

First record of *Ambulyx japonica* Rothschild, 1894 from Russia (Lepidoptera: Sphingidae)

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Abstract

Ambulyx japonica Rothschild, 1894 is reported from Russia for the first time. A single male specimen was collected in Kajmanovka village, Primorsky Krai. Therefore, the Sphingidae fauna of Russia currently comprises 69 species belonging to 34 genera.

Keywords

Biodiversity, Russian Far East, Primorsky Krai, new record, Smerinthinae, Ambulycini

Introduction

As the well-studied family, the Sphingidae is the most suitable group for studying northward range expansions of Asian lepidopteran species. *Acosmeryx naga* (Moore, 1858) and *Ambulyx tobii* (Inoue, 1976), which relatively recently appeared in the Russian Far East, have currently become naturalised (Beljaev 2003; Koshkin and Bezborodov 2013; Koshkin et al. 2015). New observations of *Psilogramma increta* (Walker, 1865) following the first occurrence reported in 2020 (Spitsyn and Spitsyna 2021) reveal that another hawk moth species is successfully expanding its

range to north. In 2022 it was collected from Ovchinnikovo village (ca. 70 km N from Andreevka village, the locality of the first observation) (Makhov et al. 2024), while in 2024 – from Kajmanovka village (ca. 140 km N from Andreevka village; our unpublished data) and from Sinelnikovo village (ca. 150 km N from Andreevka village; Vadim Golovizin, pers. comm.).

In the present study, we report on the first record of *Ambulyx japonica* Rothschild, 1894 from Russia (Figs 1A, 3). So far *A. tobii* (Inoue, 1976) (Figs 1B–C, 3) was the only species of this genus known from the country (Koshkin and Bezborodov 2013; Koshkin et al. 2015). *A. japonica* is fully expected to be the second *Ambulyx* species to become naturalised in the south of Primorsky Krai. Taking into account our record, the Russian fauna of the Sphingidae currently comprises 69 species belonging to 34 genera (*Choerocampa suellus* (Staudinger, 1878) is an invalid species according to the Sphingidae Taxonomic Inventory (Kitching 2013) and is not considered by the authors) (Zolotuhin 2019; Zolotuhin and Evdoshenko 2019; Spitsyn and Spitsyna 2021).

Materials and methods

A single male specimen was attracted at night Kajmanovka village (Primorsky Krai, Russian Far East) by a 250 W mercury-vapor lamp ‘DRL’. The specimen is deposited in the collection of the Russian Museum of Biodiversity Hotspots (RMBH), N. Laverov Federal Center for Integrated Arctic Research of the Ural Branch of the Russian Academy of Sciences (Arkhangelsk, Russia). The genitalia were dissected, mounted on temporary glass slides with 70% ethanol, and photographed using a Leica M165C stereomicroscope with a FLEXACAM C1 digital camera, then preserved in glycerin in micro-tubes pinned to the specimens. Images of the specimens were taken using a Canon EOS 7D camera with a Sigma 24–70mm f/2.8 DG HSM lens. Distribution map was constructed using ESRI ArcGIS 10.

Results

Ambulyx japonica Rothschild, 1894

Ambulyx japonica koreana Inoue, 1993

Figs 1A, 2A, 3

Material examined. RUSSIA, Primorsky Krai, Ussurisky District, Kajmanovka village, cedar-broadleaf forest, 43°37'45"N, 132°14'16"E, 90 m, 16-17.06.2026, V.G. Bezborodov leg. – 1♂.

Distribution. The nominate ssp. occurs in Japan; the ssp. *angustifasciata* Okano, 1959 lives in Taiwan; the ssp. *koreana* Inoue, 1993 is distributed in China (Jilin, Liaoning, Beijing, Hebei, Tianjin, Shaanxi, Henan, Anhui, Hubei, Jiangxi, Sichuan, Guizhou, Chongqing), North Korea, South Korea (Jiang et al. 2025), and Russia (Primorsky Krai; first country-level record).

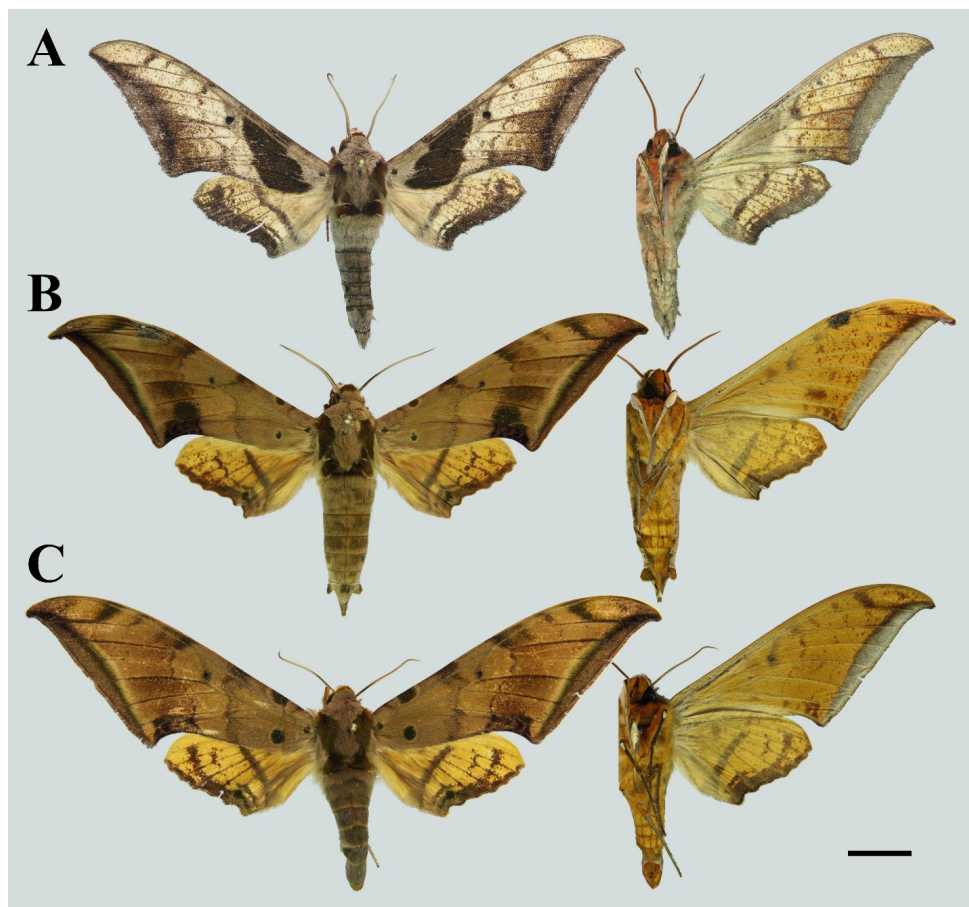


Figure 1. Representatives of the genus *Ambulyx* from Russia: A) *A. japonica* Rothschild, 1894, male; B–C) *A. tobii* (Inoue, 1976): B) male, C) female. Scale bar = 10 mm.

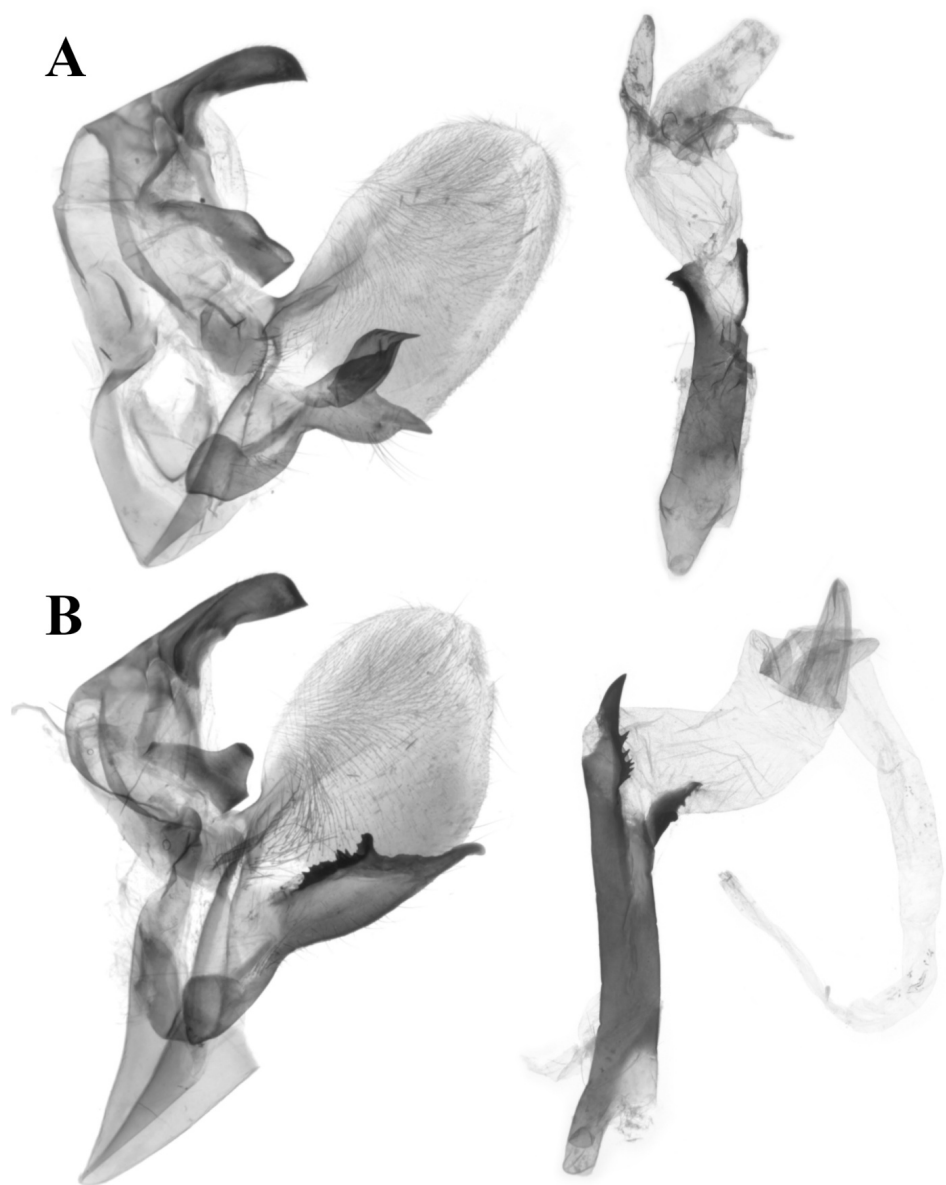


Figure 2. Male genitalia of *Ambulyx* spp. from Russia: **A)** *A. japonica* Rothschild, 1894; **B)** *A. tobii* (Inoue, 1976).

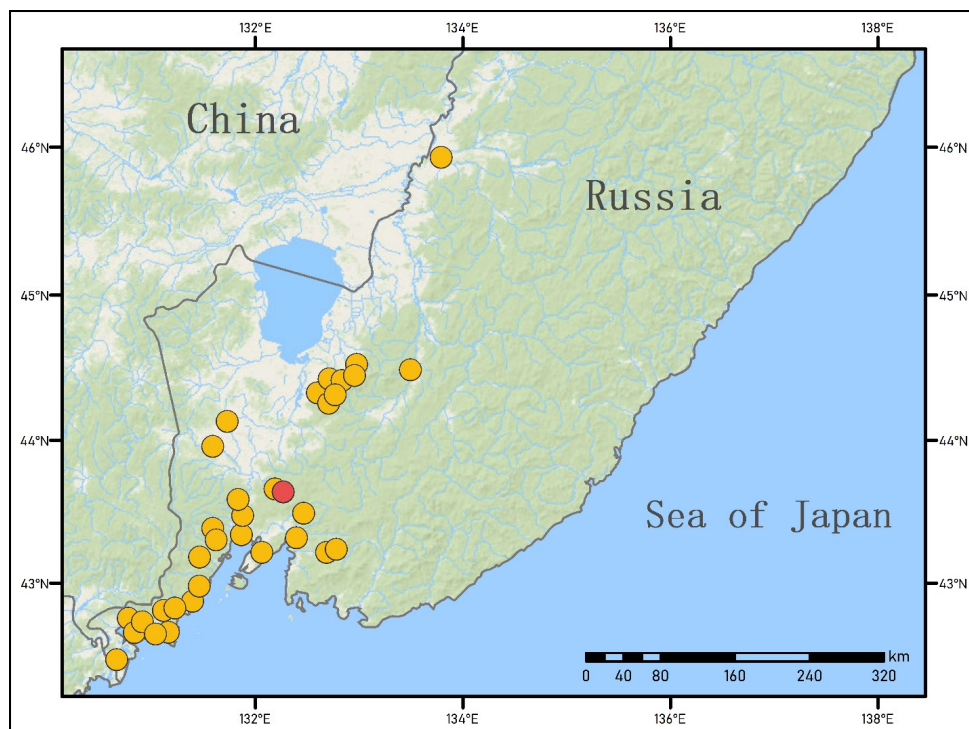


Figure 3. Distribution map of *Ambulyx* spp. in Russia. Yellow circles indicate collecting localities of *A. tobii* (Inoue, 1976), red circle indicates a collecting locality of *A. japonica* Rothschild, 1894.

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