

A survey of aquatic and terrestrial Heteroptera in northern Europe with special regard to Finnmark, Norway (and adjacent regions)

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Knowledge about Heteroptera from Northern Norway (Finnmark), Sweden (Torne Lappmark), Finland (Lapponia kemensis, Lapponia inarenis) and the historical parts of the Russian Lapland provinces (Lapponia rossica, Petsamo, Murmansk) is summarized. In total, 16 species of Heteroptera are reported new to Finnmark county and 15 new to the Swedish province Torne Lappmark. Detailed records are given for 49 species, mainly sampled during extensive fieldwork as part of a project about specific insect groups inhabiting freshwater and humid habitats in Finnmark in 2010. The species *Brachyarthrum limitatum* Fieber 1858, *Chlamydatus opacus* (Zetterstedt 1838), and, *Tytthus pygmaeus* (Zetterstedt 1838) are rarely found in Norway. Phenological and developmental data from northern populations of *Stenodema holsata* (Fabricius 1787) show that generations from different years and different instars of nymphs can overlap.

Key words: Heteroptera, aquatic, terrestrial, northern Europe, Finnmark, Norway.

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Introduction

Since Coulianos' annotated catalogue of the Heteroptera in 1998, knowledge about this taxon has been accumulating in Norway. The number of recorded species increased from 439 species in 1998 (Coulianos 1998) to at least 465 today (Ødegaard *et al.* 2010). Apart from records of species new to Norway (e.g. Olsen & Hågvar 2002, Dolmen 2004, Ødegaard & Endrestøl 2007, Staverløkk *et al.* 2009, Mjøs *et al.* 2010), recent publications cover taxa-specific studies (e.g. water bugs – Coulianos *et al.* 2008; Berytidae – Ødegaard & Staverløkk 2011; the genus *Psallus* Fieber 1858 – Endrestøl & Ødegaard 2011), applied studies (Jaastad *et al.* 2009) and general new faunistic information (e.g. Ødegaard 1998,

Staverløkk *et al.* 2008, Hågvar 2010, Hågvar & Olsen 2012, 2013). Other studies continue former research on the fauna of host plants (e.g. Hågvar 1976) including Scots pine (*Pinus sylvestris* Linnaeus 1753) (Thunes *et al.* 2004) and oak (*Quercus* Linnaeus 1753 spp.) (Endrestøl & Ødegaard 2011). Another promising approach is the survey of hot-spot habitat types (Ødegaard *et al.* 2009), already resulting in new records for Norway (Endrestøl & Ødegaard 2011). Recent regional studies, however, are rare and mostly restricted to southern Norway (e.g. Hansen & Coulianos 1988).

A faunistic study of specific insect groups, including Heteroptera, inhabiting freshwater and humid habitats in Finnmark, the northernmost part of mainland Norway, was initiated in 2010

(Ekrem *et al.* 2012). The counties of Troms and Finnmark are the Norwegian part of the historical landscape called Lapland. Lapland has never been clearly geographical defined, but it is recognized by its unique biogeographical and ecological characters (Ratcliffe 2005). This most northern part of continental Europe supports a boreal fauna and subarctic and arctic faunal elements are supplemented by eastern, partly Siberian, species (particularly in the Passvik area in Norway). Further details of the climate and vegetation related to this study are given in Ekrem *et al.* 2012.

Some ecological and faunistic studies have focused on a number of arthropod taxa of the region, for example, Collembola (Fjellberg 1988), Diptera (Nielsen 1988, Bergersen *et al.* 2004), Siphonaptera (Hastriter *et al.* 2004), Coleoptera (Strand 1946, Andersen *et al.* 2000, Olsvik *et al.* 2001), Trichoptera and Plecoptera (Tobias & Tobias 1976), and Hymenoptera (Gjelsvik 1998). Old faunistic studies on Hemiptera of the Finnmark/Lapland area date to the 19th century (e.g. Zetterstedt 1828, 1838–40, Sahlberg 1868) and were continued by Lindberg (1926, 1935, 1956), Ossiannilsson (1943), Meinander (1972), and Hågvar (1999). However, more recent studies on Heteroptera from the most northern part of Fennoscandia are rare (for Norway, see Huldén 1982, Coulianos *et al.* 2008). We therefore present an annotated list of Heteroptera species collected during the project “Insects inhabiting freshwater and humid habitats in Finnmark”. In addition, an overview of all published and unpublished Heteroptera from Finnmark county and adjacent Finnish, Swedish and Russian Lapland is given.

Material and methods

Collecting dates, sample sites, sampling methods, and methods related to DNA-barcoding for all material collected as part of the project “Insects inhabiting freshwater and humid habitats in Finnmark” are given in detail in Ekrem *et al.* 2012. Fieldwork was conducted on three 10–11 day excursions in 2010 and 107 localities (*sensu* Ekrem *et al.* 2012) were visited. We used the

numbering system of all 107 localities as given Ekrem *et al.* 2012. Since many species were sampled using several different methods, no detailed information of sampling methods is given except for remarkable faunistic records. Unpublished material is noted as “Additional material” with full references to the localities.

Data from material used in DNA barcoding are available through the public project Heteroptera of Finnmark (HETFI) in the Barcode of Life Data System 3.0 (BOLD). Unless stated otherwise, the specimens are stored in the entomological collection at the Department of Natural History, University Museum of Bergen (ZMBN).

Our overview of all recorded Heteroptera species of the northernmost continental part of Europe is based on recent and historical publications and some unpublished data. Except for the new records presented here, information is based on updated catalogues for Norway (Coulianos 1988), Sweden (Coulianos & Ossiannilsson 1976), and the Atlas of the Heteroptera of Finland 2012 (Rinne 2012). It should be noted, that not all material from the Natural History Museum Helsinki is included in the Finnish database (V. Rinne, personal communication).

Since parts of historical Finnish Lapland are now part of Russia, all records from this area were assigned to either historical Finnish Lapland or historical Lapponia rossica (which includes data from Sahlberg (1920); the province Petsamo (data from 1920–1944, coll. University of Turku; V. Rinne, personal communication); and some unpublished records from the Russian Murmansk province (=oblast) (F. Konstantinov, personal communication) which is roughly the same as the former area of Lapponia rossica).

Bianki-Kiritshenko (1923) listed *Sciocoris microphthalmus* Flor 1860, *Neottiglossa obscura* J. Sahlb. (= syn. *N. pusilla* Gmelin 1790) and *Chlorochroa juniperina* Linnaeus 1758 for the Arkhangelsk Governorate, which includes the modern Murmansk oblast (called Alexandrovsk area). The last species is not mentioned in Sahlberg (1920) for Lapponia or Lapponia rossica. Since no localities are given for the species records in Bianki-Kiritshenko (1923), they were not included in our overview (Table 1).

TABLE 1. Overview of all recorded Heteroptera species from Northern Fenno-Scandinavia provinces. For records after Coulinos (1988) and Coulianos & Ossiannilsson (1976), and, so far unpublished or revised records references are given. Additional material from the authors is marked as C (Carl-Cedric Coulianos) and SR (Steffen Roth) and presented with the year of collection. For further details see material and methods. *Notations:* ? = doubtful, published records according Coulianos (1988); Finland: Lapponia kemensis- Eastern (E) and Western part (W), Lapponia inarenis (I) and enontekiensis (E), historical Lappland (L) sensu Sahlberg (1920); Russia: Lapponia rossica (Lr), province Petsamo (P), Murmansk province (M); Sweden: Torne Lappmark (+ records according Coulianos & Ossiannilsson 1976; new records C plus year of collection); Norway: Finnmark Fylke (+ records according Coulinos 1988; material Finnmark-project: new records for Finnmark in **bold**, new records for a faunistic region (see Økland 1981) in *italic*; further information for additional material: C or SR plus year of collection).

| | Finland | | | Russia | Sweden | Norway |
|---|------------------|-----------------------------------|------------|--------|--------------------------------|--------------------|
| | Lapland kemensis | Lapponica enontekiensis /inarenis | Historical | | | |
| DIPSOCORIDAE | | | | | | |
| <i>Cryptostemma waltli</i> (Fieber, 1860) | | | | | | + |
| CORIXIDAE | | | | | | |
| <i>Cymatia bondsdorffi</i> (C.R. Sahlberg, 1819) | E,W | E,I | L | L | C 1973 (Coulianos et al. 1992) | FØ, FN |
| <i>Glaenocoris cavifrons</i> (Thomson, 1869) | W | E,I | | | + | + |
| <i>Arctocoris carinata</i> (C.R. Sahlberg, 1819) | E,W | E,I | L | L, Lr | + | + |
| <i>Arctocoris germari</i> (Fieber, 1848) | W | | | | | |
| <i>Callicorixa praeusta</i> (Fieber, 1848) | E,W | E | L | Lr | | |
| <i>Callicorixa producta</i> (Reuter, 1880) | E,W | E,I | L | Lr,P | + | + |
| <i>Callicorixa wollastoni</i> (Douglas & Scott, 1865) | E,W | E,I | | Lr | | <i>FV</i> : C 1924 |
| <i>Sigara striata</i> (Linnaeus, 1758) | E,W | | | | | |
| <i>Sigara nigrolineata</i> (Fieber, 1848) | W | | | | | FØ |
| <i>Sigara semistriata</i> (Fieber, 1848) | E,W | | L | Lr | C 1980 (Coulianos et al. 1992) | FØ |
| <i>Sigara distincta</i> (Fieber, 1848) | E,W | | | Lr | | FØ |
| <i>Sigara fallenoidea</i> (Hungerford, 1926) | W | I | | | | + |
| <i>Sigara fossarum</i> (Leach, 1817) | E,W | | L | L | | |
| NOTONECTIDAE | | | | | | |
| <i>Notonecta lutea</i> Müller, 1776 | W | E | L | Lr | | |
| HEBRIDAE | | | | | | |
| <i>Hebrus pusillus</i> (Fallén, 1807) | W | | | | | |
| VELIIDAE | | | | | | |
| <i>Microvelia reticulata</i> (Burmeister, 1835) | E | I | L | L | | |
| GERRIDAE | | | | | | |
| <i>Gerris lacustris</i> (Linnaeus, 1758) | E,W | E | L | Lr | | FØ |
| <i>Gerris odontogaster</i> (Zetterstedt, 1828) | E,W | E,I | L | Lr | + | <i>FI, FV</i> |
| <i>Gerris lateralis</i> Schummel, 1832 | E,W | E,I | L | Lr,P | + | <i>FI, FV</i> |
| <i>Limnopus rufoscutellatus</i> (Latreille, 1807) | E | E | | Lr | | + |
| SALDIDAE | | | | | | |
| <i>Chiloxanthus stellatus</i> (Curtis, 1835) | | I | | Lr | + | + |

TABLE 1. continued.

| | Finland | | | Russia | Sweden Torne Lappmark | Norway Finnmark |
|--|---------------------|--|------------|--------|-----------------------------|--------------------|
| | Lapland kemensis | Laponica enontekiensis /inarenis | Historical | | | |
| <i>Chiloxanthus arcticus</i> (J. Sahlberg, 1878) | | | | Lr | | + |
| <i>Calacanthia alpicola</i> (J. Sahlberg, 1880) | | | | Lr | | |
| <i>Chartoscirta cincta?</i> (Herrich-Schäffer, 1841) | | E | | | | |
| <i>Halosalda lateralis</i> (Fallén, 1807) | | | | Lr | | |
| <i>Macrosaldula scotica</i> (Curtis, 1835) | | E,I | | Lr | + | + |
| <i>Micracanthia fennica</i> (Reuter, 1844) | E,W | | | | | |
| <i>Micracanthia marginalis</i> (Fallén, 1807) | E | | | | | |
| <i>Saldula c-album</i> | | | | | | + |
| <i>Saldula fucicola</i> (J. Sahlberg, 1870) | W | E,I | L | Lr | + | + |
| <i>Saldula opacula</i> (Zetterstedt, 1839) | E,W | E,I | L | Lr,P | + | + |
| <i>Saldula orthochila</i> (Fieber, 1859) | E,W | E,I | L | Lr | + | FV |
| <i>Saldula pallipes</i> (Fabricius, 1794) | E,W | E,I | L | Lr | + | FØ |
| <i>Saldula palustris</i> (Douglas, 1874) | | | | | | + |
| <i>Saldula saltatoria</i> (Linnaeus, 1758) | E,W | E,I | | P | + | + |
| <i>Salda littoralis</i> (Linnaeus, 1758) | W | E,I | L | Lr,P | + | + |
| <i>Salda morio</i> Zetterstedt, 1838 | | E | L | L | | |
| <i>Salda sahlbergi</i> Reuter, 1875 | E | E | L | L | | |
| <i>Teloleuca bifasciata</i> (Thomson, 1871) | | E | L | Lr | + | + |
| <i>Teloleuca pellucens</i> (Fabricius, 1779) | W | E | | | + | + |
| TINGIDAE | | | | | | |
| <i>Acalypta carinata</i> (Panzer, 1806) | E,W | E,I | L | Lr,P | + | + |
| <i>Acalypta marginata</i> (Wolff, 1804) | | | L | Lr | + | + |
| <i>Acalypta nigrina</i> (Fallén, 1807) | E,W | E,I | | Lr,P | + | + |
| <i>Acalypta parvula</i> (Fallén, 1807) | | | | | | + |
| MICROPHYSIDAE | | | | | | |
| <i>Loricula pselaphiformis</i> Curtis, 1833 | E,W | E,I | | Lr | + | FV, FN, FØ |
| <i>Myrmedobia distinguenda</i> Reuter, 1884 | E | | | | | |
| <i>Myrmedobia exilis</i> (Fallén, 1807) | E,W | E,I | L | Lr,P | + | + |
| MIRIDAE | | | | | | |
| <i>Monalocoris filicis</i> (Linnaeus, 1758) | W | | | Lr | | FV |
| <i>Dicyphus globulifer</i> (Fallén, 1829) | W | | | | | |
| <i>Dicyphus constrictus</i> (Boheman, 1852) | E,W | I | | | | |
| <i>Bothynotus pilosus</i> (Boheman, 1852) | W | E,I | | | + | + |
| <i>Deraeocoris scutellaris</i> (Fabricius, 1794) | | E | | | | |
| <i>Myrmecoris gracilis</i> (R. F. Sahlberg, 1848) | W | | | | | |
| <i>Pithanus hrabei</i> Stehlik, 1952 | E,W | I | | | | |
| <i>Pithanus maerkelii</i> (Herrich-Schäffer, 1835) | E | | L | Lr | | |
| <i>Leptopterna dolabrata</i> (Linnaeus, 1758) | E,W | E,I | L | Lr | | |

TABLE 1. continued.

| | Finland | | | Russia | Sweden | Norway |
|--|------------------|-------------------------------------|------------|--------|--------|-------------------------|
| | Lapland kemensis | Laponica enontekiensis /inarenensis | Historical | | | |
| <i>Leptopterna ferrugata</i> (Fallén, 1807) | E,W | E,I | L | Lr | + | |
| <i>Stenodema holsata</i> (Fabricius, 1787) | E,W | E,I | L | Lr,P | + | + |
| <i>Stenodema virens</i> (Linnaeus, 1767) | E,W | I | | | + | |
| <i>Stenodema calcarata</i> (Fallén, 1807) | E,W | | | | | |
| <i>Teratocoris caricis</i> Kirkaldy, 1909 | W | E,I | | | C 2001 | |
| <i>Teratocoris paludum</i> J. Sahlberg, 1870 | E,W | E | | | | |
| <i>Teratocoris saundersi</i> Douglas & Scott, 1869 | E,W | E,I | L | Lr,P | + | + |
| <i>Teratocoris viridis</i> Douglas & Scott, 1867 | E,W | E,I | L | Lr,P | + | + |
| <i>Trigonotylus caelestialium</i> (Kirkaldy, 1902) | W | | | | | |
| <i>Trigonotylus fuscitarsis</i> Lammes, 1987 | E,W | E,I | | | | |
| <i>Trigonotylus ruficornis</i> (Geoffroy, 1785) | E,W | E,I | L | Lr | | ? |
| <i>Phytocoris pini</i> Kirschbaum, 1856 | W | | | | | |
| <i>Adelphocoris seticornis</i> (Fabricius, 1775) | W | | | | | |
| <i>Closterotomus fulvomaculatus</i> (De Geer, 1773) | E,W | E,I | L | Lr,P | + | FØ |
| <i>Dichroscytus rufipennis</i> (Fallén, 1807) | E,W | E,I | | | | |
| <i>Lygocoris pabulinus</i> (Linnaeus, 1761) | E,W | E,I | | | | FØ (+ Hågvar 1999) |
| <i>Lygocoris rugicollis</i> (Fallén, 1807) | E,W | E,I | L | Lr | + | + |
| <i>Lygocoris contaminatus</i> (Fallén, 1807) | E,W | E,I | | | + | + |
| <i>Apolygus limbatus</i> (Fallén, 1807) | W | | | | | |
| <i>Apolygus lucorum</i> (Meyer-Dür, 1843) | E,W | | | | | |
| <i>Lygus gemellatus</i> (Henrich-Schäafer, 1835) | W | E | | | | |
| <i>Lygus punctatus</i> (Zetterstedt, 1838) | E,W | E,I | | | C 2012 | FV:C 2004 |
| <i>Lygus rugulipennis</i> Poppius, 1911 | E,W | E,I | L | Lr,P | + | + |
| <i>Lygus wagneri</i> Remane, 1955 | W | | | | | |
| <i>Orthops campestris</i> (Linnaeus, 1758) | W | | | | | |
| <i>Pinalitus rubricatus</i> (Fallén, 1807) | E,W | E,I | | | | |
| <i>Agnocoris rubicundus</i> (Fallén, 1807) | E,W | E,I | | P | + | +(Hågvar & Hatlen 2005) |
| <i>Polymerus tepastus</i> Rinne, 1989 | E | E | | | | |
| <i>Polymerus unifasciatus</i> (Fabricius, 1794) | | | | Lr | | ? |
| <i>Capsus ater</i> (Linnaeus, 1758) | W | | | | | |
| <i>Capsus wagneri</i> Remane, 1950 | E,W | | | | | |
| <i>Strongylocoris leucocephalus</i> (Linnaeus, 1758) | | | | Lr,P | + | |
| <i>Strongylocoris steganooides</i> (J. Sahlberg, 1875) | | E | | Lr | | + |
| <i>Euryopicoris nitidus</i> (Meyer-Dür, 1843) | | | | Lr | | |
| <i>Labops sahlbergii</i> (Fallén, 1829) | E,W | E,I | L | Lr,P | C 1984 | |

TABLE 1. continued.

| | Finland | | | Russia | Sweden Torne Lappmark | Norway Finnmark |
|---|---------------------|---|------------|--------|-------------------------------|--------------------|
| | Lapland kemensis | Laponica enontekiensis /inarensis | Historical | | | |
| <i>Orthotylus boreellus</i> (Zetterstedt, 1828) | E,W | E,I | | Lr | + | FØ |
| <i>Orthotylus marginalis</i> Reuter, 1883 | E,W | E | | | | |
| <i>Orthotylus flavosparsus</i> (C. R. Sahlberg, 1842) | | | | Lr | | |
| <i>Orthotylus fuscescens</i> (Kirschbaum, 1856) | E,W | | | | | |
| <i>Cyrtorhinus caricis</i> (Fallén, 1807) | E,W | E | | M | | |
| <i>Fieberocapsus flaveolus</i> (Reuter, 1870) | E | | | | | |
| <i>Mecomma ambulans</i> (Fallén, 1807) | E,W | E,I | L | Lr,P | + | + |
| <i>Mecomma dispar</i> (Boheman, 1852) | W | | | | | |
| <i>Globiceps flavomaculatus</i> (Fabricius, 1794) | E | E | | | | ? C1925 |
| <i>Globiceps salicicola</i> Reuter, 1880 | E,W | E,I | L | Lr | + | |
| <i>Blepharidopterus angulatus</i> (Fallén, 1807) | E,W | E | | M | | FV: C 1995 |
| <i>Pilophorus clavatus</i> (Linnaeus, 1767) | E,W | | | | | |
| <i>Macrotylus cruciatus</i> (R. F. Sahlberg, 1848) | | E | | | | |
| <i>Plagiognathus arbustorum</i> (Fabricius, 1794) | E,W | E | | M | | |
| <i>Plagiognathus chrysanthemi</i> (Wolff, 1804) | E,W | | L | L | | + |
| <i>Monosynamma bohemani</i> (Fallén, 1829) | E,W | E,I | | L,M | | |
| <i>Chlamydatus acanthioides</i> | | | | Lr | | |
| <i>Chlamydatus opacus</i> (Zetterstedt, 1838) | E,W | E,I | L | Lr | + | FV: SR 2006 |
| <i>Chlamydatus saltitans</i> (Fallén, 1807) | E,W | E,I | L | Lr,P | | + |
| <i>Chlamydatus pulicarius</i> (Fallén, 1807) | E,W | E,I | L | Lr,P | + | +(Hågvar 1999) |
| <i>Chlamydatus pullus</i> (Reuter, 1880) | E,W | E,I | L | Lr | + | |
| <i>Chlamydatus wilkinsoni</i> (Douglas & Scott, 1866) | E,W | E,I | L | Lr | | FV:C 2004 |
| <i>Chlamydatus drymophilus</i> Vinokurov, 1982 | | I | | | | |
| <i>Atractotomus morio</i> J. Sahlberg, 1883 | | | | | Year ? (Stonedahl 1990) | |
| <i>Psallus falleni</i> Reuter, 1883 | | | | | | FN |
| <i>Psallus haematodes</i> (Gmelin, 1790) | W | E | | | | FØ |
| <i>Psallus salicis</i> (Kirschbaum, 1856) | | | | | C 1984 | FV |
| <i>Psallus aethiops</i> (Zetterstedt, 1838) | W | E,I | L | Lr,P | + | + |
| <i>Psallus betuleti</i> (Fallén, 1826) | E,W | E,I | L | Lr,P | + | FØ |
| <i>Psallus graminicola</i> (Zetterstedt, 1828) | E,W | E,I | L | Lr,P | + | + |
| <i>Psallus variabilis</i> (Fallén, 1807) | | | | | | ? |
| <i>Psallus ambiguus</i> (Fallén, 1807) | | | | M | + | |
| <i>Psallus lapponicus</i> E. Wagner, 1952 | E,W | E,I | L | Lr | | FØ |
| <i>Psallus siculus</i> Reuter 1875 | | | | M | | |
| <i>Phoenicocoris modestus</i> (Meyer-Dür, 1843) | | E | | | | |

TABLE 1. continued.

| | Finland | | | Russia | Sweden Torne Lappmark | Norway Finnmark |
|--|---------------------|---|------------|--------|-----------------------------|----------------------------------|
| | Lapland kemensis | Laponica enontekiensis /inarenensis | Historical | | | |
| <i>Phoenicocoris obscurellus</i> (Fallén, 1829) | E,W | | | | | + |
| <i>Brachyarthrum limitatum</i> Fieber, 1858 | | | | | | FØ |
| <i>Tytthus pygmaeus</i> (Zetterstedt, 1838) | E,W | | | | | FI : C 1990 |
| <i>Plesiodema pinetella</i> (Zetterstedt, 1828) | E,W | E,I | L | M | | <i>FN, FØ</i> |
| <i>Megalocoleus molliculus</i> (Fallén, 1807) | E | | | | | |
| NABIDAE | | | | | | |
| <i>Nabis brevis</i> Scholtz, 1847 | | | L | L,P | C 1951 | |
| <i>Nabis ferus</i> (Linnaeus, 1758) | | | | Lr | | |
| <i>Nabis inscriptus</i> (Kirby, 1837) | E,W | | | P | | |
| <i>Nabis limbatus</i> Dahlbom, 1851 | E | | | | | |
| <i>Nabis flavomarginatus</i> Scholtz, 1847 | E,W | E,I | L | Lr,P | + | + |
| ANTHOCORIDAE | | | | | | |
| <i>Acomporis alpinus</i> Reuter, 1875 | W | E | L | Lr | | |
| <i>Acomporis pygmaeus</i> (Fallén, 1807) | E,W | E,I | L | Lr | + | FV : C 1996, FØ |
| <i>Anthocoris gallarumulmi</i> (De Geer, 1773) | | | | | | + |
| <i>Anthocoris nemorum</i> (Linnaeus, 1761) | E,W | E,I | L | Lr,P | + | + |
| <i>Elatophilus nigricornis</i> (Zetterstedt, 1838) | | E,I | | | + | |
| <i>Elatophilus stigmatellus</i> (Zetterstedt, 1838) | E,W | E,I | | Lr | | +(Hågvar 1999) |
| <i>Temnostethus gracilis</i> Horvath, 1907 | W | E | | | | |
| <i>Tetraphleps bicuspis</i> (Herrich-Schäffer, 1835) | W | | | | | |
| <i>Scoloposcelis obscurella</i> (Zetterstedt, 1838) | | | | | C 1832 | |
| <i>Xylocoris formicetorum</i> (Boheman, 1844) | W | | L | Lr | | |
| CIMICIDAE | | | | | | |
| <i>Cimex lectularius</i> Linnaeus, 1758 | W | E | L | Lr,P | | + |
| <i>Oeciacus hirundinis</i> (Lamarck, 1816) | | I | | | | |
| ARADIDAE | | | | | | |
| <i>Aradus angularis</i> J. Sahlberg, 1866 | E,W | E | L | | C 2008 | |
| <i>Aradus betulae</i> (Linnaeus, 1758) | E,W | E | L | Lr | + | + |
| <i>Aradus betulinus</i> Fallén, 1829 | E,W | | | | + | |
| <i>Aradus bimaculatus</i> Reuter, 1872 | | E | | | | |
| <i>Aradus cinnamomeus</i> (Panzer, 1794) | W | | | | | |
| <i>Aradus corticalis</i> (Linnaeus, 1758) | W | | | | | |
| <i>Aradus crenaticollis</i> R.F. Sahlberg, 1848 | W | | | P | C 2012 | + |
| <i>Aradus depressus</i> (Fabricius, 1794) | | | | | | + |
| <i>Aradus laeviusculus</i> Reuter, 1875 | W | E | L | | C 2008 | |
| <i>Aradus lugubris</i> Fallén, 1805 | E,W | E,I | L | Lr,P | + | + |

TABLE 1. continued.

| | Finland | | | Russia | Sweden Torne Lappmark | Norway Finnmark |
|--|---------------------|--|------------|--------|-----------------------------|--------------------|
| | Lapland kemensis | Laponica enontekiensis /inarenis | Historical | | | |
| <i>Aradus obtectus</i> Vásárhelyi, 1988 | E | E | | | | |
| <i>Aradus signaticornis</i> R.F. Sahlberg, 1848 | W | | | | | |
| LYGAEIDAE | | | | | | |
| <i>Nithecus jacobaeae</i> (Schilling, 1829) | | | | Lr | | |
| <i>Nysius ericae groenlandicus</i> (Zetterstedt, 1838) | W | E,I | L | Lr,P | + | FN |
| <i>Nysius thymi</i> (Wolff, 1804) | E,W | E | L | Lr | + | + |
| <i>Cymus glandicolor</i> Hahn, 1832 | W | | | | | |
| <i>Ischnodemus sabuleti</i> (Fallén, 1826) | | | | Lr | | |
| <i>Geocoris lapponicus</i> Zetterstedt, 1838 | E,W | E,I | L | L,P | + | |
| <i>Drymus brunneus</i> (R.F. Sahlberg, 1848) | E,W | | L | Lr,P | | cf FV |
| <i>Eremocoris abietis</i> (Linnaeus, 1758) | E,W | E,I | L | Lr,P | + | + |
| <i>Eremocoris plebejus</i> (Fallén, 1807) | | E | | | | + |
| <i>Scolopostethus affinis</i> (Schilling, 1829) | | | L | Lr | | |
| <i>Scolopostethus pictus</i> (Schilling, 1829) | | | | P | | |
| <i>Scolopostethus thomsoni</i> Reuter, 1874 | W | E,I | | P | + | + |
| <i>Trapezonotus arenarius</i> (Linnaeus, 1758) | | | | | C 1932 | FV: C 2004 |
| <i>Trapezonotus desertus</i> Seidenstücker, 1951 | E | E | | | + | |
| <i>Peritrechus nubilus</i> (Fallén, 1807) | | | L | Lr | | |
| <i>Ligyrocoris sylvestris</i> (Linnaeus, 1758) | E,W | I | L | Lr | + | |
| <i>Pachybrachius fracticollis</i> (Schilling, 1829) | | | | | C 1973 | |
| <i>Stygnocoris sabulosus</i> (Schilling, 1829) | E,W | E | | | | |
| BERYTIDAE | | | | | | |
| <i>Berytinus minor</i> (Herrich-Schäffer, 1835) | | | | P | | |
| RHOPALIDAE | | | | | | |
| <i>Rhopalus maculatus</i> (Fieber, 1837) | W | | | | | |
| <i>Stictopleurus crassicornis</i> (Linnaeus, 1758) | E,W | | | | | |
| COREIDAE | | | | | | |
| <i>Coriomeris scabricornis lapponicus</i> Tshernova, 1978 | | E | | | | |
| CYDNIDAE | | | | | | |
| <i>Adomerus biguttatus</i> (Linnaeus, 1758) | E,W | | | | | |
| ACANTHOSOMATIDAE | | | | | | |
| <i>Elasmostethus interstinctus</i> (Linnaeus, 1758) | | E,I | | | + | |
| <i>Elasmucha grisea</i> (Linnaeus, 1758) | E | | | | | |
| SCUTELLERIDAE | | | | | | |
| <i>Phimodera lapponica</i> (Zetterstedt, 1828) | | | | | + | |
| PENTATOMIDAE | | | | | | |
| <i>Rhacognathus punctatus</i> (Linnaeus, 1758) | W | | L | Lr,P | + | |

TABLE 1. continued.

| | Finland | | | Russia | Sweden Torne Lappmark | Norway Finnmark |
|--|---------------------|---|------------|--------|-----------------------------|--------------------|
| | Lapland kemensis | Laponica enontekiensis /inarensis | Historical | | | |
| <i>Zicrona caerulea</i> (Linnaeus, 1758) | E,W | I | L | Lr,P | C 1989 | + |
| <i>Neottiglossa pusilla</i> (Gmelin, 1790) | | | | Lr | | |
| <i>Chlorochroa juniperina</i> (Linnaeus, 1758) | E,W | E,I | | | + | |
| <i>Sciocoris microphthalmus</i> Flor, 1860 | | | L | Lr | + | |
| <i>Sciocoris umbrinus</i> (Wolff, 1804) | W | | | | | |

Unpublished records from Norway and Sweden in museums and private collections have been checked by Carl-Cedric Coulianos.

Nomenclature follows the Catalogue of the Heteroptera of the Palaearctic region (Aukema & Rieger 1995–2006). Where possible, historical species records from Sahlberg (1920) were updated to reflect recent nomenclature.

Results

An overview of all recorded Heteroptera species from Northern Fennoscandia is provided in Table 1. It also gives updated records with references from the Finnmark county after Coulianos (1988).

The species

County of Finnmark (Norway): Material from the project “Insects inhabiting freshwater and humid habitats in Finnmark” and additional material

Family CORIXIDAE

Cymatia bonsdorffii (C. Sahlberg, 1819)

Material. FinLoc45: 3 September 2010, 1♂3♀♀; FinLoc58: 2 September 2010, 1♂1♀; FinLoc65: 9 September 2010, 1♂.

Remarks. New record for Finnmark (FØ, FN). Species found throughout Scandinavia with some isolated records from Northern Norway.

Glaenocoris propinqua cavifrons (Thomson, 1869)

Material. FinLoc65: 8 September 2010, 1♀.

Arctocoris carinata (C. R. Sahlberg, 1819)

Material. FinLoc46: 4 September 2010, 1♀; FinLoc54: 2 September 2010, 1♂; FinLoc65: 8 September 2010, 1♂; FinLoc84: 6 September 2010, 1♂ (det. B. Aukema).

Callicorixa producta (Reuter, 1880)

Material. FinLoc22: 31 August 2010, 1♂; FinLoc22: 1 September 2010, 1♂; FinLoc46: 4 September 2010, 1♀; FinLoc53: 26 July 2010, 1♂; FinLoc65: 2 August 2010, 1♂; 9 September 2010, 1♂1♀; FinLoc67: 8 September 2010, 1♀; FinLoc74: 7 September 2010, 4♀♀; FinLoc75: 8 September 2010, 2♂♂1♀; FinLoc81: 7 September 2010, 2♂♂; FinLoc86: 7 September 2010, 2♂♂; FinLoc101: 6 September 2010, 1♂1♀.

Callicorixa wollastoni (Douglas & Scott, 1865)

Additional material. FV, Alta: Jotkajavvre, August 1924, 2♀♀, leg. Münster, coll. Natural History Museum of Oslo (NHMO).

Remarks. First record for FV; earlier known from FI.

Sigara distincta (Fieber, 1848)

Material. FinLoc75: 8 September 2010, 2♀♀; FinLoc81: 7 September 2010, 4♀♀.

Remarks. New record for Finnmark county, a common species found northwards into the southern part of the Nordland county (Coulianos *et al.* 2008).

Family GERRIDAE

***Gerris lacustris* (Linnaeus, 1758)**

Material. FinLoc65: 9 September 2010, 1♂; FinLoc67: 7 September 2010, 1♀; 8 September, 2010, 1♂; FinLoc68: 20 June 2010, 1♂; 7 September 2010, 1♂; 8 September 2010, 1♂; FinLoc86: 7 September 2010, 1♂1♀; 8 September 2010, 6♂♂6♀♀.

Remarks. New record for Finnmark (FØ). In this study collected from the rivers Ellenelva and Ellijohki, and a large lake (Russe vann-FinLoc65).

***Gerris lateralis* Schummel, 1832**

Material. FinLoc07: 15 June 2010, 1♂; FinLoc19: 25 July 2010, 1♂; FinLoc19: 1 September 2010, 2♂♂3♀♀; FinLoc21: 1 September 2010, 2♂♂; FinLoc28: 5 September 2010, 2♂♂; FinLoc45: 4 September 2010, 4♀♀; FinLoc47: 4 September 2010, 1♂; FinLoc53: 3 September 2010, 1♂1♀; FinLoc55: 16 June 2010, 1♂; FinLoc65: 20 June 2010, 1♂; 1 August 2010, 1♀; 9 September 2010, 1♂2♀♀; FinLoc67: 8 September 2010, 1♂1♀; FinLoc69: 20 June 2010, 2♂♂1♀; 31 July 2010, 1♂; FinLoc81: 20 June 2010 1♂2♀♀; FinLoc84: 2 September 2010, 2♂♂; 7 September 2010, 5♂♂3♀♀; FinLoc85: 20 June 2010, 2♂♂3♀♀; FinLoc87: 31 July 2010, 1♀; FinLoc88: 3 September 2010, 1♀; FinLoc89: 21 June 2010, 1♂1♀; FinLoc89: 21 June 2010, 4♂♂4♀♀; FinLoc92: 1 August 2010, 2♂♂2♀♀.

Remarks. First records for the regions FV and FI; the species is now recorded from all four Finnmark regions (FV, FØ, FN, FI).

***Gerris odontogaster* (Zetterstedt, 1828)**

Material. FinLoc22: 1 September 2010, 1♀; FinLoc29: 4 September 2010, 2♂♂3♀♀; FinLoc45: 17 June 2010, 3♂♂; 4 September 2010, 2♂♂1♀; FinLoc53: 27 July 2010, 1♂; 3 September 2010, 2♀♀; FinLoc67: 8 September 2010, 1♀; FinLoc68: 1 August 2010, 1♂3♀♀; 8 September 2010, 3♂♂3♀♀.

Remarks. First records for the regions FV and FI; the species is now recorded from all four Finnmark regions (FV, FØ, FN, FI).

Family SALDIDAE

***Chiloxanthus arcticus* (J. Sahlberg, 1878)**

Material. FinLoc80: 1 August 2010, 2♂♂6 nymphs; 8 September 2010, 3♂♂2♀♀.

Remarks. Fourth record of the species in Norway (see discussion).

***Saldula orthochila* (Fieber, 1859)**

Material. FinLoc06: 2 September 2010, 1♀; FinLoc42: 28 July 2010, 1♀; FinLoc62: 3 September 2010, 1♂; 5 September 2010, 1♂1♀; FinLoc75: 31 July 2010, 1♂; FinLoc79: 2 August 2010, 1♀; FinLoc81: 31 July 2010, 1♂.

Remarks. First records for the region FV; the species is now recorded from all four Finnmark regions (FV, FØ, FN, FI).

***Saldula pallipes* (Fabricius, 1794)**

Material. FinLoc75: 31 July 2010, 1♀.

Remarks. First record for the region FV.

***Saldula palustris* (Douglas, 1874)**

Material. FinLoc62: 3 September 2010, 1♂ 3♀♀.

***Saldula saltatoria* (Linnaeus, 1758)**

Material. FinLoc06: 26 July 2010, 1♀; FinLoc08: 31 July 2010, 1♀; FinLoc19: 31 July 2010, 1♂1♀; FinLoc42: 31 July 2010, 2♂♂2♀♀; FinLoc49: 27 July 2010, 1♀; FinLoc54: 26 July 2010, 1♀; FinLoc60: 3 September 2010, 1♀; 4 September 2010, 1♂.

***Salda littoralis* (Linnaeus, 1758)**

Material. FinLoc06: 26 July 2010, 1♂; FinLoc36: 29 July 2010, 2♂♂2♀♀; FinLoc54: 25 July 2010, 1♂; 26 July 2010, 1♀; FinLoc62: 2 September 2010, 1♀; FinLoc69: 30 July 2010, 1♂; FinLoc94: 29 July 2010, 3♂♂5♀♀12 nymphs.

Family MICROPHYSIDAE

***Loricula pselaphiformis* Curtis 1833**

Material. FinLoc08: 26 June–10 July 2010 Malaise trap, 1♂; FinLoc49: 28 July 2010, 1♂; FinLoc56: 2–17 July 2010 Malaise trap, 1♂; FinLoc65: 30 July–10 August 2010 Malaise trap, 1♀.

Remarks. New record for Finnmark (FV, FN),

FØ). Previously found throughout Norway as far north as the county of Troms.

***Myrmedobia exilis* (Fallén, 1807)**

Material. FinLoc56: 26 July–25 August 2010 Malaise trap, 1♂.

Family MIRIDAE

***Monacoloris filicis* (Linnaeus, 1758)**

Material. FinLoc06: 2 September 2010, 5♂♂2♀♀; FinLoc07: 31 August 2010, 1♂.

Remarks. New record for Finnmark (FV). A common species on bracken (*Pteridium aquilinum* (L.) Kuhn) and previously found throughout as far north as the county of Troms.

***Bothynotus pilosus* (Boheman, 1852)**

Material. FinLoc08: 23 July 2010, 1♂; FinLoc20: 2 September 2010, 1♂.

***Agnocoris rubicundus* (Fallén, 1807)**

Material. FinLoc67: 31 July 2010, 1♂ 1 nymph; FinLoc69: 31 July 2010, 1♂.

Additional material. FV, Alta: Kåfjord, Møllernes Malaise-trap 4 July–25 September 1996, 1 adult, leg. L.O.Hansen, coll. NHMO

Remarks. First records for the faunistic region FV.

***Closterotomus fulvomaculatus* (De Geer, 1773)**

Material. FinLoc67: 31 July 2010, 1♀; FinLoc92: 31 July 2010, 1♀.

Additional material. FØ, Sør-Varanger: Noatun, Malaise Trap 22 July–7 August 1989, leg. H. Schaanning, coll. NHMO.

Remarks. First records for the faunistic region FØ.

***Lygocoris contaminatus* (Fallén, 1807)**

Material. FinLoc07: 31 July 2010 1♂.

***Lygocoris pabulinus* (Linnaeus, 1761)**

Material. FinLoc05: 31 July 2010, 1♂; FinLoc67: 31 July 2010, 1♂.

Remarks. First records for the faunistic region FØ.

***Lygocoris rugicollis* (Fallén, 1807)**

Material. FinLoc05: 7–24 August 2010 Malaise trap, 2♀♀; FinLoc06: 26 July 2010, 5♂♂; FinLoc08: 31 July 2010, 1♀; FinLoc18: 25 July 2010, 1♂2♀♀; FinLoc19: 6–20 July 2010 Malaise trap, 1♂; FinLoc20: 24 July 2010, 1♀; FinLoc21: 25 July 2010, 1♀; 25 June–9 July 2010 Malaise trap, 1♂ 9–20 July 2010 Malaise trap, 1♀; FinLoc27: 28 July 2010, 1♀; 31 July 2010, 1♀; FinLoc30: 29 July 2010, 1♀; FinLoc32: 28 July 2010, 1♀; FinLoc36: 28 July 2010, 1♀; FinLoc42: 17–28 July 2010 Malaise trap, 1♀; 26 July–25 August 2010 Malaise trap, 1♂; FinLoc49: 28 July 2014, 2♂♂ 5♀♀; FinLoc55: 27 July 2010, 1♀; FinLoc60: 28 July 2010, 1♂; FinLoc65: 30 July–10 August 2010 Malaise trap, 1♂; FinLoc67: 31 July 2010; 1♂; FinLoc81: 31 July 2010, 1♂, 21 August–6 September 2010 Malaise trap, 1♀; 21 August–6 September 2010 Malaise trap, 1♀.

***Lygus punctatus* (Zetterstedt, 1838)**

Additional material. FV, Alta: Jotka, window trap 16–23 July 2004, 1♂, leg. & coll. R. Stenman.

Remarks. New record for Finnmark (FV). Previously found as far north as the county of Sør-Trøndelag, but known from northern Sweden and Finland.

***Stenodema holsata* (Fabricius, 1787)**

Material. FinLoc04: 2 September 2010, 1♂; FinLoc05: 24 July 2010, 1♀; 31 August 2010, 2♂♂1♀; 26 June–10 July 2010 Malaise trap, 3♀♀; 24–30 July 2010 Malaise trap, 1♂; 7–24 August 2010 Malaise trap, 1♂; FinLoc06: 13 June 2010, 1♂, 26 July 2010, 2♂♂5 nymphs, 2 September 2010, 1 nymph; FinLoc07: 24 July 2010, 1♀; 31 July 2010, 1♀; FinLoc08: 31 August 2010, 3♀♀; FinLoc18: 1 August 2010, 2♂♂1♀1 nymph; FinLoc20: 25 July 2010, 3♀♀, 4 September 2010, 4♂♂3♀♀; FinLoc27: 29 July 2010, 2 nymphs; FinLoc32: 29 July 2010, 2♀♀; FinLoc36: 29 July 2010, 1♂3 nymphs; FinLoc42: 29 July 2010, 10♀♀; 17–28 July 2010 Malaise trap, 1♀; 26 July–25 August 2010 Malaise trap, 5♀♀; FinLoc44: 28 July 2010, 3♀♀; FinLoc54: 26 July 2010, 2♀♀; 2 September 2010, 3♂♂3♀♀3nymphs; FinLoc55: 16 June 2010, 1♂5♀♀1 nymph, 27 July 2010, 4♀♀5 nymphs;

3 September 2010, 1♂2♀♀; FinLoc58: 26 July 2010, 1♂4♀♀; FinLoc67: 30 July 2010, 1 nymph; 31 July 2010, 1♀ 1 nymph, 8 September 2010, 2♀♀; FinLoc69: 20 June 2010, 1♂; FinLoc75: 8 September 2010, 2♀♀; FinLoc77: 1 August 2010, 1♀5 nymphs; FinLoc81: 20 June 2010, 1♀, 30 July 2010, 1 nymph; 31 July 2010, 1 nymph; 7 September 2010, 2♂♂, 19–24 June 2010 Malaise trap, 1♀, 30 July 2010, 2♀♀; FinLoc87: 31 July 2010, 2♀♀; FinLoc90: 2 August 2010, 1♀; FinLoc94: 29 July 2010, 2♀♀; FinLoc105: 4 September 2010, 1♂.

***Teratocoris saundersi saundersi* Douglas & Scott, 1869**

Material. FinLoc08: 24 July 2010, 1♀; FinLoc06: 26 July 2010, 2♂♂; FinLoc08: 7–24 August 2010 Malaise trap, 1♀; FinLoc10: 30 July 2010, 1♀; FinLoc22: 25 July 2014, 2♂♂; FinLoc36: 28 July 2010, 1♀; FinLoc42: 26 July–25 August 2010 Malaise trap, 1♂1♀ 1nymph; FinLoc44: 28 July 2010, 2♀♀; FinLoc53: 27 July 2010, 10 ♂♂; FinLoc65: 31 July 2010, 1 nymph; FinLoc81: 28 July 2010, 1♀; FinLoc84: 2 August 2010, 1♂1♀ 1nymph; FinLoc92: 30 July 2010, 1♀; FinLoc94: 28 July 2010, 1♀.

***Strongylocoris steganoides* (J. Sahlberg, 1875)**

Material. FinLoc06: 26 July 2010, 1♀.

***Blepharidopterus angulatus* (Fallén, 1807)**

Additional material. FV, Alta: Detsika, Buolamalia, 8 August–10 September 1995, 1♂, leg. L.O.Hansen, coll. NHMO.

Remarks. New record for Finnmark (FV) but previously found throughout Norway as far north as the county of Nordland province.

***Globiceps flavomaculatus* (Fabricius, 1794)**

Remarks. FI [No locality or date given, uncertain record] leg. Münster (Warloe 1925).

***Mecomma ambulans* (Fallén, 1807)**

Material. FinLoc06: 26 July 2010, 1♂1♀; FinLoc07: 26 July 2010, 1♀; 31 July 2010, 1♂; FinLoc08: 23 July 2010, 7♂♂; FinLoc18: 25 July 2010, 8♂♂ 5♀♀; FinLoc20: 24 July 2010, 1♂1♀; FinLoc21: 25 July 2010, 3♂♂; FinLoc36: 29 July

2010, 1♀; FinLoc42: 17–29 July 2010 Malaise trap, 2♂♂, 29 July 2010, 7♂♂4♀♀; 26 July–25 August 2010 Malaise trap, 88♂♂; FinLoc49: 28 July 2010, 1♂1♀; FinLoc55: 27 July 2010, 5♀♀; FinLoc56: 2–17 July 2010 Malaise trap, 1♂, 26 June–25 July 2010 Malaise trap, 10♂♂; 26 July–25 August 2010 Malaise trap, 1♂; FinLoc65: 30 July–10 August 2010 Malaise trap, 5♂♂; FinLoc67: 30 July 2010, 3♂♂; FinLoc68: 1 August 2010, 1♂; FinLoc75: 8 September 2010, 1♀; FinLoc81: 10–21 July 2010 Malaise trap, 1♂; FinLoc84: 2 August 2010, 5♂♂1♀.

***Orthotylus boreellus* (Zetterstedt, 1828)**

Material. FinLoc19: 6–20 August 2010 Malaise trap, 1♂; FinLoc77: 31 July 2010, 1♀.

Remarks. First records for the faunistic region FØ.

***Tytthus pygmaeus* (Zetterstedt, 1838)**

Additional material. FI, Kautokeino, 25 July 1990, leg. K.-J.Hedqvist, coll. NRM Stockholm

Remarks. New record for Finnmark (FI). The second record for Norway (first record from VE:Tjøme, Mostrand) (see Coulianos 1998).

***Brachyarthrum limitatum* Fieber, 1858**

Material. FinLoc67: (Pasvik, Ellenelva N69.21323° E29.15357°) 1♀, tree beating.

Remarks. First record for Finnmark (FØ); found on *Populus tremula* Linnaeus 1753.

***Chlamydatus opacus* (Zetterstedt, 1838)**

Additional material. FV, Alta: Airport 29.6.2006, 1♂1♀, leg. Ove Sørlibråten, coll. NHMO.

Remarks. New record for Finnmark (FV). Previously found in the counties of Oppland and Sør-Trøndelag only (see Coulianos 1998).

***Chlamydatus pulicarius* (Fallén, 1807)**

Material. FinLoc55: 27 July 2010, 1♀.

***Chlamydatus wilkinsoni* Douglas & Scott, 1869**

Additional material. FV, Alta: Jotka, pit-fall trap 9 July–6 August 2004: 32 adults, 4 nymphs leg. & coll. R. Stenman.

Remarks. First records for the faunistic region FV.

***Plesiodyma pinetella* (Zetterstedt, 1828)**

Material. FinLoc56: 26 July–25 August 2010, Malaise trap, 1♀; FinLoc65: 9 September 2010, 1♂.

Remarks. First records for the faunistic regions FN and FØ.

***Psallus (Psallus) haematodes* (Gmelin, 1790)**

Material. FinLoc68: 31 July 2010, 1♀.

Remarks. New record for Finnmark (FØ).

***Psallus (Pityopsallus) lapponicus* Reuter, 1874**

Material. FinLoc67: 30 July 2010, 2♂, tree beating; FinLoc68: 31 July 2010, 1♂, tree beating.

Remarks. First record for the faunistic region FØ, collected from *Pinus sylvestris*.

***Psallus (Apocremnus) betuleti* (Fallén, 1829)**

Material. FinLoc07: 31 July 2010, 1♀, tree beating, 31 August 2010, 1♀, tree beating; FinLoc89 (FØ): 30 July 2010, 1♂, tree beating.

Remarks. First record for FØ, collected from *Salix Linneaus* sp.

***Psallus (Psallus) falleni* (Reuter, 1883)**

Material. FinLoc55: 3 July 2010, 1♂; FinLoc60: 3 September 2010, 1♀.

Remarks. First record for Finnmark (FN), previously found in the county of Troms (Hågvar & Olsen 2012).

***Psallus (Psallus) salicis* (Kirschbaum, 1856)**

Material. FinLoc05: 24–30 July 2010, Malaise trap 1♂.

Remarks. New record for Finnmark (FV), previously reported from several regions in Norway with Nord-Trøndelag as the northernmost record (Hågvar 2008).

Family ANTHOCORIDAE

***Acompocoris pygmaeus* (Fallén, 1807)**

Material. FinLoc67: 30 July 2010; 1♀, FinLoc69, 31 July 2010, 1♀.

Additional material. FV, Alta: Kåfjord, Møllernes Malaise-trap 4 August–25 September 1996, 1 adult, leg. L.O. Hansen, coll. Zool. Mus. Oslo

Remarks. New record for Finnmark (FØ,FV) but previously found from several regions in Norway as far as north to the county of Troms.

***Anthocoris nemorum* (Linnaeus, 1761)**

Material. FinLoc05: 24–30 July 2010 Malaise trap, 7♂♂, 7–24 August 2010 Malaise trap, 7♂♂2♀♀; 31 August 2010, 3♂♂2♀♀; FinLoc06: 2 September 2010, 4♂♂; FinLoc07: 31 August 2010, 2♂♂; FinLoc19: 3 June 2010, 1♂; 6–20 July 2010 Malaise trap, 1♂2♀♀3 nymphs; 1 August 2010, 2♀♀; 6–20 August 2010 Malaise trap, 1♂2♀♀; FinLoc20: 4 September 2010, 1♀; FinLoc21: 25 June 2009–July 2010 Malaise trap, 3♀♀; 6–20 July 2010 Malaise trap, 2 nymphs; FinLoc42: 29 July 2010, 2♀♀; 26 July–25 August 2010 Malaise trap, 1♂1♀; FinLoc55: 3 September 2010, 1♀; FinLoc56: 26 July–25 August 2010 Malaise trap, 2♂♂; FinLoc60: 3 September 2010, 1♂2♀♀; FinLoc65: 24 June–20 July 2010 Malaise trap, 2♂♂3♀♀; 1 August 2010, 1 nymph; 10–21 August 2010 Malaise trap, 3♂♂5♀♀; FinLoc68: 1 August 2010, 1♀; 8 September 2010, 1♂1♀; FinLoc77: 1 August 2010 1♂1♀ 3 nymphs; FinLoc81: 31 July 2010, 3 nymphs; 19–24 June 2010 Malaise trap, 1♀; 24 June–20 July 2010 Malaise trap, 6♀♀; 10–21 August 2010 Malaise trap, 3 nymphs; 21 August–6 September 2010 Malaise trap, 18♂♂1♀; FinLoc92: 31 July 2010, 4♂♂; 1 August 2010 1♂.

Family LYGAEIDAE

***Nysius ericae groenlandicus* (Zetterstedt, 1838)**

Material. FinLoc54: 26 July 2010, 1♂1♀.

Remarks. First records for the faunistic region FN; the species is now recorded from all four Finnmark regions (FV, FØ, FN, FI).

***Nysius thymi* (Wolff 1804)**

Remarks. Widely distributed in Norway. In Finnmark known from FI and FN. The record from FØ (Ossiannilsson 1943) is *Nysius ericae groenlandicus* (Zetterstedt, 1838).

***Drymus cf. brunneus* (R.F. Sahlberg 1848)**

Material. FinLoc07: 31 August 2010, 2 nymphs.

Remarks. This species has more northern distribution (as far as north as the the county of Troms (TRi)) than its sister species *D. ryeii* Douglas & Scott 1865 (as far as north as to the county of Sør-Trøndelag) and *D. sylvaticus* (Fabricius, 1775) (as far as north as to the county of Møre og Romsdal). However, our assumption has to be verified.

***Eremocoris abietes* (Linnaeus, 1758)**

Material. FinLoc53: 3 September 2010, 2♂♂1♀; FinLoc56: 3 September 2010, 1♀; FinLoc58: 2 September 2010, 1♀.

***Trapezonotus arenarius* (Linnaeus, 1758)**

Additional material. FV, Alta: Jotka, window-trap 16–23 July 2004, 1♀, leg. & coll. R. Steman.

Remarks. First records for the faunistic region FN; the species is now recorded from all four Finnmark regions (FV, FØ, FN, FI).

New records for Torne Lappmark (Sweden)

***Cymatia bonsdorffii* (C. Sahlberg, 1819)**

Material. Vittangi 13 June 1973, 2♂♂3♀♀, leg. R. Danielsson coll. Zool. Mus.Lund (Coulianos, Nilsson & Söderberg 1992); Abisko, Stordalen 30 July 1997 1♀, leg. & coll. G. Gillerfors.

***Sigara semistriata* (Fieber, 1848)**

Material. Swamp at Laino älv 9 July 1980, 1 nymph, Mertasemo 25 July 1983, 1♀, leg. & coll. P.-E.Lingdell (Coulianos, Nilsson & Söderberg 1992).

***Lygus punctatus* (Zetterstedt, 1838)**

Material. Jukkasjärvi, Masugnsbyn 30 June 2013, 8♂♂5♀♀ leg. & coll. R. Hobro.

***Teratocoris caricis* Kirkaldy 1909**

Material. Abisko 7 August 2001, 1♂, leg. & coll. G. Gillerfors.

***Labops sahlbergii* (Fallén 1829)**

Material. 1,5 km S of Kiruna kyrka 16 July 1984, 1♀, leg. & coll. C.-C. Coulianos.

***Atractotomus morio* J. Sahlberg 1883**

Material. Rautas (Stonedahl 1990).

***Psallus salicis* (Kirschbaum, 1856)**

Material. 1,5 km S of Kiruna kyrka 16 July 1984, 1♂2♀♀ on *Alnus incana* (Linnaeus) Moench, leg. & coll. C.-C. Coulianos.

***Scoloposcelis obscurella* (Zetterstedt 1838)**

Material. Leg. Frigelius 1832 (Zetterstedt 1838).

***Nabis brevis* Scholtz 1847**

Material. Masugnsbyn 3 July 1951, 1♂, leg. P. Ardö *et al.* coll. Zool. Mus. Lund.

***Aradus angularis* J. Sahlberg, 1866**

Material. Vittangi, Lainio burnt area 2 July 2012, 1♂, leg. & coll. C.-C. Coulianos.

***Aradus crenaticollis* R.F. Sahlberg, 1848**

Material. Vittangi, Lainio burnt area 2 July 2012, 1♂1♀, leg. & coll. A. Garpebing.

***Aradus laeviusculus* Reuter, 1975**

Material. Jukkasjärvi, Lainio burnt area 19 June 2008, 1♂ window trap, leg. & coll. R. Pettersson.

***Pachybrachius fracticollis* (Schilling 1829)**

Material. 2,5 km E of Abisko 17 June 1973, 1♂, leg. R. Danielsson, coll Zool. Mus. Lund.

***Trapezonotus arenarius* (Linnaeus 1758)**

Material. Earlier published records are uncertain. The only verified record is: Abisko 1932, 1♀, leg. L. Brundin, coll. Naturhistoriska Riksmuseum Stockholm.

***Zicrona caerulea* (Linnaeus 1758)**

Material. Övre Soppero 24 June 1989, 1♀, leg. & coll. G. Gillerfors.

Discussion

In total, 16 Heteroptera species were found new to Finnmark county, 12 new to at least one of the

faunistic regions (sensu Økland 1981) and 15 new to the Swedish province Torne Lappmark.

Most of them correspond well with their currently known distribution in Scandinavia and the new records probably indicate nothing more than the well-known fact that the Heteroptera fauna of this area has been sparsely studied. A representative example is *Tytthus pygmaeus* for which there are only two records in Noway; Vestfold and now Finnmark, and which likely reflects the difficulties of finding this small swamp species rather than a biogeographical pattern (see Coulianos 1998, Wachmann *et al.* 2004).

We remark here on some species that deserve special mention since only a few records are known from Norway so far. Whereas *Psallus lapponicus* (records in Norway: NTI, Inderøy; Mosvik, NSI, Hattfjelldal; Røssvatn and Hattfjelldal) seems to have a genuine northern distribution, two other plant-bug species were also found in southern Norway. This may reflect our fragmentary knowledge about Norwegian Heteroptera but even for better-known taxa such as Trichoptera such a disjunctive distribution pattern has been documented (see Andersen & Hagenlund 2012).

For one of these plant-bug species – *Brachyarthrum limitatum* – with a currently known southern distribution in Norway (AK, Asker; Brønnøya: OS, Gjøvik: Gjøvik) as well as records from southern Finland (Rintala & Rinne 2011) and central Sweden (Coulianos & Ossiannilsson 1976), a northerly extension to its range would correspond with the range of its host plant, *Populus tremula* (Lid & Lid 2005). *Chlamydatus opacus*, on the other hand, has a more northern distribution both in Sweden and Finland with some isolated records in the south. The reported records from Norway for this species, namely from Oppland, Sør-Trøndelag and Finnmark, seems to fit with that pattern.

A distinctive geographical gradient with much higher species richness in the south definitely reflects the environmental preferences (including distribution of host plants) for many Heteroptera taxa. This is also detectable in the dominance of Heteroptera species listed in the 2010 Norwegian Red List for Hemiptera (Ødergaard *et al.* 2010) that occur only or mostly in south or south-east

Norway (for an analysis of the Red Data List from 2006 see Roth 2009). However, there is evidence for a species-poor but specific arctic Heteroptera fauna (Lindberg 1956, Danks 1981, Makarova & Makaraov 2006). According to Makarova & Makaraov (2006), *Chiloxanthus arcticus*, among other Saldidae species, and *Nysius groenlandicus* belong to the northernmost representatives of the Heteroptera suborder. Both species were also found in this study. Since the duration of life cycles increases with latitude, development takes longer than one year in many insect species, and the ability to overwinter as larvae (or nymphs) becomes essential (Danks 1981). Not having completed their development within one year was considered a key factor of suppression for Heteroptera (Chernov 1978). Species of the family Saldidae are known for their prevalence in arctic habitats and usually overwinter as eggs or adults (Wachmann *et al.* 2006), but under certain conditions *Chiloxanthus pilosus* (Wachmann *et al.* 2006) and *Chiloxanthus stellatus* (Usinger 1960) can overwinter as nymphs. In the present study, however, nymphs of instars III–V of Saldidae, including *C. arcticus*, were found in late July indicating they will develop in the course of the summer and overwinter as adults.

In concordance with the habitat study on Dolgii Islands (Barent Sea) (Makarova & Makaraov 2006), *Chiloxanthus arcticus* was only collected from brackish marsh areas (here in the Passvik River Estuary) but not from freshwater habitats in our study. However, records of this species are still rare in Norway. Apart from unspecified older observations from Sør-Varanger (1 ex., leg. Poppius see Sahlberg 1920, published in Warloe 1927 as *C. stellatus* Curtis, 1835), there are only two additional more recent records: one from the same location (FØ, Sør-Varranger: Jacobselv) as in this study (1 ex., 5 July 1989, leg. B. Sagvolden, coll. S. Hågvar), and a second from Mikkelsnes, (FØ, Sør-Varranger) (2 ex., 8 August 1996, leg. J. Skartveit, coll. ZMBN). Since the most recent identification key (Vinokorov 2005) relied mainly on male characteristics for distinguishing between *C. arcticus* and *C. stellatus*, further studies are needed to evaluate the distribution of both species in northern Norway. Our identification was

confirmed using DNA-barcoding.

The most dominant species in our study were *Anthocoris nemorum*, *Stenodema holsata* and *Mecomma ambulans*. For the last species, brachypterous females and macropterous males created a biased sampling in the Malaise traps with a notable record of 88 males in a four-week period (26 July–25 August) at one sampling site (FinLoc 42).

The plant-bug species *Stenodema holsata* occurs in open grassland habitats using a wide spectrum of Poaceae and Juncaceae species as host plants (e.g. Wachmann *et al.* 2004). This species is very common and widespread north of the Alps including the British Isles. The phenology of its north European distribution has been studied in more detail here. In general, *S. holsata* is univoltin and overwinters as an adult. In central Europe, after copulation in May, eggs are laid until June and the first adult of the new generation emerges in July (Wachmann *et al.* 2004). In Finnmark, there is a notable lengthy period of different instars resulting in an overlap of the generations. The overwintering generation was found on our first field trip as late as 27 July (earliest recorded date: 2 June). Females with eggs were found from 15 June until 27 July and in that period 61.04% of the 77 females caught had developed eggs in their ovaries. In June, seven out of eight females caught already had well-developed eggs. This suggests the main period of oviposition would be in July. The average number of eggs per female was 4.38 (range 1–13) but since females lay eggs in several clusters over a longer period these numbers do not tell much about the overall reproductive outcome. Nymphs of instars I–III were recorded around 26–31 July, the last instar V occurred from 25 July until 1 September. Fresh hatched adults of the new generation were caught in Malaise traps as early as 30 July, and the males and females of the new generation were frequently found on our field trip 30 August–8 September.

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