

A new occurrence of *Wesmaelius vaillanti* (Navás, 1927)  
(Neuroptera: Hemerobiidae) in Russia

Новая находка *Wesmaelius vaillanti* (Navás, 1927)  
(Neuroptera: Hemerobiidae) в России

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**Key words.** Hemerobiidae, *Wesmaelius vaillanti*, Voronezhskaya Oblast, new record.

**Ключевые слова.** Hemerobiidae, *Wesmaelius vaillanti*, Воронежская область, новые находки.

**Abstract.** *Wesmaelius vaillanti* (Navás, 1927) is recorded from the Voronezhskaya Oblast of Russia for the first time. This species is typical for dry steppes and semi-deserts of Eurasia. However, the northern-most occurrences of the species in Eastern Europe including Voronezhskaya Oblast were made in forest-steppe regions.

[Makarkin et al., 2021] and Saratovskaya Oblast [Makarkin, Anikin, 2022].

Here, the species is recorded for the first time from the Voronezhskaya Oblast of Russia, and previous data on its distribution and habitats are summarized.

**Резюме.** *Wesmaelius vaillanti* (Navás, 1927) впервые отмечается в Воронежской области России. Этот вид характерен для сухих степей и полупустынь Евразии. Однако наиболее северные находки вида в восточной Европе (включая Воронежскую область) сделаны в лесостепных регионах.

## Material and Methods

One specimen of *Wesmaelius vaillanti* (Navás) was collected in the Khopyor State Nature Reserve (Russia: Voronezhskaya Oblast) and deposited in the Federal Scientific Center of the East Asia Terrestrial Biodiversity, Vladivostok.

The present work is registered in ZooBank (www.zoobank.org) under LSID urn:lsid:zoobank.org:pub:6B33DC5D-7F2F-4834-85F1-3A202F2E9FA4

## Introduction

*Wesmaelius vaillanti* (Navás, 1927) is very rare in Russia. It was described as *Hemerobius Vaillanti* from China based on a female: «Chine occidentale, Kan sou et Chien si [western China, Gansu and Shaanxi], Dr. L. Vaillant, 1909» [Navás, 1927]. Later, *H. vaillanti* (Navás) was recorded from Szechwan [Sichuan], another Chinese province [Banks, 1947]. Monserrat [2001] examined the holotype and concluded that the species belongs to the genus *Wesmaelius* Krüger, 1922. Before this, two species now placed in the genus were described almost simultaneously: *Wesmaelius mongolicus* (Steinmann, 1965) as *Boriomyia mongolica* Steinmann from Mongolia [Steinmann, 1965], and *W. arenatus* (Aspöck, Aspöck, 1966) as *Boriomyia arenata* H. Aspöck & U. Aspöck from Turkey [Aspöck, Aspöck, 1966]. Their undoubted synonymy was established by Aspöck et al. [1980]. Monserrat [2001] concluded that all three species are synonyms.

In Russia, the species was first recorded from Crimea [Krivokhatsky, Zakharenko, 1994] and was later found in the Astrakhanskaya Oblast [Dubatolov, 1998], Kalmykia

## Results

### Hemerobiidae

#### *Wesmaelius vaillanti* (Navás, 1927)

**Material.** Russia, *Voronezhskaya Oblast*: 1♀ — Khopyor State Nature Reserve, vicinity of Varvarino, 51.207°N, 41.719°E, floodplain, yellow pan (plate) traps of Moericke, 9–13.VIII.2023, K. Tomkovich leg.

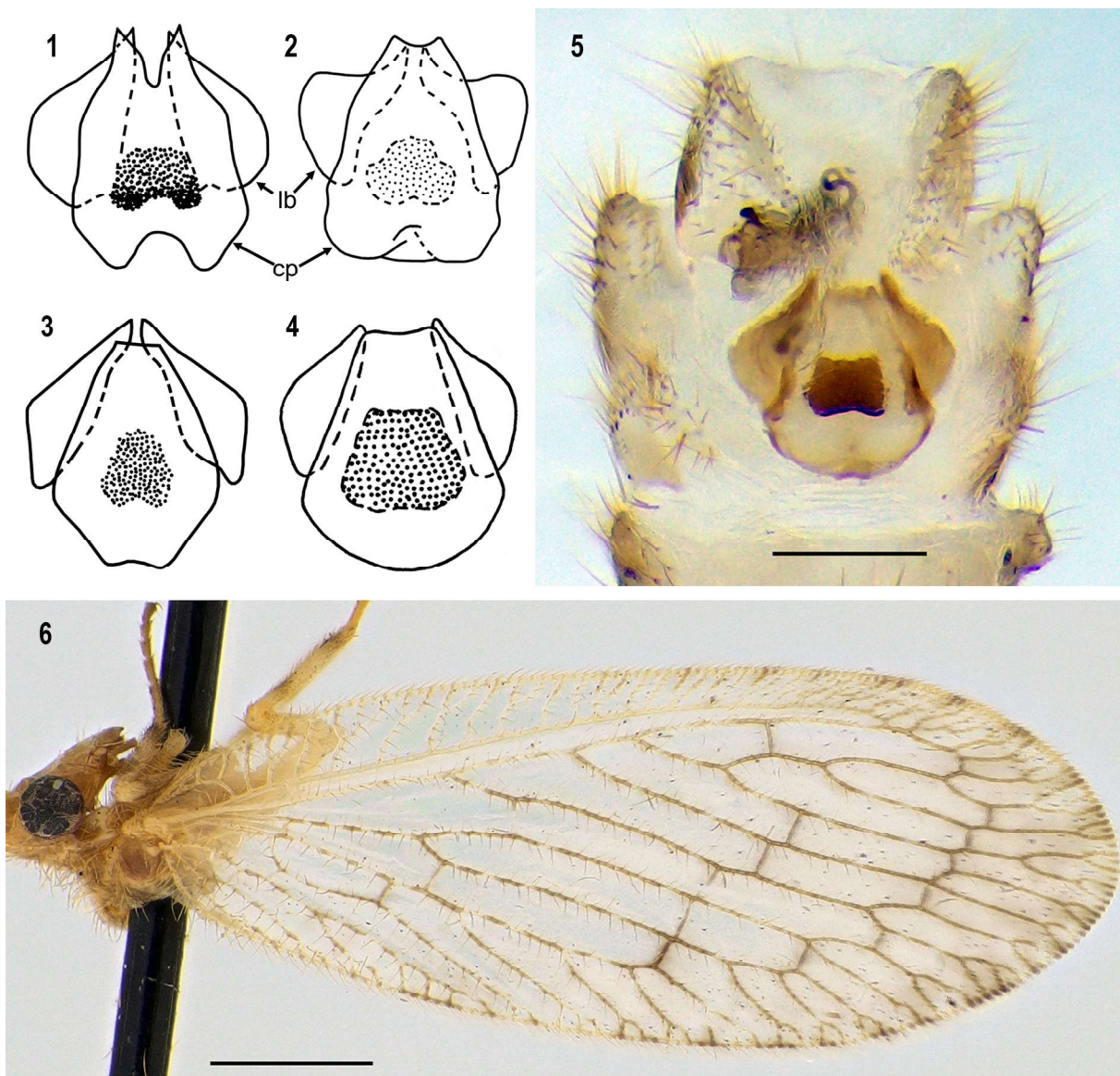
**Morphological and taxonomical remarks.** The holotype of the species is a female. Its subgenitale considerably differs from those of other examined specimens by the deep caudal excision of the central plate (gonocoxite 8) and by its more excised anterior margin (Fig. 1). In other specimens, the caudal margin of the central plate is smoothly concave (Figs 2–4), and its anterior margin is slightly excised (Figs 2, 3) or without excision (Figs 4, 5). The shapes of the lateral lobes (gonapophyses 8) are also slightly variable. Such great variability of the subgenitale is not surprising, as it is present in some other species of the genus.

However, it is theoretically possible that the holotype of *W. vaillanti* (Navás) belongs to a different species than all other known specimens than those mapped in Fig. 7. In this case, all of these localities including that in Voronezhskaya Oblast except in China are occurrences of *Wesmaelius mongolicus* (Steinmann). To resolve this, males and females with this subgenitale structure of *W. vaillanti* (Navás) would need to be collected in China.

The male genitalia of two other species which are considered junior synonyms of this species (*W. mongolicus* (Steinmann) and *W. arenatus* (Aspöck, Aspöck))

were adequately described, and their synonymy are undoubted [see Aspöck, Aspöck, 1966: Figs 4a–c; Aspöck et al., 1980: Figs 545–547; Makarkin, 1996: Figs 25–28, 30].

Forewings in most specimens of this species lack any spots and shading, and their veins are yellowish brown (branches of RP, M, CuA and A1 are mostly much darker). However, the specimen from the Voronezhskaya Oblast possesses light brownish shading around the crossveins in the inner and outer gradate series, and the longitudinal veins have paler interruptions. The holotype has similar shading [Monserrat, 2001].



Figs 1–6. Details of *Wesmaelius vaillanti* (Navás) female morphology: holotype after Monserrat, 2001 (1), specimen likely from Turkey after Aspöck et al. [1980] (2), paratype of *W. arenatus* (Aspöck, Aspöck) [1966] (3), 4 — specimen from Kazakhstan after Makarkin, 1996 (4), specimen from Voronezhskaya Oblast (5, 6). 1–4 — subgenitale; 5 — apex of abdomen, ventral view; 6 — forewing. Designations: cp — central plate of subgenitale (gonocoxite of 8th abdominal segment), lb — lateral lobes of subgenitale (gonapophyses of 8th abdominal segment). Scale bar 0.2 mm for Fig. 5; 1 mm for Fig. 6.

Рис. 1–6. Детали строения самок *Wesmaelius vaillanti* (Navás): голотип по Monserrat [2001] (1), экземпляр из Турции (вероятно) по Aspöck et al. [1980] (2), паратип *W. arenatus* (Aspöck, Aspöck) [1966] (3); экземпляр из Казахстана по Makarkin [1996] (4) и экземпляр из Воронежской области (5, 6). 1–4 — субгениталии; 5 — верхина брюшка снизу; 6 — переднее крыло. Обозначения: cp — центральная пластинка субгениталией (гоноксит 8-го сегмента брюшка), lb — боковые доли субгениталией (гонапофизы 8-го сегмента брюшка). Масштаб: 0,2 мм для рис. 5; 1 мм для рис. 6.

**Distribution.** Russia: Crimea, Kalmykia, Voronezhskaya, Saratovskaya and Astrakhanskaya Oblasts; Romania; Ukraine (Kharkovskaya Oblast); Turkey; Iran; Kazakhstan (Akmolinskaya Oblast (Aktobe Region), Ulytausкая Oblast (Ulytau Region), Zapadno-Kazakhstanskaya Oblast (West Kazakhstan Region), Akmolinskaya Oblast (Akmola Region)); Mongolia (Bayanhongor, Hovd, Central (Töv), Dundgovi, Ömnögovi aymags); China (Gansu/Shaanxi, Sichuan) (Fig. 7).

**Habitats.** In Romania, the species occurs in the delta of Dunade, in Grindul Caraorman, which is the only area in Europe with sandy dunes [Kis, 1972]. In Crimea, it was found at Cape Kazantip in the southern shore of the Sea of Azov [Krivokhatsky, Zakharenko, 1994]. The landscape there is dry steppe. In Kalmykia, one specimen was collected at a light exposed in a dry steppe, not far from the Elista River, bordered by cane [Makarkin et al., 2021]. In Astrakhanskaya Oblast, *W. vaillanti* (Navás) was collected near the Baskunchak Lake in a semi-desert area [Dubatolov, 1998].

All localities in Kazakhstan and Mongolia are in dry steppe or semi-desert regions [Steinmann, 1965, 1971; Makarkin, 1984, 1996]. Most localities in Turkey and Iran were mapped by Aspöck et al. [1980]; there is little information on these, except that the vicinity of the Tuz Gölu Lake where one female was collected [Aspöck, Aspöck, 1966] is a steppe area. Nothing is known of its habitats in China [Navás, 1927; Banks, 1947; Zhao, 2016].

Therefore, most localities of *W. vaillanti* (Navás) are within the Eurasian forest-steppe zone (after Lavrenko et al. [1991]) in steppes or semi-deserts slightly south to this zone. Localities in Turkey and Iran are probably also steppe or semi-desert.

However, the habitats of *W. vaillanti* (Navás) in eastern Europe (Voronezhskaya Oblast, Kharkov and Samara) do not look characteristic of the species. In Kharkov, one specimen was collected in the city park [Zakharenko, 1980]. The northern-most locality of the

species is Saratov, where one specimen was collected at a light within the city [Makarkin, Anikin, 2022]. Both localities lie within the forest-steppe zone. The collecting locality of the species in the Voronezhskaya Oblast is a forest edge: the open area is a dry meadow with elements of steppe vegetation, but the deciduous forest turns into a humid lowland towards the lake.

Therefore, although the northern-most localities in eastern Europe are situated within the Eurasian forest-steppe zone, these are not steppe nor semi-desert. We can expect new occurrences of *W. vaillanti* (Navás) in other north regions of this forest-steppe zone.

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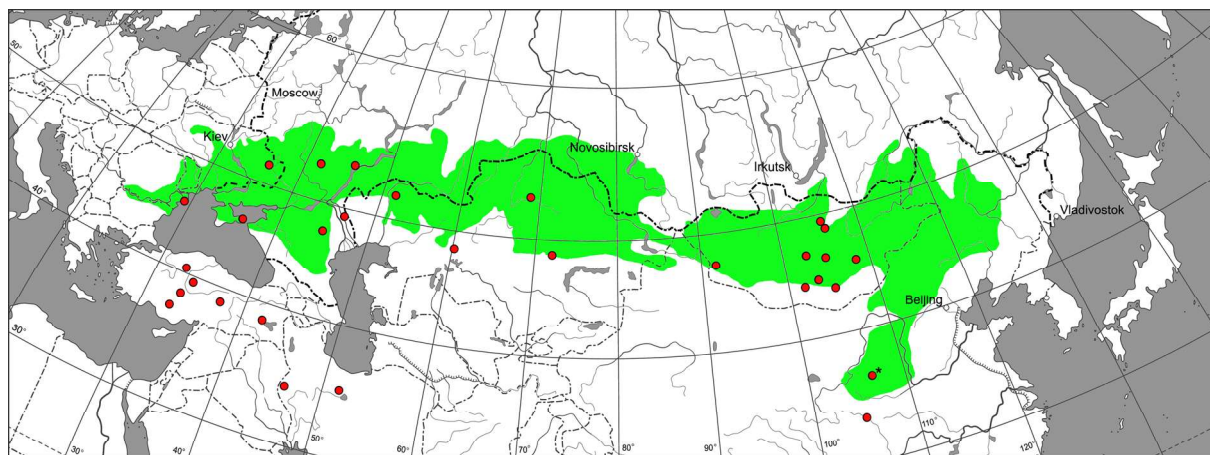


Fig. 7. Distribution of *Wesmaelius vaillanti* (Navás). The locality of the holotype (\*) is mapped at the boundary between Gansu and Shaanxi. The Eurasian forest-steppe zone after Lavrenko et al. [1991] is shown by color.

Рис. 7. Распространение *Wesmaelius vaillanti* (Navás). Местонахождение голотипа (\*) нанесено на карту на границе Ганьсу и Шэньси. Цветом показана Евразийская лесостепная область по Lavrenko et al. [1991].

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