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NEW RECORDS OF POEMENIINAE AND XORIDINAE (HYMENOPTERA, ICHNEUMONIDAE) FROM UKRAINE AND POLAND, WITH CORRECTIONS TO THE UKRAINIAN CHECKLIST

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New Records of Poemeniinae and Xoridinae (Hymenoptera, Ichneumonidae) from Ukraine and Poland, with Corrections to the Ukrainian Checklist. Varga, O. & Kostro-Ambroziak, A. — New distribution data and taxonomic changes to the checklists of two Darwin wasp subfamilies, Poemeniinae and Xoridinae, in Poland and Ukraine are provided. Two poemeniine species, *Neoxorides montanus* Oehlke, 1966 and *N. striatus* Johansson, 2020, are added on the Ukrainian list. Another species, *Neoxorides opacus* (Kokujev, 1903), with its first authenticated host record, *Xylotrechus rusticus* (Linnaeus, 1758), is a new species record for Poland and Ukraine. Two species of the Xoridinae, *Odontocolon styx* Johansson, 2020 and *Xorides stepposus* Kasparyan, 1981, are the first records for Poland and two species, *X. depressus* (Holmgren, 1860) and *X. sordator* (Thunberg, 1824), for Ukraine. In addition, *Xorides rusticus* (Desvignes, 1856) should be excluded and two species, *X. fuligator* (Thunberg, 1822) and *X. sapporensis* (Uchida, 1928), should be added on the Ukrainian checklist instead of the recently synonymised *X. niger* (Pfeffer, 1913) and *X. hedwigi* Clement, 1938, respectively. The possible synonymy of *Xorides annulator* (Fabricius, 1804), *X. propinquus* (Tschek, 1869) and *X. corcyrensis* (Kriechbaumer, 1894) is discussed.
Key words: Darwin wasps, parasitoids, new records, Poland, Ukraine.

Introduction

Poemeniinae and Xoridinae are relatively small subfamilies of the Darwin wasps (Hymenoptera, Ichneumonidae) represented in Europe by 13 and 50 species, respectively (Kasparyan, 1981; Yu et al., 2016; Johansson & Klopfstein, 2020; Johansson, 2022; Johansson et al., 2022). The representatives of both subfamilies are recorded mainly as idiobiont ectoparasitoids of saproxylic coleopterans and hymenopterans (Yu et al., 2016).

Poemeniines and xoridines are among the best studied ichneumonid groups in both Poland and Ukraine, with 8 and 31 species (Hilszczanski, 2002; Bogdanowicz et al., 2007), and 11 and 30 species (Varga, 2015 a, b; Johansson & Klopfstein, 2020), respectively.

The aim of this paper is to present additions and changes to the checklists of Poemeniinae and Xoridinae of Poland and Ukraine, based on recently collected material, taxonomic updates, and reconsideration of some previously identified specimens.

Material and Methods

This study is based on specimens deposited in the collections of the I. I. Schmalhausen Institute of Zoology, Ukraine (SIZK), Department of Biology, University of Bialystok, Poland (UwB), and the Bavarian State Zoological Collection, Germany (ZSSM). Images of the specimens were taken with a Leica Z16 APO microscope equipped with a Leica DFC 450 camera and processed with LAS Core software (SIZK), an Olympus DSX110 opto-digital microscope (UwB), and a Leica DMRBE microscope equipped with a Nikon V1 camera, combined with CombineZM software (ZSSM). Scale bar for body parts = 0.5 mm and for habitus = 2 mm.

Taxonomic and faunistic updates

Poemeniinae

Neoxorides montanus Oehlke, 1966

Distribution. Western Palaearctic; Ukraine: Ivano-Frankivsk Reg. (Johansson & Klopfstein, 2020).

Remark. The Ukrainain specimens of three *Neoxorides* species, *N. collaris* (Gravenhorst, 1829), *N. montanus* and *N. striatus* Johansson, 2020, used by Johansson & Klopfstein (2020) in their study, were collected in Ivano-Frankivsk Region and previously published as strongly variable *N. collaris* (Varga, 2015 a).

Neoxorides nitens (Gravenhorst, 1829)

Material. **Non-type. Ukraine:** Ivano-Frankivsk Reg., Rybne, 48.939894 N, 24.582188 E, Malaise trap No. 3, 22.08–07.09.2019, 1 ♀ (V. Shparyk); Transcarpathian Reg., Vynogradiv, oak forest, 280 m, 48.1383 N, 23.0737 E, Malaise trap, 28.04–19.05.2016, 1 ♀, 2 ♂; Malaise trap No.1, 10.06–02.07.2017, 1 ♀; Hlyboke, 48.540845 N, 22.400448 E, oak forest, sweeping, 02.05.2018, 1 ♀, 1 ♂ (O. Varga) (SIZK).

Distribution. Palaearctic; Ukraine: Ivano-Frankivsk and Transcarpathian Regions.

Remark. The presence of this species in Ukraine was questionable and based only on literature data without any actual specimens examined (Varga, 2015 a). The first voucher specimens are listed in this paper. The species is common in dry oak forests of Transcarpathia.

Neoxorides opacus (Kokujev, 1903)

Material. **Non-type. Poland:** Siedlce, ex *Xylotrechus rusticus* on *Betula pendula*, 1.05.2017, 1 ♀; ex *Xylotrechus*, 27.04.2017, 1 ♀; 12.05.2017, 1 ♀ (J. Gutowski). **Ukraine:** Kyiv Reg., Dibrova, 17.06.2006, 1 ♀ (M. Zaika) (SIZK).

Distribution. Palaearctic; **first record for Poland and Ukraine**.

Remark. *Xylotrechus rusticus* (Linnaeus, 1758) is the first authenticated host record for this species. Notably, this is also one of the species suggested as a potential host by Johansson & Klopfstein (2020).

Neoxorides striatus Johansson, 2020

Material. **Non-type. Ukraine:** Rybne, 48.939894 N, 24.582188 E, Malaise trap No 2, 16.06–5.07.2019, 1 ♀ (V. Shparyk).

Distribution. Europe; Ukraine: Ivano-Frankivsk Reg. (Johansson & Klopfstein, 2020).

Podoschistus scutellaris (Desvignes, 1856)

Material. **Non-type. Ukraine:** Transcarpathian Reg., Vynogradiv, oak forest, 280 m, 48.1383 N, 23.0737 E, Malaise trap, 28.04–19.05.2016, 1 ♀ (O. Varga) (SIZK).

Distribution. Palaearctic; Ukraine: Kharkiv (Kasparyan, 1981) and Transcarpathian Regions.

Remark. The presence of this species in Ukraine was previously based only on literature data without specimens examined (Varga, 2015 a). The first voucher specimen is listed in this paper. The species is common in dry oak forests of Transcarpathia.

Xoridinae

Odontocolon quercinum (Thomson, 1877)

Material. **Non-type. Ukraine:** Transcarpathian Reg., Vynogradiv, oak forest, 280 m, 48.1383 N, 23.0737 E, Malaise trap, 28.04–19.05.2016, 1 ♀, 2 ♂ (O. Varga) (SIZK).

Distribution. Western Palaearctic; Ukraine: Crimea, Ivano-Frankivsk, Kherson (Varga, 2015 b) and Transcarpathian Regions.

Odontocolon styx Johansson, 2020

Material. **Non-type. Poland:** Białowieża Forest, near Teremiski, *Tilio-Carpinetum*, 52°44'23.2"N, 23°46'22.1" E, Malaise trap, 24.06–12.07.2021, 3 ♂, 2 ♀; 12–27.07.2021, 2 ♂, 1 ♀ (O. Varga & A. Kostro-Ambroziak) (SIZK).

Distribution. Previously known only from Sweden (Johansson, 2020); **first record for Poland.**

Odontocolon appendiculatum (Gravenhorst, 1829)

Distribution. Palaearctic; Ukraine: Kharkiv and Kherson Regions (Kasparyan, 1981).

Remark. Johansson (2020) recently synonymised *Odontocolon thomsoni* (Clément, 1938) with *O. appendiculatum*. Thus, it should be applied for the Ukrainian records of *O. thomsoni* published in Varga (2015 b).

Xorides depressus (Holmgren, 1860) (fig. 9)

Material. **Non-type. Ukraine:** Kyiv, Bilychi, 21.05.2010, 1 ♂ (M. Zaika) (SIZK).

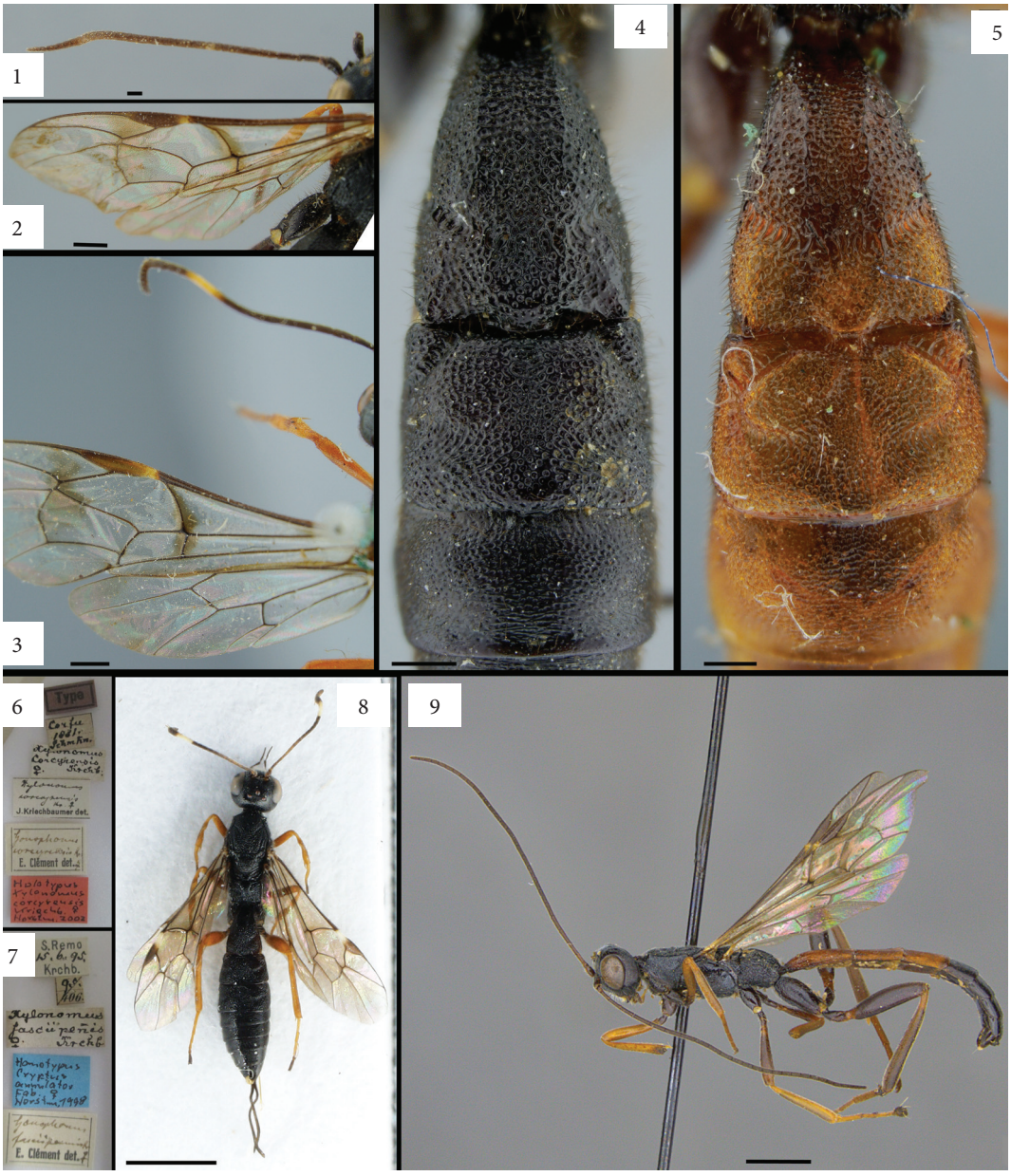
Distribution. Europe; **first record for Ukraine.**

Xorides ephialtoides (Kriechbaumer, 1882)

Material. **Type. Germany:** Lectotype ♀ of *Xylonomus ephialtoides* (designated by Townes, 1964), Frankf. a/M u. Passau; **Austria:** syntype ("cotype") of *Macrosterotrichus ephialtoides*, Austr. Inf., Prater, l.05.1911, 1 ♂ (Wachtl) (ZSSM). **Non-type. Ukraine:** Kyiv, Bilychi, 15.06.2010, 3 ♀; 28.06.2010, 1 ♂ (M. Zaika) (SIZK).

Distribution. Palaearctic; Ukraine (Varga, 2015 b).

Remark. This species was recorded by Kasparyan (1981) from the Kharkiv and Kherson Regions of Ukraine. No additional material was found, and the species was included in the Ukrainian catalog of Varga (2015 b) based only on literature data. The paper also included another species, *Xorides rusticus* (Desvignes, 1856), identified on the basis of a female (partially damaged) collected in Kyiv. After examining the type specimens of *X. ephialtoides* and *X. rusticus*, the first author found that the Ukrainian female of *X. rusticus* differs from both species in that the first metasomal tergite is elongate (more robust in *X. ephialtoides*), with well developed carinae (not developed in *X. rusticus*). Furthermore, the black coloration of the hind trochanter, trochan-



Figs 1–9. *Xorides* spp.: 1–2, 4, 6 — *X. corcyrensis* (holotype female); 3, 5, 7 — *X. fasciipennis* (holotype female); 1 — antenna; 2 — wings; 3 — antenna and wings; 4–5 — metasomal tergites 1–3 (dorsal view); 6–7— type labels; 8 — *X. stepposus* (dorsal view of female habitus); 9 — *X. depressus* (lateral view of male habitus).

tellus, and partially of the femur in combination with the well developed carina of the first tergite suggest that the Ukrainian specimen may represent an unknown female of *X. ilignus* Hilszczański, 2000, but we currently refrain from describing it until male and female are collected or reared from the same locality. Therefore, *X. rusticus* should be excluded from the Ukrainian list of the subfamily Xoridinae.

Xorides filiformis (Gravenhorst, 1829)

Material. **Non-type. Ukraine:** Transcarpathian Reg., Hlyboke, 48.540845 N, 22.400448 E, oak forest, 02.05.2018, 1 ♀, 1 ♂ (O. Varga) (SIZK).

Distribution. Western Palaearctic; Ukraine: Kharkiv (Kasparyan, 1981), Crimea (Varga, 2015 b), and Transcarpathian Regions.

Xorides fuligator (Thunberg, 1822)

Distribution. Western Palaearctic; Ukraine: Ivano-Frankivsk Reg. (see below).

Remark. *Xorides fuligator* has not been recorded so far from Ukraine. Johansson et al. (2022) recently synonymised *X. niger* (Pfeffer, 1913) with *X. fuligator*. Thus, the name should be applied for the Ukrainian records of *X. niger* published in Varga (2015 b).

Xorides propinquus (Tschek, 1869)

Material. **Non-type. Ukraine:** Transcarpathian Reg., Vynogradiv, oak forest, 280 m, 48.1383 N, 23.0737 E, Malaise trap No. 1, 10.06–02.07.2017, 1 ♀, 1 ♂; 02–22.07.2017, 1 ♀; sweeping, 03.05.2018, 1 ♀; trunk trap, 26.07–18.08.2018, 1 ♀ (O. Varga) (SIZK).

Distribution. Palaearctic; Ukraine: Crimea (Kasparyan, 1981), Kyiv (Varga, 2015 b) and Transcarpathian Regions.

Remark. After examination of the type specimen of *Xorides corcyrensis* (Kriechbaumer, 1894) (figs 1–2, 4, 6), the first author found no morphological differences between this species and *X. propinquus* specimens collected in Ukraine, except for the narrow white ring on the antenna of *X. propinquus*. This mark is barely visible on the ventral side of the antennae in some of the females examined and is absent in the males, which calls into question the validity of *X. corcyrensis*. Furthermore, the type of *X. fasciipennis* (Kriechbaumer, 1894) (synonymised with *X. annulator* (Fabricius, 1804) by Horstmann, 2006) also shows similarities with the Ukrainian *X. propinquus* specimens, except for the red colouration of the metasoma, which can be variable in some *Xorides* spp. (see Johansson et al., 2022) and is common in other black-bodied ichneumonids found in dry and hot habitats, e. g. pimplines in southern Ukraine (figs 3, 5, 7). Thus, we suspect that all three names may represent different colour forms of a single species, but at present we refrain from making any definitive conclusions until molecular support can be presented.

Xorides sapporensis (Uchida, 1928)

Distribution. Oriental and Palaearctic; Ukraine: Kyiv Reg. (see below).

Remark. *Xorides sapporensis* has not previously been listed from Ukraine. Johansson et al. (2022) recently synonymized *Xorides hedwigi* Clément, 1938 with *X. sapporensis*. Thus, the name should be applied for the Ukrainian record of *X. hedwigi* published in Varga (2015 b).

Xorides sordator (Thunberg, 1824)

Material. **Non-type. Ukraine:** Ivano-Frankivsk Reg., Mochary, 5 km NE of Bogorodchany, 48.8371 N, 24.5814 E, 315 m, mixed forest, Malaise trap No.1, 21.07–10.08.2015, 1 ♀ (O. Varga) (SIZK).

Distribution. Western Palaearctic; **first record for Ukraine**.

Remark. *Xorides sordator* as a valid species name was reinstated by Johansson et al. (2022). According to that paper, this name should be applied for the species previously misidentified as *Xorides fuligator* (e. g. Kasparyan, 1981).

Xorides stepposus Kasparyan, 1981 (fig. 8)

Material. **Non-type. Poland:** Radom, Park Kościuszki, ex hornbeam branch, coll. 10.02.2017, rear. 25.02.2017, 1 ♀ (M. Milkowski) (UwB). **Ukraine:** Transcarpathian Reg., Vynogradiv, oak forest, 280 m, 48.1383 N, 23.0737 E, Malaise trap No. 3, 14.05–10.06.2017, 1 ♀ (O. Varga) (SIZK).

Distribution. Currently known only from Eastern and Central Ukraine (Varga, 2015 b), first record for Western Ukraine; **first record for Poland.**

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