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Two species of barkflies (Psocodea: "Psocoptera") new to the fauna of Poland and remarks on the checklist of Polish Psocoptera

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Abstract: This paper presents the first records of two barkfly species (Psocodea: "Psocoptera") new to the fauna of Poland: *Valenzuela corsicus* (Kolbe, 1882) and *Hemineura dispar* Tetens, 1891 discovered in the Przemków Landscape Park. In addition, the author concludes that three barkfly species, *H. dispar*, *Trichadenotecnum germanicum* Enderlein, 1909 and *Lachesilla greeni* (Pearman, 1933), were previously erroneously listed in some sources as occurring in Poland. *Trichadenotecnum germanicum* and *L. greeni* should therefore be removed from the checklist of Polish Psocoptera, whereas *H. dispar* is confirmed here for the first time from the territory of Poland.

Key words: psocids, *Hemineura dispar*, *Valenzuela corsicus*, Przemków Landscape Park, faunistics

INTRODUCTION

Psocodea is an order of insects encompassing approximately 11,000 described species (Zhang 2011). It comprises two groups of insects that were formerly classified as separate orders: the free-living Psocoptera (barkflies and booklice) and the parasitic Phthiraptera (biting and sucking lice or "true lice").

Psocodea is divided into three suborders: Psocomorpha, Trogiomorpha, and Troctomorpha (de Moya et al. 2021). Species formerly assigned to the order Psocoptera are currently classified within all suborders of Psocodea, and this group is now considered paraphyletic (Yoshizawa & Lienhard 2010). On the other hand, the most recent phylogenomic analyses conducted by de Moya et al. (2021) provide evidence that Phthiraptera constitute a monophyletic group, derived from Troctomorpha and forming a sister group to the family Liposcelididae. In the classification of Psocodea proposed in that study, Phthiraptera are placed at the rank of infraorder within Troctomorpha.

For practical reasons, due to differences in ecology, collecting methods, and the fact that Psocoptera and Phthiraptera are usually studied by different experts, Psocoptera are still treated in the scientific literature as a functional group, referred to as Psocodea: "Psocoptera" (Anonby 2019; Palaczyk 2021a). This approach has also been adopted in this paper.

In Poland, Psocoptera represent one of the least studied groups of insects, with 73 species recorded from the country prior to this article. The key sources of knowledge on their distribution are the comprehensive works of Julitta Włodarczyk-Martini from the second half of the 20th century (Włodarczyk 1968; Martini 1975, 1990). Recent research on the occurrence of this group in Poland includes studies of its distribution in the Knyszyńska Forest (Szawaryn et al. 2020), Ojców National Park (Palaczyk 2021a, b), selected nature reserves (Ostrovsky & Aleksandrowicz 2022), and the Brynek Palace and Park Complex (Czeczor 2026), as well as "Contribution to the knowledge of the barkflies (Psocodea) of Poland" (Ostrovsky et al. 2023), and new records of *Bertkauia lucifuga* (Rambur, 1842) (Czeczor et al. 2025). The most recent additions to the Polish barkfly fauna are *Trichadenotecnum innuptum Betz, 1983 and Ectopsocus cf. petersi* Smithers, 1978 (Czeczor 2026). The distribution of many Psocoptera species in Poland remains poorly studied (Palaczyk 2021a, Czeczor et al. 2025). No published records of Psocoptera are currently available from four regions of Poland: Mazovia, Roztocze, the Bieszczady Mountains, and the Pieniny Mountains.

This study provides the first records of two barkfly species in Poland: *Valenzuela corsicus* (Kolbe, 1882) (Caeciliusidae) and *Hemineura dispar* Tetens, 1891 (Elipsocidae). Additionally, the paper shows that *H. dispar*, *Trichadenotecnum germanicum*, and *Lachesilla greeni* were erroneously listed as occurring in Poland due to a misinterpretation of data presented in the identification key to Polish Psocoptera by Martini (1975).

MATERIALS AND METHODS

The barkflies were incidentally observed on 27 Sept 2025 at approximately 15:00, between the Kozłowska Desert and the Southern Kozłowska Desert in the Przemków Landscape Park [UTM: WS49] (≈ 51.425°N, 15.653°E). The individuals were collected, preserved in 70% ethanol, identified using the keys provided by Lienhard (1998) and Svensson & Hall (2010) and de-

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posited in the author's collection. After visual examination and photographic documentation had been completed, the adult female of *H. dispar* was accidentally damaged with a dissecting needle, rendering its diagnostic characters indiscernible.

Microscopic photographs of the collected specimens were taken at the Laboratory of Invertebrate Zoology, University of Zielona Góra, using a Nikon SMZ1500 stereomicroscope equipped with a Nikon D5100 digital camera and processed using NIS-Elements software (version 4.0, NIS-A edition) with the EDF module. Further image processing was performed using Adobe Photoshop.

The map presenting the new locality was generated with MapaUTM ver. 6 (Gierlasiński 2026) and subsequently edited in Gimp.

RESULTS

***Valenzuela corsicus* (Kolbe, 1882)**
(Fig. 3)

Lower Silesia: Przemków Landscape Park [UTM: WS49], 1♀, on the ground beneath *Calluna vulgaris*, 27 Sept 2025, leg. Kamil Hurna, det. Kamil Hurna & Alexei Kouprianov.

A West Palearctic species, common in the Mediterranean region. In Central and Northern Europe it is found in a few locations with a favourable climate (Lienhard 1998). Among the countries bordering Poland, it has previously been recorded in Germany, Russia (Republic of Mordovia), and Belarus (Schmidt 2015; Georgiev et al. 2023; Ostrovsky 2024). It can be easily distinguished from similar species by the combination of dark-brown head and setose postcubital vein (PCu) of the forewing (Fig. 3B) (Svensson & Hall 2010; Lock & Van Butsel 2017).

***Hemineura dispar* Tetens, 1891**
(Fig. 4)

Lower Silesia: Przemków Landscape Park [UTM: WS49], 1♀, 1 juv. most likely conspecific, on the ground beneath *Calluna vulgaris*, 27 Sept 2025, leg. Kamil Hurna, det. Kamil Hurna & Alexei Kouprianov.

A European species, the only representative of the genus *Hemineura* Tetens recorded in Central Europe, previously reported from three countries neighboring Poland: Czechia, Germany, and Slovakia (Lienhard 2016).

It can be distinguished from species in the genus *Mesopsocus* Kolbe by its smaller, less protruding eyes and a broader abdomen (Svensson & Hall 2010). I used

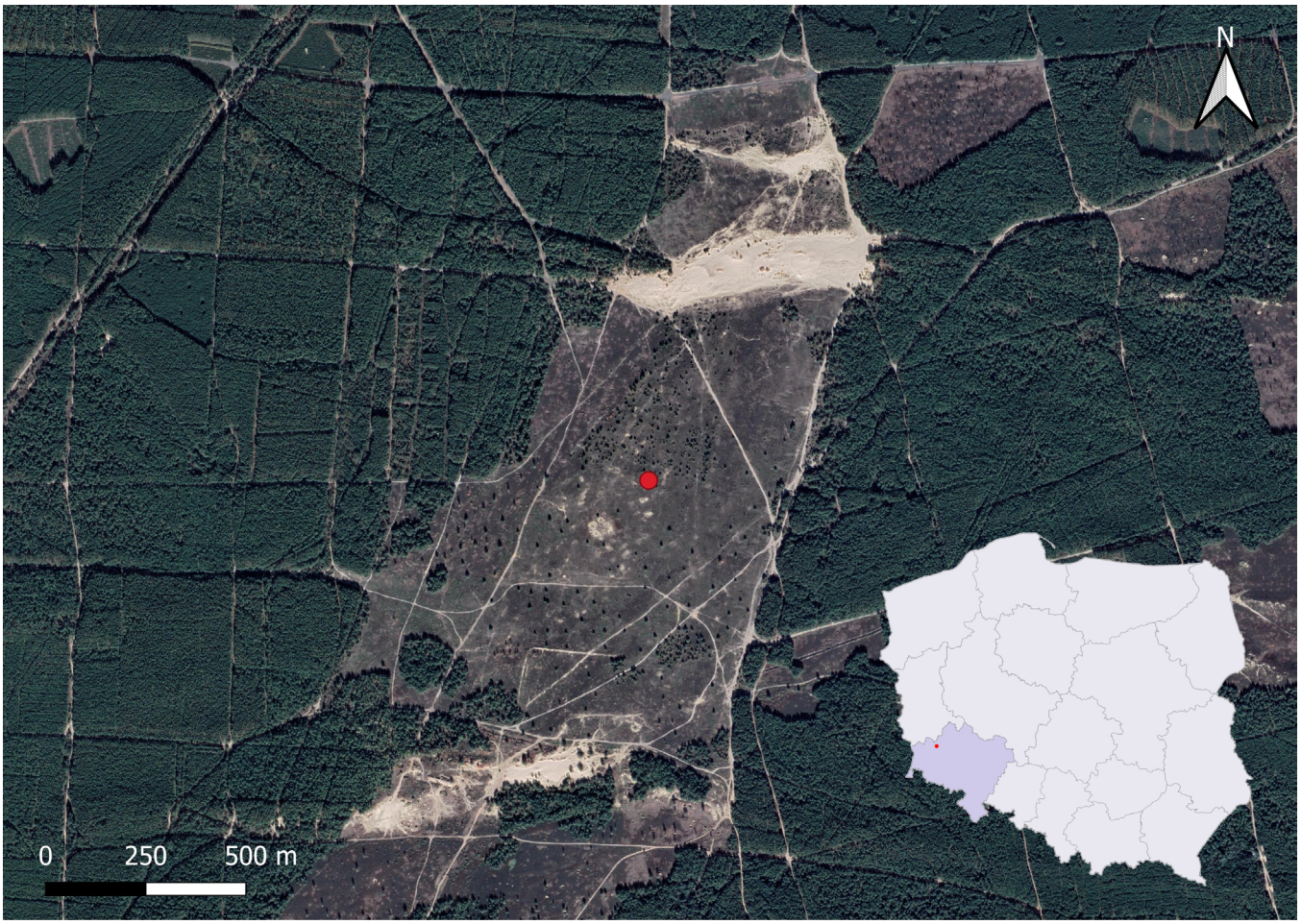

Figure 1. Map of the study area within the UTM: WS49 square. Red dot marks the approximate place where the individuals were observed. Small map in the corner: blue region – Lower Silesian Voivodeship, red dot – UTM: WS49 square.



Figure 2. The habitat of *Valenzuela corsicus* Kolbe and *Hemineura dispar* Tetens in the Przemków Landscape Park (photo by K. Hurna).

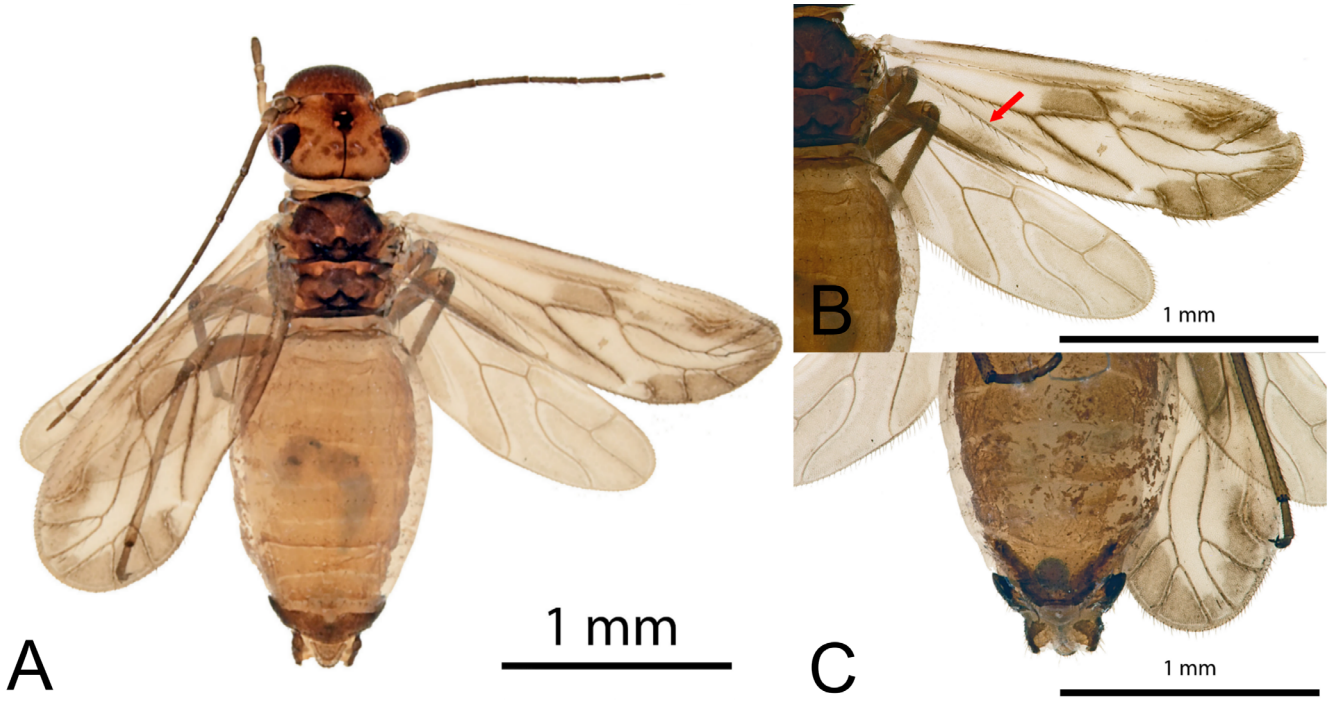

Figure 3. *Valenzuela corsicus* Kolbe: A – habitus in dorsal view, B – forewing and hindwing (red arrow points to the setose PCu vein of the forewing), C – posterior part of the abdomen with visible terminalia, ventral view (photos by K. Hurna).

the characters given in Lienhard's (1998) monograph to rule out *Hemineura hispanica* (Enderlein, 1907) – the species with the most similar subgenital plate: (1) size (> 2 mm, ca. 2.5 mm), (2) habitat (*H. hispanica* is found on trees and bushes, while *H. dispar* can also be found among low vegetation, e.g., *Calluna* Salisb, Erica L., Artemisia L.), (3) distribution (in Europe, *H. hispanica* is known from the Mediterranean region), and (4) shape of

the pattern on the frons (one circular- or V-shaped spot in *H. hispanica*, whereas it is fragmented into smaller, coalescent spots in *H. dispar*) (Fig. 4A).

DISCUSSION

The discovery of both species presented in this article in Poland could have been expected based on their known distribution. Schmidt (2015) recorded *Valenzuela corsicus* in Großenhain, Saxony, on a dry sandy grassland with *Cytisus scoparius* (L.) Link, *Agrostis capillaris* L., and *Avenella flexuosa* (L.) Drejer. In Belarus, this species was collected in the Bragin district in a pine forest and on sand dunes with dry grass vegetation dominated by Poaceae (Ostrovsky 2024), and in the Polesie State Radiation and Ecological Reserve using a Malaise trap (Ostrovsky & Prokhorchik 2025). The record of *V. corsicus* from Przemków Landscape Park is consistent with the species' occurrence in dry, often psammophilous habitats.

The possible occurrence of *Hemineura dispar* in Poland was first suggested nearly 60 years ago by Włodarczyk (1968) in part XVIII of the *Catalogue of Polish Fauna* (p. 3): "*Besides the species already recorded from Poland, it is most likely that a few others will be found, namely Trichadenotecnum germanicum Roesler, Hemineura dispar Tetens, and Lachesilla greeni Pearman, which have been reported from countries in northern and central Europe*" (author's translation from Polish).

In 1975, *H. dispar*, along with *T. germanicum* and *L. greeni*, were included by the same author (Martini 1975) in the identification key to Polish Psocoptera, with the note that their presence in the country was likely, but they were not included 15 years later by Martini (1990) in "the Checklist of Animals of Poland". Since that time, none of the three aforementioned species has been recorded from Poland. Their occurrence in Poland was, however, listed by Lienhard & Smithers (2002) and subsequently repeated in other sources, including Skibińska & Chudzicka (2007), Lienhard (2016), and Fauna Europaea (2026a, b, c).

Correspondence between the author and Charles Lienhard revealed that the source for the inclusion of *T. germanicum*, *H. dispar*, and *L. greeni* in the World Catalogue of Psocoptera by Lienhard & Smithers (2002) was the identification key by Martini (1975) cited above; this inclusion, along with all subsequent records repeating this initial mistake, should therefore be regarded as erroneous. Consequently, the record of *H. dispar* from the Przemków Landscape Park presented here constitutes the first verified report of this species (and genus) from Poland. In contrast, *T. germanicum* and *L. greeni*, due to the lack of confirmed data, should be removed from the Polish checklist of barklice. The current number of Psocoptera species recorded from Poland therefore amounts to 75 (based on Lienhard 2016, complemented by data from Czeczor 2026 and this paper).

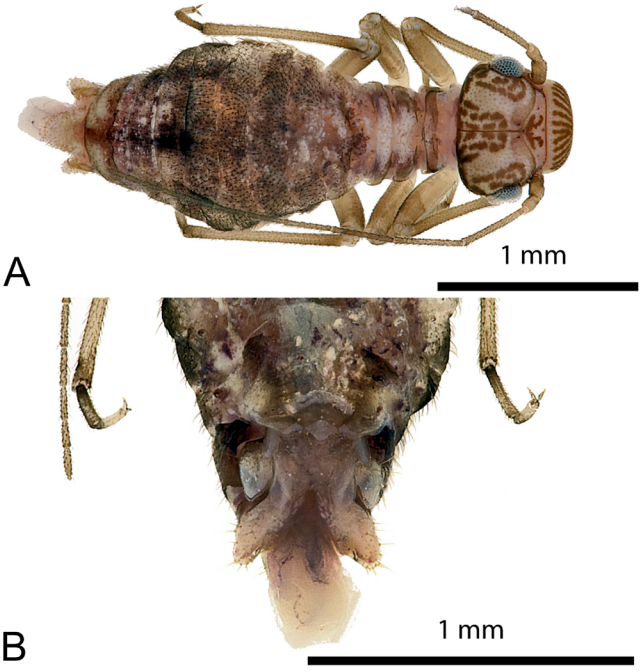

Figure 4. Adult female of *Hemineura dispar* Tetens: A – habitus in dorsal view, B – posterior part of the abdomen with visible terminalia, ventral view (photos by K. Hurna).

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STRESZCZENIE

Dwa nowe gatunki psotników (Psocodea: "Psocoptera") dla fauny Polski i uwagi do wykazu polskich Psocoptera

W pracy przedstawiono pierwsze stwierdzenie psotników (gryzków) *Valenzuela corsicus* (Kolbe, 1882) i *Hemineura dispar* Tetens, 1891 na terenie Polski. Oba gatunki odnaleziono 27 września 2025 roku na wrzosowisku w Przemkowskim Parku Krajobrazowym (województwo dolnośląskie). Dotychczasowe informacje w niektórych publikacjach dotyczące występowania w Polsce *Hemineura dispar*, a także dwóch innych gatunków psotników – *Trichadenotecnum germanicum* Enderlein, 1909 i *Lachesilla greeni* (Pearman, 1933) były błędne, toteż zaprezentowane w niniejszej publikacji stanowisko *H. dispar* jest pierwszym na terenie Polski, natomiast *T. germanicum* i *L. greeni* powinny zostać wykreślone z wykazu polskich Psocoptera. Aktualna liczba psotników z grupy Psocoptera wykazanych z terytorium Polski wynosi zatem 75.