

Neuroptera of the Bohemian Forest and the foothills

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Abstract

A systematic research of the order Neuroptera was carried out in the Bohemian Forest (Central Europe) during the years 1989–2004. It was collected and assessed 2937 specimens and detected 51 species from 6 families: Coniopterygidae 10, Osmylidae 1, Sisyridae 2, Hemerobiidae 23, Chrysopidae 14, and Myrmeleontidae 1 species. The most abundant and most frequent species living on spruce (*Picea abies*) were *Coniopteryx pygmaea* and *Hemerobius pini*. Species living in the foothills were frequent as well: *Hemerobius micans*, *Micromus paganus*, *Hemerobius marginatus*, and *Nineta vittata*. Species significant from the nature protection point of view, which are listed in the Red list of threatened species in the Czech Republic – Invertebrates: *Parasemidalis fuscipennis*, *Sisyra terminalis*, *Osmylus fulvicephalus*, *Wesmaelius ravus*, *Micromus lanosus*, and *Nothochrysa capitata*, were rarer. Occurrence of antlion *Myrmeleon formicarius* is interesting too. New species for the fauna of the Czech Republic is *Nineta inpunctata*. Abundance, dominance and frequency for each species are added.

Key words: Neuroptera, Central Europe, Šumava Mts., mountain forest, habitats, dominance, frequency

INTRODUCTION

Not many information exist about species of Neuroptera from the Bohemian Forest and the foothills. Basal data are from KLAPÁLEK (1903) where he recorded 15 species from the area of Železná Ruda. ZELENY (1962, 1963, 1971) published findings of several species of brown lacewings (Hemerobiidae) and green lacewings (Chrysopidae) from the Bohemian Forest and ZELENY (1971, 2002) recorded 37 species of this order from the Novohradské Hory Mts. PAPÁČEK & SOLDÁN (2003) write about 3 species, which develop in water. Finally ZELENY (2004) released an overview of 48 species occurring on peat bogs Mrtvý Luh and Chalupská Slat' and in forest undergrowth of the Boubín Mt. For individual species he gives a number of localities where particular species was found. MERGL (2005) reported 3 species from the Český Les Mts. (=Upper Palatinate Forest). PAPÁČEK et al. (2006) mentioned an occurrence of *Osmylus fulvicephalus* in the Novohradské Hory Mts. The occurrence of some species from the adjacent parts of the Bohemian Forest in Austria and Germany is published by ASPÖCK & ASPÖCK (1964) and by ASPÖCK et al. (1980).

MATERIAL AND METHODS

From 1989 to 2004 a systematic research of the lacewings (Neuroptera) of the Bohemian Forest (Czech Republic, Central Europe), particularly of the peat bogs, their margins and bog spruce forests, was carried out. The localities of the research are in the Šumava National Park and Protected Landscape Area especially in the parts from 750 m to 1200 m a.s.l. The

collecting was pursued by sweeping or by means of light trap. Additional material from previous years, particularly from the years 1974 and 1985, and that collected by J. Strejček, is also included. Data from collections of the Department of Entomology of National Museum in Prague are also summarized. Evaluated material forms solid basis for recognition of species of Neuroptera of the Bohemian Forest.

The material was identified using ASPÖCK & ASPÖCK (1964) and ASPÖCK et al. (1980). The nomenclature follows ASPÖCK et al. (2001) and JEDLIČKA et al. (2004).

Localities are listed alphabetically by municipality, followed by the name of mountain (if applicable), name of protected area (reserve), and number of geomorphological units [18 – Český Les Mts., 19 – Bohemian Forest foothills (Šumavské podhůří), 20 – Novohradské Hory Mts., 39 – Bohemian Forest (=Šumava Mts.)] and of grid-mapping field code (ZELENÝ 1971).

LIST OF LOCALITIES

Annín 39 (6846b–47a), Babylon 18 (6643a), Benešov nad Černou 20 (7253d), Blažejovice 39 (7049b), Bohumilice 39 (6948b), Borová Lada 39 (7047b), Borová Lada–Chalupská Slat' peat bog 39 (7047b), Čachrov 39 (6745b), Čábuze 39 (6848c), Černá v Pošumaví 39 (7250d), Černé Údolí 20 (7354a), Černý Kříž 39 (7149c), Dobrá–Mrtvý Luh peat bog 39 (7149c), Dobrá Voda 20 (7149c), Drahonice 19 (6750d), Filipova Hut' 39 (6947c), Hojsova Stráž–Mústek (Mt.) 39 (6745c), Horní Vltavice 39 (7048c), Horažďovice 19 (6648c), Horská Kvilda 39 (6947c), Horšovský Týn 18 (6443d), Hracholusky–Zlatý Potok stream 39 (6950a), Husinec 19 (6949d), Chlum 39 (7149a), Chlum–Mrtvý Luh peat bog 39 (7149a), Churáňov 39 (6947b), Chvalšiny–Klet' Mt. 19 (7151a), Chvalšovice 39 (6848d), Janovice 39 (6645c), Javorník 39 (6847), Jiřičná u Petrovic 39 (6746d), Kaplice 19 (7252d), Kladenské Rovné 19 (7251a), Klenci pod Čerchovem 18 (6542d), Krasetín–Klet' Mt. 19 (7151b), Kvilda 39 (6947), Kvilda–Jezerní Slat' peat bog 39 (6947c), Kvilda–Prameny Vltavy 39 (7047a), Lenora–Velká Niva peat bog 39 (7048d), Libinské Sedlo 39 (7049b), Malá Chmelná 19 (6747c), Modrava–Břežník Mt. 39 (7046b), Modrava–Černá Hora Mt. 39 (7047a), Modrava–Hraniční Slat' peat bog 39 (7046bd), Modrava–Javoří Pila 39 (6946d), Modrava–Rokytská Slat' peat bog 39 (7046a), Mokrá 39 (7250b), Mříč–Klet' Mt. 19 (7051d), Nová Pec–Plechý Mt. 39 (7249a), Nová Pec–Plešné Lake 39 (7249a), Nová Hůrka 39 (6846c), Nové Hrady 20 (7254b), Nová Hůrka 39 (6846c), Nové Hrady 20 (7254b), Nový Kramolín 18 (6542b), Nový Svět 39 (6948c), Olšany 19 (6647b), Pěkná 39 (7149b), Petrovice 39 (6546b), Pohří na Šumavě 20 (7354c–7454a), Prachatice 39 (6950c), Prášíly–Novohůrecká Slat' peat bog 39 (6846c), Prášíly–Ždánidla Mt. 39 (6848c), Přečín 39 (6848c), Rabí 19 (6747b), Smolov 18 (6543d), Soumarský Most 39 (7148b), Soumarský Most–Radvanovický Hřbet Mt. 39 (7148b), Srní 39 (6946b), Srní–Medvědí Hora Mt. 39 (6946b), Stožec 39 (7048d), Stožec–Stožec Mt. 39 (7048d), Strakonice 19 (6749a), Strážný–Pilecká Nádrž reservoir 39 (7048c), Sušice 19 (6747c), Terčí Ves 20 (7353b), Újezd 18 (6543c), Včelná pod Boubínem 39 (6949c), Vicemily 39 (6949a), Vimperk–Sviní Vrch Mt. 39 (6948), Volary 39 (7049c), Volyně 19 (6849), Vyšný–Vyšenské Kopce hills 19 (7151d), Zátoň 39 (7048b), Zátoň–Boubínský Prales primeval forest 39 (7048b), Zdíkov 39 (6948a), Železná Ruda–Černé Lake 39 (6845c).

Most species as well as individuals were obtained by sweeping from trees and shrubs, less number by individual collecting. Material collected by night capture with white surface was acquired too, and portion of material is obtained from a light trap (J. Jaroš and K. Spitzer lgt., in overview of species marked ENTÚ lgt.), which was capturing the insects regularly 3 days at 2–3 week intervals from June to August. Only few species are acquired from the trap but some belong to interesting finds obtained only by this particular method. Regular quan-

titative collections were carried out in years 1989–1992, 1996 and 2001–2004.

RESULTS

Survey of species

Localities in the list of species are arranged in alphabetical order. All localities, where certain species was found, are listed. Date of collection comes after the locality, afterwards in fraction quantity of male/female collected. At frequently found species all the localities are mentioned first, then years of collection and date of the first and the last find in Bohemian Forest. Ultimate number of specimens (spec.) collected follows in some cases date when the most individuals were found with mentioning of their quantity and a note referring to the habitat.

Coniopterygidae

Aleuropteryx loewii Klapálek, 1894. Babylon, 14 Aug 1974 0/1; Rabí, 22 Jun 1985 1/0; Strakonice, 20 Jul 1971 0/1; Sušice, 23 Jul 1968 0/1. Species living on pine *Pinus sylvestris*.

Helicoconis lutea (Wallengren, 1871). Localities: Annín, Benešov nad Černou, Čachrov, Černá v Pošumaví, Dobrá–Mrtvý Luh, Horská Kvilda–Jezerní Slat', Horšovský Týn, Javorník, Jiříčná, Klenčí pod Čerchovem, Kvilda, Lenora–Velká Niva, Modrava, Nový Kramolín, Olšany, Pohorí na Šumavě, Stožec–Stožec Mt., Sušice, Vimperk–Sviní Vrch, Zátoň, Zátoň–Boubínský Prales, Zdíkov. 1966–2004: 18 Jun – 19 Aug, 73 spec. Collected at most 11 spec. in one locality. Species found on spruce *Picea abies*, it ascends to high altitudes.

Coniopteryx tineiformis Curtis, 1834. Benešov nad Černou, 2 spec.; Chvalšiny–Klet', 4 Jun 1988 1/4; Rabí, 22 Jun 1985 3/7; Vimperk–Sviní Vrch, 20 Jun 1982 2/8; Vyšný–Vyšenské Kopce, 2 Aug 1989 1/0. Species collected from oak *Quercus robur* and hazel *Corylus avellana* especially in lower elevations.

Coniopteryx borealis Tjeder, 1930. Benešov nad Černou, 2 spec., Borová Lada–Chalupská slat', 12 May 1996 1/1; Rabí, 27 Jun 1985 1/0; Vimperk, 18 Jun 1982 1/0. Species collected from oak *Quercus robur* and hazel *Corylus avellana* usually individually only.

Coniopteryx pygmaea Enderlein, 1906. Localities: Annín, Babylon, Benešov nad Černou, Bohumilice, Borová Lada, Borová Lada–Chalupská Slat', Čachrov, Dobrá–Mrtvý Luh, Churáňov, Horská Kvilda, Horská Kvilda–Jezerní Slat', Horšovský Týn, Chlum, Javorník, Klenčí pod Čerchovem, Lenora–Velká Niva, Libínské Sedlo, Modrava, Nový Kramolín, Olšany, Rabí, Smolov, Srní–Medvědí Hora, Sušice, Újezd, Vimperk–Sviní Vrch, Vyšné–Vyšenské Kopce, Zátoň, Zátoň–Boubínský Prales, Zdíkov, 1966–2004, (15 Apr) 3 May – 21 Aug (22 Sep) 379 spec., up to 47 spec. were collected on 13 Aug in one locality, it is the most distributed and most common species living on our coniferous trees including larch *Larix decidua*, so it is possible to capture even more specimens in appropriate time than at the collection from 13 Aug. It has 2–3 generations and it is possible to find it from April to October. After new generation incubation males shortly (2–5 days) predominate, afterwards predominate females, which are then found several days.

Coniopteryx esbenpeterseni Tjeder, 1930. Benešov nad Černou, 67/84; Rabí, 22 Jun 1985 9/4. Species is found on hazel *Corylus avellana*, mainly in warmer habitats. Occurrence of the species in the Novohradské Hory Mts. was purely exceptional and it seems it is very local.

Parasemidalis fuscipennis (Reuter, 1894). Dobrá–Mrtvý Luh, 25 May 2001 1/0 ENTÚ lgt., light trap. Lives on pine *Pinus sylvestris*. Species is collected only exceptionally and indi-

vidually, it seems the species occurs in crowns of trees and descends only coincidentally. *Semidalis aleyrodiformis* (Stephens, 1836). Localities: Babylon, Benešov nad Černou, Čachrov, Černý Kříž, Horšovský Týn, Jiříčná, Olšany, Rabí, Sušice, Vyšný-Vyšenské Kopece, Zátoň, Zátoň–Boubínský Prales. 1968–2004: (15 Apr) 21 Jun – 2 Aug (16 Sep), 120 spec. Most specimens 32/33 collected on 29 Jun. Species has 2 generations, lives on various deciduous trees and shrubs including fruit trees. Common on oak *Quercus robur*, hazel *Corylus avellana*, hornbeam *Carpinus betulus*, pear-tree *Pyrus communis* and plum-tree *Prunus domestica*.

Conwentzia psociformis (Curtis, 1834). Babylon, 14 Aug 1974 4/6, 15 Aug 1974 19/28 + 2 larvae; Benešov nad Černou 2 spec.; Horšovský Týn 13 Aug 1974 6/15; Jiříčná 23 Jul 1968 0/2; Sušice 23 Jul 1968 2/1; Újezd 16 Aug 1974 0/1. Usually the species is found in August, principally on oak *Quercus robur*.

Conwentzia pineticola Enderlein, 1905. Localities: Annín, Babylon, Benešov nad Černou, Borová Lada–Chalupská Slat', Čachrov, Černá v Pošumaví, Horská Kvilda, Horská Kvilda–Jezerní Slat', Horšovský Týn, Churáňov, Chlum, Javorník, Jiříčná, Klenčí pod Čerchovem, Kvilda, Libinské Sedlo, Modrava, Nový Kramolín, Stožec–Stožec (Mt.), Sušice, Újezd, Volary, Zátoň, Zátoň–Boubínský Prales, Zdíkov, 1968–2004: (23 Apr) 7 May – 17 Aug (3 Oct), 168 spec. Most specimens were collected on 24 Jul (21 spec.) and 25 Jul (19 spec.). Species living on all our coniferous trees, larch including, on which most specimens are found occasionally.

Osmyliidae

Osmylus fulvicephalus (Scopoli, 1763). Chvalšovice, Jul 1967 1/0, 4 Jul 1973 6/2, Havel lgt.; Dobrá Voda, 2 Jul 1987 1/0; Přečín 10 Jul 1973 1/4, 14 Jun 1977 2/3 Havel lgt. A remarkable and unmistakable species. I have 20 adult specimens from the Bohemian Forest, 19 of them are from the Peklov stream so it is one locality referring to municipalities Chvalšovice and Přečín. (According to personal information from T. SOLDÁN, this species was recorded on localities Janovice, Malá Chmelná, Pěkná, and Prachatice as well, Soldán lgt.). PAPÁČEK & SOLDÁN (2004) mention it as the abundant species in the foothills of the Bohemian Forest. MERGL (2005) remarks common occurrence of this species in the beginning of the nineties along streams close to the municipality of Rybník in the Český Les Mts. and that we can encounter it quite often in the Český Les Mts. so far. PAPÁČEK et al. (2006) writes about occurrence on Mlýnský Vrch Mt. (Staré Hutě) (7254c). The adults can be found on vegetation along streams and under bridges.

Sisyridae

Sisyra nigra (Retzius, 1783). Černý Kříž, 10 Jul 2002 1/0; Lenora–Velká Niva, 22 Jul 2003 1/0 ENTÚ lgt., light trap. Adults occur on herbaceous vegetation or on shrubs and trees on the shores of stagnant waters.

Sisyra terminalis Curtis, 1854. Lenora–Velká Niva, 22 Jul 2003 1/0 ENTÚ lgt., light trap. Less frequent species of the genus *Sisyra* found along slowly running and stagnant waters.

Hemerobiidae

Drepanopteryx phalaenoides (Linneus, 1758). Horská Kvilda, 13 Jul 1959 0/1, K. Novák lgt.; Lenora–Velká Niva, 25 Aug 1964 0/1 Hoffer lgt.; Smolov, 13 Aug 1974 1/0; Soumarský Most–Radvanovický Hřbet Mts., 12 Jul 1992 0/1, J. Střejček lgt.; 13 Aug 1974 1/0; Zátoň–Boubínský Prales, 5–7 Aug 2003 0/1, light trap, ENTÚ lgt. The largest brown lacewing in Europe. It imitates withered leaf by the shape of wings and its colour. Species very marked after capturing. It lives on deciduous trees and shrubs, usually is being found only individu-

ally, most often in late summer.

Wesmaelius concinnus (Stephens, 1836). Černé Údolí, 1 spec.; Dobrá–Mrtvý Luh, 24 Aug 1964 0/1, Hoffer lgt.; 23 Jul 1991 0/1; Nové Hrady, 2 spec.; Lenora–Velká Niva, 5–7 Aug 2003 0/1, light trap, ENTÚ lgt. Species found on pine *Pinus* sp., but only occasionally and individually.

Wesmaelius quadrifasciatus (Reuter, 1894). Benešov nad Černou, Bohumilice (K. Novák lgt.), Borová Lada–Chalupská Slat', Chlum–Mrtvý Luh, Chvalšiny, Dobrá–Mrtvý Luh, Horská Kvilda–Jezerní Slat', Jiříčná u Petrovic, Klenčí pod Čerchovem, Kvilda (J. Doskočil lgt.), Modrava, Modrava–Hraniční Slat', Modrava–Rokytská Slat', Nová Hůrka, Olšany; Prášíly–Novohůrecké Slatě (J. Strejček lgt.); Rabí, Stožec, Sušice, Vimperk–Sviní Vrch, Zátoň, Zátoň–Boubínský Prales, Zdíkov. 1962–2005: (14 May) 18 Jun – 6 Oct, 54 spec., collected at most 6 spec. in one day, 22 Jun. Species occurs on spruce *Picea abies* and larch *Larix decidua*, only exceptionally on other conifers.

Wesmaelius nervosus (Fabricius, 1793). Borová Lada–Chalupská Slat', 10 Jun 1997 1/1; Černé Údolí, 2 spec.; Chlum–Mrtvý Luh, 19 Aug 1974 0/1; Horská Kvilda, 16 Aug 1961 0/1, Štys lgt.; Klenčí pod Čerchovem, 14 Aug 1974 0/1; Nové Hrady, 1 spec.; Nový Kramolín, 15 Aug 1974 1/3; Pěkná, 21 Jul 1959 0/1, K. Novák lgt.; Prášíly–Novohůrecké Slatě, 16 Jul 1992 1/0, Strejček lgt.; Smolov, 13 Aug 1974 0/1; Újezd, 16 Aug 1974 1/0; Vyšný–Vyšenské Kopce, 2 Aug 1989 1/0. Species found on deciduous trees. It seems it occurs especially on birch *Betula* sp.

Wesmaelius ravus (Withycombe, 1923). Husinec, 22 Jul 1971 1/0; Kvilda–Jezerní Slat', 8 Jun 1992 0/1; Nové Hrady, 1 spec. Species found quite exceptionally. Collected from spruce *Picea abies*.

Hemerobius humulinus Linnaeus, 1758. Annín, Babylon, Benešov nad Černou, Blažejovice, Borová Lada–Chalupská Slat', Čachrov, Chlum–Mrtvý Luh, Dobrá–Mrtvý Luh, Horšovský Týn, Jiříčná, Kaplice, Klenčí pod Čerchovem, Krasetín, Kvilda–Jezerní Slat', Lenora, Lenora–Velká Niva, Nové Hrady, Nový Kramolín, Olšany, Rabí, Smolov, Stožec, Újezd, Vimperk–Sviní Vrch, Vícemily, Volary, Vyšný–Vyšenské Kopce, Zátoň, Zátoň–Boubínský Prales, Zdíkov. 1959–2003: 27 May – 27 Aug, 73 spec., the most collected in Dobrá–Mrtvý Luh 17 Aug 1989 5/8. One of our most common and especially most distributed species on various deciduous trees and shrubs, occasionally on conifers in forests, forest-steppes, bushy hillsides, parks, orchards and gardens.

Hemerobius simulans Walker, 1853. Zátoň–Boubín, 19 Aug 1974 0/1, coniferous trees.

Hemerobius stigma Stephens, 1836. Blažejovice, 22 Jul 1959 0/1, K. Novák lgt.; Borová Lada–Chalupská Slat', 24 Jun 1998 1/0; Chlum–Mrtvý Luh, 19 Aug 1974 0/1; Churáňov, 18 Jun 1982 0/1; Dobrá–Mrtvý Luh, 23 Jul 1991 0/1; 25–28 Jul 2000 0/2, 1–4 Aug 2000 0/1, 7–10 Aug 2001 0/1, 9 Jul 2002 0/1, 30 Aug 2002 0/1, ENTÚ lgt.; Kvilda–Jezerní Slat', 16 Jul 1992 0/1, 22–24 Jul 2003 0/1, 16–19 Jul 2004 1/0, ENTÚ lgt.; Lenora–Velká Niva, 16–19 Jul 2004 0/1, ENTÚ lgt.; Modrava–Hraniční Slat', 3 Aug 2004 0/1; Modrava–Rokytecká Slat', 16 Jul 1992 2/0; Nové Hrady, 5 spec.; Rabí, 22 Jun 1985 0/1; Strakonice, 20 Jul 1974 0/1; Újezd, 16 Aug 1974 0/1; Zdíkov, 22 Jul 1974 0/1; Železná Ruda, 20 Jul 1974 1/0. Species found on conifers, especially on spruce *Picea abies* and pine *Pinus sylvestris*. It ascends up to high mountain elevations. Usually is being found only individually.

Hemerobius pini Stephens, 1836. Annín, Babylon, Benešov nad Černou, Borová Lada–Chalupská Slat', Čachrov, Černá v Pošumaví, Černý Kříž, Chlum–Mrtvý Luh, Churáňov, Filipova Huť, Dobrá–Mrtvý Luh, Drahonice, Horská Kvilda, Horšovský Týn, Javorník, Jiříčná, Klenčí pod Čerchovem, Krasetín, Kvilda, Kvilda–Jezerní Slat', Lenora–Velká Niva, Libinské Sedlo, Modrava, Modrava–Hraniční Slat', Modrava–Rokytská Slat', Nové Hrady, Nový Kramolín, Pohorí na Šumavě, Smolov, Srní, Stožec, Sušice, Újezd, Vimperk–Sviní Vrch,

Zátoň, Zátoň–Boubínský Prales, Zdíkov, Žofín–Žofínský Prales. 1960–2005: 8 Jun – 5 Oct, 312 spec., the most in one sample (one day) was collected in Babylon, 14 Aug 1974 10/30. One of the most distributed species of the family Hemerobiidae and most common species on conifers. It ascends up to high mountain elevations.

Hemerobius contumax Tjeder, 1932. Chvalšiny–Klet', 4 Jun 1988 0/1; Nové Hrady, 8 spec.; Sušice, 23 Jul 1968 1/2. Collected from spruce *Picea abies* and larch *Larix decidua*. Only rarely and individually found species.

Hemerobius fenestratus Tjeder, 1932. Dobrá–Mrtvý Luh 13 Aug 1991 0/2; Jiřičná 23 Aug 1968 1/0; Kvilda–Jezerní Slat', Modrava–Hraniční slat' 21 Aug 1999 0/1; Nové Hrady 3 spec.; Smolov 4 Aug 1974 1/3; Volary 22 Jul 1971 1/0; Zdíkov 22 Jul 1971 1/0. Species collected from conifers, from spruce *Picea abies* and larch *Larix decidua* always rarely only.

Hemerobius atrifrons McLachlan, 1868. Borová Lada, 24 Jul 1996 0/1; Chlum–Mrtvý Luh, 19 Aug 1974 0/1; Dobrá–Mrtvý Luh, 17 Aug 1989 0/1, 11 Jul 1992 0/1, Strejček lgt.; Modrava, 1 Aug 1990 0/1; Modrava–Rokytská Slat', 16 Jul 1992 0/1; Nové Hrady, 78 spec.; Nový Svět, 1 Aug 1996 0/1; Olšany, 22 Jun 1985 0/1; Sušice, 23 Jul 1968 0/1, 21 Jun 1985 2/0; Vimperk–Sviní Vrch, 18 Jun 1982 0/1, 20 Jun 1982 0/1; Zátoň, 19 Aug 1974 3/4; Žofín–Žofínský Prales, 1 spec. Collected from larch *Larix decidua*, where sometimes occurs in bigger population density. It is possible to find it on individual larches as well as along roads.

Hemerobius nitidulus Fabricius, 1777. Annín, Babylon, Benešov nad Černou, Borová Lada–Chalupská Slat', Černá v Pošumaví, Chlum–Mrtvý Luh, Dobrá–Mrtvý Luh, Horská Kvilda, Kvilda–Jezerní Slat', Lenora, Lenora–Velká Niva, Modrava, Modrava–Rokytská Slat', Nová Pec–Plechý Mt., Nové Hrady, Nový Kramolín, Olšany, Pohoří na Šumavě, Rábí, Soumarský Most, Strakonice, Sušice, Vimperk–Sviní Vrch, Zdíkov. 1964–2001: 29 May – 25 Aug, 36 spec. Collected from pine *Pinus sylvestris*, *P. rotundata*, and *P. mugo* on localities of Bohemian Forest individually, only 24 Jul 1991 in Kvilda–Jezerní Slat' were 4 spec. collected.

Hemerobius micans Olivier, 1792. Babylon, Benešov nad Černou, Borová Lada–Chalupská Slat', Čachrov, Černá v Pošumaví, Černé Udolí, Chlum–Mrtvý Luh, Chvalšiny–Klet', Dobrá–Mrtvý Luh, Horšovský Týn, Jiřičná, Klenčí pod Čerchovem, Krasetín–Klet', Kvilda–Jezerní Slat', Lenora–Velká Niva, Modrava–Hraniční Slat', Nové Hrady, Nový Kramolín, Olšany, Pohoří na Šumavě, Rábí, Smolov, Srní–Medvědí Hora, Sušice, Újezd, Vimperk–Sviní Vrch, Vyšný–Vyšenské Kopce, Zátoň, Zátoň–Boubínský Prales, Žofín–Žofínský Prales. 1968–2005: 13 May – 21 Aug, 181 spec. Most specimens of this species in one sample was in locality Újezd 16 Aug 1974 10/9, otherwise the species in Bohemian Forest was found from 1 to 5, exceptionally up to 10 specimens. *H. micans* lives on deciduous trees, especially on beech *Fagus sylvatica*, where as the only species of the family Hemerobiidae occurs in big population density. It was collected on oak *Quercus* sp., hornbeam *Carpinus betulus*, hazel *Corylus avellana*, maple *Acer* sp., and other as well.

Hemerobius lutescens Fabricius, 1793. Benešov nad Černou, 7 spec.; Černá v Pošumaví, 18 Aug 1974 0/1; Churáňov 18 Jun 1982 2/0; Chvalšiny–Klet' 4 Jun 1988 1/0; Dobrá–Mrtvý Luh 11 Jul 1992 0/1, 3 Aug 1995 0/1; Klenčí pod Čerchovem, 14 Aug 1974 4/0; Lenora–Velká Niva, 23 Aug 1964 1/0, 26 Aug 1964 0/1, Hoffer lgt.; Nové Hrady, 1 spec.; Nový Kramolín, 15 Aug 1974 0/1; Olšany, 22 Jun 1985 0/2; Pohoří na Šumavě, 6 spec.; Sušice, 21 Jun 1985 0/1; Vimperk–Sviní Vrch, 18 Jun 1982 3/1, 20 Jun 1982 4/2. The species lives on a variety of deciduous trees and shrubs in forests, parks, orchards and gardens as well. The species seems to occur more frequently on maple *Acer* sp. and hazel *Corylus avellana*.

Hemerobius marginatus Stephens, 1836. Benešov nad Černou, 5 spec.; Borová Lada–Cha-

lupská Slat', 24 Jul 1996 1/0, 24 Jun 1998 2/0; Čachrov, 24 Jul 1968 0/1; Dobrá–Mrtvý Luh, 17 Aug 1989 2/1, 23 Jul, 13 Aug, 22 Aug 1991 3/11, 15 Jul 1992 4/3, 21 Aug 1997 0/2, 31 Jul 2000 1/0; Klenčí pod Čerchovem, 14 Aug 1974 1/0; Sušice, 21 Jun 1985 0/1; Volary, 22 Jul 1971 1/4; Vyšný–Vyšenské Kopce, 2 Aug 1989 0/1; Zátoň–Boubínský Prales, 22 Jul 1968 1/0, 20 Jul 1974 3/1, 1–3 Jul 2003 1/0. Species found on deciduous trees and shrubs on hazel *Corylus avellana*, maple *Acer pseudoplatanus*, in the margin of Mrtvý Luh bog especially on birch *Betula pubescens*.

Micromus variiegatus (Fabricius, 1793). Babylon, 14 Aug 1974 2/0; Benešov nad Černou, 3 spec.; Černé Údolí, 2 spec.; Dobrá–Mrtvý Luh, 21–24 Aug 2001 1/0, ENTÚ lgt.; Lenora–Velká Niva, 26–28 Jul 2005 1/0, ENTÚ lgt.; Vyšný–Vyšenské Kopce, 2 Jul 1989 1/0. This species lives on low herbaceous vegetation and moist localities. Passes on agricultural plants as well, e.g. lucerne.

Micromus angulatus (Stephens, 1836). Hojsova Stráž–Můstek Mt., 9 Oct 1958 3/2, 10 Aug and 3 Oct 1959 3/2, Doskočil et Hůrka lgt.; Kvilda, 5 Oct 1960 0/1, 16 Jul 1961 0/1, Doskočil lgt.; Lenora, 13–28 Aug 1964 7/4, Hoffer lgt.; Nové Hrady, 1 spec.; Zátoň–Boubínský Prales, 22–24 Jul 2003 0/1, ENTÚ lgt. Species lives and also is found on herbaceous vegetation. There are most findings from late summer and beginning of autumn. It ascends to high altitudes.

Micromus paganus (Linnaeus, 1767). Babylon, 15 Aug 1974 0/1; Benešov nad Černou, 1 spec.; Borová Lada–Chalupská Slat', 12 Aug 1998 1/0; Dobrá, 24 Jul 1970 13/1, I. Novák lgt.; Dobrá–Mrtvý Luh, 17 Jul 1989 1/0, 23 Jul 1991 4/2, 13 Aug 1991 0/6, 15 Jul 1992 2/3, 21 Aug 1997 1/1; Hojsova Stráž–Můstek Mt., 2 Sep 1958 0/1, Doskočil lgt.; Horní Vltavice, 24 Jun 1998 0/1; Klenčí pod Čerchovem, 14 Aug 1974 0/1, Kvilda–Jezerní Slat', 24 Jul 1991 1/0; 16–19 Jul 2004 1/0, ENTÚ; Lenora, 28 Aug 1964 0/1, Hoffer lgt.; Lenora–Velká Niva, 24–26 Jun 2003 1/0; Nový Kramolín, 15 Aug 1974 1/0; Prášíly–Novohůrská Slat', 1/0, Strejček lgt.; Srní, 21 Jul 1971 1/2; Újezd, 16 Aug 1974 1/0; Vícemily, 27 Aug 1959 0/1, K. Novák lgt.; Vimperk–Sviní Vrch, 17 and 18 Jun 1982 4/3; Zátoň–Boubínský Prales, 1–3 and 22–24 Jul 2003 2/0, 26–28 Jul and 12–14 Aug 2005 5/1, ENTÚ lgt.; Žofín, 2 spec. Species collected from deciduous trees and shrubs: hazel *Corylus avellana*, maple *Acer pseudoplatanus*, and birch *Betula pubescens*. It is more common in foothills.

Micromus lanosus (Zelený, 1962). Benešov nad Černou, 5 spec.; Dobrá–Mrtvý Luh, 11 Jul 1992 0/1, Strejček lgt.; Klenčí pod Čerchovem, 14 Aug 1984 0/1; Krasetín–Klet', 21 Aug 1996 1/2; Sušice, 23 Jul 1968 0/1; Zátoň–Boubínský Prales, 22 Jul 1968 0/1, 20 Jul 1971 0/1; 22–24 Jul 2003 1/0, ENTÚ lgt. Species found especially on maple *Acer pseudoplatanus*, in the Bohemian Forest on beech *Fagus sylvatica* and birch *Betula pubescens*. It is the rarest from the 4 *Micromus* species in the Czech Republic.

Symphorobius elegans (Stephens, 1836). Volary, 22 Jul 1974 0/1. Species lives on deciduous trees.

Symphorobius fuscescens (Wallengren, 1863). Babylon, 15 Aug 1974 0/1; Benešov nad Černou, 1 spec.; Borová Lada–Chalupská Slat', 21 Jul 1987 1/0, 26 Jun 1996 1/1, 10 Jun 1998 2/2, 24 Jun 1998 1/1; Dobrá–Mrtvý Luh, 17 Aug 1989 0/1, 23 Jul 1991 1/2, 21–24 Aug 2001 0/1, ENTÚ lgt.; Nové Hrady, 1 spec.; Prášíly–Novohůrecké Slatě, 16 Jul 1992 0/1, Strejček lgt. In Bohemian Forest found on pine *Pinus sylvestris*, *Pinus rotundata*, and *Pinus mugo*.

Symphorobius pellucidus (Walker, 1853). Zátoň–Boubínský Prales, 20 Jul 1971 1/0. Species living on deciduous trees, collected from beech *Fagus sylvatica*.

Chrysopidae

Nothochrysa capitata (Fabricius, 1793). Vimperk, 17 Jun 1982, 1 larva on spruce *Picea abies*.

Nineta flava (Scopoli, 1763). Benešov nad Černou, 6 spec.; Borová Lada–Chalupská Slat', 1 Aug 1996 0/1; Churáňov, 18 Jun 1982 0/1; Nový Kramolín, 15 Aug 1974 2 larvae; Rabí, 22 Jun 1985 1/0; Újezd, 16 Aug 1974 3 larvae; Vimperk–Sviní Vrch, 18 Jun 1982 3/5; Volary, 22 Jul 1971 0/1; Vyšný–Vyšenské Kopce, 2 Aug 1989 0/1; Zátoň–Boubínský Prales, 19 Aug 1974 1 spec.; Žofín, 1 spec. Species occurs in moist localities on various deciduous trees and shrubs in forests, parks, orchards and gardens even in big towns. In the Bohemian Forest it was found on maple *Acer pseudoplatanus*, willow *Salix caprea*, hazel *Corylus avellana*, and birch *Betula pubescens*.

Nineta vittata (Wesmael, 1841). Benešov nad Černou, 9 spec.; Borová Lada–Chalupská Slat', 24 Jun 1998 0/1; Churáňov, 18 Jun 1982 0/1; Dobrá, 24 Jul 1970 0/2, I. Novák lgt.; Dobrá–Mrtvý Luh, 23 Jul 1991 1/1, 15 Jul 1992 1/1, 21 Aug 1997 1 larva; Klenčí pod Čerchovem, 14 Aug 1974 1 larva; Krasetín, 27 Jul 1968 0/1; Nový Kramolín, 15 Aug 1974 2 larvae; Smolov, 13 Aug 1974 1 larva; Újezd, 16 Aug 1974 2 larvae; Vimperk, 18 Jun 1982 3/2; Vimperk–Sviní Vrch, 20 Jun 1982 7/4; Vyšný–Vyšenské Kopce, 2 Aug 1989 1 larva; Zátoň–Boubínský Prales, 22 Jul 1968 1/0; 26–28 Jul 2005 1/2, ENTÚ lgt.; Žofín, 1 spec. Species found on deciduous trees especially on maples *Acer pseudoplatanus* and *A. platanoides*, but also on birch *Betula pubescens*, oak *Quercus*, and sometimes on beech *Fagus sylvatica*, especially in foothills.

Nineta inpunctata (Reuter, 1894). Borová Lada–Chalupská Slat', 12 Jun 1996 1/0; Vimperk, 18 Jun 1982 1/0. Species found on maple *Acer pseudoplatanus* and birch *Betula pubescens* on peat-bog. New species for the Czech Republic; from neighbouring countries it is known from Germany, Poland, Hungary, and Austria.

Nineta pallida (Schneider, 1851). Babylon, 14 Aug 1974 3/2; Čachrov, 24 Jul 1968 1/0; Jiřičná, 23 Jul 1968 2/0; Krasetín, 21 Aug 1996 3/4; Nový Kramolín, 15 Aug 1974 7/6; Sušice, 23 Jul 1968 0/1; Újezd, 16 Aug 1974 4/3. Species found especially on spruce *Picea abies*, but also on pine *Pinus sylvestris*. In late summer it is also common in commercial forests and spruce plantations.

Chrysotropia ciliata (Wesmael, 1841). Benešov nad Černou, 37 spec.; Babylon, 15 Aug 1974 0/4; Husinec, 22 Jul 1971 0/2; Jiřičná, 23 Jul 1968 0/1; Klenčí pod Čerchovem, 14 Aug 1974 0/1; Vimperk–Sviní Vrch, 18 and 20 Jun 1982 2/3; Vyšný–Vyšenské Kopce, 23 Aug 1989 0/1; Žofín–Žofínský Prales, 1 spec. Species living on deciduous trees rather on moist shady habitats. Frequently found on hornbeam *Carpinus betulus* and on hazel *Corylus avellana*.

Chrysopa perla (Linnaeus, 1758). Benešov nad Černou, 20 spec.; Bohumilice, 20 Jul 1971 1/1; Borová Lada–Chalupská Slat', 12 Jun – 1 Aug 1996 9/7, 10 Jun – 29 Jul 1997 6/5, 10 Aug 1998 5/1, 8 Jul 2004 0/1; Čachrov, 24 Jul 1971 1 larva; Černý Kříž, 22 Jun 2004 0/1; Churáňov, 18 Jun 1982 0/1; Dobrá–Mrtvý Luh, 23 Jul 1991 1/0, 15 Jul 1992 4/4, 3 Aug 1995 2/2; Horní Vltavice, 24 Jun 1998 0/3; Husinec, 22 Jul 1971 1/2; Javorník, 18 Jun 1982 0/1; Libínské Sedlo, 22 Jul 1971 0/1; Nové Hrady, 2 spec.; Olšany, 22 Jun 1985 4/8; Pěkná, 23 Jul 1987 1/2; Pohorí na Šumavě, 10 ex.; Rabí, 22 Jun 1985 9/6; Stožec, 3 Aug 1995 2/0; Sušice, 23 Jul 1968 0/1; Vimperk, 20 Jun 1982 1/0; Vimperk–Sviní Vrch, 18 Jun 1982 10/1, 20 Jun 1982 3/0; Volary 22 Jul 1971 1/4; Vyšný–Vyšenské Kopce 29 May 1997 2/0; Zdíkov 22 Jul 1971 0/4; Žofín–Žofínský Prales 27 Jun 1970 6/5. In Czech Republic the second most common species of the family living on deciduous trees and shrubs, on raspberry growth, sometimes on conifers on forest clearings, in parks, orchards and gardens.

Chrysopa pallens (Rambur, 1838). Benešov nad Černou, 1 spec.; Borová Lada–Chalupská Slat', 1 Aug 1996 0/1, 12 Aug 1998 0/1; Klenčí pod Čerchovem, 14 Aug 1974 0/1; Mokrý, 26 Jul 1968 0/2; Olšany, 22 Jun 1985 1/0; Strakonice, 20 Jul 1971 0/1; Vimperk–Sviní Vrch, 18 Jun 1982 0/1. Our biggest species of the genus *Chrysopa* living on deciduous trees and shrubs in forests, parks, fruit orchards and gardens as well.

Dichochrysa flavifrons (Brauer, 1850). Vyšný–Vyšenské Kopce, 2 Aug 1989 1/0. Species living on deciduous trees especially in warmer habitats.

Dichochrysa prasina (Burmeister, 1839). Nové Hrady, 3 spec.; Smolov, 13 Aug 1974 1/0; Vyšný–Vyšenské Kopce, 2 Aug 1989 0/2; Zdíkov, 22 Jul 1971 0/1. Species found on deciduous as well as on coniferous trees and shrubs in lighter dryer habitats.

Dichochrysa ventralis (Curtis, 1834). Benešov nad Černou, 37 spec.; Čachrov, 24 Jul 1968 0/1; Nové Hrady, 1 spec.; Olšany, 22 Jun 1985 0/1; Rabí, 22 Jun 1985 2/3; Sušice, 23 Jul 1968 0/1, 21 Jun 1985 0/1; Vimperk–Sviní Vrch, 20 Jun 1982 0/1; Volary, 23 Jul 1971 0/1; Žofín–Žofínský Prales, 1 spec. Species found on deciduous as well as on coniferous trees and shrubs rather in colder and moister habitats.

Cunctochrysa albolineata (Killington, 1935). Benešov nad Černou, 6 spec.; Olšany, 22 Jun 1985 1/1; Rabí, 22 Jun 1985 3/0; Nový Kramolín, 15 Aug 1974 1/1; Újezd, 16 Aug 1974 0/1; Vimperk–Sviní Vrch, 22 Jun 1982 1/0; Vyšný–Vyšenské Kopce, 2 Aug 1989 0/1. Found individually on trees and shrubs.

Peyerimhoffina gracilis (Schneider, 1851). Annín, 25 Jul 1968 0/1; Babylon, 14 Aug 1974 1/4; Borová Lada–Chalupská Slat', 24 Jul 1996 1 larva; Dobrá–Mrtvý Luh, 12 Aug 1998 0/1; Horšovský Týn, 13 Aug 1974 2/1; Klenčí pod Čerchovem, 14 Aug 1974 0/1; Modrava–Hraniční Slat', 3 Aug 1992 0/1; Nové Hrady, 1 spec.; Nový Kramolín, 15 Aug 1974 1/0; Smolov, 13 Aug 1974 2/6; Sušice, 23 Jul 1968 1/0; Zátoň–Boubínský Prales, 23–26 Sep 2005 0/1, ENTÚ lgt.; Žofín–Žofínský Prales, 5 Sep 1992 0/1, Strejček lgt.. Species found on conifers, especially on spruce *Picea abies* mostly individually. Larger quantity sometimes occurs in late summer. It seems the population density increases in recent years. Adults hibernate so that the species occurs early in spring.

Chrysoperla carnea (Stephens, 1836). Annín, Babylon, Benešov nad Černou, Čachrov, Černá v Pošumaví, Chlum–Mrtvý Luh, Dobrá, Dobrá–Mrtvý Luh, Drahonice, Filipova Huť, Horská Kvilda, Horšovský Týn, Husinec, Javorník, Jiříčná, Kaplice, Klenčí pod Čerchovem, Krasetín–Klet', Kvilda, Kvilda–Jezerní Slat', Lenora, Lenora–Velká Niva, Modrava, Modrava–Hraniční Slat', Modrava–Rokytská Slat', Nové Hrady, Nový Kramolín, Olšany, Pohoří na Šumavě, Rabí, Stožec, Strakonice, Sušice, Újezd, Vimperk–Sviní Vrch, Volary, Vyšný–Vyšenské Kopce, Zátoň, Zátoň–Boubínský Prales, Zdíkov, Žofín Prales: 1960–2005: 6 May – 6 Oct, 280 spec. In Czech Republic most common green lacewing, which can be found almost everywhere from early spring to autumn. Adults hibernate even in human dwellings among others. Frequent findings are caused by its biology. Adults lay eggs especially on low herbaceous vegetation in meadows and fields in “culture steppe”. In closed forests they occur less often. Adults after incubation fly together on shrubs and trees, very often on oak *Quercus robur*, maples *Acer sp.*, but on other deciduous trees as well, including fruit trees, trees in parks, orchards and gardens. On these places adults gather from July in big number. In that period, in August especially, only very little number of other species of green lacewings occurs. Striking is then hibernation in human dwellings, where they appear on windows when the temperature rises. All the factors mentioned lead to frequent finding of this species. Change of their colour from green to yellow with red spots is remarkable as well.

Myrmeleontidae

Myrmeleon formicarius Linnaeus, 1767. Dobrá, 12 Aug 1998 2 + (10) larvae; Klenčí pod Čerchovem, 14 Aug 1974 4 larvae; Krasetín–Klet', 21 Aug 1996 2 + (10) larvae; Mříč, 21 Aug 1996 3 + (50) larvae; Rabí, 22 Jun 1985 1/0; Stožec–Stožec Mt., 3 Aug 1995 12 + (80) larvae; Zátoň–Zátoňská Hora, 10 Jul 1994 1 + (10) larvae, J. Strejček lgt. MERGL (2005) was finding larvae abundantly in the Český Les Mts. near the municipality of Rybník in the 1990s. The most common and most distributed antlion of the Czech Republic. Larvae make

catching traps in dry unshaded places directed to the south without vegetation. They can be found along forest roads, on the margins of forest clearings, sandpits etc. Adults can be found only individually and rather by chance.

Quantitative assessment

Dominance

It was assessed 2937 specimens of the order Neuroptera collected in the Bohemian Forest and detected 51 species from 6 families. From the Czech Republic 85 species and from Bohemia 74 species are known. That means it is 60% of the total quantity of the species from the Czech Republic and 69% from Bohemia. Quantitative assessment of each species corresponds to vegetation composition of habitats, where spruce growth (Table 1) dominated. The most frequently found species *Coniopteryx pygmaea* and *Hemerobius pini* are associated with coniferous trees, spruce including. They form 25% from the total number of collected and assessed material. Then species *Chrysoperla carnea* follows, which belongs to the most common species in the Central Europe at all and which can be found in various habitats, including individuals that hibernate in human edifices. Together the 3 mentioned species form more than 35% of totally collected species. After previously mentioned species 5 other species follow of which 4 live on deciduous trees: *Hemerobius micans*, *Semidalis aleyrodiformis*, *Chrysopa perla*, *Coniopteryx esbenpeterseni*, and one *Conwentzia pineticola* on conifers. Four of them belong to most common species, only *C. esbenpeterseni* belongs to exceptions. Usually it is found only individually not on many localities. Next 12 species follow in the studied material representing from 1 to 5%. Part of them belongs to species distributed from lowlands to mountains, part is associated rather to colder foothills, e.g. *Micromus paganus*, *Hemerobius marginatus*, *Nineta vittata*. Remaining 31 species were found less frequently and they are represented by less than 1%. Seven species of them found only accidentally by 1 specimen: *Parasemidalis fuscipennis*, *Sisyra terminalis*, *Hemerobius simulans*, *Symphorobius pellucidus* and *Nothochrysa capitata*.

Table 1. Number (abundance) of assessed specimens (spec.) of individual species of the order Neuroptera from Bohemian Forest and their representation (dominance) in percentages and comparison with order according to number of occurrence of the species in samples.

Order of abundance	Species	Number of spec.	Dominance (%)	Order of frequency
1	<i>Coniopteryx pygmaea</i>	395	13.45	1
2	<i>Hemerobius pini</i>	338	11.51	2
3	<i>Chrysoperla carnea</i>	309	10.52	3
4	<i>Hemerobius micans</i>	194	6.61	5–6
5	<i>Semidalis aleyrodiformis</i>	185	6.30	17
6	<i>Conwentzia pineticola</i>	169	5.75	4
7	<i>Coniopteryx esbenpeterseni</i>	164	5.58	42
8	<i>Chrysopa perla</i>	162	5.52	9
9	<i>Conwentzia psociformis</i>	88	3.00	29
10	<i>Hemerobius humulinus</i>	73	2.49	5–6
11	<i>Helicoconis lutea</i>	73	2.49	7
12	<i>Micromus paganus</i>	64	2.18	11
13	<i>Wesmaelius quadrifasciatus</i>	54	1.84	10
14	<i>Chrysotropia ciliata</i>	52	1.77	22
15	<i>Hemerobius marginatus</i>	50	1.70	14

Table 1. Continued.

Order of abundance	Species	Number of spec.	Dominance (%)	Order of frequency
16	<i>Dichochrysa ventralis</i>	49	1.67	21
17	<i>Nineta vittata</i>	47	1.60	13
18	<i>Hemerobius nitidulus</i>	46	1.57	8
19	<i>Hemerobius lutescens</i>	40	1.36	15
20	<i>Nineta pallida</i>	36	1.23	26
21	<i>Hemerobius stigma</i>	28	0.95	19
22	<i>Coniopteryx tineiformis</i>	28	0.95	33
23	<i>Peyerimhoffina gracilis</i>	26	0.89	16
24	<i>Nineta flava</i>	26	0.89	20
25	<i>Myrmeleon formicarius</i>	25	0.85	25
26	<i>Micromus angulatus</i>	25	0.85	34
27	<i>Hemerobius atrifrons</i>	21	0.72	18
28	<i>Osmylus fulvicephalus</i>	20	0.68	32
29	<i>Symphorobius fuscescens</i>	18	0.61	30
30	<i>Wesmaelius nervosus</i>	17	0.58	19
31	<i>Cunctochrysa albolineata</i>	16	0.55	27
32	<i>Micromus lanosus</i>	14	0.48	23
33	<i>Hemerobius fenestratus</i>	13	0.44	24
34	<i>Hemerobius contumax</i>	12	0.41	40
35	<i>Micromus variegatus</i>	10	0.34	31
36	<i>Chrysopa pallens</i>	9	0.31	28
37	<i>Dichochrysa prasina</i>	7	0.24	36
38	<i>Coniopteryx borealis</i>	6	0.20	37
39	<i>Drepanepteryx phalaenoides</i>	5	0.17	35
40	<i>Wesmaelius concinnus</i>	5	0.17	38
41	<i>Aleyropteryx loewii</i>	4	0.14	39
42	<i>Wesmaelius ravus</i>	3	0.10	41
43	<i>Sisyra nigra</i>	2	0.07	43
44	<i>Nineta inpunctata</i>	2	0.07	44
45–51	<i>Parasemidalis fuscipennis</i>	1	0.03	45–51
45–51	<i>Sisyra terminalis</i>	1	0.03	45–51
45–51	<i>Symphorobius elegans</i>	1	0.03	45–51
45–51	<i>Symphorobius pellucidus</i>	1	0.03	45–51
45–51	<i>Hemerobius simulans</i>	1	0.03	45–51
45–51	<i>Nothochrysa capitata</i>	1	0.03	45–51
45–51	<i>Dichochrysa flavifrons</i>	1	0.03	45–51

Frequency

Table 2 adduces how often particular species, of the total number of 61 taken samples, were found on localities. The three most common species according to number of specimens collected (*C. pygmaea*, *H. pini*, and *C. carnea*), and the species *Conwentzia pineticola*, which lives on conifers too, were collected in more than 50% of cases. From 20 to 50% of cases 12 species were represented including species living in foothills such as *H. micans*, *M. paganus*, *N. vittata*, *H. marginatus*, and other more common species *H. humulinus*, *H. nitidulus*, *H. stigma* and others. Another 12 species follow, representing from 10 to 20% of cases. Spe-

cies *Semidalis aleyrodiformis* is the fifth most common species by number of specimens, then, e.g., *Chrysotropia ciliata*, *Nineta pallida* but also *Micromus lanosus*, which is a local species more common in foothills, belong into this group. Last group is formed by 23 species where the most striking are species *Coniopteryx esbenpeterseni*, which was on the seventh place according to number of specimens but was found only in 2 localities, and *Conwentzia psociformis*, ninth according to number of specimens but represented only in 6 samples. Both species are associated to deciduous trees. *C. esbenpeterseni* especially to hazel *Corylus avellana*, in one locality occurred exceptional number of specimens, and species *C. psociformis* associated principally to oak *Quercus robur*.

Species associated to water by their development – from the genera *Osmylus* and *Sisyra* – were captured rather accidentally because of collecting methods were oriented to terrestrial especially forest habitats. Species *Myrmeleon formicarius* could have been found more often as well, if the research had been focused more on localities suitable for development of its larvae. In prestige publications concerning on studied area (PAPÁČEK & SOLDÁN 2003, MERGL 2005, PAPÁČEK et al. 2006) reference of only 5 species of lacewings can be found: *Sisyra fuscata* (= *S. nigra*), *S. terminalis*, *Osmylus fulvicephalus*, *Hemerobius micans*, and *Myrmeleon formicarius*. Information about occurrence are reported generally in most cases and the localities mentioned more accurately referring to two species of genus *Sisyra* and *Osmylus* will need revision. It is possible, that these data refer to findings of larvae and misidentification is presumable. In the publication about the Bohemian Forest (PAPÁČEK & SOLDÁN 2003), larva of *O. fulvicephalus* is figured, but with incorrect caption as spongillafly of the genus *Sisyra*. It is also probable as well, that the species *S. nigra* instead of much less abundant *S. terminalis*, was found.

Table 2. Neuropteran species frequency of representation from Bohemian Forest in 61 obtained samples and percentages and comparison with order according to number of determined specimens.

Order of frequency	Species	Frequency	Percentage	Order of abundance
1	<i>Coniopteryx pygmaea</i>	42	68.9	1
2	<i>Hemerobius pini</i>	41	67.2	2
3	<i>Chrysoperla carnea</i>	41	67.2	3
4	<i>Conwentzia pineticola</i>	32	52.5	6
5	<i>Hemerobius micans</i>	30	49.2	4
6	<i>Hemerobius humulinus</i>	30	49.2	10
7	<i>Helicoconis lutea</i>	28	45.9	11
8	<i>Hemerobius nitidulus</i>	26	42.6	18
9	<i>Chrysopa perla</i>	24	39.3	8
10	<i>Wesmaelius quadrifasciatus</i>	23	37.7	13
11	<i>Micromus paganus</i>	19	31.2	12
12	<i>Hemerobius stigma</i>	19	31.2	21
13	<i>Nineta vittata</i>	15	24.6	17
14	<i>Hemerobius marginatus</i>	13	21.3	15
15	<i>Hemerobius lutescens</i>	13	21.3	19
16	<i>Peyerimhoffina gracilis</i>	13	21.3	23
17	<i>Semidalis aleyrodiformis</i>	12	19.7	5
18	<i>Hemerobius atrifrons</i>	12	19.7	27
19	<i>Wesmaelius nervosus</i>	12	19.7	30

Table 2. Continued.

Order of frequency	Species	Frequency	Percentage	Order of abundance
20	<i>Nineta flava</i>	11	18.3	24
21	<i>Dichochrysa ventralis</i>	9	14.8	16
22	<i>Chrysotropia ciliata</i>	8	13.1	14
23	<i>Myrmeleon formicarius</i>	8	13.1	25
24	<i>Micromus lanosus</i>	8	13.1	32
25	<i>Hemerobius fenestratus</i>	8	13.1	33
26	<i>Nineta pallida</i>	7	11.5	20
27	<i>Cunctochrysa albolineata</i>	7	11.5	31
28	<i>Chrysopa pallens</i>	7	11.5	36
29	<i>Conwentzia psociformis</i>	6	9.8	9
30	<i>Symphorobius fuscescens</i>	6	9.8	29
31	<i>Micromus variegatus</i>	6	9.8	35
32	<i>Osmylus fulvicephalus</i>	6	9.8	28
33	<i>Coniopteryx tineiformis</i>	5	8.2	22
34	<i>Micromus angulatus</i>	5	8.2	26
35	<i>Drepanopteryx phalaenoides</i>	5	8.2	39
36	<i>Dichochrysa prasina</i>	4	6.6	37
37	<i>Coniopteryx borealis</i>	4	6.6	38
38	<i>Wesmaelius concinnus</i>	4	6.6	40
39	<i>Aleyropteryx loewii</i>	4	6.6	41
40	<i>Hemerobius contumax</i>	3	4.9	34
41	<i>Wesmaelius ravus</i>	3	4.9	42
42	<i>Coniopteryx esbepeterseni</i>	2	3.3	7
43	<i>Sisyra nigra</i>	2	3.3	43
44	<i>Nineta inpunctata</i>	2	3.3	44
45–51	<i>Parasemidalis fuscipennis</i>	1	1.6	45–51
45–51	<i>Sisyra terminalis</i>	1	1.6	45–51
45–51	<i>Symphorobius elegans</i>	1	1.6	45–51
45–51	<i>Symphorobius pellucidus</i>	1	1.6	45–51
45–51	<i>Hemerobius simulans</i>	1	1.6	45–51
45–51	<i>Nothochrysa capitata</i>	1	1.6	45–51
45–51	<i>Dichochrysa flavifrons</i>	1	1.6	45–51

CONCLUSIONS

Total number of 51 found species forms 60% of species known from the Czech Republic and 69% of species known from Bohemia. The species that occur on coniferous trees, especially on spruce, which forms majority of tree growth in Bohemian Forest, were found most commonly and most frequently: *C. pygmaea*, *H. pini*, and *C. pineticola*. Very common was also the species *Chrysoperla carnea*, most frequent in the Czech Republic and Central Europe. Also species of higher altitude were frequent, especially in foothills: *Hemerobius micans*, *Micromus paganus*, *Hemerobius marginatus*, and *Nineta vittata*. Rarer species, important for nature protection, are *Parasemidalis fuscipennis*, *Osmylus fulvicephalus*, *Sisyra terminalis*, *Micromus lanosus*, and *Nothochrysa capitata*. Some species found are on the Red list

of threatened species in the Czech Republic: *S. terminalis*, *M. lanosus*, *O. fulvicephalus*, *N. capitata*, *P. fuscipennis*, and *Wesmaelius ravus*. occurrence of antlion *Myrmeleon formicarius* is also interesting. The species *Nineta inpunctata* is new for the Czech Republic. Some species, relatively common elsewhere, were not found in the studied area: *Wesmaelius subnebulosus*, *Symphorobius pygmaeus*, *Chrysopa commata*, and *Ch. phyllochroma*. Probably infrequent species *Drepanopteryx algida* was not found here, too. Reason is insufficiently systematic research in the Bohemian Forest foothills.

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