экосети, разработке системы экологического менеджмента территории рестабилизации нарушенных экотопов.

Ключевые слова: *водная растительность, Западное Подолье, асоциация, диагностический вид.*

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A CHECKLIST OF CHEILOSIA GENUS HOVERFLIES IN THE PODILSKY TOVTRY NATIONAL PARK, UKRAINE

The genus Cheilosia Meigen, 1822 belongs to the monophyletic tribe Rhingiini of the subfamily Eristalinae, with more than 300 Palaearctic species (Stahls, Nyblom, 2000; Stahls et al., 2004; Thompson et al., 2010). It is one of the largest genera in the world and the largest Palaearctic genus of the hoverflies (Vujic et al., 2013). Cheilosia larvae are mostly phytophagous, with some species feeding on the sap and cambium of coniferous trees (subgenus Neocheilosia Barkalov, 1983) or fungivorous (Vujic, 1996; Rotheray, 1993; Stuke, 2000). Some phytophagous species are known to be pests of crops, for instance C. vulpina (Meigen, 1822) infesting up to 50% of artichoke (Cynara scolymus) crops in Northern France in the 1980s (Rotheray, Gilbert, 2011). C. gigantea (Zetterstedt, 1838) was reported to feed as larva in Rumex sp., C. rufimana (Becker, 1894) oviposits on Polygonum bistorta, and larvae of C. variabilis (Panzer, 1798) feed in the roots of Scrophularia nodosa (Dиљек, 1962). On another hand, larvae of C. urbana (Meigen, 1822) are host-specifi c and efficient agents for biological control of Hieracium spp. (Grosskopf et al., 2002). Adults of Cheilosia are commonly feeding on flowers; in early spring on flowers of Salix spp. and during the summer visiting various yellow and white flowers (Stahls et al., 2008). Cheilosia are blackish hoverflies, rarely with silverish spots, or seldom with greenish or purple sheen (Van Veen, 2004). Some species are good mimics of Hymenoptera (Stahls et al., 2004). Identification of Cheilosia species is oft en difficult because of the presence of cryptic species and lack of conspicuous characters. The most recent and important publications on this genus are as follows: Barkalov (2002) classified Cheilosia into 13 subgenera; Van Veen (2004) distributed the species into 9 groups; Speight (2012) registered 175 European species; Vujic et al. (2013) provided a key to European species of the C. proxima species group.Over the past decades there have been significant changes in the views on the taxonomy of double-winged species, in particular the representatives of the Syrphidae family, within the framework of both world and European fauna. In addition, the processes of anthropogenic transformation of the environment, in particular on the territory of Ukraine, which are also reflected in the composition of fauna, have acquired significant volumes. All of this requires the creation and constant correction of systematic fauna lists and analysis of their changes. The

idea behind the Global Taxonomy Initiative (GTI) is the key to assessing faunal changes historically, comparing the biota of different regions, and protecting natural resources. The idea of checklists (checklist) exists for a long time. They are based on – hierarchical lists of scientific names of taxa with indication of authorship and description of the year. The lists we have included also include names synonyms.

The purpose of this work is to streamline the list of taxa of the genus Cheilosia (Diertea, Syrphidae), which are distributed within the study area, taking into account the recent changes in the taxonomy of the genus, for the purpose of further analysis of the data and development of environmental protection recommendations based on them.

The national park «Podilsky Tovtry» is characterized by a high level of anthropogenic transformation. At the same time, the diversity of the genus Cheilosia indicates a conservation of natural forest habitats. In general, the list hoverfly national park has 108 species, including genus Cheilosia is one of the most diverse.

Key words: *Cheilosia, hoverfly, checklist, Ukraine.*

Introduction. *Cheilosia* is a genus of hoverfly. It is one of the most species diverse genera of hoverflies. The biology of many species is little understood, but where known, the larvae of *Cheilosia* species feed in the stems of plants or in fungi. The faunistic studies on dipterans of the family *Syrphidae* carried out so far in territories national park Podilsky Tovtry, have been of a fragmentary character. In particular genus *Cheilosia*.

Materials and methods. Materials for this study obtained during 2005-2012 rr. Hoverfly collected using entomological nets and by hand-picking.

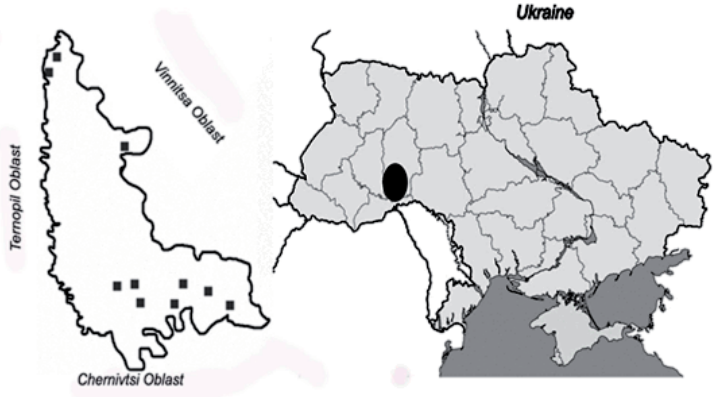

Fig. 1. *The main point of collection hoverfly in the Podilski Tovtry national park and the location in Ukraine*

Meeting covered the following types of habitats national park, forest habitats and their edge; meadow steppe habitats and shrub kserotermic area; mesophytic meadows. Overall, the study collected during 1521 ex., hoverfly. Determination was carried out by insects

determinants (Shtakelberg, 1970; Peck, 1988). Assembled materials stored in the collection of A. Lishchuk.

Taxon treatments

Cheilosia aerea Dufour, 1848 = Ch. zetterstedti (Becker, 1894)

Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Lysogirka, river valley Smotrych); sampling Protocol: entomological net; **event Date: 16.08.2006**; individual Count: 1; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 12.05.2007** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 01.05.2006** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

d) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Panivecka Dacha reserve); sampling Protocol: entomological net; **event Date: 12.08.2006**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

e) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 14.08.2006**; individual Count: 2; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Eurasia Europe South Europe (Italy (North Italy)) (http://insectoid.info/).

Scandinavia to the Mediterranean; central Spain eastwards to Greece and Ireland eastwards into European parts of Russia (Speight, M.C.D. (2014)).

Cheilosia albitarsis (Meigen, 1822)

Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 10.05.2007**; individual Count: 2; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 12.05.2007**; individual Count: 3; sex: 1 male, 2 female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 28.05.2009**; individual Count: 4; sex: 4 female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 15.05.2007**; individual Count: 3; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 27.05.2009** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 27.05.2009** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Supposedly throughout the Palaearctic (including N Africa) except the far north and in N America, but requires re-appraisal due to confusion with C.ranunculi, Doczkal (Speight, M.C.D. (2014)).

Cheilosia albipila Meigen, 1838
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Ivankovetskyy reserve); sampling Protocol: entomological net; **event Date: 30.04.2007**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 16.04.2007** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 28.04.2011** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Southern Fennoscandia south to the Pyrenees; Ireland eastwards through parts of northern and central Europe into European Russia and on to central Siberia (Speight, M.C.D. (2014)).

Cheilosia barbata Loew, 1857 = Ch. honesta Rondani, 1868
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Satanivskyy reserve); sampling Protocol: entomological net; **event Date: 28.04.2007**; individual Count: 1; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Scandinavia to the Mediterranean; central Spain eastwards to Greece and Ireland eastwards into European parts of Russia (Speight, M.C.D. (2014)).

Cheilosia chrysocoma (Meigen, 1822)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Lysogirka, river valley Smotrych); sampling Protocol: entomological net; **event Date: 16.08.2006**; individual Count: 1; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 11.08.2007** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 15.08.2009** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Scandinavia south to northern Spain, Italy and Bulgaria; Ireland eastwards through central Europe to European parts of Russia and on into Siberia (Speight, M.C.D. (2014)).

Cheilosia cynocephala Loew, 1840
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Knyazhpilskyy (Surzhynetskyy ravine) reserve); sampling Protocol: entomological net; **event Date: 13.05.2006** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

Distribution

Fennoscandia south to central France; southern England eastwards through central Europe and on into central Russia; southwards into mountainous parts of northern Italy and the former Yugoslavia (Speight, M.C.D. (2014)).

Cheilosia illustrata (Harris, 1780)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 03.07.2008** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia to Spain and Ireland to western parts of Siberia (Speight, M.C.D. (2014)).

Cheilosia impressa Loew, 1840
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 30.04.2007** (individual

Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 10.06.2008** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Scandinavia to the Mediterranean; central Spain eastwards to Greece and Ireland eastwards into European parts of Russia (Speight, M.C.D. (2014)).

Cheilosia flavipes (Panzer, 1798)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Ivankovetskyy reserve); sampling Protocol: entomological net; **event Date: 30.04.2007**; individual Count: 2; sex: 1 female, 1 male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 16.04.2007** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 15.05.2007**; individual Count: 3; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Sweden and Finland southwards, primarily through mountainous regions, to the Pyrenees and the Alpes-Maritimes, throughout the Alps to the former Yugoslavia and Bulgaria; through northern Europe into western parts of Siberia (Speight, M.C.D. (2014)).

Cheilosia frontalis Loew, 1857
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Ivankovetskyy reserve); sampling Protocol: entomological net; **event Date: 30.04.2007**; individual Count: 2; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 15.09.2005**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 12.07.2006** (individual Count: 6); sex: 2 female and 4 male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia and mountainous parts of Europe south to the Pyrenees and northern Spain; from the Ardennes east to the Alps and on into European parts of Russia (Speight, M.C.D. (2014)).

Cheilosia gigantea (Zetterstedt, 1838)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 01.05.2006** (individual Count: 2); sex: 1 male, 1 female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

Distribution

Fennoscandia south to the Alps; Germany eastwards through northern and central Europe (plus northern Italy and the old Yugoslavia) into European parts of Russia and from the Ukraine to the Caucasus; in Siberia from the Urals to the Pacific coast (Speight, M.C.D. (2014)).

Cheilosia grossa (Fallen, 1817)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Lysogirka, river valley Smotrych); sampling Protocol: entomological net; **event Date: 16.08.2006**; individual Count: 1; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 18.05.2008** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 12.05.2012** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia south to Spain; Ireland eastwards through northern, central and southern Europe into Asiatic parts of Russia in Siberia. Also recorded from the Oriental region (Uttah Pradesh in northern India) and N Africa (Morocco) (Speight, M.C.D. (2014)).

Cheilosia laticornis Rondani, 1857 = Ch. latifascies Loew, 1857
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Ivankovetskyy reserve); sampling Protocol: entomological net; **event Date: 30.04.2007**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 15.05.2007**; individual Count: 3; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Scandinavia to the Mediterranean; central Spain eastwards to Greece and Ireland eastwards into European parts of Russia (Speight, M.C.D. (2014)).

Cheilosia latifrons (Zetterstedt, 1857)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 06.06.2006** (individual Count: 3); sex: 1 female, 2 male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Panivecka Dacha reserve); sampling Protocol: entomological net; **event Date: 12.08.2006**; individual Count: 3; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 14.08.2006**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fenno-Scandia south to Iberia and from Ireland eastwards through central and southern Europe to Turkey and on into European parts of Russia and western Siberia. Also in N Africa (Kassebeer, 1998) (Speight, M.C.D. (2014)).

Cheilosia longula (Zetterstedt, 1838)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Ivankovetskyy reserve); sampling Protocol: entomological net; **event Date: 30.04.2007**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 28.05.2009** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 11.08.2007** (individual Count: 3); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia south to the Pyrenees; from Ireland eastwards through Eurasia to eastern Siberia; Italy; the former Yugoslavia (Speight, M.C.D. (2014)).

Cheilosia morio (Zetterstedt, 1838)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Ivankovetskyy reserve); sampling Protocol: entomological net; **event Date: 30.04.2007**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

From northern Scandinavia (Lapland) south to northern Germany and Poland; from the Baltic states and northern Germany eastwards through central Europe (Switzerland, Austria) to Bulgaria and Roumania and on into the Ukraine, the Balkans, western Siberia and Mongolia (Speight, M.C.D. (2014)).

Cheilosia nigripes (Meigen, 1822)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Lysogirka, river valley Smotrych); sampling Protocol: entomological net; **event Date: 16.08.2006**; individual Count: 1; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 12.07.2006** (individual Count: 4); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 4); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia south to the Pyrenees and northern Spain; from southern England eastwards through central and southern Europe (northern Italy, the former Yugoslavia) into Turkey and European parts of Russia; through Siberia to the Pacific coast (Speight, M.C.D. (2014)).

Cheilosia pagana (Meigen, 1822)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 16.04.2007** (individual Count: 2); sex: 1 female 1 male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 24.04.2007** (individual Count: 2); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural

monument); sampling Protocol: entomological net; **event Date: 11.08.2007** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Knyazhpilskyy (Surzhynetskyy ravine) reserve); sampling Protocol: entomological net; **event Date: 13.05.2006** (individual Count: 2); sex: 1 female 1 male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 14.08.2006**; individual Count: 5; sex: 1 male 4 female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia south to Iberia; from Ireland eastwards through central and southern Europe into Turkey and Russia and on throughout Siberia (Speight, M.C.D. (2014)).

Cheilosia pubera (Zetterstedt, 1838)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Lysogirka, river valley Smotrych); sampling Protocol: entomological net; **event Date: 16.08.2006**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 01.05.2006** (individual Count: 2); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 15.05.2007**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

d) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 27.05.2009** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia, the Ardennes, northern Spain (Cordillera Cantabrica) and the Alps; from Ireland eastwards through northern and central Europe (plus mountainous parts of northern Italy

and the former Yugoslavia) into European parts of Russia (Speight, M.C.D. (2014)).

Cheilosia soror (Zetterstedt, 1843) 3 = Ch. rufipes (Preyssler, 179)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Lysogirka, river valley Smotrych); sampling Protocol: entomological net; **event Date: 16.08.2006**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 10.06.2008** (individual Count: 2); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 11.08.2007** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

From Finland, Denmark and Belgium eastwards through mountainous parts of central Europe to Bulgaria; Ukraine; Kazakstan; Asiatic Russia (Speight, M.C.D. (2014)).

Cheilosia scutellata (Fallen, 1817)
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 11.08.2007** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia south to Iberia and round the Mediterranean to Greece, Turkey and N Africa; from Ireland eastwards through Eurasia to the Pacific coast (Speight, M.C.D. (2014)).

Cheilosia variabilis (Panzer [1798])
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Dovzhotsky reserve); sampling Protocol: entomological net; **event Date: 16.04.2007** (individual Count: 2); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural

monument); sampling Protocol: entomological net; **event Date: 11.08.2007** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 10.06.2008** (individual Count: 2); sex: 1 female 1 male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Southern Fennoscandia south to Iberia; from Ireland eastwards through central and southern Europe (Italy, former Yugoslavia) into Bulgaria, Turkey and Russia as far as western Siberia. Also in N Africa (Morocco) (Speight, M.C.D. (2014)).

Cheilosia velutina Loew, 1840
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Satanivskyy reserve); sampling Protocol: entomological net; **event Date: 28.04.2007**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 22.04.2007** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia south to Spain; from Ireland eastwards through much of Europe into Russia and on through Siberia to the Pacific coast (Speight, M.C.D. (2014)).

Cheilosia vernalis (Fallen, 1817) = Ch. ruficollis Becker, 1984
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Satanivskyy reserve); sampling Protocol: entomological net; **event Date: 28.04.2007**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;

b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 18.05.2008** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 20.05.2012** (individual Count: 1); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Fennoscandia south to Iberia; from Ireland eastwards through central and southern Europe (Italy, former Yugoslavia) to Turkey and European parts of Russia and on through Siberia to the Pacific coast (Speight, M.C.D. (2014)).

Cheilosia vulpina (Meigen, 1822).
Materials

a) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Ivankovetskyy reserve); sampling Protocol: entomological net; **event Date: 30.04.2007**; individual Count: 1; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
b) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Gorodok district (Satanivskyy reserve); sampling Protocol: entomological net; **event Date: 28.04.2007**; individual Count: 1; sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
c) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Sovynyj Yar reserve); sampling Protocol: entomological net; **event Date: 15.05.2007**; individual Count: 3; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
d) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Smotrytsky Canyon natural monument); sampling Protocol: entomological net; **event Date: 18.05.2008** (individual Count: 2); sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
e) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Bagovycia); sampling Protocol: entomological net; **event Date: 10.06.2008** (individual Count: 1); sex: female; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk;
f) country: Ukraine; state Province: Khmelnytskyi Oblast; locality: Kamianets-Podilskyi Raion (district) (Panivecka Dacha reserve); sampling Protocol: entomological net; **event Date: 13.07.2005**; individual Count: 1; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk; **event Date: 27.07.2005**; individual Count: 3; sex: male; life Stage: adult; recorded By: A. Lischuk; identified By: A. Lischuk.

Distribution

Denmark to the Pyrenees and northern Spain; from Britain (England) eastwards through central Europe to central and southern parts of Russia as far as western Siberia (Speight, M.C.D. (2014)).

Discussion. Genus Cheilosia forms a rather uniform group of species with similar ecological requirements. Their geographical distribution is almost exclusively restricted to the Holarctic region. They inhabit the temperate zone where the plant cover is represented by broad-leaved deciduous forests. The species of the genus Cheilosia are associated with woodlands, mainly with wet broad-leaved forests and with herbaceous vegetation of the temperate zone.

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КОНТРОЛЬНИЙ СПИСОК СИРФІД РОДУ CHEILOSIA НАЦІОНАЛЬНОГО ПРИРОДНОГО ПАРКУ ПОДІЛЬСЬКІ ТОВТРИ, УКРАЇНИ

У фауні мух-сирфід Євразії рід Cheilosia характеризується високими показниками видового різноманіття. Високі показники видового різноманіття пояснюються широким спектром екологічних, в тому числі трофічних, адаптацій видів цього роду, серед яких більшість – фітофаги, які поділяються на мінерів листя великих трав'янистих рослин, на мешканців стебел і на мешканців коренів і кореневищ. З огляду на широке поширення і видове різноманіття роду Cheilosia, його представники нерідко потрапляють в коло інтересів людини. Деякі види роду Cheilosia знижують або повністю пригнічують продуктивність насіння деяких бур'янів (н-д: будяка кучерявого (Carduus crispus L.) на 45% і тому можуть розглядатися як ефективні агенти біологічного контролю за цим бур'яном). Окрім того, представники роду Cheilosia є природними запилювачами багатьох рослин, зважаючи на високу активність їх імаго. Сирфіди можуть бути індикаторами чистоти навколишнього середовища і їх можна застосовувати у переробці екскрементів с/г худоби та відходів у цій промисловості. Вказані характеристики є важливими для дослідження біорізноманіття урбаністичних систем.

За останні десятиліття відбулись помітні зміни у поглядах на таксономію двокрилих, зокрема представників родини Syrphidae у межах як світової, так і європейської фауни. Окрім того, значних обсягів набули процеси антропогенної трансформації середовища, зокрема й на території України які теж відбиваються на складі фа-

уни. Усе це вимагає створення і постійної корекції систематичних списків фауни та аналізу їх змін. Ідея угоди Глобальної таксономічної ініціативи (Global Taxonomy Initiative (GTI)), є ключовою для оцінювання фауністичних змін у історичному розрізі, порівняння біоти різних регіонів та охорони природних ресурсів. Ідея контрольних списків (checklist) існує давно. У їхній основі лежать – ієрархічні переліки наукових назв таксонів із зазначенням авторства і року опису. Розглянуті нами списки включають також синонімію назв.

Мета цієї роботи – впорядкування переліку таксонів роду Cheilosia (Diptera, Syrphidae), що поширені в межах території дослідження з урахуванням останніх змін у таксономії роду з метою подальшого аналізу даних та розробки на їх основі природоохоронних рекомендацій.

Ключові слова: *Cheilosia, мухи-сирфіди, контрольний список, Україна.*

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КОНТРОЛЬНЫЙ СПИСОК СИРФИД РОДА CHEILOSIA НАЦИОНАЛЬНОГО ПАРКА ПОДОЛЬСКИЕ ТОВТРЫ, УКРАИНА

В фауне мух-журчалок Евразии род Cheilosia представлен необычайным видовым богатством. По числу видов этот таксон примерно равен небольшому семейству, а по обилию – в некоторых биотопах, среди двукрылых, занимает ведущее место. Необычайное видовое разнообразие объясняется широким спектром экологических адаптаций видов этого рода. Наиболее широко представленная группа фитофагов делится на минеров листьев крупных травянистых растений, на обитателей стеблей и на обитателей корней и корневищ. Широкий охват разнообразных вегетативных частей растений и переход на другие пищевые субстраты (грибы, смола), мог, по-видимому, послужить одной из причин, интенсивного видообразования. Ввиду широкого распространения и большого числа видов в роде Cheilosia, его виды нередко попадают в поле деятельности человека. Некоторые виды, снижающие или даже полностью подавляющие продуктивность семян некоторых злостных сорняков (например Ch. grossa снижает продукцию семян у чертополоха курчавого (Carduus crispus L.) на 45% и поэтому может рассматриваться как эффективный агент биологического контроля за этим сорняком). Кроме того, представители рода Cheilosia – частые посетители многих цветковых растений, и, должно быть, служат их естественными опылителями.

За последние десятилетия произошли заметные изменения во взглядах на таксономии двукрылых, в частности представителей семьи Syrphidae в пределах как мировой, так и европейской фауны. Кроме того, значительных объемов приобрели процессы антропогенной трансформации среды, в том числе на территории Украины, которые так отражаются на составе фауны. Все это требует создания и постоянной коррекции систематических списков фауны и анализа их изменений. Идея Соглашения Всемирной таксономической инициативы (Global Taxonomy Initiative (GTI)), яв-

ляется ключевым для оценки фаунистических изменений в историческом разрезе, сравнение биоты разных регионов и охраны природных ресурсов. Идея контрольных списков (checklist) существует давно. В их основе лежат – иерархические списки научных названий таксонов с указанием авторства и года описания. Рассмотренные нами списки включают также синонимия названий.

Цель этой работы – благоустройство перечня таксонов рода Cheilosia (Diptera, Syrphidae), которые распространены в пределах территории исследования с учетом последних изменений в таксономии рода с целью дальнейшего анализа данных и разработки на их основе природоохранных рекомендаций.

Ключевые слова: *Cheilosia, мухи-сирфиды, контрольный список, Украина.*

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ОРГАНІЧНЕ ВИРОБНИЦТВО ПРОДУКЦІЇ ТВАРИННИЦТВА

Розглянуто і проаналізовано сучасні напрями органічного виробництва продукції тваринництва. Встановлено, що організація розведення худоби повинна відповідати Стандартам органічного виробництва – забезпечення тварин адекватними, якісними, органічно вирощеними кормами, підтримання належний рівень концентрації поголів'я худоби на одиницю площі, розмір поголів'я і отар та забезпечення змін пасовищ, щоб надати тваринам можливість реалізовувати свої поведінкові потреби та зберігати природні ресурси і якість довкілля; впровадження методів тваринництва, що зменшують стрес, сприяють досягненню гарного стану здоров'я й добробуту тварин, запобігають поширенню хвороб і паразитів, та уникають використання хімічних традиційних ветеринарних препаратів; використання методів господарювання, що сприяють сталому використанню земельних та водних ресурсів. Відмічено, що виробництво екологічно чистої продукції тваринництва повинно здійснюватися у відповідності до головних принципів: дотримання гармонійної рівноваги у виробництві продуктів рослинного і тваринного походження; організація біологічних процесів на основі відтворення ресурсів; повторне використання продуктів тваринництва з метою повернення в грунт поживних речовин; впровадження багаторічних сівозмін і годівля тварин кормами власного виробництва або сусіднього органічного господарства; тварини не повинні відчувати дії голоду, спраги, стресу, болю та хвороб. Наголошено, що спеціальними принципами органічного виробництва є зведення до мінімуму всіх шляхів забруднення навколишнього середовища; збереження біологічного різноманіття рослин і тварин; впровадження раціональних технологій годівлі, догляду за тваринами, проведення своєчас-