinsia zurilinae* Ustjuzhanin & Kovtunovich sp. nov.; *Pterophorus aurora* Ustjuzhanin & Kovtunovich sp. nov. Una especie, *Asiaephorus sythoffi* (Snellen, 1903), se registra por primera vez en Filipinas.

Palabras clave: Insecta, Lepidoptera, Pterophoridae, nuevas especies, nuevos registros, biodiversidad, Mindanao, Luzón, Filipinas.

Introduction

The island country of the Philippines is in the western part of the Pacific Ocean and includes more than 7,000 islands. The nature of the Philippines is rich, diverse, with mangrove forests, and evergreen, tiered rainforests harbouring numerous endemic plant species. The fauna belongs to the Indo-Malay zoogeographic region, exhibiting a high diversity of vertebrate species, many of which are also endemic. However, many plant and animal species are now threatened with extinction due to heavy water pollution and intensive deforestation.

The fauna of Pterophoridae in the Philippines is still very poorly studied. To date, there is only one relevant study (Gielis, 2003), which provides an overview of 22 Pterophoridae species, of which seven were described as new to science. The present study employed a limited sample of Pterophoridae from the islands of Mindanao and Luzon, the Philippines (Figures 1-2), collected by Dr Omelko. The processing of this material identified eight species of Pterophoridae, including three species new to science and one species new to the fauna of the Philippines.

Materials and methods

The Pterophoridae species were collected during nighttime and twilight hours using light traps. The studied specimens are deposited in the collection of the Zoological Institute, St. Petersburg, Russia (ZISP) and in the Collection of P. Ustjuzhanin and V. Kovtunovich (Novosibirsk and Moscow, Russia, CUK). The holotypes of the new species are deposited in the collection of Zoological Institute, St. Petersburg, Russia (ZISP).

Figures 1-2. Biotopes. **1.** Philippines, Mindanao, Mount Apo Natural Park. **2.** Philippines, Luzon, Aurora Memorial National Park. Photo M. Omelko.



Results

NEW SPECIES DESCRIPTION

***Nippoptilia jakobi* Ustjuzhanin & Kovtunovich, sp. nov.** (Figures 3-4)
<https://zoobank.org/2785EEA6-C3AE-44AC-AE57-4F61A4D3F2F1>

Type material: Holotype ♂, PHILIPPINES, Mindanao, Mount Apo Natural Park, 26-I-2024, M. M. Omelko leg. (ZISP, gen.pr. Nr. 2016)

Description: External characters. Head, thorax and tegulae dark brown. Labial palpi thin, almost straight, projected forward, with alternating brown and yellow scales, 1.5 times longer than longitudinal eye diameter. Antennae dark brown, with alternating white longitudinal strokes. Wingspan 14 mm. Fore wings brown, with areas of light yellowish spots. Thin yellow band on first lobe distally. Deep cut on top of second lobe, fringe inside it bright yellow. Fringe along outer edge of fore wing yellowish gray, with dark brown portions of elongated scales. Fringe inside cleft grey, with alternating black scales. Hind wings unicolorous, dark brown. Dark scales on top of third blade forming triangle. Hind legs light brown, shining, spurs very long, with dark brown scales at base.

Male genitalia: Tegumen two-lobed. Valves symmetric, broad basally, narrowed apically, with dense cluster of spines. Apical valves with one long spine. Saccus arched. Aedeagus long, curved with sharp bends, twice as long as valve.

Diagnosis: In the male genitalia, the species is like *Nippoptilia regalis* Fletcher, 1909 in two-lobed tegumen, but it differs in valves broadened basally and strongly curved aedeagus. The new species is also like *N. regalis* in wing coloration.

Distribution: Philippines, Mindanao.

Flight period: January.

Etymology: The species is named in honour of Galina Yurievna Yakobi (Novosibirsk, Russia), doctor of otoneurology, a highly esteemed specialist. She committed herself to the alleviation of pain and suffering of many people.

***Hellinsia zurilinae* Ustjuzhanin & Kovtunovich, sp. nov.** (Figures 5-6)
<https://zoobank.org/0F197598-C1C0-4C3B-946E-AD3BC20E36CA>

Type material: Holotype ♂, PHILIPPINES, Mindanao, Mount Apo Natural Park, 28-I-2024, M. M. Omelko leg. (ZISP, gen.pr. Nr. 2017.)

Description: External characters. Head, thorax and tegulae bright white. Collar between head and thorax with bright red hairs. Labial palpi straight, pointed apically, slightly smaller than longitudinal eye diameter.

Antennae light coloured, with alternating narrow transverse brown scales. Wingspan 14 mm. Fore wings bright white. Costal edge darkened with brown scales. Distinct narrow band of dark brown scales above cleft of first lobe. Two small elongated strokes in distal and apical parts of first lobe. Irregularly shaped dark brown spot at cleft base. Light gray fringe inside cleft and along outer edge of fore wing. Hind wings unicolorous, gray, noticeably darker than fore wings, with grey fringe. Hind legs pale yellow with portions of brown scales at spur bases.

Male genitalia: Valves asymmetric, left valve wider than right one, slightly narrowed apically. Saccular process on left valve forked, unequal in length and width. Broad process slightly shorter than narrow one. Saccular process on right valve bulbous, basally wide and oval, smoothly narrowing distally. The upper half of the right valve of the holotype is destroyed.

Female genitalia: unknown.

Diagnosis: In the male genitalia, the new species is similar to *Hellinsia madecasseus* (Bigot, 1964) in asymmetric shape of valve, sinuous aedeagus and arcuate saccus, but it differs in the presence of fork-shaped saccular process on the left valve and bulb-shaped saccular process on the right one. *H. madecasseus* has saccular process on the left valve.

Distribution: Philippines, Mindanao.

Flight period: January.

Etymology: The species is named in honour of Valentina Olegovna Zurilina, amateur entomologist from Chelyabinsk, expert on butterflies and moths, excellent collector of high-quality materials, in gratitude for our long-standing cooperation.

***Pterophorus aurora* Ustjuzhanin & Kovtunovich, sp. nov.** (Figures 7-8)

<https://zoobank.org/CB87CF7C-ED9D-40DC-A1C3-9D91405943E5>

Type material: Holotype ♂, PHILIPPINES, LUZON, Aurora Memorial National Park, 18-II-2024, M.M. Omelko leg. (ZISP, gen.pr. Nr. 2018)

Description: External characters. Head, thorax and tegulae with densely appressed white scales. Labial palpi white, straight, pointed apically, slightly shorter than longitudinal eye diameter. Antennae thin, yellowish white. Wingspan 20 mm. Fore wings white, with areas of small dark spots. Cluster of small black spots on white fringe at cleft base. On both lobes of fore wings, black spots in middle and distal parts. Hind wings white. Small black portions of scales on first and second lobes. Fringe on both wings long, white or grayish white. Hind legs unicolorous, white.

Male genitalia: Valves asymmetric, narrow, slightly widened in middle part, narrowed apically. Fork-shaped saccular process on left valve, both processes on it of equal length, in middle part of valve. Saccular process on right valve in form of claw-shaped process, pointed. Anellus arms asymmetric, right arm distinctly wider and slightly longer than left one. Uncus thin, smoothly curved in middle part, pointed apically. Aedeagus short, almost straight, twice shorter than valve, narrowed distally.

Female genitalia: Unknown.

Diagnosis: The new species is similar to *Pterophorus vikhrevi* Ustjuzhanin et Kovtunovich, 2015 in wing coloration and dark spots arrangement, but it differs in smaller wingspan and different structure of male genitalia. In the male genitalia, the species is similar to *Pterophorus ceylonicus* Ustjuzhanin & Kovtunovich, 2015 in the shape of valve, uncus and aedeagus, but it differs in the saccular process structure. The left saccular process of *P. ceylonicus* has two processes of unequal length, while in the new species, they are equal in length; the right saccular process of *P. ceylonicus* is curved, while in the new species, it is straight. The shape of anellus arms is also different; in the new species, the right arm is slightly longer than the left one, while in *P. ceylonicus*, it is considerably longer; moreover, in *P. ceylonicus*, the anellus left arm is apically pointed, while in the new species, it is rounded.

Distribution: Philippines, Luzon.

Flight period: February.

Etymology: The name is toponymic. Aurora is a memorial national park located in the Sierra Madre Mountain range, in the central part of Luzon Island.

Platyptilia farfarella Zeller, 1867

Material examined: PHILIPPINES, Mindanao, Mount Apo Natural Park, 1 ♂, 3 ♀, 28-31-I-2024, M. M. Omelko leg. (ZISP, CUK); Mindanao, Mount Kitanglad Range Natural Park, 1 ♀, 02-II-2024, M. M. Omelko leg. (ZISP); Luzon, Aurora Memorial National Park, 1 ♀, 16-II-2024, M. M. Omelko leg. (CUK).

Asiaephorus sythoffi (Snellen, 1903)

Material examined: PHILIPPINES, Mindanao, Mount Kitanglad Range Natural Park, 1 ♂, 05-II-2024, M. M. Omelko leg. (CUK).

Remark: The first record from the Philippines.

Sphenarches anisodactylus (Walker, 1864)

Material examined: PHILIPPINES, Mindanao, Mount Apo Natural Park, 1 ♀, 28-I-2024, M. M. Omelko leg. (CUK).

Adaina microdactyla (Hübner, [1813])

Material examined: PHILIPPINES, Mindanao, Mount Apo Natural Park, 18 ex., 26-I-08-II-2024, M. M. Omelko leg. (ZISP, CUK).

Adaina microdactoides Gielis, 2003

Material examined: PHILIPPINES, Mindanao, Mount Apo Natural Park, 1 ♂, 29-I-2024; 3 ♂, 3 ♀, 04-06-II-2024, M. M. Omelko leg. (ZISP, CUK).

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Conflict of Interest

The authors declare that there is no known financial interest or personal relationship that could have influenced the work presented in this article.

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Figures 3-8. 3-4. *Nippoptilia jakobi* Ustjuzhanin & Kovtunovich, sp. nov. 3. Adult (Holotype, ZISP). 4. Male genitalia (Holotype, ZISP, 2016). 5-6. *Hellinsia zurilinae* Ustjuzhanin & Kovtunovich, sp. nov. 5. Adult (Holotype, ZISP). 6. Male genitalia (Holotype, ZISP, 2017). 7-8. *Pterophorus aurora* Ustjuzhanin & Kovtunovich, sp. nov. 7. Adult (Holotype, ZISP). 8. Male genitalia (Holotype, ZISP, 2018).

