



A checklist of the Ukrainian Xoridinae (Hymenoptera, Ichneumonidae)

Oleksandr Varga ‡

‡ I.I. Schmalhausen Institute of Zoology, NAS of Ukraine, Kyiv, Ukraine

Corresponding author: Oleksandr Varga (sancho.varga@gmail.com)

Academic editor: Anu Veijalainen

Received: 06 Mar 2015 | Accepted: 23 Sep 2015 | Published: 24 Sep 2015

Citation: Varga O (2015) A checklist of the Ukrainian Xoridinae (Hymenoptera, Ichneumonidae). Biodiversity Data Journal 3: e4832. doi: [10.3897/BDJ.3.e4832](https://doi.org/10.3897/BDJ.3.e4832)

Abstract

The Ukrainian Xoridinae list containing 28 species is reviewed. Four species, *Xorides flavotibialis* Hilszczanski, 2000, *X. hedwigi* Clement, 1938, *Xorides rufipes* (Gravenhorst, 1829), and *X. rusticus* (Desvignes, 1856) are recorded in the Ukrainian fauna for the first time. *Agrilus biguttatus* F. is recorded as a host of *Ischnoceros caligatus* (Gravenhorst, 1829) for the first time.

Keywords

Parasitoids, Ichneumonidae, Xoridinae, Ukraine, checklist, new records

Introduction

The Xoridinae Shuckard, 1840 is a relatively small subfamily of Ichneumonidae, with 220 described species worldwide and 46 species in Europe (Yu et al. 2012), classified into four genera (Townes 1969, Wahl 1997). Three of the genera, *Ischnoceros* Gravenhorst, 1829, *Odontocolon* Cushman, 1942 and *Xorides* Latreille, 1809, occur in Ukraine (Kasparyan 1981, Meyer 1934, Varga 2014a, Varga 2014b).

Xoridines are most commonly encountered in mature forests where they search for larvae of wood-boring Coleoptera. Host records include Cerambycidae and Buprestidae species, associated with coniferous and deciduous forests (Kasparyan 1981, Yu et al. 2012).

The first Ukrainian Xoridinae list, provided by Meyer (1934), included 10 species, mainly recorded from Central and South-Eastern Ukraine. About a half a century later, Kasparyan (1981) provided new data about the distribution of xoridines in Ukraine. In this work, what is today Ukraine was marked as "South" and "South-West" (and "West" together with Belarus) of the European part of the former USSR. In most cases the records are from Eastern Ukraine, but they lack specific locality information (only in some cases the author provided a clear locality name, e.g. Kharkiv). Western Ukraine, especially the Carpathians, remained largely unstudied for xoridines until 2014. Recent research carried out by the author demonstrated high Xoridinae species richness in the region (Varga 2014a, Varga 2014b).

The main goal of this paper is to provide summarized data on the distribution of the subfamily Xoridinae in Ukraine, which will provide a basis for a future revision of this group.

Materials and methods

This study is based on specimens collected by sweep netting and Malaise (Fig. 1) and conical traps (Fig. 1) (so-called Tereshkin's traps, see Tereshkin (1990)). The sampling was done by the author in the Ukrainian Carpathians in 2014 and 2015. The specimens are deposited in the Schmalhausen Institute of Zoology (Kiyv, Ukraine). Material from the Zoological Institute of St Petersburg, Russia, was also studied. The images were taken at the Alexandru Ioan Cuza University (Iasi, Romania) using a Leica stereomicroscope 205A with DFC 500 camera, combined with Zerene® software. The species were identified using keys provided by Kasparyan (1981) and Hilszczanski (2000). The images of most of the species were sent to Jacek Hilszczanski to confirm their identification. General distribution of species follows Yu et al. (2012).

Taxon treatments

Ischnoceros caligatus (Gravenhorst, 1829)

Materials

- a. country: Ukraine; stateProvince: Volyn Region; samplingProtocol: reared ex. *Agrilus biguttatus* F.; eventDate: 08/07/1976; individualCount: 1; sex: female; lifeStage: adult; recordedBy: V. Kozak; identifiedBy: O. Varga; dateIdentified: 2013
- b. country: Ukraine; stateProvince: Kiyv Region; locality: Batiava Gora; samplingProtocol: sweeping; eventDate: 05/28/2007; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Gezun; identifiedBy: O. Varga; dateIdentified: 2013

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 2): Ivano-Frankivsk Region (Varga 2014a), Volyn and Kyiv Regions.



Figure 1.

Some of the trapping sites in the Carpathians: triangle - Malaise trap in the primeval beech forest near the village of Mala Ugolka; circle - Tereshkin trap on a dead *Fagus sylvatica* trunk near the village of Kvasy.

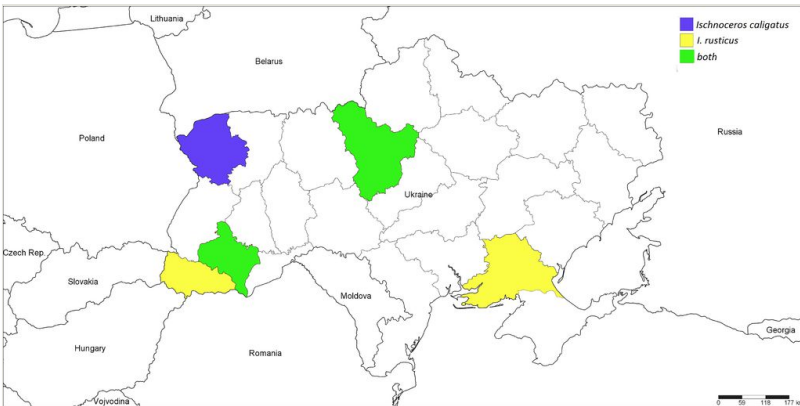


Figure 2.

The Ukrainian distribution map of *Ischnoceros caligatus* (Gravenhorst, 1829) and *I. rusticus* (Geoffroy, 1785).

Notes

Agrilus biguttatus F. (Coleoptera: Buprestidae) is recorded as a host of this species for the first time.

Ischnoceros rusticus (Geoffroy, 1785)

Materials

- a. country: Ukraine; stateProvince: Kiyv Region; locality: Hodosovka; samplingProtocol: sweeping; eventDate: 04/24/2004; individualCount: 1; sex: female; lifeStage: adult; recordedBy: M. Nesterov; identifiedBy: O. Varga; dateIdentified: 2013
- b. country: Ukraine; stateProvince: Transcarpathian Region; county: Tyachiv District; locality: Carpathian Biosphere Reserve, prymeval beech forest near Mala Ugolka; verbatimElevation: 750 m; verbatimCoordinates: 48° 15'39.58"N, 23° 37'0.84"E; samplingProtocol: Malaise trap; startDayOfYear: 07/17/2014; endDayOfYear: 08/16/2014; individualCount: 1; sex: female; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2014

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 2): Kherson Region (Kasparyan 1981), Ivano-Frankivsk Region (Varga 2014a), Kyiv and Transcarpathian Regions.

Odontocolon dentipes (Gmelin, 1790)

Materials

- a. country: Ukraine; stateProvince: Kiyv Region; locality: Belitchi; samplingProtocol: sweeping; eventDate: 06/01/2006; individualCount: 1; sex: male; lifeStage: adult; recordedBy: M. Nesterov; identifiedBy: O. Varga; dateIdentified: 2013
- b. country: Ukraine; stateProvince: Kiyv Region; locality: Kiyv; samplingProtocol: sweeping; eventDate: 03/21/1924; individualCount: 1; sex: female; lifeStage: adult; recordedBy: Paramonov; identifiedBy: O. Varga; dateIdentified: 2013
- c. country: Ukraine; stateProvince: Transcarpathian Region; county: Rakhiv District; locality: Carpathian Biosphere Reserve, Chornogora, slopes of m. Sheshul; verbatimElevation: 1450 m; verbatimCoordinates: 48° 09'25.05"N, 24° 20'59.53"E; samplingProtocol: Malaise trap; eventDate: 2014-06-05/29; individualCount: 1; sex: male; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2014

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 3): Ivano-Frankivsk Region (Varga 2014a), Kiyv and Transcarpathian Regions.

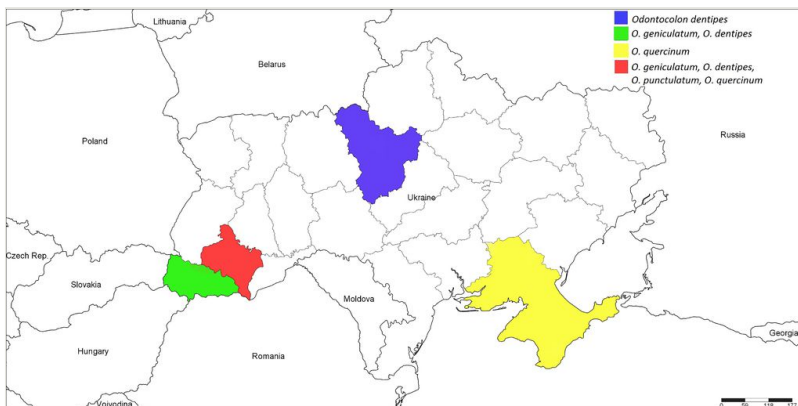


Figure 3.

The Ukrainian distribution map of *Odontocolon dentipes* (Gmelin, 1790), *O. geniculatum* (Kriechbaumer, 1889), *O. punctulatum* (Thomson, 1877), and *O. quercinum* (Thomson, 1877).

***Odontocolon geniculatum* (Kriechbaumer, 1889)**

Distribution

Palearctic (Yu et al. 2012); Ukraine (Fig. 3): Ivano-Frankivsk and Transcarpathian Regions (Varga 2014a).

***Odontocolon punctulatum* (Thomson, 1877)**

Distribution

Western Palearctic (Yu et al. 2012); Ukraine (Fig. 3): Ivano-Frankivsk Region (Varga 2014a).

***Odontocolon quercinum* (Thomson, 1877)**

Material

- a. country: Ukraine; stateProvince: Crimea; county: Balaclava District; locality: Aya Cape; samplingProtocol: sweeping; eventDate: 07/22/1979; individualCount: 1; sex: male; lifeStage: adult; recordedBy: A. Kotenko; identifiedBy: O. Varga; dateIdentified: 2013

Distribution

Western Palearctic (Yu et al. 2012); Ukraine (Fig. 3): Kherson Region (Kasparyan 1981), Ivano-Frankivsk Region (Varga 2014a), Crimea.

Odontocolon rufiventris (Holmgren, 1860)

Material

- a. country: Ukraine; stateProvince: Transcarpathian Region; county: Tyachiv District; locality: Carpathian Nature Reserve, beech forest, 6.5 km N of Mala Ugolka; verbatimElevation: 750 m; verbatimCoordinates: 48° 15'39.58"N, 23° 37'0.84"E; samplingProtocol: Malaise trap; eventDate: 2015-05-12/31; individualCount: 1; sex: female; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2015

Distribution

Western Palaearctic (Yu et al. 2012); Ukraine (Fig. 4): Ivano-Frankivsk Region (Varga 2014a), Transcarpathian Region.

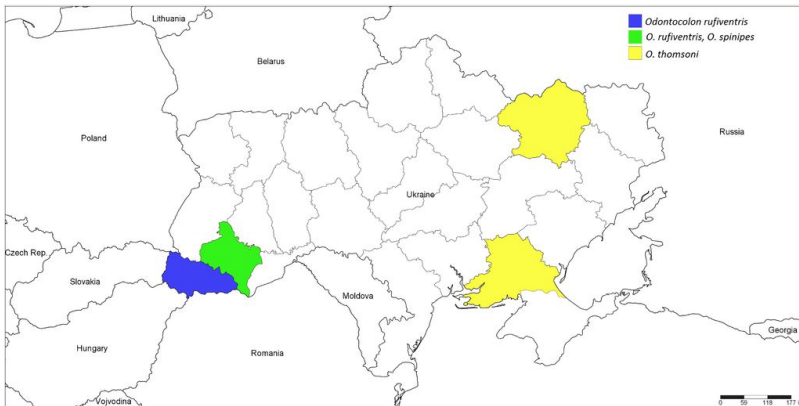


Figure 4.

The Ukrainian distribution map of *Odontocolon rufiventris* (Holmgren, 1860), *O. spinipes* (Gravenhorst, 1829), and *O. thomsoni* (Clément, 1938).

Odontocolon spinipes (Gravenhorst, 1829)

Distribution

Palaearctic (Yu et al. 2012); Ukraine (Fig. 4): Ivano-Frankivsk Region (Varga 2014a).

Odontocolon thomsoni (Clément, 1938)

Distribution

Western Palaearctic (Yu et al. 2012); Ukraine (Fig. 4): Kharkiv and Kherson Regions (Kasparyan 1981).

Xorides alpestris* (Habermehl, 1903)*Material**

- a. country: Ukraine; stateProvince: Kiyv Region; locality: Belitchi; samplingProtocol: sweeping; eventDate: 06/01/2006; individualCount: 1; sex: male; lifeStage: adult; recordedBy: M. Nesterov; identifiedBy: O. Varga; dateIdentified: 2013

Distribution

Palearctic (Yu et al. 2012); Ukraine (Fig. 5): Ivano-Frankivsk Region (Varga 2014b) and Kiyv Region.

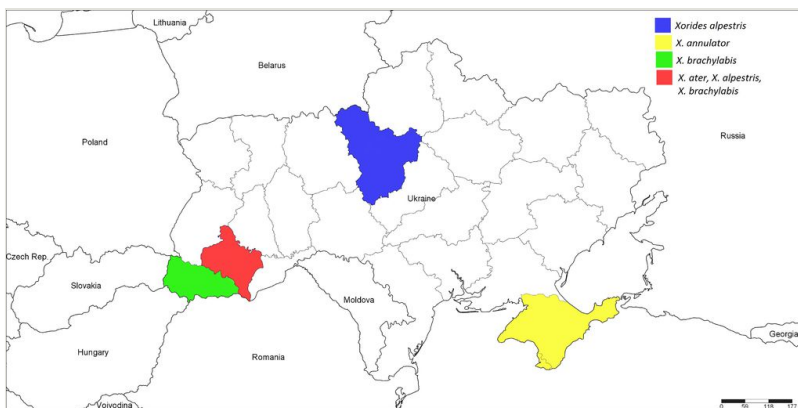


Figure 5.

The Ukrainian distribution map of *Xorides alpestris* (Habermehl, 1903), *X. annulator* (Fabricius, 1804), *X. ater* (Gravenhorst, 1829), and *X. brachylabis* (Kriechbaumer, 1889).

Xorides annulator* (Fabricius, 1804)*Distribution**

Palearctic (Yu et al. 2012); Ukraine (Fig. 5): Crimea (Kasparyan 1981).

Notes

There is only one specimen with a very old and illegible label, and it seems to be collected (as the other species in the collection) from South-East Ukraine. Therefore, the data provided is from the literature.

Xorides ater (Gravenhorst, 1829)

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 5): South-East Ukraine (Kasparyan 1981), Ivano-Frankivsk Region (Varga 2014b).

Notes

There is only specimen with a very old and illegible label, and it seems to be collected (as the other species in the collection) from South-East Ukraine. Therefore, the data provided is from the literature.

Xorides brachylabis (Kriechbaumer, 1889)

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 5): Ivano-Frankivsk and Transcarpathian Regions (Varga 2014b).

Xorides csikii Clement, 1938

Material

- a. country: Ukraine; stateProvince: Kiyv Region; locality: Hodosovka; samplingProtocol: sweeping; eventDate: 05/06/2005; individualCount: 1; sex: female; lifeStage: adult; recordedBy: M. Nesterov; identifiedBy: O. Varga; dateIdentified: 2013

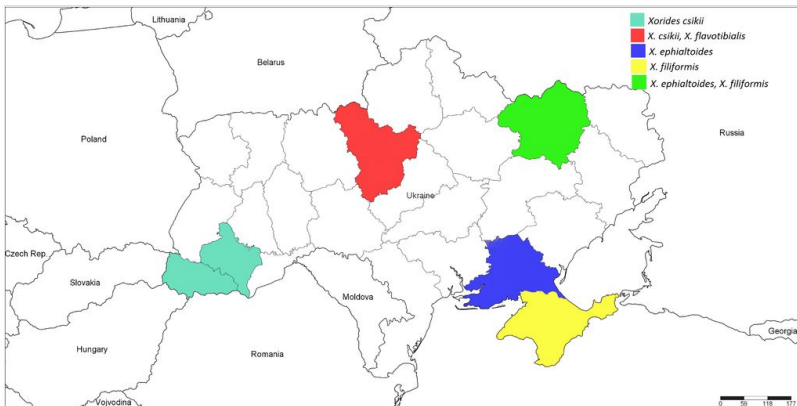


Figure 6.

The Ukrainian distribution map of *Xorides csikii* Clement, 1938, *X. ephialtoides* (Kriechbaumer, 1882), *X. filiformis* (Gravenhorst, 1829), and *X. flavotibialis* Hilszczanski, 2000.

Distribution

Western Palaearctic, previously recorded only from France, Germany, Hungary, Poland, Switzerland, and United Kingdom (Yu et al. 2012); Ukraine (Fig. 6): Ivano-Frankivsk and Transcarpathian Regions (Varga 2014b), Kiyv Region.

Xorides ephialtoides (Kriechbaumer, 1882)

Distribution

Palaearctic (Yu et al. 2012); Ukraine (Fig. 6): Kharkiv and Kherson Regions (Kasparyan 1981).

Xorides filiformis (Gravenhorst, 1829)

Material

- a. country: Ukraine; stateProvince: Crimea; locality: Karabi Yayla; samplingProtocol: sweeping; eventDate: 2003; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Sirenko; identifiedBy: O. Varga; dateIdentified: 2012

Distribution

Western Palaearctic (Yu et al. 2012); Ukraine (Fig. 6): Kharkiv Region (Kasparyan 1981), Crimea.

Xorides flavotibialis Hilszczanski, 2000

Material

- a. country: Ukraine; stateProvince: Kyiv Region; locality: Batyeva Gora; samplingProtocol: sweeping; eventDate: 06/10/2007; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Gesun; identifiedBy: O. Varga; dateIdentified: 2014

Distribution

This species is known only from Poland (Hilszczanski 2000); Ukraine (Fig. 6): Kiyv Region, new for Ukraine (Fig. 7).



Figure 7.

Xorides flavotibialis Hilszczanski, 2000.

Xorides gravenhorstii (Curtis, 1831)

Material

- a. country: Ukraine; stateProvince: Crimea; locality: Kanaka; samplingProtocol: sweeping; eventDate: 05/13/1993; individualCount: 1; sex: male; lifeStage: adult; identifiedBy: O. Varga; dateIdentified: 2013

Distribution

Western Palaearctic (Yu et al. 2012); Ukraine (Fig. 8): Crimea, Zaporyzhzhya Region (Kasparyan 1981), Ivano-Frankivsk and Transcarpathian Regions (Varga 2014b).

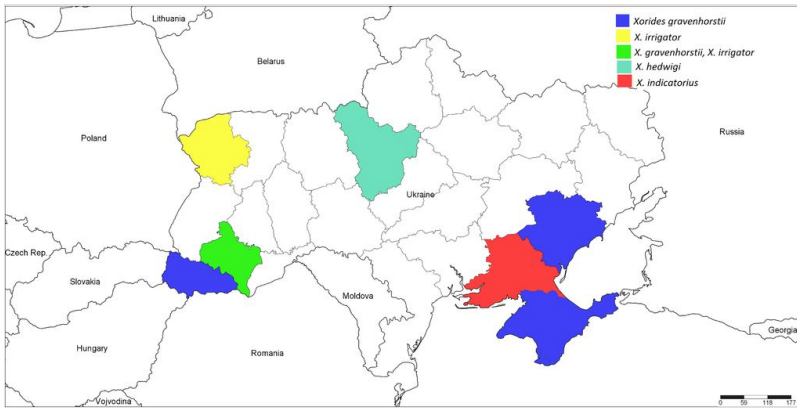


Figure 8.

The Ukrainian distribution map of *Xorides gravenhorstii* (Curtis, 1831), *X. hedwigi* Clement, 1938, *X. indicatorius* (Latreille, 1806), and *X. irrigator* (Fabricius, 1793).

Xorides hedwigi (Clement, 1938)

Material

- a. country: Ukraine; stateProvince: Kyiv Region; locality: Novosilky; samplingProtocol: sweeping; eventDate: 06/07/1993; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Kotenko; identifiedBy: O. Varga; dateIdentified: 2014

Distribution

Palaearctic, recorded only from Austria, China, Czech Republic, former Czechoslovakia, Germany, Hungary, and Poland (Yu et al. 2012); Ukraine (Fig. 8): Kyiv Region, new for Ukraine (Fig. 9).



Figure 9.

Xorides hedwigi Clement, 1938.

***Xorides indicatorius* (Latreille, 1806)**

Distribution

Western Palaearctic (Yu et al. 2012); Ukraine (Fig. 8): Kherson Region (Kasparyan 1981).

***Xorides irrigator* (Fabricius, 1793)**

Material

- a. country: Ukraine; stateProvince: Volyn Region; county: Lyuboml'sk District; samplingProtocol: reared ex. *Acanthocinus aedilis* L.; eventDate: 08/01/1975; individualCount: 2; sex: females; lifeStage: adult; identifiedBy: D. Kasparyan; dateIdentified: 1977

Distribution

Palaearctic (Yu et al. 2012); Ukraine (Fig. 8): Ivano-Frankivsk Region (Varga 2014b), Volyn Region.

***Xorides niger* (Pfeffer, 1913)**

Distribution

Western Palaearctic (Yu et al. 2012); Ukraine (Fig. 10): Ivano-Frankivsk Region (Varga 2014b).

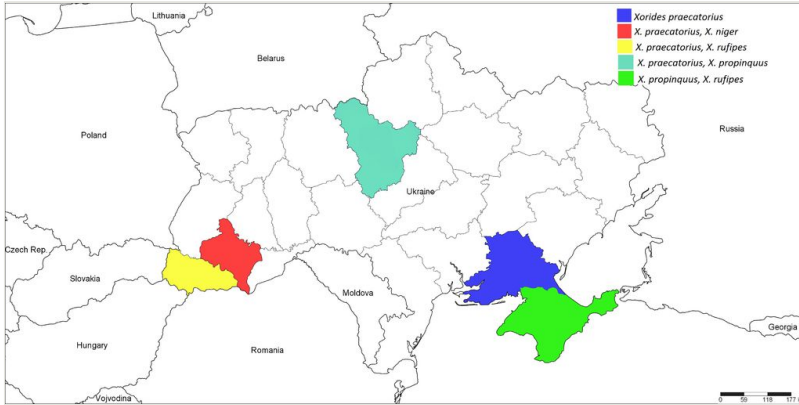


Figure 10.

The Ukrainian distribution map of *Xorides niger* (Pfeffer, 1913), *X. praecatorius* (Fabricius, 1793), *X. propinquus* (Tschek, 1869), and *X. rufipes* (Gravenhorst, 1829).

Xorides praecatorius (Fabricius, 1793)

Materials

- a. country: Ukraine; stateProvince: Kiyv Region; locality: Novobelitchi; samplingEffort: sweeping; eventDate: 04/30/2010; individualCount: 1; sex: male; lifeStage: adult; recordNumber: A. Prohorov; identifiedBy: Oleksandr Varga; dateIdentified: 2013
- b. country: Ukraine; stateProvince: Kiyv Region; locality: Hodosovka; samplingEffort: sweeping; eventDate: 05/06/2005; individualCount: 1; sex: male; lifeStage: adult; recordNumber: M. Nesterov; identifiedBy: Oleksandr Varga; dateIdentified: 2013
- c. country: Ukraine; stateProvince: Kiyv Region; locality: Batiava Gora; samplingEffort: sweeping; eventDate: 05/29/2007; individualCount: 1; sex: male; lifeStage: adult; recordNumber: A. Gezun; identifiedBy: Oleksandr Varga; dateIdentified: 2013

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 10): Kherson Region (Kasparyan 1981), Ivano-Frankivsk and Transcarpathian Regions (Varga 2014b), Kiyv Region.

Xorides propinquus (Tschek, 1869)

Material

- a. country: Ukraine; stateProvince: Kyiv Region; locality: Batiava Gora; samplingProtocol: sweeping; eventDate: 05/27/2007; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Gesun; identifiedBy: O. Varga; dateIdentified: 2014

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 10): Crimea (Kasparyan 1981), Kyiv Region.

Xorides rufipes* (Gravenhorst, 1829)*Materials**

- a. country: Ukraine; stateProvince: Transcarpathian Region; county: Rakhiv District; locality: Carpathian Biosphere Reserve, Svydovets, beech forest 2-3 km NW of Kvasy; verbatimElevation: 850 m; verbatimCoordinates: 48°09'08.89"N, 24°15'58.35"E; samplingProtocol: Trunk trap; startDayOfYear: 05/07/2014; endDayOfYear: 06/05/2014; individualCount: 2; sex: females; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2014
- b. country: Ukraine; stateProvince: Crimea; county: Balaklava District; locality: Aya Cape; samplingProtocol: sweeping; eventDate: 07/22/1979; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Kotenko; identifiedBy: O. Varga; dateIdentified: 2014
- c. country: Ukraine; stateProvince: Transcarpathian Region; county: Tyachiv District; locality: Carpathian Nature Reserve, beech forest, 6.5 km N of Mala Ugolka; verbatimElevation: 750 m; verbatimCoordinates: 48°15'39.58"N, 23°37'0.84"E; samplingProtocol: near dead *Fagus sylvatica* trunk; eventDate: 05/31/2015; individualCount: 1; sex: female; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2015
- d. country: Ukraine; stateProvince: Transcarpathian Region; county: Vynogradiv District; locality: Carpathian Nature Reserve, Vynogradiv, oak forest, Chorna Gora; verbatimElevation: 500 m; verbatimCoordinates: 48°09'19.70"N, 23°04'22.47"E; samplingProtocol: near dead oak trunk; eventDate: 05/30/2015; individualCount: 2; sex: females; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2015
- e. country: Ukraine; stateProvince: Transcarpathian Region; county: Vynogradiv District; locality: Carpathian Nature Reserve, Vynogradiv, oak forest, Chorna Gora; verbatimElevation: 500 m; verbatimCoordinates: 48°09'19.70"N, 23°04'22.47"E; samplingProtocol: near dead oak trunk; eventDate: 05/30/2015; individualCount: 1; sex: male; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2015

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 10): Transcarpathian Region and Crimea, new for Ukraine.

Xorides rusticus* (Desvignes, 1856)*Material**

- a. country: Ukraine; stateProvince: Kyiv Region; locality: Kyiv, Feofania; samplingProtocol: sweeping; eventDate: 06/19/2002; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Kotenko; identifiedBy: O. Varga; dateIdentified: 2014

Distribution

Palaeartic, previously recorded only from China, Germany, Poland, and United Kingdom (Yu et al. 2012); Ukraine (Fig. 11): Kyiv Region, new for Ukraine.

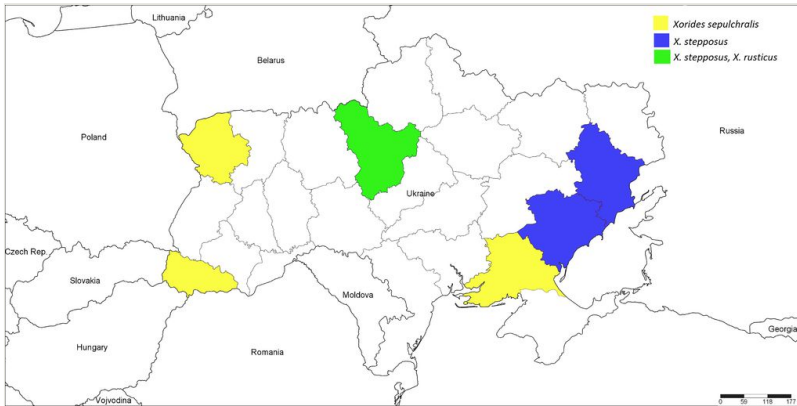


Figure 11.

The Ukrainian distribution map of *Xorides rusticus* (Desvignes, 1856), *X. sepulchralis* (Holmgren, 1860), and *X. stepposus* Kasparyan, 1981.

Xorides sepulchralis (Holmgren, 1860)

Materials

- a. country: Ukraine; stateProvince: Volyn Region; locality: Nevyr; samplingProtocol: sweeping; eventDate: 08/03/1960; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Ermolenko; identifiedBy: O. Varga; dateIdentified: 2014
- b. country: Ukraine; stateProvince: Transcarpathian Region; county: Vynogradiv District; locality: Carpathian Nature Reserve, Vynogradiv, oak forest, Chorna Gora; verbatimElevation: 500 m; verbatimCoordinates: 48°09'19.70"N, 23°04'22.47"E; samplingProtocol: near dead oak trunk; eventDate: 05/30/2015; individualCount: 3; sex: males; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2015
- c. country: Ukraine; stateProvince: Transcarpathian Region; county: Tyachiv District; locality: Carpathian Nature Reserve, beech forest, 6.5 km N of Mala Ugolka; verbatimElevation: 750 m; verbatimCoordinates: 48°15'39.58"N, 23°37'0.84"E; samplingProtocol: Malaise trap; eventDate: 2015-05-12/31; individualCount: 1; sex: female; lifeStage: adult; recordedBy: O. Varga; identifiedBy: O. Varga; dateIdentified: 2015

Distribution

Palaeartic (Yu et al. 2012); Ukraine (Fig. 11): Kherson Region (Kasparyan 1981), Volyn and Transcarpathian Regions (Fig. 12).

Xorides stepposus Kasparyan, 1981

Material

- a. country: Ukraine; stateProvince: Kyiv Region; locality: Kyiv, Svyatoshyhno; samplingProtocol: sweeping; eventDate: 05/04/2011; individualCount: 1; sex: female; lifeStage: adult; recordedBy: A. Prohorov; identifiedBy: O. Varga; dateIdentified: 2014



Figure 12.

Xorides sepulchralis (Holmgren, 1860).

Distribution

This species is only known from Ukraine (Fig. 11): Donetsk and Zaporizhzhya Regions (Kasparyan 1981), Kyiv Region (Fig. 13).



Figure 13.

Xorides stepposus Kasparyan, 1981.

Discussion

Before this work, the Ukrainian Xoridinae was a poorly studied group of ichneumonids comprising just 15 species, mainly recorded by Meyer (1934) and Kasparyan (1981). The

main collections were deposited in Russian museums. Unfortunately, Meyer's collection was lost during the Second World War and now none of these records can be considered valid as there are no voucher specimens available. Thus, *Xorides gracilicornis* (Gravenhorst, 1829) recorded by Meyer (1934) from the Kiyv Region should be excluded from the Ukrainian list. The same is true for another species, *X. fuligator* (Thunberg, 1822), which is known only from a questionable record by Besser (1835) from the Volyn Region. The Ukrainian distribution of the other species recorded by Meyer (1934) were confirmed in a later work (Kasparyan 1981). This latter collection is deposited in the Zoological Institute of St Petersburg, Russia, and comprises specimens collected mainly from the South-Eastern part of Ukraine (Crimea, Kherson and Kharkiv Regions). Up to 2014, there was no separate Xoridinae collection in the Schmalhausen Institute of Zoology in Kiyv. Only a few pinned specimens (identified by Dmitriy R. Kasparyan) were located in a box with "mixed" ichneumonids. After the recent investigation of the Carpathian Xoridinae fauna (Varga 2014a, Varga 2014b), this collection was largely replenished, increasing the number of the Ukrainian xoridines to 24 species. In addition, some unidentified and unpinned specimens (collected by other scientists) deposited in the institute's collection were also studied by the author. As a result, four new species, *X. flavotibialis* Hilszczanski, 2000, *X. hedwigi* Clement, 1938, *Xorides rufipes* (Gravenhorst, 1829), and *X. rusticus* (Desvignes, 1856) were added to the Ukrainian list.

To conclude, the Ukrainian fauna of the subfamily Xoridinae now contains 28 species, most of which are widespread and common in Europe, but some of them, e.g. *X. csikii* Clement, 1938, *X. flavotibialis* Hilszczanski, 2000, *X. hedwigi* Clement, 1938, and *X. rusticus* (Desvignes, 1856), and *X. stepposus* Kasparyan, 1981, are quite rare.

Acknowledgements

The author is deeply grateful to Jacek Hilszczanski for his help with the identification of some of the species; Andrey Khalaim for checking the specimens in the collection of the Zoological Institute (St Petersburg); Anu Veijalainen, Jacek Hilszczanski, Gavin Broad, Andrey Khalaim, and two anonymous reviewers for helpful suggestions and corrections to an earlier version of the manuscript; Chris Raper for the correction of the English text. I would like to acknowledge Ovidiu Popovici and Lucian Fusu (UAIC) for access to the photo-laboratory. The author's visit to Romania was funded by the Erasmus Mundus EMERGE Scholarship. The author's field work in the Carpathians was funded by The Rufford Foundation http://www.rufford.org/projects/alexander_varga.

References

- Besser W (1835) Über die Ichneumonen Volhyniens. Bulletin de la Société Imperiale des Naturalistes de Moscou 8: 171-176.
- Hilszczanski J (2000) European species of subgenus *Moerophora* Foerster of *Xorides* Latreille (Hymenoptera: Ichneumonidae: Xoridinae), with descriptions of two new species. Insect Systematics & Evolution 31: 247-255. DOI: [10.1163/187631200x00020](https://doi.org/10.1163/187631200x00020)
- Kasparyan DR (1981) 5. Subfam. Xoridinae. In: Medvedev GS (Ed.) Keys to the insects of the European part of the USSR. Vol. III. Hymenoptera. Part 3. Nauka, Leningrad, 688 pp. [In Russian].
- Meyer NF (1934) Parasitic Hymenoptera in the family Ichneumonidae of the USSR and adjacent countries. Vol. III. Keys to the fauna of the USSR. Leningrad 3: 1-271. [In Russian].
- Tereshkin AM (1990) A trap for the xylobiontes and their parasites. URL: <http://tereshkin.info/papers/a-trap-for-the-xylobiontes-and-theirs-parasites-in-russian.html>
- Townes HK (1969) The genera of Ichneumonidae, Part 1. Memoirs of the American Entomological Institute 11: 1-300. DOI: [10.1007/bf02027741](https://doi.org/10.1007/bf02027741)
- Varga A (2014a) Study of Xoridinae (Hymenoptera, Ichneumonidae) in the Ukrainian Carpathians. Genera *Odontocolon* Cushman and *Ischnoceros* Gravenhorst. Proceedings of the Russian Entomological Society 85 (1): 143-150.
- Varga A (2014b) A review of the genus *Xorides* Latreille, 1809 (Hymenoptera, Ichneumonidae, Xoridinae) in the Ukrainian Carpathians. Journal of Insect Biodiversity 2 (7): 1-9. DOI: [10.12976/jib/2014.2.7](https://doi.org/10.12976/jib/2014.2.7)
- Wahl DB (1997) The cladistics of the genera and subgenera of Xoridinae. Memoirs of the American Entomological Institute 57: 454-460.
- Yu DS, Horstmann K, van Achterberg C (2012) World Ichneumonoidea 2011. Taxapad 2012. Database on flash-drive. Ottawa, Ontario, Canada. URL: <http://www.taxapad.com>