

# ФАУНА ТА СИСТЕМАТИКА

## FAUNA AND SYSTEMATICS

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### **HETEROLOCHA LAMINARIA (HERRICH-SCHÄFFER, 1852) (LEPIDOPTERA: GEOMETRIDAE) — A NEW SPECIES FOR THE UKRAINIAN FAUNA**

The first records of *Heterolocha laminaria* (Herrich-Schäffer, 1852) (Lepidoptera: Geometridae) in Ukraine are presented. Until the recent past, the European registrations of *H. laminaria* had been only reported from Rostov Region of Russia. New records were made at several localities within Dnipropetrovsk, Zaporizhzhia, Odesa and Poltava regions, in Southern, South-Western, South-Eastern and Central Ukraine. These findings were revealed from mid-June to mid-August in various habitat types: steppes, artificial deciduous and mixed forests, agrocenosis. The current records significantly shift westward the range limits of *H. laminaria*. Thus, a newly-discovered locality in Savran Forest is the westernmost point in the entire species range. Most likely the westward expansion of this species has occurred in recent decades. The habitats, adults, and male genitalia of *H. laminaria* are illustrated.

**Keywords:** *Heterolocha laminaria*, Geometridae, Lepidoptera, Ukraine

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The genus *Heterolocha* Lederer, 1853 includes 41 species, inhabiting the south of Palearctic and Oriental regions. In European fauna, it is represented by only one species of *Heterolocha laminaria* (Herrich-Schäffer, 1852), comprising 4 subspecies, namely:

- *H. l. laminaria* Herrich-Schäffer, 1852;
- *H. l. euxantha* Wehrli, 1937 (China);
- *H. l. lungtana* Wehrli, 1940 (China);
- *H. l. sutschanska* Wehrli, 1937 (Far East of Russia (Sakhalin Island included), China and Japan).

The range of the nominative subspecies encompasses the south of European Russia, North-East Turkey, the Caucasus, Transcaucasia, North Iran and North Afghanistan. However, the taxonomical status of the East Asian subspecies needs to be revised (Skou, Sihvonen, 2015).

*H. laminaria* is univoltine in the main part of its range but bivoltine in the south. Adults fly from mid-June to the end of August (Skou, Sihvonen, 2015).

The larval host plants are *Salix* spp. and *Corylus* spp. (Poltavsky et al., 2007b).

## Material and Methods

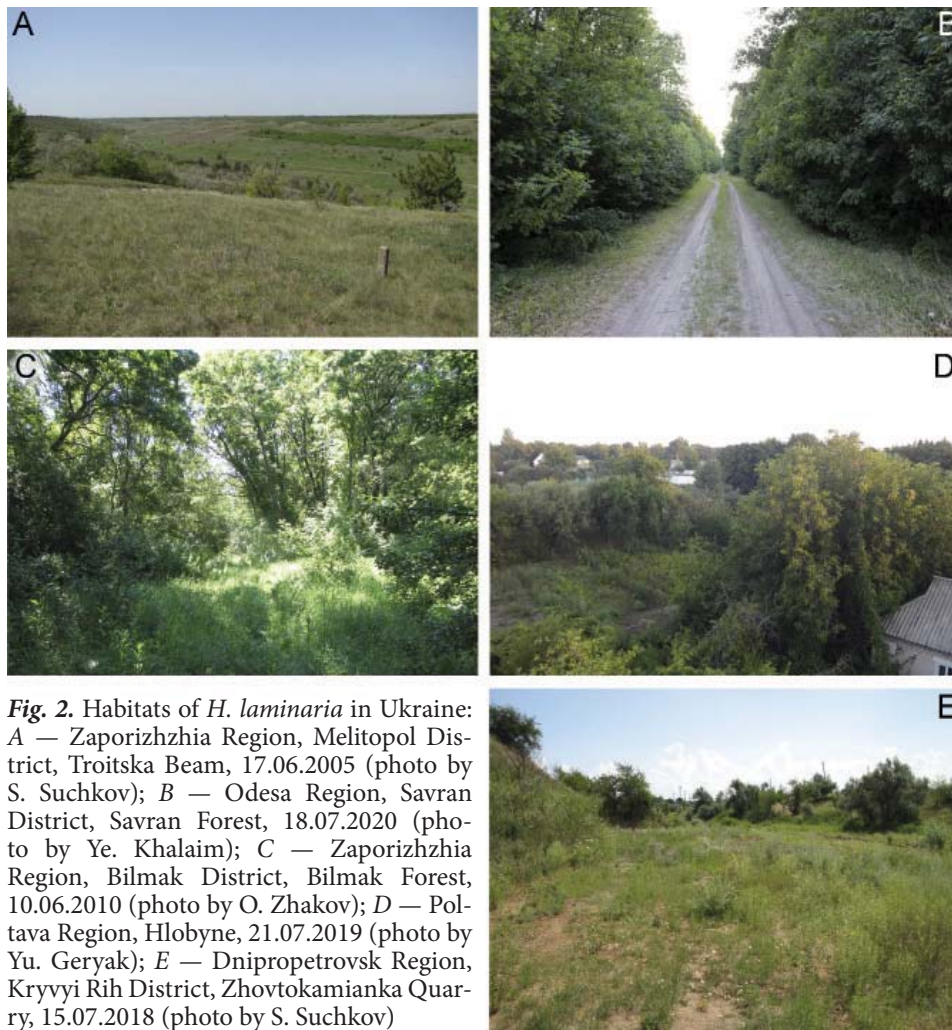
All specimens were collected at night, using artificial light sources, in particular UV lamps, connected to the mains or to a portable generator.

## Results and Discussion

The findings of the specimens of *H. l. laminaria* were made at the following points: **Dnipropetrovsk Region**: Kryvyi Rih District: Zhovtokamianka Quarry, 15.07.2018 (S. Suchkov) — 1♀; **Zaporizhia Region**: Bilmak District, Bilmak



**Fig. 1.** European records of *Heterolocha laminaria*: red circles — in Ukraine; black squares — in Rostov Region of Russia



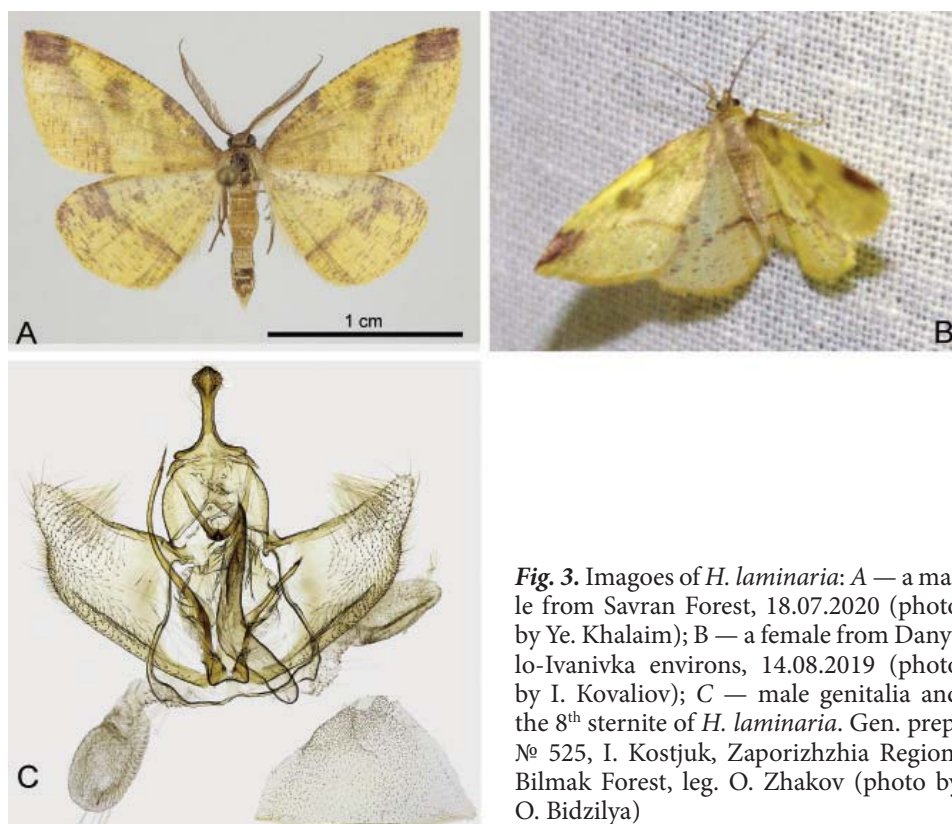
**Fig. 2.** Habitats of *H. laminaria* in Ukraine: **A** — Zaporizhzhia Region, Melitopol District, Troitska Beam, 17.06.2005 (photo by S. Suchkov); **B** — Odesa Region, Savran District, Savran Forest, 18.07.2020 (photo by Ye. Khalaim); **C** — Zaporizhzhia Region, Bilmak District, Bilmak Forest, 10.06.2010 (photo by O. Zhakov); **D** — Poltava Region, Hlobyne, 21.07.2019 (photo by Yu. Geryak); **E** — Dnipropetrovsk Region, Kryvyi Rih District, Zhovtokamianka Quarry, 15.07.2018 (photo by S. Suchkov)

Forest, 10.06.2010 (O. Zhakov) — 2♂, 2♀; Melitopol District: Danylo-Ivanivka environs, 14.08.2019 (I. Kovaliov) — 1♀; Troitska Beam, 17.06.2005 (Suchkov S.) — 1♂; **Odesa Region:** Savran District: 2 km E of Kovbasova Polyana, Savran Forest, 18.07.2020 (Ye. Khalaim, S. Novitckiy) — 1♂; **Poltava Region:** Hlobyne, 21.07.2019 (Yu. Geryak) — 1♀ (Fig. 1).

Ukraine is the second European country, where the species is recorded. Until then, in Europe only a few specimens were known, collected in 2006 in Rostov Region of Russia (Poltavsky et al., 2007a, b). However, the first Ukrainian specimen of *H. laminaria* had been found in 2005. Thus, in fact, it was the first discovery of the species in Europe. Unfortunately, this specimen had not been identified for many years and, therefore, the record was not published.

All our findings were made from mid-June to mid-August in various habitat types, ranging from steppes (Troitska Beam), artificial deciduous and mixed forests (Savran and Bilmak Forests) to anthropogenic landscapes (Hlobyne, Zhovtokamianka Quarry) (Fig. 2).





**Fig. 3.** Imagoes of *H. laminaria*: A — a male from Savran Forest, 18.07.2020 (photo by Ye. Khalaim); B — a female from Danylo-Ivanivka environs, 14.08.2019 (photo by I. Kovaliov); C — male genitalia and the 8<sup>th</sup> sternite of *H. laminaria*. Gen. prep. № 525, I. Kostjuk, Zaporizhzhia Region, Bilmak Forest, leg. O. Zhakov (photo by O. Bidzilya)

The wingspan of Ukrainian specimens varies within 20—27 mm. The wing patterns are light to dark yellow, with rose-brown transversal lines and forewing discal spots. The colour of the frons, collar, thorax and abdomen is the same as that of the wings. Males have bipectinate antennae, females have weakly fasciculate ones (Fig. 3). The male genitalia correspond to their descriptions in literature (Skou, Sihvonen, 2015) (Fig. 3, C).

## Conclusions

The given records significantly shift westward the range limits of *H. laminaria*. Thus, a newly-discovered locality in Savran Forest is the westernmost point in the entire species range. It is assumed that the westward expansion of this species has occurred in recent decades.

Moreover, the new data provide additional information on the biology and distribution of this species in Europe and complement the checklist of Geometridae of Ukraine.

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**HETEROLOCHA LAMINARIA (HERRICH-SCHÄFFER, 1852)  
(LEPIDOPTERA: GEOMETRIDAE) — НОВИЙ ВИД У ФАУНІ УКРАЇНИ**

Вперше для фауни України наводиться *Heterolocha laminaria* (Herrich-Schäffer, 1852) — представник родини п'ядунів (Geometridae), що досі в Європі був відомий виключно з Ростовської області Росії. Вид виявлений у Дніпропетровській, Запорізькій, Одеській та Полтавській областях. Знахідки зроблені з середини червня до середини серпня у різноманітних біотопах: степу, штучних листяних і мішаних лісах, та агроценозах. Нові знахідки значно відсувають відому межу поширення виду на захід, а місцезнаходження в Савранському лісі є найзахіднішим у всьому його ареалі. Найімовірніше в останні десятиліття відбулася експансія виду в західному напрямку. Наведені фото біотопів, імаго та геніталій самця *H. laminaria*.

Ключові слова: *Heterolocha laminaria*, Geometridae, Lepidoptera, Україна.