

Moth flies (Diptera: Psychodidae) of the western Hercynian mountains, Sokolov open-cast coal mines and dumps (Czech Republic)

Jan Ježek, Jozef Oboňa, Ivo Přikryl & Blanka Mikátová

Moth flies (Diptera: Psychodidae) of the western Hercynian mountains, Sokolov open-cast coal mines and dumps (Czech Republic). – Acta Mus. Siles. Sci. Natur., 67: 193-292, 2018.

Abstract: New faunistic data of Psychodidae (Diptera) from Western Bohemia are presented (266 sites explored in 1993-2010, incl. literary data). Altogether 96 species of moth flies (adults) of 36 genera (55 % of all species of the family known from the Czech Republic are known to occur in the western Hercynian mountains, Sokolov open-cast coal mines, dumps and adjacent localities. 26 of these species were classified in the national Red List 2005 of threatened invertebrates. Critically endangered species CR (14), endangered species EN (4), vulnerable species VU (8) and without a Red status so far are two species nationally scarce NS. An extreme water chemistry of some mine localities (pH, alkalinity, N-NH₄⁺, N-NO₃⁻, N org., total N, total P, Na, K, Ca, Mg, Fe, Cl⁻, SO₄²⁻, Mn and conductivity) in a relation to collected adults were studied. The relationship between site altitude of all localities and the number of species as well as critically endangered species is accounted.

Key words: Diptera, Psychodidae, Trichomyiinae, Sycoracinae, Psychodinae, faunistics, Sokolov brown-coal basin, western Bohemia, Palaearctic Region, biodiversity, conservation potential, threatened species, water chemistry.

Introduction

The family Psychodidae (moth flies, Fig. 2) occurring in all biogeographic regions is taxonomically one of the most difficult groups of nematoceros Diptera relatively well-represented in the Palaearctic region with much more than 500 known species (Wagner 1990, 2018) of which almost 180 occur in the Czech Republic (Ježek 2009a, Ježek *et al.* 2012 and some unpublished new data see Ježek *et al.* 2019 in prepared = new checklist of moth flies of Czechia and Slovakia). Attention paid to these flies and the species richness of the psychodid fauna in the Czech Republic and Slovakia is continually move upward, see following papers from the last period: Ježek & Omelková (2012), Ježek *et al.* (2008, 2010, 2012, 2013, 2014), Kroča & Ježek (2015), Oboňa *et al.* (2014), Oboňa & Ježek (2012a, b, 2013, 2014), Omelková & Ježek (2012a, b, c), Šuláková *et al.* (2014), Oboňa & Kozánek (2018). Subfamilies Sycoracinae, Trichomyiinae and Psychodinae occur in Central Europe and are included in this paper in contrast to the world subfamilies Phlebotominae, Bruchomyiinae and Horaiellinae. Adult moth flies (size 2–3 mm) occur in wet, shaded habitats in the neighbourhood of springs, water reservoirs, and especially small bodies of running water. Generally, the adults have not been observed to feed in the wild; however, females of the Sycoracinae are known to suck the blood of certain amphibians. The larvae of non-phlebotomine moth flies are saprophagous, coprophilous, urinophilic, cochliothelmic, mycobiontic, psammobiontic, petrimadiculous, limimadiculous, bryomadiculous, and bryofluicolous, and are also found in phyto- and dendrotelmes or actively tunnel the rotting wood of fallen trees (Trichomyiinae). The larvae of Psychodidae often develop in decaying organic matter and leaf packs in peat-forming spring fens and mires (genera *Clytocerus*, *Peripsychoda*, *Pneumia*, and *Ulomyia*) or on gravel and stony fractions of substrate with calcium carbonate encrusted mats of bryophytes (subtribe Mormiina, and genera *Berdeniella* and *Pericoma*). Some larvae are associated with wet mosses (*Mormia*, *Pericoma*, *Tonnoiriella*), mollusc shells (*Philosepedon*), sandy sediments (*Parajungiella*), fungi (*Chodopsycha*), or are found in the slime film covering stones in streams (*Berdeniella* and *Parabazarella*), rotten parts of fallen trees (*Trichomyia*), dendrothelmae (*Lepiseodina*, *Sciria*), forest wallows (*Logima*) and sewer reservoir systems of prefabricated

buildings (*Clogmia*); some Psychodini are coprophilous and urinophilic (see Omelková *et al.* 2006, 2007, 2008). The larvae of some psychodids are detritus feeders inhabiting rotting wood or tree hole sediment (e.g. Mayer 1938, Vaillant 1989, Kitching 2004, Oboňa & Ježek 2012a,b) or organic solution filters (Šuláková *et al.* 2014). Only a few dipterists have visited the western Bohemia to collect moth flies and published extensive data (historical records see Vimmer 1905, 1907, 1913 – *Pericoma ocellaris* Mg., Aš, p. 103, 76 and 11; new records were published by Ježek 1977, 1983, 1984, 1985, 1987, 1990a, b, 1996, 1997, 1999, 2003, 2004, 2009b, Ježek & Hájek, 2007).

Material and methods

This study is based on 2730 slides of moth flies. The material was collected mainly in the Sokolov open-cast coal mine areas and adjacent localities (predominantly NW Hercynicum of CZ) between 1993 and 2010 – see maps 1, 2. A prime mover of the research biodiversity project was the Sokolov coal company SUAS – Vřesová, the Research Institute of fishery and hydrobiology VURH (1993-1996) – Vodňany, later the Research company ENKI (1997-2010) – Třeboň and the National Museum Praha (Museum of Natural History, Department of Entomology). Sporadic older historical specimens were collected in 1981 (a Resort project of the National Museum). The general natural history of the whole studied area (incl. NNR and NR – see e.g. Figs 3, 4) was characterised by Zahradnický *et al.* (2004). Some interesting details are added e.g. by Náprstek (1958), Václ (1964), Příkryl (1997), Rojik (2004a, b), Kuncová & Tyller (2009) and Polášková *et al.* (2017). Most of the material was recorded using Malaise traps - Figs 16, 18 (mostly a museum team work, emptied about three-weekly, generally only the date on which samples were removed is quoted in the list of material examined in the Results section), occasionally supplemented by yellow pan traps or individual collecting by sweep netting during many individual excursions financed by the National Museum Praha. The captured moth flies were preserved in 70 % ethanol in the field and subsequently cleared in chloralphenol, treated in xylol, determined by the first author and mounted on glass slides in Canada balsam in Prague. The voucher specimens are deposited in the National Museum, Praha, Czech Republic (NMPC). Observations were made using Carl Zeiss Jena (Germany) and Reichert (Austria) microscopes, with a mirror arm used as a drawing aid (see Fig. 1). Slides were numbered in the NMPC with two separate series of numbers: Inv. No. = Inventory Slide Number of the family Psychodidae (see Tkoč *et al.* 2014). Most of the recent data comes from a total of 266 localities (see the numbered list of collecting sites), coordinates, with detailed information included and supplied with the codes of fields in the faunistic and floristic grid mapping system for Central Europe (see map. 2) (Ehrendorfer & Hamann 1965, Zelený 1972, Pruner & Míka 1996). Identification keys used: Vaillant (1971-1983), Szabó (1983), Withers (1989a) and numerous unnamed original papers of different authors with descriptions of new species. The nomenclature is modified from Vaillant (1971-1983) and Wagner (1990, 2018) using the classifications of e.g. Ježek & van Harten (2005, 2009), Ježek (2007), Omelková & Ježek (2012b), Oboňa & Ježek (2014), Kvitte (2014) and Kroča & Ježek (2015). Environmental data are from the ENKI Třeboň chemical analysis database. The terminology of threatened species of moth flies is applied *sensu* Ježek (2005). Samples of water were taken in the field by I. Příkryl (ENKI) and water analyses were performed by laboratories of VURH – Vodňany, JIVAK – České Budějovice, SUAS – Vřesová and ENKI – Třeboň.

The following abbreviations are used: CR – Critically Endangered; EN – Endangered; ♀ – female; ENKI – Research company of solar and landscape energetics, pond fishing, water managements, using of natural and artificial swamps (Třeboň); HC – hand collecting; Imts. – inter mountains; JIVAK - Southern Bohemian aqueducts and canalization (České Budějovice); ♂ – male; MT – Malaise trap; Mts – mountains; NM – National Monument; NMPC – entomological collections of the National Museum in Prague, Czech Republic; NR – Nature Reserve; NNR – National Nature Reserve; NS – Nationally Scarce; PLA – Protected landscape area; SUAS – Sokolov coal company (Vřesová), SW – sweep netting; veg. – vegetation; TE – Tulgren's equipment; TN – total nitrogen; TP – total phosphor; VU – Vulnerable; VURH – Research Institute of fishery and hydrobiology (Vodňany); YPT – yellow pan traps; C – Chvojka leg.; F – Fikáček leg.; Fr – Frouz leg.; J – Ježek leg.; K – Kabelák leg.; Ko – Kosík leg.; M – Macek leg.; S – Skuhrovec leg.

LIST OF ALL COLLECTING SITES

Western Bohemia, all visited localities of Psychodidae (Diptera) (map. 3) incl. mining sites ■ (map. 4) (including recently disappeared localities as a result of progressing mining or successional ecosystem processes ①)

1. Anenská Ves env. Krajčková, wet meadow, 561 m a.s.l., veg.: *Alnus*, *Betula*, *Frangula*, *Filipendula*, *Rubus*, *Lysimachia*, *Caltha*, Daucaceae; 5741, 50°12.3'N, 12°33.3'E.
2. Antonínova Výšina env. Františkovy Lázně, Dvoreček pond, forest stream, 466 m a.s.l., veg.: *Picea*, *Pinus*, *Betula*, *Salix*, *Caltha*, Pteropsida; 5839, 50°7.9'N, 12°19.0'E.

3. Bečov nad Teplou, Zlatý potok brook nr. Zelená hora hill 664.5 m a.s.l., *Picea* - forest, veg.: *Salix*, *Corylus*, *Petasites*, Daucaceae, Poaceae; 5942, 50°4.9'N, 12°48.6'E.
4. between Boučí and Dolní Nivy, Podkrušnohorská výsypka dump, Svatava – Kraslice 210 road, salt marshes, ponds, 507 m a.s.l., veg.: *Betula*, *Calamagrostis*; 5741, 50°14.11'N, 12°35.90'E. ■
5. between Boučí and Horní Nivy, 586.5 m a.s.l., forest stream, rocks, fallen trees, veg.: *Picea*, *Salix*, *Betula*, *Rubus*, *Nasturtium*, Marchantiopsida, Musci; 5741, 50°14.6'N, 12°36.3'E. ■
6. between Boučí and Svatava, NW of Podkrušnohorská výsypka dump, nr. Svatava – Kraslice 210 road, opposite seepage slope to the Erika sand pit, swamps and ponds, flocculated iron, 485 m a.s.l., veg.: *Betula*, *Pinus*, *Salix*, *Lupinus*, *Juncus*, *Tussilago*, *Typha*, *Phragmites*; 5741, 50°12.81'N, 12°36.71'E. ■
7. between Bystřina (summer camp) and Rovná, Sokolov distr., forest, spring area and meadows, brook, Alnetum, 668 m a.s.l., veg.: *Salix*, *Betula*, *Picea*, *Rubus*, *Urtica*, *Equisetum*, *Juncus*, *Caltha*, *Carduus*, *Heracleum*, Pteropsida, Musci; 5841, 50°6.2'N, 12°39.2'E.
8. between Chocovice and Doubí nr. Tršnice railway station, oxbows of Ohře river, 426 m a.s.l., veg.: *Alnus*, *Salix*, *Caltha*; 5840, 50°7.1'N, 12°24.5'E.
9. between Dasnice, Šabina and Libavské Údolí env. Kynšperk nad Ohří, Ohře river (Fig. 6), oxbows, primary floodplain and deep pools, 410 m a.s.l., veg.: *Alnus*, *Impatiens*, *Comarum*, *Urtica*, *Calamagrostis*; 5841, 50°7.9'N, 12°34.3'E. ■
10. between Děpoltovice and Nivy, Vitický potok brook, *Picea* - forest, 450 m a.s.l., veg.: *Sambucus*, *Rubus*, *Caltha*, *Polygonum*, *Impatiens*, Pteropsida; 5742/5743, 50°17.0'N, 12°50.3'E.
11. between Dolní Nivy and Holý vrch hill 664 m a.s.l., Vřesová env., Pstruhový potok brook, forest; 5741, 50°15.8'N, 12°38.3'E. ■
12. between Dvorečky and former Libava (abolished settlement) env. Kynšperk nad Ohří, nr. Studánka game park, Malá Libava forest brook, marsh, 523 m a.s.l., veg.: *Alnus*, *Frangula*, *Sambucus*, *Rubus*, *Scirpus*, *Caltha*, *Heracleum*, *Urtica*, *Nasturtium*, Poaceae; 5941, 50°6.0'N, 12°34.2'E.
13. between Fojtov and Nový Fojtov env. Nová Role, Vitický potok brook, 619 m a.s.l., veg.: *Alnus*, *Frangula*, *Sorbus*, *Equisetum*, *Lupinus*, *Caltha*, *Juncus*, Pteropsida; 5642, 50°18.7'N, 12°47.4'E.
14. between Hazlov and Nebesa, spring area nr. Goethův vrch hill (670.3 m a.s.l.), *Picea* - forest, 610 m a.s.l., veg.: *Alnus*, *Acer*, *Caltha*, *Equisetum*, *Nasturtium*, *Urtica*, Daucaceae; 5839, 50°11.1'N, 12°14.3'E.
15. between Hluboký and Kfely env. Ostrov, Malý hluboký rybník pond, swamps, 435 m a.s.l., veg.: *Alnus*, *Betula*, *Sambucus*, *Potamogeton*, *Caltha*, *Urtica*, *Filipendula*, *Typha*; 5643, 50°19.2'N, 12°54.6'E.
16. between Horní Rozmyšl and Lipnice, Podkrušnohorská výsypka dump, marshes with young alder growth, trap of a small elevation, 510 m a.s.l.; 5742, 50°14.16'N, 12°40.33'E. ■
17. between Horní Rozmyšl and Lomnice, Podkrušnohorská výsypka dump, Chvojkova jezerní plošina lake basin, fresh dump top, 577 m a.s.l., veg.: *Typha*, *Tussilago*; 5741, 50°14.24'N, 12°39.12'E. ■
18. between Josefov and Hřebený env. Krajková, pond in field, outflow, swamps, Alnetum, 549 m a.s.l., veg.: *Sambucus*, *Sorbus*, *Rubus*, *Leonurus*, *Caltha*, *Ranunculus*, *Equisetum*, *Myosotis*, Pteropsida, Poaceae; 5741, 50°12.7'N, 12°34.1'E.
19. between Kacěřov and Bučina hill 500.9 m a.s.l., Libocký potok brook, 440 m a.s.l., primary floodplain, marshes, forest edge; 5841, 50°9.1'N, 12°30.5'E. ■
20. between Kacěřov and Hluboká, meadows, streams, sludge bed, 454 m a.s.l., veg.: *Alnus*, *Betula*, *Sorbus*, *Filipendula*, *Caltha*, *Equisetum*, *Polygonum*, Poaceae; 5841, 50°9.6'N, 12°30.0'E. ■
21. between Kfely and Ostrov, Bystřice stream, 412 m a.s.l.; 5643, 50°18.7'N, 12°55.9'E.
22. between Klest and Krapice env. Františkovy Lázně, Amerika pond, 442 m a.s.l., veg.: *Alnus*, *Salix*, *Heracleum*, *Caltha*, *Urtica*, *Juncus*, *Carex*; 5839, 50°6.6'N, 12°19.4'E.
23. between Královské Poříčí and Staré Sedlo, Údolí Ohře NM, Ohře river, forest, well, rapid outflow floodplain, marshes, 431 m a.s.l., veg.: *Alnus*, *Tilia*, *Picea*, *Betula*, *Sambucus*, *Frangula*, *Rubus*, *Urtica*, *Aegopodium*, *Impatiens*, *Caltha*, *Polygonum*, *Rumex*, *Melandrium*, *Ranunculus*, *Equisetum*, *Nasturtium*, *Leonurus*, *Myosotis*, *Deschampsia*, Poaceae, Pteropsida, Musci; 5842, 50°11.2'N, 12°42.4'E.
24. between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river, meadows, 413 m a.s.l., veg.: *Salix*, *Sambucus*, *Alnus*, *Crataegus*, *Acer*, *Ribes*, *Batrachium*, *Aegopodium*, *Urtica*, *Juncus*, Poaceae, Daucaceae, Musci; 5841, 50°07.6'N, 12°31.8'E. ■
25. between Lipnice and Vintířov, Podkrušnohorská výsypka dump, Panský rybník pond, rolling dump, a mining area of the Division Jiří Administration, marshes, 473 m a.s.l., veg.: *Alnus*, *Salix*, *Betula*, *Quercus*, *Rubus*, *Lupinus*, *Sparganium*, *Juncus*, *Phragmites*, *Potentilla*, *Urtica*, *Equisetum*, *Tussilago*, Poaceae; 5742, 50°14.2'N, 12°42.1'E. ■
26. between Lipnice and Vřesová, Podkrušnohorská výsypka dump, dry ridge dump part between recultivated area and shrubby slopes (*Salix*, *Betula*, *Populus*), trap of a higher elevation, 535 m a.s.l.; 5742, 50°14.47'N, 12°40.73'E. ■
27. between Lipoltov and Tuřany env. Kynšperk nad Ohří, small forest ponds, Lipoltovský potok brook, 436 m a.s.l., veg.: *Betula*, *Salix*, *Alnus*, *Equisetum*, *Scirpus*, *Typha*, *Heracleum*; 5941, 50°5.2'N, 12°31.0'E.

28. between Loket and Nové Sedlo, Ohře river, 391 m a.s.l., veg.: *Alnus*, *Acer*, *Sambucus*, *Crataegus*, *Batrachium*, *Urtica*, *Aegopodium*, Pteropsida, Daucaceae, Poaceae; 5842, 50°11.6'N, 12°44.6'E.
29. between Loket and Staré Sedlo, Ohře river, forest rocky spring area, stream, marshes, 432 m a.s.l., veg.: *Picea*, *Acer*, *Quercus*, *Corylus*, *Alnus*, *Betula*, *Rubus*, *Caltha*, *Deschampsia*, *Impatiens*, Pteropsida, Musci, Poaceae; 5842, 50°11.6'N, 12°43.7'E.
30. between Loket and Svatošské skály rocks, Kovářka forest district, Ohře river, islands, ponds, 407 m a.s.l., veg.: *Alnus*, *Ulmus*, *Salix*, *Batrachium*, *Impatiens*; 5842, 50°11.6'N, 12°46.9'E.
31. between Lomnice and Dolní Nivy, water reservoir, dump marshes, 540 m a.s.l., veg.: *Betula*, *Quercus*, *Pinus*, *Salix*, *Alnus*, *Scirpus*, *Caltha*, *Equisetum*; 5741, 50°13.7'N, 12°37.7'E. ■ 0
32. between Lomnice and Sokolov, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Karasí water reservoir, 430 m a.s.l., veg.: *Populus*, *Carex*, *Juncus*; 5741, 50°12.13'N, 12°38.33'E. ■ 0
33. between Lomnice and Sokolov, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Kosík's water reservoir, 388 m a.s.l.; 5741, 50°12.6'N, 12°38.8'E. ■ 0
34. between Lomnice and Sokolov, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Prasečí water reservoir, shallow periodical palustrine wetland, 450 m a.s.l., veg.: *Populus*, *Salix*, *Crataegus*, *Scirpus*, *Carex*, *Juncus*; 5741, 50°12.2'N, 12°38.6'E. ■ 0
35. between Lomnice and Sokolov, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Přesličková water reservoir (Fig. 19) and sedge swamps NW, forest edge, 450 m a.s.l., veg.: *Populus*, *Crataegus*, *Equisetum*, *Carex*; 5741, 50°12.28'N, 12°38.55'E. ■ 0
36. between Lomnice and Svatava, Matyáš dump, forest water reservoirs, 440 m a.s.l.; 5741, 50°12.0'N, 12°37.8'E. ■
37. between Lomnice and Vintířov, Olegovy výstřelky shothole pools, artificial small water reservoirs, crustated swamps in foot of Pastviny dump (Fig. 17), 490 m a.s.l., veg.: *Betula*, *Populus*, *Salix* and *Alnus*; 5742, 50°13.7'N, 12°39.9'E. ■
38. between Lomnice and Vintířov, Podkrušnohorská výsypka dump (Map 1), experimental waterfall, 490 m a.s.l., veg.: *Populus*, *Salix*, *Pinus*, *Carex*, *Juncus*; 5741, 50°13.25'N, 12°38.63'E. ■
39. between Lomnice and Vintířov, Podkrušnohorská výsypka dump, Klára water reservoir, 500 m a.s.l., veg.: *Populus*, *Salix*, *Pinus*; 5741, 50°13.33'N, 12°38.78'E. ■
40. between Mírová and Počerny env. Karlovy Vary, Chodovský potok brook, spring area, 400 m a.s.l., veg.: *Alnus*, *Sambucus*, *Sorbus*, *Aegopodium*, *Urtica*, *Nasturtium*; 5742, 50°14.1'N, 12°47.7'E. ■
41. between Mokřiny and Vernéřov nr. Aš, Bílý Halštrov brook, valley, swamps, 597 m a.s.l., veg.: *Alnus*, *Pinus*, *Salix*, *Crataegus*, *Caltha*, *Rumex*, *Filipendula*, Daucaceae; 5739, 50°12.9'N, 12°14.4'E.
42. between Nebanice and Odava env. Kynšperk nad Ohří, Ohře river, marshes, brook, 418.5 m a.s.l., veg.: *Alnus*, *Sambucus*, *Caltha*, *Nasturtium*, *Urtica*, *Iris*, *Galium*, Poaceae; 5840, 50°6.6'N, 12°29.0'E.
43. between Nebesa and Výhledy env. Aš, Halštrovský les forest, 702.3 m a.s.l., streams, swamps, veg.: *Picea*, *Alnus*, *Equisetum*, *Sphagnum*, Poaceae, Musci; 5739, 50°11.7'N, 12°15.0'E.
44. between Nejdek and Přebuz, Liščí údolí valley env. Strmý vrch hill (925.9 m a.s.l.), Skřiváň brook, 766 m a.s.l., veg.: *Acer*, *Pinus*, *Betula*, *Rubus*, *Urtica*, Pteropsida; 5642, 50°20.1'N, 12°39.2'E.
45. between Nová Role and Mezirolí, 478.1 m a.s.l., forest brook, swamps, Alnetum, veg.: *Betula*, *Caltha*, *Equisetum*, *Solanum*, *Caltha*, *Scirpus*; 5742, 50°16.5'N, 12°48.5'E.
46. between Nové Bukovany and Chlum Sv. Máří, U vodojemu water tank, forest stream, 495 m a.s.l., veg.: *Alnus*, *Betula*, *Sorbus*, *Acer*, *Urtica*, *Typha*, *Rubus*, Musci, Poaceae; 5841, 50°9.3'N, 12°32.8'E. ■
47. between Nový Fojtov and Lužec env. Nejdek, Nad Matysem hill 735.8 m a.s.l., forest swamps, veg.: *Picea*, *Sambucus*, *Caltha*, *Myosotis*, *Juncus*, *Sphagnum*; 5642, 50°18.9'N, 12°47.4'E.
48. between Rosnice and Stará Role, Karlovy Vary env., Václav flooded pit, 394 m a.s.l., veg.: *Alnus*, *Betula*, *Aesculus*, *Polygonum*, *Urtica*, *Sparganium*; 5743, 50°14.8'N, 12°50.6'E. ■
49. between Ruprechtov and Odeř env. Hroznětín, forest pond, marshes, Alnetum, 468 m a.s.l., veg.: *Salix*, *Carex*, *Urtica*, *Caltha*, *Filipendula*, *Lemna*, Daucaceae, Poaceae; 5643, 50°18.2'N, 12°50.8'E.
50. between Skalka and Ovčín nr. Hazlov, forest marshes, ponds, 602 m a.s.l., veg.: *Betula*, *Equisetum*, *Caltha*, *Juncus*, *Sphagnum*; 5839, 50°10.3'N, 12°16.7'E.
51. between Sokolov and Svatava, Riesel dump, water reservoir, 428 m a.s.l.; 5841, 50°11.27'N, 12°37.96'E. ■
52. between Svatava, Krajková and Habartov, Radvanovský potok brook, forest, 555 m a.s.l., veg.: *Pinus*, *Alnus*, *Betula*, *Quercus*, *Deschampsia*, *Caltha*, *Urtica*, Pteropsida, Marchantiopsida, Musci; 5741, 50°12.2'N, 12°33.5'E. ■
53. between Svatava and Královské Poříčí, Marie open-cast mine foreground, water reservoirs and swamps, 390 m a.s.l.; 5742, 50°11.7'N, 12°39.0'E. ■ 0
54. between Svatava and Lomnice, aggregated small localities: Svatava river – weir and Lomnický potok brook, Wolf, Kukla and Štikárna water bodies 444 m a.s.l.; 5741/5841, approximately 50°12.0'N, 12°37.7'E. ■

55. between Tatrovice and Chodov, Nové Chalupy seclusion env., Liščí kopec hill 616.2 m a.s.l., mixed forest glade, 500 m a.s.l.; 5742, 50°16.0'N, 12°42.6'E. ■
56. between Tatrovice and Chodov, Nové Chalupy seclusion env., Smolnická výsypka dump (Map 1) – northern margin, forest brook, 519 m a.s.l., veg.: *Picea*, *Alnus*, *Sphagnum*, *Vaccinium*, *Viola*, Pteropsida, Musci; 5742, 50°16.4'N, 12°43.4'E. ■
57. between Vonšov and Kateřina env. Františkovy Lázně, kaolin reservoir, 464 m a.s.l., veg.: *Betula*, *Alnus*, *Salix*, *Juncus*, *Sphagnum*, *Leonurus*, *Comarum*, *Lemna*, Poaceae, Musci; 5840, 50°9.5'N, 12°23.4'E.
58. between Výhledy and Skalka env. Hazlov, Hazlovský potok brook, meanders, forest pond, swamps, forest meadows, spring areas, 627 m a.s.l., veg.: *Alnus*, *Pinus*, *Picea*, *Sorbus*, *Rubus*, *Caltha*, *Equisetum*, *Nasturtium*, *Convalaria*, Pteropsida, Musci, Daucaceae; 5839, 50°10.9'N, 12°16.5'E.
59. Bočov env. Karlovy Vary, Bochovický potok brook, arable land, 668 m a.s.l.; 5844, 50°9.05'N, 13°4.01'E.
60. Bor env. Milhostov, Plesná brook, meadow, Alnetum, 464 m a.s.l., veg.: *Quercus*, *Betula*, *Frangula*, *Filipendula*, *Urtica*, *Impatiens*; 5840, 50°10.8'N, 12°26.9'E.
61. Borek env. Bernartice, Čankovský potok brook, swamps, 452 m a.s.l.; 6342, 49°38.17'N, 12°46.67'E.
62. Březová, Tisová forest brook, 596 m a.s.l., veg.: *Picea*, *Fagus*, *Sorbus*, *Acer*, *Sambucus*, *Corylus*, *Filipendula*, *Caltha*, *Equisetum*, Pteropsida, Daucaceae, Musci; 5841, 50°8.3'N, 12°39.1'E. ■
63. Bublák nr. Vackovec, Milhostov env., Plesná brook, spring area, marshes, mineral well, 433 m a.s.l., veg.: *Alnus*, *Betula*, *Sorbus*, *Salix*, *Rubus*, *Filipendula*, *Leonurus*, *Menyanthes*, *Orchis*, *Equisetum*, *Eriophorum*, *Caltha*, *Typha*, *Scirpus*, *Sphagnum*, *Lysimachia*, *Urtica*, *Rumex*; 5840, 50°8.6'N, 12°27.2'E.
64. Bystřina (summer camp) nr. Kostelní Bříza, Velká Libava brook and small rills, meanders, forest meadows, marshes, Picea - forest, 569 m a.s.l., veg.: *Alnus*, *Salix*, *Frangula*, *Rubus*, *Caltha*, *Carex*, *Myosotis*, *Nasturtium*, *Filipendula*, *Alisma*, *Scirpus*, *Rumex*, *Urtica*, Pteropsida, Poaceae; 5841, 50°6.5'N, 12°38.1'E.
65. Chlum Sv. Máří, Lítov-Boden dump edge, small pools, lentic water, 512 m a.s.l., veg.: *Alnus*, *Salix*, *Betula*, *Sambucus*, *Rubus*, *Urtica*, Daucaceae; 5841, 50°9.59'N, 12°32.81'E. ■
66. Chlum Sv. Máří, water reservoir, swamps, 478 m a.s.l., veg.: *Salix*, *Betula*, *Scirpus*, *Carex*, *Juncus*, *Lychnis*, *Aegopodium*, *Equisetum*, *Ranunculus*; 5841, 50°9.18'N, 12°32.83'E. ■
67. Chodová Planá, arable land, gutters, 527 m a.s.l.; 6142, 49°54.26'N, 12°43.64'E.
68. Chranišov env. Nové Sedlo, gutters and swamps, 438 m a.s.l.; 5742, 50°13.3'N, 12°44.5'E. ■
69. Choječná env. Cheb, forest stream, pond, 426 m a.s.l., veg.: *Picea*, *Quercus*, *Betula*, *Sambucus*, *Urtica*, *Nasturtium*, *Filipendula*; 5840, 50°6.2'N, 12°26.2'E.
70. Citice env. Sokolov, Ohře river, 406 m a.s.l., veg.: *Alnus*, *Betula*, *Crataegus*, *Quercus*, *Acer*, *Urtica*, *Galium*, *Impatiens*, *Ranunculus*, Poaceae, Daucaceae; 5841, 50°10.1'N, 12°37.3'E. ■
71. Citice env. Sokolov, Výsypka Antonín dump, forest meadow, 434 m a.s.l., veg.: *Alnus*, *Tilia*, *Picea*, *Salix*, *Carex*, Poaceae, Daucaceae; 5841, 50°10.2'N, 12°37.7'E. ■
72. Čankov nr. Karlovy Vary, pond, spring area, brook, Alnetum, 437 m a.s.l., veg.: *Equisetum*, *Nasturtium*, *Leonurus*, *Aegopodium*, *Urtica*, *Lemna*, Musci; 5743, 50°15.7'N, 12°51.0'E.
73. Černý Mlýn nr. Tisová env. Sokolov, wet meadows, 410 m a.s.l., veg.: *Betula*, *Alnus*, *Salix*, *Rubus*, *Filipendula*, *Iris*, *Equisetum*, *Carex*, *Juncus*, *Typha*, *Senetio*, Poaceae; 5841, 50°8.5'N, 12°35.7'E. ■
74. Dasnice env. Kynšperk nad Ohří, cottage colony nr. Ohře river, railway viaduct, polluted brook, wet meadows, 414 m a.s.l., veg.: *Alnus*, *Impatiens*, *Comarum*, *Urtica*, *Calamagrostis*; 5841, 50°8.8'N, 12°33.2'E. ■
75. Dasnice env. Kynšperk nad Ohří, small water reservoir and marshes nr. railway station, 444 m a.s.l., veg.: *Betula*, *Acer*, *Alnus*, *Sorbus*, *Rubus*, *Alisma*, *Impatiens*, *Urtica*, *Leonurus*, Poaceae; 5841, 50°8.4'N, 12°34.4'E. ■
76. Dasnice (village) env. Kynšperk nad Ohří, Habartovský potok brook, 416 m a.s.l.; 5841, 50°8.8'N, 12°34.1'E. ■
77. Dasnické rozcestí crossroad env. Nové Bukovany, forest marshes, 478 m a.s.l., veg.: *Alnus*, *Picea*, *Symphoricarpos*, *Equisetum*, *Caltha*; 5841, 50°9.7'N, 12°33.4'E. ■
78. Děpoltovice, wet meadows, Alnetum, 476 m a.s.l., veg.: *Crataegus*, *Betula*, *Caltha*, *Urtica*, *Nasturtium*, *Carex*, *Impatiens*, *Filipendula*, *Aegopodium*; 5742, 50°17.4'N, 12°49.7'E.
79. Děvín NR env. Milhostov, Lužní potok brook, forest, Alnetum, 438 m a.s.l., veg.: *Sambucus*, *Betula*, *Quercus*, *Pinus*, *Calamagrostis*, *Juncus*, *Phragmites*; 5840, 50°9.6'N, 12°25.6'E.
80. Dolní Nivy env. Vřesová, brook, spring area, 554 m a.s.l., veg.: *Sambucus*, *Acer*, *Alnus*, *Urtica*; 5741, 50°14.7'N, 12°38.6'E. ■
81. Dolní Nivy env. Vřesová, Podkrušnohorská výsypka dump (NW margin), vicinity of Nivy - Vřesová road, wet meadows, 551 m a.s.l., veg.: *Salix*, *Filipendula*, *Polygonum*, large growths of *Phragmites australis*; 5741, 50°14.4'N, 12°38.4'E. ■
82. Dolní Nivy env., Pstruhový potok brook between Ovčí vrch hill 662.4 m a.s.l. and Holý vrch hill 664.2 m a.s.l., authentic forest, 597 m a.s.l., veg.: *Alnus*, *Acer*, *Picea*, *Caltha*, *Nasturtium*, *Rubus*, Daucaceae, Pteropsida; 5741, 50°15.2'N, 12°38.5'E.
83. Dolní Pochlovice env. Kynšperk nad Ohří, Boží Požehnutí water reservoir (Map 1), 412 m a.s.l.; 5841, 50°7.8'N, 12°31.1'E. ■

84. Dolní Rotava (foundry), Rotava brook nr. cemetery, 551 m a.s.l., veg.: *Alnus*, *Pinus*, *Rubus*, *Urtica*, Pteropsida; 5741, 50°18.2'N, 12°35.2'E.
85. Dolní Rychnov env. Sokolov, golf course edge, Silvestr recultivated dump (Fig. 22, Map.1), 450 m a.s.l., marshes, seepage water, Alnetum; 5841, 50°9.27'N, 12°39.28'E. ■
86. Dolní Rychnov env. Sokolov, golf course water reservoir (shallow), 450 m a.s.l., Silvestr recultivated dump; 5841, 50°9.28'N, 12°39.65'E. ■
87. Dolní Rychnov env. Sokolov, Silvestr recultivated dump edge, Rychnovský potok brook, spring areas, Alnetum, clearcut, 490 m a.s.l., veg.: *Filipendula*, *Scirpus*, *Leonurus*, *Lysimachia*, *Nasturtium*, Musci; 5842, 50°9.33'N, 12°40.23'E. ■
88. Dvoreček nr. Františkovy Lázně, Mělký rybník pond, polluted marsh, 451 m a.s.l., veg.: *Betula*, *Quercus*, *Sambucus*, *Salix*, *Scirpus*, *Polygonum*, Poaceae; 5839, 50°7.7'N, 12°18.7'E.
89. Dvorek env. Františkovy Lázně, Stodolský potok brook, old stone-pit, meadows, 438 m a.s.l., veg.: *Salix*, *Alnus*, *Betula*, *Populus*, *Cirsium*, Poaceae; 5840, 50°8.4'N, 12°24.8'E.
90. Dvory env. Loket, valley, brook, meadows, swamps, 561 m a.s.l., veg.: *Betula*, *Salix*, *Rubus*, *Tanacetum*, *Caltha*, *Viola*, *Primula*, *Nasturtium*, Daucaceae; 5842, 50°10.4'N, 12°45.6'E.
91. Erika sand pit nr. Na Pískách cottages colony env. Sokolov, Svatava - Dolní Nivy 210 road, small water reservoirs and pools, 474 m a.s.l., veg. *Betula*, *Salix*, *Juncus*, *Typha*; 5741, 50°12.9'N, 12°36.2'E. ■
92. Františkovy Lázně, Klára forest pond, 443 m a.s.l., veg.: *Picea*, *Betula*, *Alnus*, *Sorbus*, *Typha*, *Caltha*, *Juncus*, Pteropsida; 5839, 50°7.1'N, 12°20.0'E.
93. Františkovy Lázně, Natálie water reservoir, spring area, 445 m a.s.l., veg.: *Betula*, *Heracleum*, *Juncus*; 5840, 50°6.7'N, 12°21.9'E.
94. Františkovy Lázně, woodpark, brook, 445 m a.s.l., veg.: *Quercus*, *Picea*, *Sambucus*, *Sorbus*, *Rubus*, *Urtica*, *Oxalis*, *Impatiens*, Poaceae, Pteropsida; 5839, 50°7.0'N, 12°20.4'E.
95. Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river, 412 m a.s.l., primary floodplain; 5841, 50°8.12'N, 12°32.37'E. ■
96. Habartov, Habartovský potok brook, důl Boden pit, 464 m a.s.l., veg.: *Betula*, *Alnus*, *Salix*, *Rosa*, *Polygonum*, *Tussilago*, *Juncus*, *Typha*, *Luzula*, *Tanacetum*, Daucaceae, Poaceae; 5841, 50°10.6'N, 12°33.2'E. ■
97. Habartov - Kluč, water reservoirs, spring areas, marshes nr. dump, 491 m a.s.l., veg.: *Alnus*, *Betula*, *Leonurus*, *Caltha*, *Juncus*, *Myosotis*, *Urtica*, *Aegopodium*, *Filipendula*, Musci; 5841, 50°11.8'N, 12°34.4'E. ■
98. Habartov - Úžlabí, Habartovský potok brook, 510 m a.s.l., Alnetum; 5841, 50°11.12'N, 12°32.27'E. ■
99. Habartov - V zátiší, 547.5 m a.s.l., forest marshes, veg.: *Alnus*, *Salix*, *Equisetum*, *Urtica*, *Impatiens*, Daucaceae; 5841, 50°11.8'N, 12°33.9'E. ■
100. Háje env. Březová, small forest stream – a tributary of Lomnický potok brook, 555 m a.s.l.; 5843, 50°10.98'N, 12°52.64'E. ■
101. Hájek env. Františkovy Lázně, Soos Museum, building and small neighbouring moss water reservoirs, swamps, streams, 438 m a.s.l., veg.: *Alnus*, *Betula*, *Quercus*, *Salix*, *Schoenoplectus*, *Enteromorpha*, *Phragmites*, *Carex*, *Juncus*, *Rumex*, Poaceae; 5840, 50°8.8'N, 12°24.2'E.
102. Hájek env. Ostrov, Umučený rybník pond, Alnetum, 454 m a.s.l., veg.: *Sambucus*, *Populus*, *Salix*, *Calamagrostis*, *Urtica*; 5743, 50°16.9'N, 12°55.4'E.
103. Hazlov env., Ovčín forest ponds, marshes, stream, 597 m a.s.l., veg.: *Alnus*, *Betula*, *Acer*, *Equisetum*, *Caltha*, *Nasturtium*, Pteropsida; 5839, 50°10.2'N, 12°16.9'E.
104. Hled'sebské rybníky ponds nr. Ostroh env. Hazlov, forest margin, brook, marsh, 455 m a.s.l., veg.: *Alnus*, *Picea*, *Betula*, *Scirpus*, *Urtica*; 5839, 50°7.4'N, 12°18.1'E.
105. Hluboká env. Habartov, Libocký potok brook, 457 m a.s.l., veg.: *Alnus*, *Sorbus*, *Rubus*, *Caltha*, *Senetio*, Pteropsida, Daucaceae; 5840, 50°10.4'N, 12°29.3'E. ■
106. Hluboký env. Ostrov, Hlubocký rybník pond, outflow, 426 m a.s.l., veg.: *Alnus*, *Salix*, *Caltha*, *Geum*, *Urtica*, flocculated iron; 5643, 50°19.1'N, 12°54.3'E.
107. Hora Svatého Šebastiána, Bezručovo údolí valley, Chomutovka brook, 775 m a.s.l., veg.: *Picea*, *Salix*, *Sorbus*, *Urtica*, Poaceae; 5445, 50°31.4'N, 13°16.0'E.
108. Horní Lazy env. Lázně Kynžvart, Alnetum, sludge bed, 817 m a.s.l., veg.: *Caltha*, *Nasturtium*, *Ranunculus*, *Heracleum*, *Myosotis*, *Urtica*, Poaceae; 5941, 50°3.4'N, 12°37.2'E.
109. Horní Nivy env. Vřesová, Lomnický potok brook, apiary, 604 m a.s.l., veg.: *Alnus*, *Heracleum*, *Myosotis*, *Caltha*, *Scirpus*, *Juncus*, *Nasturtium*; 5741, 50°15.0'N, 12°37.7'E. ■
110. Horní Nivy env., E of Ovčí vrch hill 662.4 m a.s.l., flat spring area, 631 m a.s.l., veg.: *Alnus*, *Betula*, *Acer*, *Rubus*, *Scirpus*, *Caltha*, *Nasturtium*, *Equisetum*, *Anemone*, Pteropsida; 5741, 50°15.2'N, 12°38.2'E.
111. Horní Nivy env., NE of Ovčí vrch hill 662.4 m a.s.l., authentic floodplain, serpentine windings, stream, spring area, 653 m a.s.l., veg.: *Alnus*, *Betula*, *Acer*, *Rubus*, *Scirpus*, *Caltha*, *Nasturtium*, *Equisetum*, *Anemone*, Pteropsida; 5741, 50°15.7'N, 12°38.3'E.
112. Horní Pochlovice env. Kynšperk nad Ohří, Libocký potok brook, Pochlovická minerálka spring env., swamps, 432 m a.s.l.; 5841, 50°8.12'N, 12°30.4'E. ■

113. Horní Rozmyšl, cowshed, marshes, Alnetum, 578 m a.s.l., veg.: *Salix, Betula, Carpinus, Sambucus, Scirpus, Nasturtium, Petasites, Filipendula, Heracleum, Lysimachia*; 5742, 50°15.3'N, 12°39.7'E. ■
114. Horní Rozmyšl, dump edge, water reservoir, brook, well, drain, flocculated iron, 522 m a.s.l., veg.: *Alnus, Salix, Typha, Heracleum, Lychnis, Myosotis, Caltha, Tanacetum, Filipendula, Juncus, Carex*; 5742, 50°14.96'N, 12°40.24'E. ■
115. Horní Rozmyšl env., northern edge of Podkrušnohorská výsypka dump, Slané údolí valley with growth of *Betula*, pools of spontaneous depressions, 540 m a.s.l.; 5741, 50°14.65'N, 12°39.54'E. ■
116. Horní Rozmyšl, primary meadows, brook, 536 m a.s.l.; 5742, 50°14.91'N, 12°39.85'E. ■
117. Horní Rozmyšl, Vřesový potok brook below quarry (Map 1), 521 m a.s.l., veg.: *Alnus, Betula, Frangula, Caltha, Equisetum, Pteropsida, Daucaceae*; 5742, 50°15.4'N, 12°40.8'E. ■
118. Horní Slavkov env., Třídómí forester's house, meadows, swamps, 624 m a.s.l.; 5842, 50°8.4'N, 12°44.6'E.
119. Hradiště nr. Vojkovic env. Ostrov, the confluence of Bystřice brook and Ohře river, 340 m a.s.l.; 5743, 50°17.5'N, 13°0.5'E.
120. Hroznětín nr. Ostrov, dried Alnetum, meadows, Jesenice brook, 343 m a.s.l., veg.: *Sambucus, Salix, Fraxinus, Iris, Glyceria, Urtica, Daucaceae*; 5643, 50°18.3'N, 12°52.3'E.
121. Hrušková env. Sokolov, Hruškovský potok brook, forest swamps, 566 m a.s.l.; 5842, 50°9.36'N, 12°42.26'E. ■
122. Jáchymov – Nové Město, small forest marshes, 846 m a.s.l.; 5643, 50°22.17'N, 12°53.76'E.
123. Jimlíkov env. Nová Role, kaoline-pits, Jimlíkovský potok white brook, 420 m a.s.l., veg.: *Alnus, Urtica, Caltha, Carex, Aegopodium, Pteropsida, Daucaceae*; 5741, 50°15.0'N, 12°46.7'E. ■
124. Jindřichovice env., pond, 648 m a.s.l., veg.: *Acer, Alnus, Ulmus, Sambucus, Fraxinus, Caltha, Lemna, Urtica, Ranunculus, Heracleum*; 5741, 50°17.3'N, 12°35.9'E.
125. Jindřichovice - village, dunging spring area, 651 m a.s.l., veg.: *Sambucus, Fraxinus, Urtica*; 5741, 50°16.9'N, 12°36.0'E.
126. Kacěřov env. Kynšperk nad Ohří, dungy ponds, 438 m a.s.l., veg.: *Alnus, Corylus, Acer, Frangula, Deschampsia, Caltha, Rubus, Polygonatum, Pteropsida*; 5841, 50°8.7'N, 12°30.1'E. ■
127. Karlovy Vary - central part of the town, Ohře river, 369 m a.s.l.; 5743, 50°13.9'N, 12°52.0'E.
128. Karlovy Vary - Doubí, Ohře river, 374 m a.s.l., veg.: *Salix, Alnus, Urtica, Polygonum, Impatiens*; 5742, 50°12.7'N, 12°49.4'E.
129. Karlovy Vary - Tašovice, Ohře river and brook, forest, rocks, 379 m a.s.l., veg.: *Fagus, Acer, Picea, Alnus, Sambucus, Impatiens, Urtica, Maianthemum, Melandrium, Pteropsida*; 5742, 50°12.6'N, 12°48.5'E.
130. Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake, marshes, 443 m a.s.l., veg.: *Pinus, Betula, Salix, Alnus, Picea, Rubus, Sphagnum, Potamogeton, Oxycoccus, Erica, Eriophorum, Leonurus, Typha, Lysimachia, Equisetum, Calamagrostis, Schoenoplectus, Juncus, Luzula, Carex, Pteropsida, Musci*; 5840, 50°9.6'N, 12°24.5'E.
131. Kfely env. Ostrov, Bystřice brook, pond, Alnetum, 417 m a.s.l., veg.: *Sambucus, Solanum, Comarum, Geranium, Urtica, Artemisia, Daucaceae*; 5643, 50°18.8'N, 12°54.6'E.
132. Kfely env. Ostrov, Jesenice brook, 415 m a.s.l., veg.: *Alnus, Sambucus, Ulmus, Geum, Urtica, Filipendula, Pteropsida*; 5643, 50°18.7'N, 12°54.5'E.
133. Kladská env. Mariánské Lázně, Třebízského potok brook nr. Králův kámen 851.9 m a.s.l., *Picea* - forest, veg.: *Salix, Nasturtium, Pteropsida*; 5942, 49°59.9'N, 12°41.1'E.
134. „Klondike“ nr. Vintířov, Podkrušnohorská výsypka dump, marshes, (Fig. 21), 474 m a.s.l., veg.: *Betula, Salix, Picea, Alnus, Juncus, Typha, Equisetum, Calamagrostis*; 5742, 50°14.56'N, 12°42.42'E. ■
135. „Klondike“ nr. Vintířov, Podkrušnohorská výsypka dump, slope treeless tufa fens (crusted swamps), flocculated iron, 470 m a.s.l., veg.: *Picea, Sambucus, Sorbus, Crataegus, Equisetum, Fragaria, Calamagrostis, Glyceria, Juncus, Cirsium, Marchantiopsida, Musci, Poaceae*; 5742, 50°14.50'N, 12°42.42'E. ■
136. „Klondike“ nr. Vintířov, Podkrušnohorská výsypka dump, terrestrial ecosystem, older forest recultivation (*Quercus, Alnus*), Alnetum, 490 m a.s.l.; 5742, 50°14.48'N, 12°42.23'E. ■
137. Kolová env. Kynšperk nad Ohří, forest spring area, 508 m a.s.l., veg.: *Picea, Frangula, Quercus, Sambucus, Carex, Scirpus, Senetio, Pteropsida*; 5841, 50°6.9'N, 12°33.1'E.
138. Kopanina nr. Habartov, Leopoldovy Hamry Nature Park, Horka water reservoir env., valley of a brook, marshes, Alnetum, 539 m a.s.l., veg.: *Alnus, Quercus, Sambucus, Rubus, Cerasus, Filipendula, Caltha, Equisetum, Urtica, Pteropsida, Daucaceae, Poaceae, Musci*; 5740, 50°12.2'N, 12°29.6'E.
139. Kopanina nr. Habartov, Leopoldovy Hamry Nature Park, „Nad stráněmi“, forest rills, Kopaninský potok brook, 566 m a.s.l., veg.: *Picea, Acer, Alnus, Sambucus, Impatiens, Daucaceae, Pteropsida, Musci*; 5740, 50°12.2'N, 12°28.7'E.
140. Kopanina nr. Habartov, Leopoldovy Hamry Nature Park, U rybníčků 637.2 m a.s.l., Pustý rybník pond, veg.: *Frangula, Carex, Scirpus, Sphagnum*; 5740, 50°12.7'N, 12°28.7'E.
141. Královské Poříčí, Pískový vrch hill, ponds, quarry, periodical outflow of a mine, wallows, 396 m a.s.l.; 5842, 50°11.9'N, 12°42.8'E. ■

142. Krapice nr. Františkovy Lázně, Amerika pond, 443 m a.s.l., veg.: *Alnus*, *Frangula*, *Salix*, *Carex*, *Heracleum*, *Caltha*, *Lysimachia*, *Juncus*, *Phragmites*; 5839, 50°6.8'N, 12°18.9'E.
143. Kraslice, Svatava river, 550 m a.s.l., 521 m a.s.l., veg.: *Alnus*, *Picea*, *Pinus*, *Impatiens*, *Polygonum*, Pteropsida; 5641, 50°20.1'N, 12°30.1'E.
144. Kraslice env., Rájecké údolí valley, Rájecký (Stříbrný) potok brook nr. Vítov 943.2 m a.s.l., *Picea* - forest, veg.: *Vaccinium*, Pteropsida, Poaceae; 5641, 50°23.1'N, 12°34.5'E.
145. Krásná Lípa (water reservoir) nr. Rovná env. Kostelní Bříza, stream, marsh, Alnetum, 593 m a.s.l., veg.: *Sambucus*, *Caltha*, *Carex*, *Myosotis*, Daucaceae; 5941, 50°5.9'N, 12°38.5'E.
146. Kynšperk nad Ohří, gutter, swamps, 433 m a.s.l., veg.: *Alnus*, *Salix*, *Iris*, *Nasturtium*, *Caltha*, *Urtica*, *Lychnis*, *Phragmites*, *Carex*, *Calamagrostis*, *Ranunculus*, *Heracleum*; 5841, 50°7.0'N, 12°32.3'E. ■
147. Kynšperk nad Ohří env., Studánka farming lonely houses, spring area, swamps, *Picea* - forest, 578 m a.s.l., veg.: *Alnus*, *Betula*, *Heracleum*, *Caltha*, *Nasturtium*, Pteropsida; 5941, 50°5.6'N, 12°35.0'E.
148. Lázně Kynžvart env., forest brook nr. Kladské rašeliny NNR peatbogs (Fig. 3), marshes, 925 m a.s.l., veg.: *Fagus*, *Acer*, *Picea*, *Alnus*, Pteropsida, Poaceae; 5941, 50°1.7'N, 12°38.4'E.
149. Lazy env., between Smrkovec (abolished settlement) and Žitný hill 793.2 m a.s.l., Malá Libava brook, cowshed, 712 m a.s.l., veg.: *Alnus*, *Betula*, *Picea*, *Heracleum*, *Caltha*, *Impatiens*, Pteropsida; 5941, 50°4.1'N, 12°36.9'E.
150. Libavské Údolí env. Kynšperk nad Ohří, valley, Velká Libava brook as tributary of Ohře river (above the firth) 415 m a.s.l.; 5941, 50°8.1'N, 12°32.4'E.
151. Lipnice env. Vintířov, Podkrušnohorská výsypka dump, marshes, including large areas put under fence of the Division Jiří Administration (Fig. 11, Map 1); 475 m a.s.l., veg.: *Alnus*, *Tilia*, *Quercus*, *Betula*, *Rubus*, *Typha*, *Equisetum*, Poaceae; 5742, 50°14.0'N, 12°41.6'E. ■
152. Lítov, dump, water reservoir, Částkovský potok brook, 494 m a.s.l., veg.: *Alnus*, *Betula*, *Sambucus*, *Caltha*, Pteropsida, *Rubus*, *Filipendula*, Daucaceae, Poaceae; 5841, 50°10.45'N, 12°31.45'E. ■
153. Lobzy nr. Březová, Lobézský potok brook, 630 m a.s.l., spring area, *Pinus* - forest, veg.: *Alnus*, *Picea*, *Acer*, *Rubus*, *Caltha*, *Senetio*, *Myosotis*, *Equisetum*, *Filipendula*, *Urtica*, Pteropsida, Daucaceae, Poaceae; 5842, 50°8.4'N, 12°41.9'E.
154. Loket, Lněný vrch hill 604.9 m a.s.l., forest spring area, 561 m a.s.l., veg.: *Acer*, *Alnus*, *Corylus*, *Impatiens*, *Marchantia*, Pteropsida, Daucaceae, Musci; 5842, 50°10.4'N, 12°45.6'E.
155. Loket (Fig. 7), Ohře river nr. Šibeniční vrch hill 498 m a.s.l., rocks, veg.: *Alnus*, *Impatiens*, *Urtica*, *Heracleum*, Pteropsida; 5842, 50°11.6'N, 12°46.0'E.
156. Loket - Split camping area and Staré koupaliště swimming pool, Ohře river, 434 m a.s.l., veg.: *Alnus*, *Sorbus*, *Ulmus*, *Acer*, *Picea*, *Betula*, *Tilia*, *Corylus*, *Frangula*, *Rubus*, *Lemna*, *Impatiens*, *Urtica*, *Batrachium*, Pteropsida, Poaceae; 5842, 50°11.7'N, 12°44.2'E.
157. Loket env., Nadlesí nr. Údolí, small pond, meadows, 615 m a.s.l.; 5842, 50°9.5'N, 12°45.2'E.
158. Lomnice env., Lomnický les forest, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Rašelinná water reservoir, 359 m a.s.l.; 5741, 50°12.4'N, 12°39.8'E. ■ 0
159. Lomnice env., Lomnický les forest, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Smrdutá and Topolová water reservoirs, 402 m a.s.l., veg.: *Salix*, *Betula*, *Populus*, *Glyceria*, *Sparganium*, *Typha*, *Leonurus*, *Cirsium*, Poaceae; 5741, 50°11.5'N, 12°38.9'E. ■ 0
160. Lomnice env., Lomnický les forest, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Šídlo water reservoir, 346 m a.s.l.; 5741, 50°12.4'N, 12°39.2'E. ■ 0
161. Lomnice env., Lomnický les forest, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Velký Břízák water reservoir and small water holes, 405 m a.s.l., veg.: *Acer*, *Betula*, *Populus*, *Sorbus*, *Quercus*, *Rosa*, *Rubus*, *Typha*, *Juncus*, *Carex*, *Leonurus*, *Urtica*, *Cirsium*, Daucaceae; 5741, 50°12.0'N, 12°38.8'E. ■ 0
162. Lomnice env., Lomnický les forest, Pinkoviště - inundated funnelled holes of sunken shafts in the area of old deep mining works, Záhadná water reservoir, 340 m a.s.l.; 5741, 50°12.3'N, 12°39.5'E. ■ 0
163. Lomnice env., Podkrušnohorská výsypka dump, Pastviny area, hayloft, treeless tufa fens, crusted swamps, water reservoirs; 503 m a.s.l., veg.: *Orchis*, *Typha*, *Juncus*; 5741, 50°13.3'N, 12°39.0'E. ■
164. Lomnice env., Podkrušnohorská výsypka dump, Pastviny area, Julie experimental water reservoir 1.5 km N of the village, 480 m a.s.l.; 5741, 50°13.20'N, 12°38.77'E. ■
165. Lomnice env., Podkrušnohorská výsypka dump, Pastviny area, marshes 2.5 km N of the village, 593 m a.s.l., veg.: *Typha*, *Juncus*, *Tussilago*, *Trifolium*, *Chrysanthemum*, *Lotus*, Poaceae, Musci; 5741, 50°14.0'N, 12°38.4'E. ■
166. Lomnice env., Starý Jiří (Fig. 15) open-cast mine and orange water reservoir, flocculated iron, 408 m a.s.l., veg.: *Populus*, *Crataegus*, *Scirpus*, *Carex*, *Juncus*; 5741, 50°12.5'N, 12°38.2'E. ■ 0
167. Lomnice (settlement) nr. Sokolov, spring area and brook near the church or football pitch, 443 m a.s.l.; 5741, 50°12.70'N, 12°37.96'E. ■

168. Luh nad Svatavou, Svatava river, 438 m a.s.l., veg.: *Picea*, *Pinus*, *Ulmus*, *Frangula*, *Sambucus*, *Polygonum*, *Pteropsida*; 5741, 50°13.2'N, 12°35.4'E.
169. Lužec env. Nová Role, Jezero pond, brook, sludge bed, 653 m a.s.l., veg.: *Alnus*, *Acer*, *Picea*, *Betula*, *Sambucus*, *Impatiens*, *Urtica*, *Sphagnum*, *Pteropsida*; 5642, 50°18.8'N, 12°49.4'E.
170. Lužec env. Nová Role, Lužecký potok brook, wet meadow, 630 m a.s.l., veg.: *Alnus*, *Sambucus*, *Picea*, *Equisetum*, *Polygonum*, *Scirpus*, *Myosotis*, *Daucaceae*, *Pteropsida*; 5642, 50°18.8'N, 12°48.4'E.
171. Lužná env. Františkovy Lázně, Horní rodinný rybník small forest pond nr. Plochý rybník pond, 456 m a.s.l., veg.: *Betula*, *Salix*, *Pinus*, *Rubus*, *Scirpus*, *Urtica*; 5839, 50°6.6'N, 12°17.0'E.
172. Lužná env. Františkovy Lázně, Horní Rybník (Miska) pond, 443 m a.s.l., veg.: *Alnus*, *Betula*, *Quercus*, *Rubus*, *Urtica*, *Lemna*, *Juncus*, *Impatiens*, *Caltha*, *Poaceae*; 5839, 50°6.8'N, 12°18.8'E.
173. Mariánské Lázně env., U Nimroda hill 788.7 m a.s.l., Mnichovský potok brook, Farská kyselka spring, *Picea* – forest, swamps, 780 m a.s.l., veg.: *Alnus*, *Pteropsida*; 5942, 50°0.9'N, 12°43.4'E.
174. Měděnec, forest streams, swamps, 845 m a.s.l.; 5544, 50°25.53'N, 13°7.28'E.
175. Mezihořská nr. Jindřichovice, Chodovský potok brook, pond, swamps, 643 m a.s.l., veg.: *Betula*, *Caltha*, *Equisetum*, *Sphagnum*, *Myosotis*, *Urtica*, *Juncus*; 5741, 50°16.7'N, 12°39.1'E.
176. Milíkov env., CHKO Slavkovský les, U těšovské hájenky hill 658 m a.s.l., slope swamps, *Picea* - forest, 658 m a.s.l., veg.: *Alnus*, *Equisetum*, *Sphagnum*, *Ajuga*, *Caltha*, *Trientalis*, *Musci*; 5941, 50°3.9'N, 12°33.5'E.
177. Milíkov nr. Dolní Žandov, CHKO Slavkovský les, forest margin, Braunova strouha brook, 514 m a.s.l., veg.: *Pinus*, *Picea*, *Acer*, *Alnus*, *Sorbus*, *Blechnum*, *Caltha*, *Rubus*, *Oxalis*, *Pteropsida*; 5941, 50°3.5'N, 12°33.4'E.
178. Mírová env. Chodov, Loketská výsypka dump, Jimlíkovský (Vlčí) potok brook, gutter, floodplain swamps, 407 m a.s.l., veg.: *Alnus*, *Betula*, *Sorbus*, *Sambucus*, *Populus*, *Salix*, *Caltha*, *Scirpus*, *Anemone*, *Filipendula*, *Valeriana*, *Nasturtium*, *Carex*; 5742, 50°14.48'N, 12°47.25'E. ■
179. Mírová env. Chodov, Zátíší, floodplain forest, swamps, 410 m a.s.l., veg.: *Alnus*, *Betula*, *Sambucus*, *Ribes*, *Scirpus*, *Carex*, *Ficaria*, *Daucaceae*; 5742, 50°14.0'N, 12°47.0'E. ■
180. Mlýnek env. Luby, outflow of a pond, 454 m a.s.l., veg.: *Alnus*, *Sambucus*, *Quercus*, *Sorbus*, *Rubus*, *Filipendula*, *Musci*, *Poaceae*; 5740, 50°11.6'N, 12°27.0'E.
181. Mlýnské Chalupy (abolished settlement) nr. Přebuz, forest margin, spring area, swamps, stream, 828 m a.s.l., veg.: *Alnus*, *Nasturtium*, *Caltha*, *Scirpus*, *Trientalis*; 5641, 50°21.0'N, 12°37.2'E.
182. Mokřina env. Kynšperk nad Ohří, Lipoltovský potok brook, dry marshes, 444 m a.s.l., veg.: *Salix*, *Scirpus*, *Urtica*, *Lysimachia*, *Rubus*, *Ranunculus*; 5941, 50°4.9'N, 12°32.1'E.
183. Nebesa env. Aš, Chebský les forest, 616.7 m a.s.l., meadows, pond, marshes, 615 m a.s.l., veg.: *Alnus*, *Scirpus*, *Caltha*, *Nasturtium*, *Carex*, *Daucaceae*, *Musci*; 5739, 50°11.0'N, 12°14.3'E.
184. Nejda env. Ostrov, Malá Nejda pond, meadows, 451 m a.s.l., veg.: *Alnus*, *Fraxinus*, *Aesculus*, *Sagitta*, *Sparganium*, *Urtica*, *Comarum*, *Juncus*, *Leonurus*; 5743, 50°16.8'N, 12°56.6'E.
185. Nejda env. Ostrov, Velká Hruška pond, swamps, forest margin, 462 m a.s.l., veg.: *Alnus*, *Sparganium*, *Urtica*; 5743, 50°16.8'N, 12°57.2'E.
186. Nejdek, Limnice brook, bridge, garbage, 416 m a.s.l., veg.: *Alnus*, *Sambucus*, *Symphoricarpus*, *Populus*, *Rubus*, *Polygonum*, *Urtica*, *Marchantiopsida*, *Musci*; 5642, 50°19.7'N, 12°44.7'E.
187. Nová Role, Čepcec 551 m a.s.l. env., forest, spring area, ponds, 456 m a.s.l., veg.: *Picea*, *Leonurus*, *Caltha*, *Lemna*; 5742, 50°16.7'N, 12°47.7'E.
188. Nová Role, Rolava river, 426 m a.s.l., veg.: *Alnus*, *Acer*, *Picea*, *Sorbus*, *Polygonum*, *Petasites*, *Pteropsida*; 5742, 50°16.54'N, 12°46.96'E. ■
189. Nová Role, Vlčí potok brook, forest, 480 m a.s.l., veg.: *Alnus*, *Picea*, *Scirpus*, *Caltha*, *Anemone*, *Equisetum*; 5742, 50°16.64'N, 12°45.14'E. ■
190. Nová Role, Vlčí potok brook, valley, Pod Liščím vrchem fork, 549 m a.s.l., veg.: *Alnus*, *Salix*, *Betula*, *Scirpus*, *Caltha*, *Filipendula*; 5742, 50°16.97'N, 12°44.68'E. ■
191. Nová Role env., Černý potok brook, gutter, swamps flocculated iron, 460 m a.s.l., veg.: *Betula*, *Picea*, *Alnus*, *Rubus*, *Scirpus*, *Urtica*, *Mentha*, *Equisetum*; 5742, 50°16.43'N, 12°45.21'E. ■
192. Nová Role env., margin of Smolnická výsypka dump (Map 1), Vlčí potok brook, cowshed, ponds, swamps, 450 m a.s.l., veg.: *Alnetum*, *Salix*, *Populus*, *Sambucus*, *Rubus*, *Caltha*, *Carex*, *Scirpus*, *Filipendula*; 5742, 50°16.39'N, 12°45.90'E. ■
193. Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture, 462 m a.s.l.; 5742, 50°16.29'N, 12°45.43'E. ■
194. Nová Role env., Vlčí potok brook, forest, 450 - 458 m a.s.l., veg.: *Alnus*, *Picea*, *Scirpus*, *Caltha*, *Anemone*, *Equisetum*; 5742, 50°16.46'N, 12°45.58'E. ■
195. Nová Ves env. Bečov nad Teplou, brook nr. Dominova skalka rockery NM, 727 m a.s.l., veg.: *Alnus*, *Picea*, *Pinus*, *Rumex*, *Filipendula*; 5942, 50°4.2'N, 12°46.9'E.
196. Nová Ves env. Bečov nad Teplou, U myslivny forester's lodge, wet meadow, 762 m a.s.l., veg.: *Salix*, *Trollius*, *Filipendula*, *Polygonum*, *Caltha*, *Orchis*, *Geum*, *Carex*, *Daucaceae*; 5942, 50°5.2'N, 12°45.4'E.

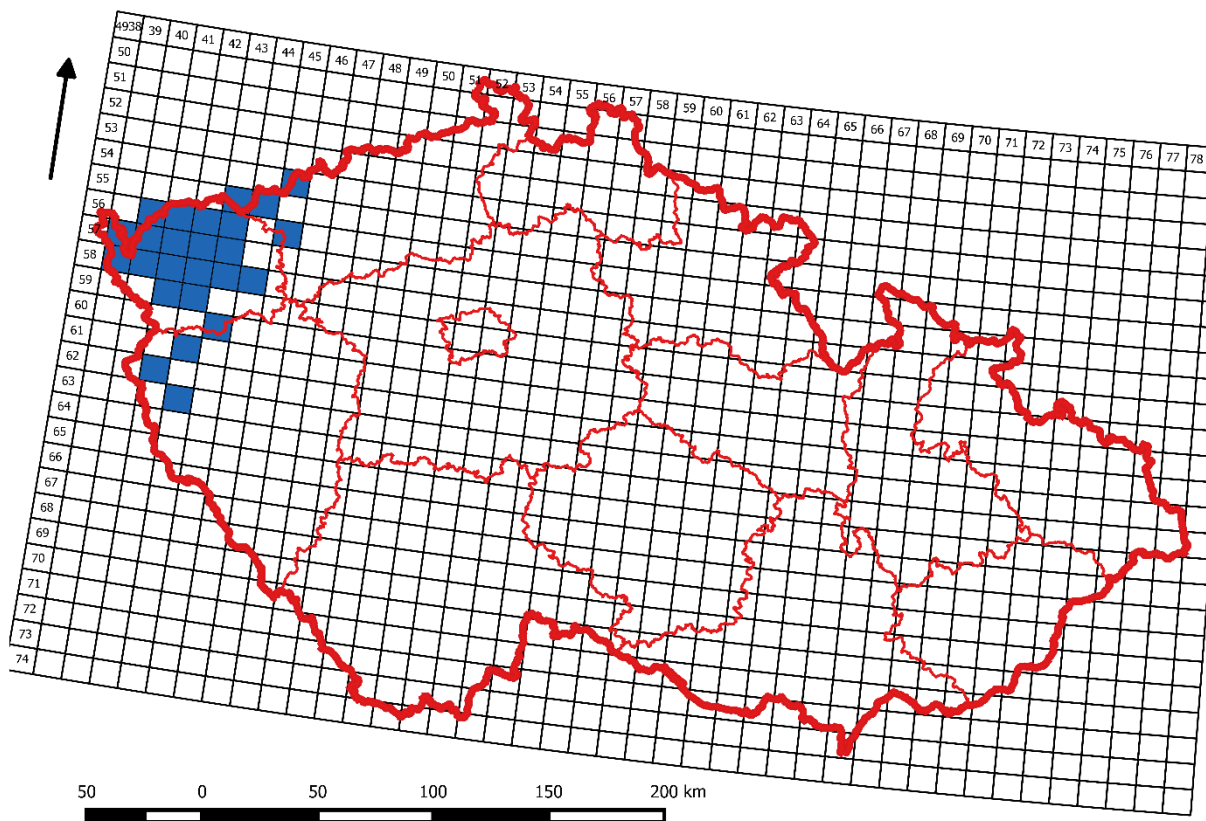
197. Nová Ves env. Bečov nad Teplou, Za Hospodou pond, village brook, 743 m a.s.l., veg.: *Fraxinus, Salix, Pirus, Petasites, Urtica*; 5942, 50°5.1'N, 12°46.4'E.
198. Nové Bukovany, forest marshes and small water reservoirs, 469 m a.s.l., veg.: *Alnus, Quercus, Caltha, Lysimachia, Urtica, Pteropsida*; 5841, 50°9.32'N, 12°34.94'E. ■
199. Nové Bukovany, Habartovský potok brook (Fig. 16), swamps, sewage treatment, 443 m a.s.l., veg.: *Alnus, Betula, Rubus, Ribes, Caltha, Equisetum, Urtica, Pteropsida*; 5841, 50°9.85'N, 12°33.93'E. ■
200. Nové Bukovany (1 km SW), Obora Dvory deer park, primary forest, Habartovský potok brook nr. railway viaduct, 430 m a.s.l., polluted watter from open-cast coal mines and dumps Lítov - Boden and Medard - Libík (Map 1), 456 m a.s.l., 5841, 50°9.65'N, 12°33.87'E. ■
201. Nové Hamry nr. Nejdek, Jelení vrch Nature Park, Rolava river nr. Čihadlo 897.3 m a.s.l.; 5642, 50°22.4'N, 12°42.1'E.
202. Nový Drahov env. Františkovy Lázně, Stodolský potok brook, swamps, brickfield, 439 m a.s.l., veg.: *Alnus, Salix, Betula, Rubus, Sphagnum, Juncus, Musci, Poaceae*; 5840, 50°8.3'N, 12°23.7'E.
203. Nový Kostel nr. Luby, Nad milířem hill 595.1 m a.s.l., forest swamps in a vicinity of ponds, 613 m a.s.l., veg.: *Picea, Frangula, Sphagnum, Equisetum, Carex, Scirpus, Vaccinium, Trientalis*; 5740, 50°12.7'N, 12°28.5'E.
204. Nový Kostel nr. Luby, U kyselky well, Svažecký potok brook, sludge bed, flocculated iron, Alnetum, 486 m a.s.l., veg.: *Salix, Rubus, Urtica, Filipendula, Lysimachia, Impatiens, Pteropsida*; 5740, 50°12.4'N, 12°27.5'E.
205. Nový Kostel railway station env., Hrzínský les forest, ponds, marshes, flocculated iron, 483 m a.s.l., veg.: *Alnus, Betula, Frangula, Salix, Rubus, Filipendula, Urtica, Carex, Juncus*; 5740, 50°13.3'N, 12°24.6'E.
206. Odeř env. Hroznětín, Jesenice forest brook, swamps, 563 m a.s.l., veg.: *Picea, Sambucus, Pteropsida*; 5643, 50°18.7'N, 12°50.0'E.
207. Oldřichov env. Pernink, a vicinity of the Oceán NR, *Picea* - forest, swamps, 908 m a.s.l., veg.: *Caltha, Equisetum, Myosotis*; 5642, 50°20.3'N, 12°46.8'E.
208. Oloví, shrubby banks of Svatava river, 484 m a.s.l.; 5741, 50°14.7'N, 12°33.8'E.
209. Ostrov env., Konopka pond, marshes, Alnetum, veg.: *Sambucus, Leonurus, Scirpus, Carduus, Urtica, Equisetum, Mentha*; 432 m a.s.l.; 5743, 50°17.4'N, 12°55.9'E.
210. Ostrov env., Ostrovské rybníky NR, Dolní Štít pond, 414 m a.s.l., veg.: *Alnus, Sambucus, Alisma, Lemna, Polygonum, Urtica, Comarum*; 5743, 50°17.8'N, 12°55.4'E.
211. Ostrov env., Ottův rybník pond, 419 m a.s.l., veg.: *Populus, Alnus, Sambucus, Phragmites, Juncus, Comarum, Sparganium, Polygonum, Filipendula, Urtica, Daucaceae*; 5643, 50°18.1'N, 12°55.6'E.
212. Plesná, Plesná brook, swamps, mineral water, flocculated iron, 492 m a.s.l., veg.: *Alnus, Sambucus, Betula, Quercus, Rubus, Impatiens, Urtica, Glyceria, Iris, Juncus*; 5740, 50°13.1'N, 12°21.8'E.
213. Podstrání env. Rovná, Slavkovský les PLA, Lobézský potok brook, 720 m nr. Stolec 784.5 m a.s.l., floodplain, veg.: *Alnus, Petasites, Pteropsida*; 5842, 50°6.0'N, 12°42.2'E.
214. Pozorka nr. Nejdek, Smolný vrch hill 754.4 m a.s.l., small forest brook, swamps, 746 m a.s.l., veg.: *Alnus, Picea, Nasturtium, Caltha, Geum, Pteropsida, Marchantiopsida, Musci*; 5642, 50°19.0'N, 12°46.3'E.
215. Prameny env. Mariánské Lázně, Dlouhá stoka brook, meadows, forest, 814 m a.s.l., veg.: *Picea, Salix, Heracleum*; 5942, 50°3.0'N, 12°42.3'E.
216. Prameny env. Mariánské Lázně, Mokřady pod Vlčkem NR, meadow, brook, moss, 769 m a.s.l.; 5942, 50°2.4'N, 12°43.9'E.
217. Přebuz, Rotava brook, meadows, swamps, flocculated iron, 856 m a.s.l., veg.: *Alnus, Populus, Picea, Myrrhis, Petasites, Nasturtium, Myosotis, Asplenium*; 5641, 50°21.6'N, 12°37.2'E.
218. Přebuz env., Přebuz Nature Park, Günterovy domky forest area, 824.9 m a.s.l., marshes, forest edge, 816 m a.s.l., veg.: *Alnus, Urtica, Imperatoria, Pteropsida*; 5641, 50°20.7'N, 12°36.4'E.
219. Přebuz env., Přebuzské vřesoviště heathland NM, 879 m a.s.l., veg.: *Picea, Sphagnum, Poaceae*; 5641, 50°22.7'N, 12°36.6'E.
220. Radvanov env. Habartov, vicinity brook, 527 m a.s.l., veg.: *Alnus, Acer, Betula, Nasturtium, Caltha, Aegopodium*; 5841, 50°12.2'N, 12°34.5'E. ■
221. Rotava railway station env. Kraslice, Leopoldovy Hamry Nature Park, Mezní potok brook, marshes, *Picea* - forest, 535 m a.s.l., veg.: *Pinus, Alnus, Salix, Scirpus, Typha, Pteropsida*; 5741, 50°17.3'N, 12°31.6'E.
222. Skalka nr. Hazlov, Hazlovský potok brook, meadows, spring area, ponds, 634 m a.s.l., veg.: *Alnus, Scirpus, Filipendula, Caltha, Equisetum, Daucaceae*; 5839, 50°11.0'N, 12°16.5'E.
223. Skalná nr. Františkovy Lázně, Kamenné Vrchy Nature Park, Kamenný vrch hill 561.5 m a.s.l., Ovčárna, forest margin, pond, 490 m a.s.l., veg.: *Alnus, Picea, Pinus, Heracleum, Iris, Typha, Solanum, Urtica, Pteropsida, Musci*; 5840, 50°10.9'N, 12°22.0'E.
224. Smolná env. Kraslice, valley of a brook, 565 m a.s.l.; 5641, 50°18.15'N, 12°31.64'E
225. Smolné Pece env. Nová Role, forest ponds, spring area, 548 m a.s.l., veg.: *Picea, Acer, Alnus, Caltha, Nasturtium, Pteropsida*; 5742, 50°17.4'N, 12°45.7'E.
226. Smrčina nr. Jindřichovice, meadows, brook, swamps, flocculated iron, 676 m a.s.l., veg.: *Alnus, Acer, Picea, Sambucus, Caltha, Polygonum, Scirpus, Myosotis*; 5741, 50°17.1'N, 12°37.1'E.

227. Smrčina nr. Plesná, Kamenné Vrchy Nature Park, Pstruhový potok brook, swamps, flocculated iron, garbage, 505 m a.s.l., veg.: *Alnus*, *Acer*, *Aesculus*, *Sambucus*, *Urtica*, *Filipendula*, *Heracleum*, *Aegopodium*, *Daucaceae*; 5740, 50°14.1'N, 12°22.1'E.
228. Sněžná nr. Kraslice, Hlinitý vrch hill, forest swamps, 675 m a.s.l.; 5640, 50°18.6'N, 12°28.4'E.
229. Sněžná - settlement, Sněžný potok brook, marshes, 671 m a.s.l.; 5640, 50°18.36'N, 12°29.38'E.
230. Sokolov env., Michal (Fig. 10) water reservoir vicinity, small pond, 499 m a.s.l., veg.: *Alnus*, *Betula*, *Rubus*, *Juncus*, *Potamogeton*, *Lemna*, *Leonurus*, *Lysimachia*, *Typha*, *Comarum*; 5842, 50°9.80'N, 12°41.84'E. ■
231. Soos NNR env. Františkovy Lázně, Císařský pramen spring (Fig. 5) (CO₂, H₂S, As, Fe), 440 m a.s.l., veg.: *Betula*, *Quercus*, *Picea*, *Calamagrostis*, *Juncus*, *Schoenoplectus*, *Poaceae*; 5840, 50°8.9'N, 12°24.2'E.
232. Soos NNR env. Františkovy Lázně, educational instructive nature trail, infusorial earth, moffettes in a volcanic caldera lake, flower-shaped crystallogenic minerals on the surface of the soil, marshes, pH 2.2, flocculated iron, 438 m a.s.l., veg.: *Betula*, *Phragmites*, *Juncus*, *Rumex*, *Schoenoplectus*, *Triglochin*, *Musci*; 5840, 50°9.0'N, 12°24.3'E.
233. Soos NNR env. Františkovy Lázně, Sázek brook, turfý banks, 439 m a.s.l.; 5840, 50°9.3'N, 12°25.0'E.
234. Soos NNR env. Františkovy Lázně, Vonšov area, peatlands, 445 m a.s.l., veg.: *Pinus*, *Betula*, *Salix*, *Sphagnum*, *Typha*, *Comarum*, *Juncus*, *Eriophorum*, *Oxycoccus*; 5840, 50°9.1'N, 12°23.5'E.
235. Spomyšl env. Tatrovice, Tatrovická stoka drain, floodplain, 620 m a.s.l., veg.: *Alnus*, *Fraxinus*, *Betula*, *Frangula*, *Scirpus*; 5742, 50°17.07'N, 12°40.91'E. ■
236. Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain, marshes, 620 m a.s.l., veg.: *Quercus*, *Pinus*, *Betula*, *Alnus*, *Typha*, *Poaceae*, *Musci*; 5742, 50°17.10'N, 12°41.12'E. ■
237. Stanovice dam, small tributary of Lomnický potok brook, 558 m a.s.l.; 5843, 50°10.4'N, 12°52.7'E.
238. Staré Sedlo env. Sokolov, Michal former open-cast coal mine vicinity, Starosedelský and Hruškovský potok brooks, swamps, floodplain, forest edge, 455 m a.s.l., veg.: *Alnus*, *Carex*, *Juncus*, *Typha*, *Equisetum*, *Nasturtium*, *Pteropsida*, *Musci*; 5842, 50°10.12'N, 12°42.18'E. ■
239. Stříbrná, village, Přebuz Nature Park, Stříbrný potok brook, marshes, flocculated iron, 608 m a.s.l., veg.: *Alnus*, *Acer*, *Betula*, *Rubus*, *Polygonum*, *Scirpus*; 5641, 50°21.8'N, 12°31.5'E.
240. Stříbrná env., Přebuz Nature Park, Rájecké údolí valley, Rájecký potok brook, Nancy camping, *Picea* - forest, meadow, 659 m a.s.l.; 5641, 50°22.7'N, 12°32.5'E.
241. Svatava env., Medard pit (Figs 8, 12, 13, 14), sludge bed, 399 m a.s.l., veg.: *Betula*, *Calamagrostis*, *Epilobium*, *Typha*, *Luzula*, *Musci*; 5841, 50°11.3'N, 12°37.2'E. ■ 0
242. Svatava env., Svatava river nr. Svatavský vrch hill 507.7 m a.s.l., floodplain, 449 m a.s.l.; 5741, 50°12.26'N, 12°35.85'E. ■
243. Svatava env., Svatavský vrch hill 507.7 m a.s.l., small forest pond, 468 m a.s.l.; 5741, 50°12.16'N, 12°36.64'E. ■
244. Svatošské skály rocks NM between Loket and Doubí, Slavkovský les PLA, Ohře river, 417 m a.s.l., veg.: *Alnus*, *Ulmus*, *Acer*, *Betula*, *Picea*, *Pinus*, *Urtica*, *Polygonum*, *Batrachium*, *Pteropsida*; 5842, 50°11.6'N, 12°48.9'E.
245. Šabina nr. Tisová env. Sokolov, spring of mineral water, 443 m a.s.l., veg.: *Alnus*, *Betula*, *Acer*, *Salix*, *Sambucus*, *Rubus*, *Filipendula*, *Equisetum*, *Caltha*, *Carduus*, *Senetio*, *Musci*, *Poaceae*; 5841, 50°7.7'N, 12°35.0'E.
246. Šindelová env. Kraslice, small brook, meadows, swamps, 598 m a.s.l.; 5641, 50°19.03'N, 12°35.63'E.
247. Tachov, Mže river, 504 m a.s.l.; 6241, 49°47.69'N, 12°37.88'E.
248. Tatrovice env. Vřesová (Fig. 9), forest brook, swamps, waterworks, 612 m a.s.l., veg.: *Picea*, *Pinus*, *Populus*, *Alnus*, *Caltha*, *Impatiens*, *Calamagrostis*, *Pteropsida*; 5742, 50°16.89'N, 12°41.66'E. ■
249. Tatrovice - Na skále env. Vřesová, meadow spring area, forest edge, 612 m a.s.l., veg.: *Betula*, *Crataegus*, *Picea*, *Equisetum*, *Veronica*, *Typha*, *Scirpus*, *Ranunculus*, *Daucaceae*; 5742, 50°16.1'N, 12°41.32'E.
250. Teplá env. Mariánské Lázně, Teplá river, Alnetum, 683 m a.s.l.; 6043, 49°58.6'N, 12°51.8'E.
251. Těšovice env. Sokolov, Ohře river floodplain, 399 m a.s.l., veg.: *Alnus*, *Acer*, *Picea*, *Quercus*, *Betula*, *Crataegus*, *Urtica*, *Polygonum*, *Batrachium*, *Aegopodium*, *Ranunculus*; 5842, 50°11.0'N, 12°40.4'E.
252. Tisová (power station), V Mokřině, brook, swamps, Slavkovský les PLA, 424 m a.s.l., veg.: *Betula*, *Salix*, *Alnus*, *Sambucus*, *Rubus*, *Heracleum*, *Urtica*, *Poaceae*, *Musci*; 5841, 50°8.3'N, 12°36.6'E.
253. Údolíčko env. Klášterec nad Ohří, Malodolský potok brook, forest sludge bed, 473 m a.s.l., veg.: *Alnus*, *Fraxinus*, *Acer*, *Picea*, *Urtica*, *Impatiens*; 5544, 50°23.8'N, 13°7.0'E.
254. Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook, spring areas, swamps, meadows, 500 m a.s.l., veg.: *Acer*, *Salix*, *Prunus*, *Carpinus*, *Filipendula*, *Urtica*, *Stipa*; 5645, 50°22.0'N, 13°13.7'E.
255. Velký Rybník nr. Hroznětín, Velký rybník pond, outflow, flocculated iron, 472 m a.s.l., veg.: *Picea*, *Alnus*, *Sambucus*, *Sorbus*, *Betula*, *Rubus*, *Carex*, *Pteropsida*; 5743, 50°17.5'N, 12°51.7'E.
256. Vintřov env., Vintřovská výsypka dump, Transects 4BN - 5BN, between Panský rybník pond and „Klondike“, Alnetum, swamps, 490 m a.s.l.; 5742, 50°14.53'N, 12°42.15'E / 50°14.57'N, 12°42.06'E. ■

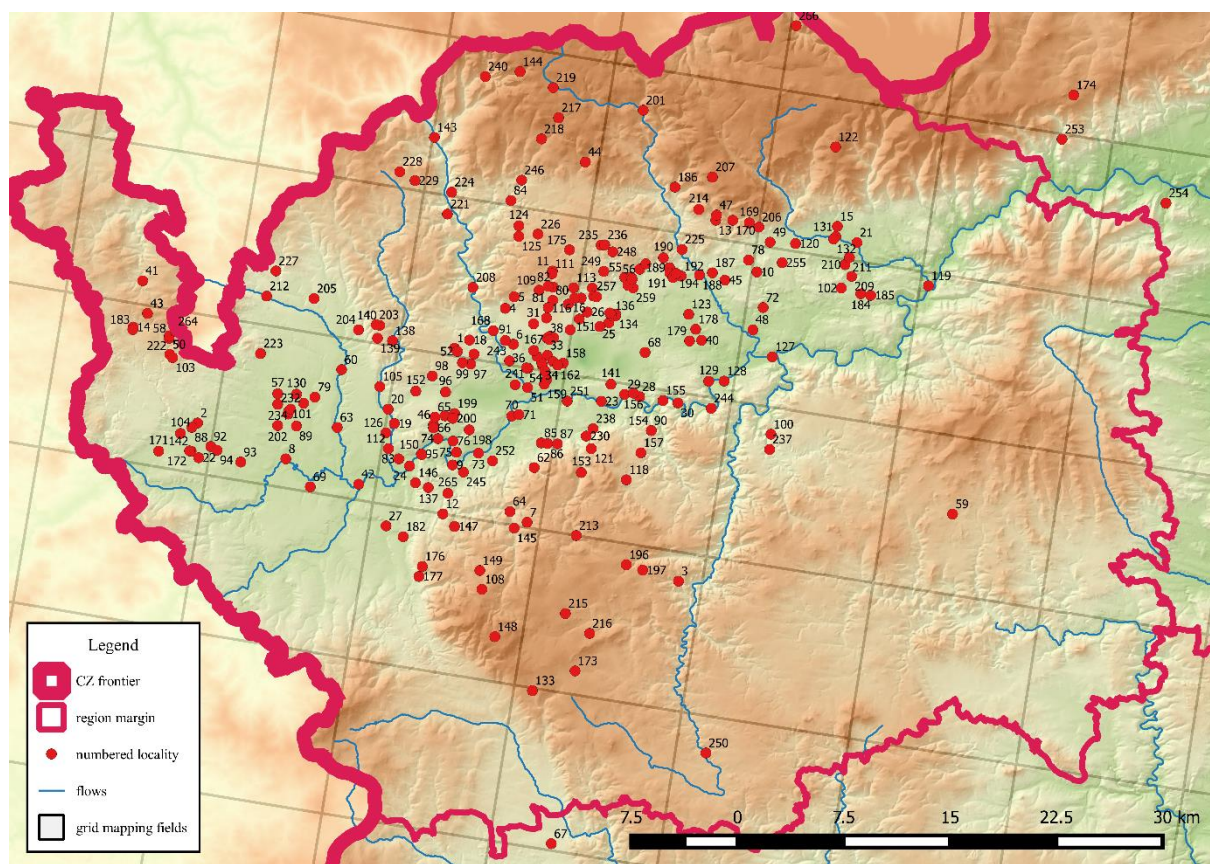
257. Vřesová env. Chodov, artificial channel of brook-transfers in the dump area, veg.: *Betula*, *Populus*, *Quercus*, 520 m a.s.l.; 5742, 50°15.11'N, 12°40.95'E. ■
258. Vřesová env. Chodov, northern border of the Smolnická výsypka dump, Černý potok brook nr. Rájecký Špičák hill 618 m a.s.l., veg.: *Picea*, *Acer*, *Caltha*, Pteropsida; 5742, 50°16.64'N, 12°43.71'E. ■
259. Vřesová env. Chodov, parallel water bodies and swamps to the sludge water defecation and sedimentation, 468 m a.s.l., veg.: *Betula*, *Alnus*, *Salix*, *Populus*, *Rubus*, *Heracleum*, *Scirpus*, *Juncus*, Daucaceae; 5742, 50°15.66'N, 12°43.19'E. ■
260. Vřesová env. Chodov, primary alder forest, NE margin of Podkrušnohorská výsypka dump, along the road 222 between Svatava and Vřesová, swamps, 504 m a.s.l., veg.: mainly *Scirpus*; 5742, 50°15.10'N, 12°41.13'E. ■
261. Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge, 476 m a.s.l.; 5742, 50°16.05'N, 12°42.98'E. ■
262. Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge, 468 m a.s.l.; 5742, 50°15.72'N 12°42.87'E. ■
263. Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge, 479 m a.s.l.; 5742, 50°15.98'N, 12°43.05'E. ■
264. Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook, forest spring area, 667 m a.s.l., veg.: *Alnus*, *Picea*, *Nasturtium*, *Caltha*, *Viola*, *Sphagnum*, *Equisetum*; 5839, 50°11.2'N, 12°16.8'E.
265. Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond and swamps near road, 494 m a.s.l., veg.: *Salix*, *Alnus*, *Betula*, *Urtica*, *Alisma*, *Lemna*, *Heracleum*, *Aegopodium*; 5841, 50°6.8'N, 12°34.3'E.
266. Zlatý Kopec env. Boží Dar, Zlatý Kopec Nature Park, Zlatý potok brook, peatbog, 749 m a.s.l., veg.: *Picea*, *Petasites*; 5543, 50°26.5'N, 12°50.3'E.



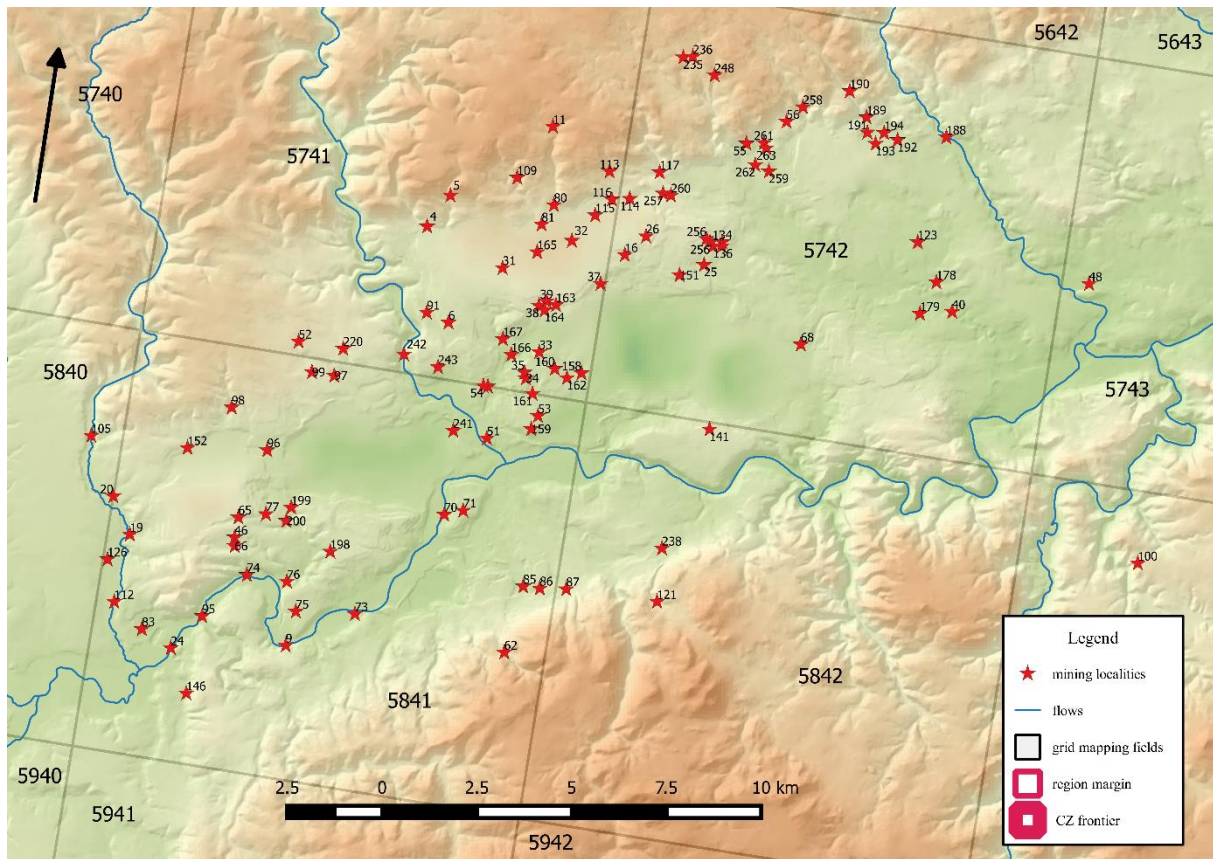
Map 1: Topographic map of dumps of the surface mining of SUAS (1: Horní Rozmyšl, quarry; 2: Smolnická výsypka dump; 3: Podkrušnohorská výsypka dump; 4: Jiří, quarry; 5: Družba, quarry; 6: Loketská výsypka dump; 7: Michal, quarry; 8: Medard – Libík, quarry and dump; 9: Silvestr, quarry; 10: Dasnice, quarry; 11: Lítov – Boden, quarry and dump; 12: Boží Požehnáni, quarry) (North is defined by upper margin of the map). Prepared by Milan Lisner.



Map 2: Map of the study area. Prepared by Blanka Mikátová.



Map 3: Map showing main sampling sites in western Bohemia. Prepared by Blanka Mikátová.



Map 4: Position of main studied mining localities. Prepared by Blanka Mikátová.

Results

PSYCHODIDAE SYCORACINAE

Sycorax Haliday in Curtis, 1839

1. *Sycorax tonnoiri* Jung, 1954

Material examined: Kopanina nr. Habartov, „Nad stráněmi“, Kopaninský potok brook (139), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 10643.

Distribution: Widespread in Central and Southern Europe (Bosnia & Herzegovina, Czech Republic, Croatia, Slovakia, and Slovenia) (Krek 1999, Kviřte *et al.* 2013).

Environmental notes, dates: June, 566 m a.s.l. Adults of this species was captured only at 1 site in western Bohemia, where water analysis was not performed.

Comments: A rare European species, critically endangered in the Czech Republic (Jeřek 2005).

TRICHOMYIINAE

Trichomyia Haliday in Curtis, 1839

2. *Trichomyia urbica* Haliday in Curtis, 1839

Published records: Marie open-cast mine foreground (53); Lomnický potok brook between Svatava and Lomnice (54) (Jeřek 1999).

Distribution: Known from Austria, Belgium, Czech Republic (Bohemia, Moravia), Denmark, France, Germany, Great Britain, Greece, Hungary, Ireland, the Netherlands, Norway, Poland, Romania, Slovakia, and Sweden (Jeřek 2003).

Environmental notes, dates: November, 390 - 444 m a.s.l. Adults of this species were captured in total at 2 sites in western Bohemia (one with water analysis - 54). The data are inapplicable because larvae of this species live only in the rotting wood of the fallen trees.

Comments: A rare European species, critically endangered in the Czech Republic (Jeřek 2005).

PSYCHODINAE
MORMIINI
MORMIINA

Katamormia Ježek, 1984

3. *Katamormia strobli* Ježek, 1986

Material examined: Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13444.

Distribution: Probably a central European species, known only from Austria and Czech Republic so far.

Environmental notes, dates: September, 551 m a.s.l. Adults of this species was captured only at one site in western Bohemia, where water analysis was not performed.

Comments: In CZ vulnerable (Ježek 2005).

Psychomormia Ježek, 1983

4. *Psychomormia incerta* (Eaton, 1893)

Published records: Lomnice env., Pastviny area (165) (Ježek 1999).

Material examined: „Klondike“ nr. Vintířov, Modráčový rybník pond (134), 9.viii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19567; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 19.v.1981, SW, 2 ♂♂, J, slides Inv. No. 608 and 609.

Distribution: A rare European species, known only from Great Britain, Belgium, and the Czech Republic (Ježek *et al.* 2014).

Environmental notes, dates: May to August, 474-593 m a.s.l. Adults of this species was captured in total on 3 sites. At 2 sites, water analysis was performed: 134 (incomplete) and 165.

pH 2.34-8.65; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-2.090; **N-NO₃⁻ (mg/l)** 0.001-3.60; **N org. (mg/l)** 0.302-3.56; **TN (mg/l)** 0.430-8.735; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 2.3-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 14.7-943.63; **Mg (mg/l)** 28.2-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 132.8-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 453-21528.

Comments: Known from hilly areas only.

5. *Psychomormia vaillanti* (Wagner, 1977)

Published records: Lomnice env., Pastviny area (165); Lomnice (settlement) nr. Sokolov (167) (Ježek 1996, 1999).

Material examined: between Boučí and Svatava, opposite seepage slope to the Erika sand pit (6), 3.vi.1997, SW, 1 ♂, J, slide Inv. No. 6595; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19519; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19490 and 19642; between Lomnice and Vintířov, experimental waterfall (38), 5., 26.v. and 18.vi.2008, MT, 4 ♂♂, C+J+M, slides Inv. No. 17492, 17503, 17544 and 17612; between Lomnice and Vintířov, Klára water reservoir (39), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17568; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12036; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13360; „Klondike“ nr. Vintířov, Modráčový rybník pond (134), 9.viii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19569; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18585; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13412.

Distribution: A very rare European species known only from Germany and Czech Republic.

Environmental notes, dates: May to September, 346-620 m a.s.l. Adults of this species were captured in total on 12 sites. The following water chemical analysis data ranges are from 6 sites of the most significant monitored localities within SUAS: 16, 37, 54, 134 (incomplete), 165 and 235.

pH 2.34-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-4.011; **N-NO₃⁻ (mg/l)** 0.001-3.60; **N org. (mg/l)** 0.119-3.619; **TN (mg/l)** 0.339-9.21; **TP (mg/l)** 0.006-6.602; **Na (mg/l)** 1.7-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 9-943.63; **Mg (mg/l)** 2.4-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 13-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 103-21528.

Comments: In the Czech Republic critically endangered (Ježek 2005).

PARAMORMIINI
PARAMORMIINA

Jungiella Vaillant, 1972

Jungiella s. str.

6. *Jungiella (Jungiella) hygrophila* Ježek, 1987

Published records: Lomnice env., Velký Březák water reservoir (161); Starý Jiří open-cast mine (166); Úhošťany (254) (Ježek 1987, 1999).

Material examined: between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7725; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12064; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9615; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6678; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 2 ♂♂, J, slides Inv. No. 644 and 649.

Distribution: Probably a central European species, known only from the Belgium, Czech Republic, Poland, Slovakia, and Ukraine (Ježek 1987, Ježek & Omelková 2012, Wagner 2018, Oboňa & Ježek 2014, Ježek *et al.* 2017, 2018b).

Environmental notes, dates: May to June, 405-500 m a.s.l. Adultst of this species were captured in 7 sites in western Bohemia. Three sites fall into the area of interest of SUAS (54, 161, 166) and water analysis was carried out here.

pH 2.2-8.75; **alkalinity (mmol/l)** 0.0-11.6; **N-NH₄⁺ (mg/l)** 0.002-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.765-10.252; **TP (mg/l)** 0.030-1.35; **Na (mg/l)** 0.1-695; **K (mg/l)** 0.1-45; **Ca (mg/l)** 8.0-409; **Mg (mg/l)** 2-278; **Fe (mg/l)** 0.08-968; **Cl⁻ (mg/l)** 1.0-719; **SO₄²⁻ (mg/l)** 10.1-5845; **Mn (mg/l)** 0.009-19.5; **conductivity (µS/cm)** 63-4682.

Comments: Uncommon species which ranges from lowlands to hilly areas.

7. *Jungiella (Jungiella) soleata* (Walker, 1856)

Published records: Lomnice env., Matyáš dump (36); Velký Březák water reservoir (161); Starý Jiří open-cast mine (166); Úhošťany (254) (Ježek 1987, 1999).

Material examined: between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7724; between Loket and Staré Sedlo, Ohře river (29), 2.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 7716 and 8592; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12072; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9617; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6689; Nové Bukovany, Habartovský potok brook, sewage treatment (199) 1.v.1998, SW, 1 ♂, J, slide Inv. No. 7748; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 27 ♂♂, J, slides Inv. No. 611, 614-621, 630-631, 633-636, 639-643, 646-648 and 650-653.

Distribution: A species distributed almost throughout Europe, including the British Isles, also known from northern Iran (Ježek & Omelková 2012).

Environmental notes, dates: May to June, 405-500 m a.s.l. Occurrence in 9 sites. Three sites fall into the area of interest of SUAS (54, 161, 166) and water analysis was carried out here.

pH 2.2-8.75; **alkalinity (mmol/l)** 0.0-11.6; **N-NH₄⁺ (mg/l)** 0.002-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.765-10.252; **TP (mg/l)** 0.030-1.35; **Na (mg/l)** 0.1-695; **K (mg/l)** 0.1-45; **Ca (mg/l)** 8.0-409; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-968; **Cl⁻ (mg/l)** 1.0-719; **SO₄²⁻ (mg/l)** 10.1-5845; **Mn (mg/l)** 0.009-19.5; **conductivity (µS/cm)** 63-4682.

Comments: The species common in shaded habitats with decaying organic matter.

8. *Jungiella (Jungiella) valachica* (Vaillant, 1963)

Published records: Lomnice env., Matyáš dump (36); Velký Březák water reservoir (161); Starý Jiří open-cast mine (166); Úhošťany (254) (Ježek 1987, 1999).

Material examined: between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7739; between Loket and Staré Sedlo, Ohře river (29), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7715; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12074; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9623; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6688; Hrušková env. Sokolov, Hruškovský potok brook (121), 5.vi.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16772; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 2 ♂♂, C+J+M, slides Inv. No. 14613 and 14659; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12076; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 1 ♂, J, slide Inv. No. 637.

Distribution: A quite sporadic species, known from Austria, Bosnia and Herzegovina, Croatia, Czech Republic, Poland, Serbia, Slovakia, Switzerland, and Ukraine (Krek 1999, Ježek & Omelková 2012, Kvifte *et al.* 2013, Wagner 2018, Oboňa & Ježek 2014, Ježek *et al.* 2017).

Environmental notes, dates: May to June, 405-566 m a.s.l. Adults of this species was captured in total at 12 sites in western Bohemia. Three sites fall into the area of interest of SUAS (54, 161, 166) and water analysis was carried out here.

pH 2.2-8.75; **alkalinity (mmol/l)** 0.0-11.6; **N-NH₄⁺ (mg/l)** 0.002-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.765-10.252; **TP (mg/l)** 0.030-1.35; **Na (mg/l)** 0.1-695; **K (mg/l)** 0.1-45; **Ca (mg/l)** 8.0-409; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-968; **Cl⁻ (mg/l)** 1.0-719; **SO₄²⁻ (mg/l)** 10.1-5845; **Mn (mg/l)** 0.009-19.5; **conductivity (μS/cm)** 63-4682.

Comments: Collected sometimes together with the foregoing species *J. soleata*.

9. *Jungiella (Psychocha) acuminata* (Szabó, 1960)

Material examined: Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 1 ♂, J, slide Inv. No. 645.

Distribution: A European species, so far known only from the Great Britain, France, Czech Republic, and Hungary (Ježek & Omelková 2012).

Environmental notes, dates: June, 500 m a.s.l. Adults of this species were captured only at 1 site in western Bohemia, where water analysis was not performed.

Comments: It occurs in habitats with decaying organic matter.

10. *Jungiella (Psychocha) procera* Krek, 1971

Material examined: Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 1 ♂, J, slide Inv. No. 612.

Distribution: A quite rare species known only from Bosnia and Herzegovina, Serbia, and the Czech Republic (Ježek & Omelková 2012).

Environmental notes, dates: June, 500 m a.s.l. Adults of this species were captured only at 1 site in western Bohemia, where water analysis was not performed.

Comments: Hardly known species, abundant only locally.

Lepiseodina Enderlein, 1937

11. *Lepiseodina rothschildi* (Eaton, 1912)

Material examined: between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18655; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18490.

Distribution: A quite rare European species, known only from the British Isles, countries along the North Sea coast, the Czech Republic, and Italy (e.g. Ježek & Omelková 2012). Published as well from tree holes by Withers (1989a,b).

Environmental notes, dates: June, 479-500 m a.s.l. Adults of this species was captured in western Bohemia on 2 sites where water analysis was performed on only one of them (263).

pH 7-7.87; **alkalinity (mmol/l)** 0.315-3.2; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.014-14.980; **N org. (mg/l)** 1.8; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.069-0.936; **Na (mg/l)** 4.7-265.5; **K (mg/l)** 1.2-9.8; **Ca (mg/l)** 6.7-153.0; **Mg (mg/l)** 1.2-36.1; **Fe (mg/l)** 0.08-0.230; **Cl⁻ (mg/l)** 4.0-241.6; **SO₄²⁻ (mg/l)** 14.1-570.5; **Mn (mg/l)** 0.041-0.27; **conductivity (μS/cm)** 59-2110.

Comments: Nationally scarce in the Czech Republic.

Panimerus Eaton, 1913

12. *Panimerus albifacies* (Tonnoir, 1919)

Published records: Lomnice env., aggregated small localities (54) (Ježek 1996).

Material examined: Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 29.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18683.

Distribution: A relatively widespread species in Europe, known from Belgium, Czech Republic, Great Britain, Denmark, France, Germany, Hungary, Ireland, Poland, Switzerland, the Netherlands, and former Yugoslavia (Wagner 1990, 2018, Ježek 2006).

Environmental notes, dates: June, 444 m a.s.l. There are only 2 sites from Western Bohemia, the water analysis was performed on only one of them (54).

pH 6.23-8.35; **alkalinity (mmol/l)** 0.4-11.6; **N-NH₄⁺ (mg/l)** 0.007-4.011; **N-NO₃⁻ (mg/l)** 0.001-1.58; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 1.22-9.21; **TP (mg/l)** 0.030-0.410; **Na (mg/l)** 1.7-695; **K (mg/l)** 2.1-45; **Ca (mg/l)**

10.9-361; **Mg (mg/l)** 3.5-278; **Fe (mg/l)** 0.1-13.449; **Cl⁻ (mg/l)** 2.1-16.45; **SO₄²⁻ (mg/l)** 13-2099; **Mn (mg/l)** 0.05-2.833; **conductivity (µS/cm)** 120-3963.

Comments: In the Czech Republic endangered (Ježek 2005).

13. *Panimerus denticulatus* Krek, 1971

Published records: Lomnice env., aggregated small localities (54); Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (163); marshes 2.5 km N (165); Starý Jiří open-cast mine (166); Vintřívov env., Vintřívovská výsypka dump (256) (Ježek 1999).

Material examined: between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19532; between Lipnice and Vintřívov, Panský rybník pond (25), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11131; between Lomnice and Svatava, Matyáš dump, forest water reservoirs (36), 15.vi.2000, SW, 1 ♂, C, slide Inv. No. 10562; between Lomnice and Vintřívov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19488; between Lomnice and Vintřívov, experimental waterfall (38), 18.vi.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17494; between Lomnice and Vintřívov, Klára water reservoir (39), 8.vi.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17476; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14732; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12061; Citice env. Sokolov, Výsypka Antonín dump (71), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11219; Dasnické rozcestí crossroad env. Nové Bukovany, forest marshes (77), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11237; Dolní Rychnov, golf course water reservoir (86), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16794; „Klondike“ nr. Vintřívov, Modráčkový rybník pond (134), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19572; „Klondike“ nr. Vintřívov, slope treeless tufa fens (135), 25.vi.2002, SW, 3 ♂♂, J, slides Inv. No. 11140, 11147 and 11225; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10465; Lomnice env., Pastviny area, marshes 2.5 km N (165), 28.vi.1995, SW, 1 ♂, C, slide Inv. No. 12160; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14671; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11226; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15640; Úhošť NNR nr. Úhošťany env. Kadaň, Doninský potok brook (254), 10.-11.vi.1981, SW, 7 ♂♂, J, slides Inv. No. 94, 622-625, 610 and 655.

Distribution: A locally common species, known from several European countries: Austria, Belgium, Bosnia and Herzegovina, Czech Republic, Great Britain, Greece, Ireland, and Macedonia (Ježek & Omelková 2012, Ježek *et al.* 2018b).

Environmental notes, dates: From June until September, 340-593 m a.s.l. A total 26 sampling sites, water analysis was performed at the following sites: 16, 37, 54, 134 (not all values), 160, 161, 163, 165, 166, 200.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-10.252; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-409; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 60-21528.

Comments: A euryvalent species, found in different types of aquatic biotopes (Kročá & Ježek 2015).

14. *Panimerus kreki* Vaillant, 1972

Published records: between Lipnice and Vřesová, recultivated Alnetum (26); between Svatava and Lomnice, aggregated small localities (54); Lomnice env., Pastviny area (165) (Ježek 1999).

Distribution: A rare species occurring in Bosnia and Herzegovina, Bulgaria, Greece, Italy, Czech Republic, and France (Ježek *et al.* 2014).

Environmental notes, dates: a half of June, 444-593 m a.s.l. Adults of this species were trapped in western Bohemia in 3 sites, the water analysis was performed at 2 sampling sites: 54 and 165.

pH 2.34-8.65; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-4.011; **N-NO₃⁻ (mg/l)** 0.001-3.60; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 0.430-9.21; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 1.7-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 10.9-943.63; **Mg (mg/l)** 3.5-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 13-2099; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 120-21528.

Comments: In the Czech Republic vulnerable (Ježek 2005).

15. *Panimerus maynei* (Tonnoir, 1920)

Published records: Citice env. Sokolov, Výsypka Antonín dump (71); Lomnice env., Pastviny area (163) (Ježek 1996).

Material examined: between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19524; between Lipnice and Vintřívov, Panský rybník pond (25), 2.vi.1997, SW, 2 ♂♂, J, slides Inv. No. 6620 and 6621; between Lomnice and Vintřívov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19504; between Lomnice and Vintřívov, experimental waterfall (38), 18.vi.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17496 and 17499; Gaserův Mlýn env. Libavské údolí, confluence of Libava brook and Ohře river (95), 18.vii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15621; Horní Rozmyšl env., Slané údolí valley

(115), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19582; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 8.viii.2002 and 21.vi.2010, MT, 2 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11205 and 19673; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11227; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 4 ♂♂, C+J+M, slides Inv. No. 10473 - 10476; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14616; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi.2005, MT, 2 ♂♂, C+J+M, slides Inv. No. 14608 and 14779; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12075.

Distribution: Rare European species, known from Belgium, Czech Republic, Great Britain, Denmark, France, Germany, and Ireland (Wagner 2018).

Environmental notes, dates: From June until August, 407-540 m a.s.l. A total 13 sampling sites, water analysis was performed at sites 16, 37, 134 (not all values), 163.

pH 6.31-8.93; **alkalinity (mmol/l)** 0.49-19.3; **N-NH₄⁺ (mg/l)** 0.001-2.69; **N-NO₃⁻ (mg/l)** 0.001-2.08; **N org. (mg/l)** 0.317-1.20; **TN (mg/l)** 0.339-2.023; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 2.32-2052.4; **K (mg/l)** 0-39.4; **Ca (mg/l)** 8.4-506; **Mg (mg/l)** 3.12-514.5; **Fe (mg/l)** 0.009-48.616; **Cl (mg/l)** 0.5-60.1; **SO₄²⁻ (mg/l)** 9-21294.0; **Mn (mg/l)** 0.0-9.354; **conductivity (µS/cm)** 75-9630.

Comments: Endangered in the Czech Republic (Ježek 2005).

16. *Panimerus notabilis* (Eaton, 1893)

Published records: between Lipnice and Vintířov, Panský rybník pond (25); between Svatava and Lomnice, aggregated small localities (54); Citice env. Sokolov, Výsypka Antonín dump (71); „Klondike“ nr. Vintířov, Modráčkový rybník pond (134); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (163); Stary Jiří open-cast mine (166) (Ježek 1999).

Material examined: between Boučí and Dolní Nivy, salt marshes (4), 3.vi.1997, SW, 1 ♂, J, slide Inv. No. 6578; between Boučí and Svatava, opposite seepage slope to the Erika sand pit (6), 3.vi. and 18.ix.1997, SW, 2 ♂♂, J, slides Inv. No. 6587 and 6596; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19514; between Horní Rozmyšl and Lomnice, Chvojkova jezerní plošina lake basin (17), 3.vi.1997, SW, 1 ♂, J, slide Inv. No. 6581; between Lipnice and Vintířov, Panský rybník pond (25), 27.v. and 2.vi.1997, SW, 2 ♂♂, J, slides Inv. No. 6615 and 6633; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19478 and 19638; between Lomnice and Vintířov, experimental waterfall (38), 26.v. and 18.vi.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17495 and 17613; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17478 and 17567; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14738; Dolní Nivy, spring area (80), 1.ix.2004, MT, 2 ♂♂, C+F+J+M+S, slides Inv. No. 13439 and 13448; Dolní Rychnov, golf course edge (85), 27.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16850; Habartov – Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6682; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002, 21.vi. and 9.viii.2010, MT, 3 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11200, 19573 and 19675; Lítov, dump, water reservoir, Částkovský potok brook (152), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7708; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, SW, 1 ♂, J, slide Inv. No. 10464; Lomnice env., Pastviny area, marshes 2.5 km N (165), 3.vi.1997, SW, 1 ♂, J, slide Inv. No. 6598; Luh nad Svatavou, Svatava river (168), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9656; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14655; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi.2005, MT, 2 ♂♂, C+J+M, slides Inv. No. 14599 and 14774; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15641; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13411; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10. and 29.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18535 and 18684; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18502.

Distribution: A common European species recorded from countries along the North Sea coast (including the British Isles), Scandinavia, central Europe, the Balkans, and Northern Iran (Ježek & Omelková 2012).

Environmental notes, dates: From May until September, 340-593 m a.s.l. Adults of this species was captured in western Bohemia on 31 sites. Water analysis was performed on the following 12 sites: 16, 37, 54, 85, 134 (not all values), 160, 161, 163, 165, 166, 200, 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: It is a first moth fly colonizer of fresh furrows (maximally two years old) - traces of big stowing open-cast machines filled by rain water, with first invasive dump water plants as *Typha*.

Parajungiella Vaillant, 1972

17. *Parajungiella bohdanecensis* Ježek & Hájek, 2007

Published records: Dolní Nivy, large growths of *Phragmites australis* (81); Svatava env., Svatava river nr. Svatavský vrch hill (242); Vřesová env. Chodov (257) (Ježek & Hájek 2007).

Material examined: „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 9.viii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19571; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18550.

Distribution: Known only from the Czech Republic so far (Ježek & Hájek 2007).

Environmental notes, dates: From June until August, 449-551 m a.s.l. Only 5 sampling sites; water chemistry was detected at sites 134 and 257 (but both incomplete).

pH 6.35-8.23; **alkalinity (mmol/l)** 0.4-10.5; **N-NH₄⁺ (mg/l)** 0.014-0.163; **N-NO₃⁻ (mg/l)** 0.002-3.173; **N org. (mg/l)** 0.45-0.94; **TN (mg/l)** 0.55-0.97; **TP (mg/l)** 0.018-0.46; **Na (mg/l)** 8.4-8.8; **K (mg/l)** 4.4-4.5; **Ca (mg/l)** 20; **Mg (mg/l)** 5.4-6.6; **Fe (mg/l)** 0.1; **Cl (mg/l)** 16.8-17.7; **SO₄²⁻ (mg/l)** 31.2-36; **Mn (mg/l)** 0.05; **conductivity (μS/cm)** 236-3367.

Comments: It prefers swamping habitats and floodplains with a growth of *Phragmites australis* from lowlands to hilly areas.

18. *Parajungiella consors* (Eaton, 1893)

Published records: Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162) (Ježek 1999).

Material examined: between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17424; between Lomnice and Vintířov, experimental waterfall (38), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17610; between Lomnice and Vintířov, Klára water reservoir (39), 10.viii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10518; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13436; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19589; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002 and 21.vi.2010, MT, 2 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11199 and 19670; Lomnice env., Pastviny area, marshes 2.5 km N (165), 3.vi.1997, SW, 1 ♂, J, slide Inv. No. 6597; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14684; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14609; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15644; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13396; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10. and 29.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18537 and 18671; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18652.

Distribution: European species, rather rare, distributed from Great Britain to Denmark, Belgium, the Netherlands, Czech Republic, and Slovakia (Ježek *et al.* 2013).

Environmental notes, dates: From May until September, 340-593 m a.s.l. Adults of this species were registered in total at 18 sampling sites. Water analysis was performed on the following 6 sites: 134 (not all values), 160, 161, 165, 200, 263.

pH 2.34-8.75; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-14.980; **N org. (mg/l)** 0-3.56; **TN (mg/l)** 0.430-26.92; **TP (mg/l)** 0.006-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0.1-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.02-4100; **Cl (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (μS/cm)** 59-21528.

19. *Parajungiella ellisi* (Withers, 1987)

Published records: Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Starý Jiří open-cast mine (166) (Ježek 1996, 1999).

Material examined: Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8593; Lomnice env., Pastviny area, Julie water reservoir (164), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17525; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.iv.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14627; Nová Role, Vlčí potok brook, forest, 480 m a.s.l. (189), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14713; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15647; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18680.

Distribution: A rare European and West-Siberian species known from Great Britain, Ireland, Austria, Czech Republic, and Russia (Siberia) (Ježek & Omelková 2012).

Environmental notes, dates: From April until June, 340-480 m a.s.l. A total 12 sampling sites; water analysis comes from sites 160, 161, 166, 200, 263.

pH 2.2-8.75; alkalinity (mmol/l) 0.0-3.2; N-NH₄⁺ (mg/l) 0.001-16.5; N-NO₃⁻ (mg/l) 0.001-27; N org. (mg/l) 0-8.415; TN (mg/l) 0.558-26.92; TP (mg/l) 0.006-1.35; Na (mg/l) 0.1-265.5; K (mg/l) 0.1-29; Ca (mg/l) 6.1-409; Mg (mg/l) 1.2-217; Fe (mg/l) 0.08-968; Cl⁻ (mg/l) 1.0-719; SO₄²⁻ (mg/l) 5-5845; Mn (mg/l) 0.009-19.5; conductivity (µS/cm) 59-4682.

Comments: Critically endangered in the Czech Republic (Ježek 2005, Ježek & Omelková 2012).

20. *Parajungiella longicornis* (Tonnoir, 1919)

Published records: between Lipnice and Vintířov, Panský rybník pond (25); between Loket and Nové Sedlo (28); between Lomnice and Svatava, Matyáš dump (36); between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Chodová Planá (67); „Klondike“ nr. Vintířov, Modráčkovy rybník pond (134); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165); Starý Jiří open-cast mine (166); Sokolov env., Michal water reservoir vicinity (230) (Ježek 1984, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 4.iv.1998, SW, 1 ♂, J, slide Inv. No. 7640; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7699; between Hluboký and Kfely, Malý hlubocký rybník pond (15), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9603; between Kacéřov and Hluboká, streams (20), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 8598; between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 7668 and 7726; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 6694; between Lipnice and Vintířov, Panský rybník pond (25), 2.vi.1997, SW, 1 ♂, J, slide Inv. No. 6618; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8600; between Lomnice and Dolní Nivy, water reservoir (31), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6766; between Lomnice and Svatava, Matyáš dump, forest water reservoir (36), 15.vi.2000, SW, 1 ♂, C, slide Inv. No. 10557; between Nebanice and Odrava, Ohře river (42), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8601; between Nová Role and Mezirolí, forest brook (45), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6669; between Ruprechtov and Odeř, forest pond (49), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9598; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12059; Chlum Sv. Máří, water reservoir (66), 4.iv.1997, SW, 2 ♂♂, J, slides Inv. No. 6747 and 6748; Citice env. Sokolov, Ohře river (70), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7789; Černý Mlýn nr. Tisová, wet meadows (73), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7744; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9616; Dolní Nivy, large growths of *Phragmites australis* (81), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 10642; Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8594; Habartov - Kluč, water reservoirs (97), 31.v.1997 and 3.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 6687 and 8595; Habartov - V zátiší (99), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6730; Hluboký env. Ostrov, Hluboký rybník pond (106), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9639; Horní Lazy env. Lázně Kynžvart, sludge bed (108), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9601; Horní Rozmyšl, dump edge, water reservoir (114), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 8596; Jindřichovice, pond (124), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7811; Kacéřov env. Kynšperk nad Ohří, dungy ponds (126), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 7756; Kopanina nr. Habartov, Horka water reservoir env. (138), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 7697; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8599; Lazy env., between Smrkovec (abolished settlement) and Žitný hill, Malá Libava brook (149), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9580; Lomnice env., Pastviny area, Julie water reservoir (164), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17532; Lužná env. Františkovy Lázně, Horní Rybník (Miska) pond (172), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8597; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14673; Nová Role, ponds (187), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9629; Nová Role, Rolava river (188), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9573; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14720; Nová Ves env. Bečov nad Teplou, Za Hospodou pond (197), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 8602; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7655; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15648; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6722; Smrčina nr. Jindřichovice, brook (226), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7773; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18603; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7630; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18562; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9613.

Distribution: Generally, a very common and abundant European and West Siberian species. In Europe, known from Austria, Belgium, Bosnia and Herzegovina, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Norway, Poland, Russia, Slovakia, Sweden, the Netherlands, and Ukraine (Ježek 1992, Ježek & Goutner 1995, Krek 1999, Kvitte *et al.* 2011, 2013, Ježek *et al.* 2017).

Environmental notes, dates: From April until July, 340-817 m a.s.l. Adults of this species was captured in western Bohemia at 57 sampling sites. Water analysis comes from 8 sites: 54, 134 (not all values), 160, 161, 165, 166, 200, 263.

pH 2.2-8.75; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.430-26.92; **TP (mg/l)** 0.006-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0.1-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: It prefers banks of streams (especially mats of bryophytes), brooks, ponds, water reservoirs and forest drainages.

21. *Parajungiella prikryli* Ježek, 1999

Published records: Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Pastviny area (165) (Ježek 1999).

Material examined: between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 2 ♂♂, C+J+M, slides Inv. No. 12106 and 12108; Citice env. Sokolov, Ohře river (70), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7786; „Klondike“ nr. Vintřív, Modráčkový rybník pond (134), 28.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11203; Lomnice env., Pastviny area, Julie water reservoir (164), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17538; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 14657 and 14759; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14600; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12056.

Distribution: Apparently a rare central European species, known only from the Czech Republic and Slovakia (Ježek 1999, Ježek & Omelková 2012, Oboňa & Ježek 2014).

Environmental notes, dates: From May until August, 405-593 m a.s.l. A total 9 sampling sites; water chemistry was registered at sites 54, 134 (not all values were found), 161 and 165.

pH 2.34-8.75; **alkalinity (mmol/l)** 0.0-19.08; **N-NH₄⁺ (mg/l)** 0.000-4.011; **N-NO₃⁻ (mg/l)** 0.001-3.60; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 0.430-9.21; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0.1-170; **Ca (mg/l)** 8.0-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 10.1-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 63-21528.

Comments: It inhabits meanders of brooks, shaded swamps, ponds and water reservoirs. In CZ vulnerable (Ježek 2005).

22. *Parajungiella pseudolongicornis* (Wagner, 1975)

Published records: between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); „Klondike“ nr. Vintřív, Modráčkový rybník pond (134) (Ježek 1996, 1999).

Material examined: between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7738; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003 and 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 12085 and 17519; Horní Lazy env. Lázně Kynžvart, sludge bed (108), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9608; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8603; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14656; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14656; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 14656; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18617.

Distribution: A rare species, recorded only from Great Britain, Ireland, Austria, Czech Republic, Slovakia, Bosnia and Herzegovina, and Serbia (Ježek & Omelková 2012b).

Environmental notes, dates: From May until July, 390-817 m a.s.l. Adult of this species were captured in western Bohemia in 11 sites. Water analysis was performed on the following four localities: 54, 134 (not all values), 161, 200.

pH 5.1-8.75; **alkalinity (mmol/l)** 0.305-11.6; **N-NH₄⁺ (mg/l)** 0.002-4.011; **N-NO₃⁻ (mg/l)** 0.001-4.882; **N org. (mg/l)** 0-3.619; **TN (mg/l)** 0.55-9.21; **TP (mg/l)** 0.01-0.410; **Na (mg/l)** 0.1-695; **K (mg/l)** 0.1-45; **Ca (mg/l)** 6.1-361; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-15.143; **Cl⁻ (mg/l)** 1.0-588.6; **SO₄²⁻ (mg/l)** 10.1-2099; **Mn (mg/l)** 0.009-8.919; **conductivity (µS/cm)** 63-3963.

Comments: It occurs in habitats with decaying organic matter as the foregoing species. Critically endangered in the Czech Republic (Ježek 2005).

23. *Parajungiella serbica* (Krek, 1985)

Published records: Citice env. Sokolov, Výsypka Antonín dump (71); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Pastviny area (165) (Ježek 1996, 1999).

Material examined: between Lomnice and Vintřív, Olegovy výstřelky shothole pools (37), 6.ix.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19647; between Lomnice and Vintřív, experimental waterfall (38), 18.vi.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17493; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12088; Erika sand pit, small water reservoirs and pools (91), 10.vi.2003, MT, 1 ♂,

C+J+M, slide Inv. No. 12181; „Klondike“ nr. Vintřív, Modráčkový rybník pond (134), 28.viii.2002, 21.vi. and 9.viii.2010, MT, 3 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11251, 19578 and 19672; Lomnice env., Pastviny area, Julie water reservoir (164), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17533; Lomnice env., Pastviny area, marshes 2.5 km N (165), 28.vi.1995, SW, 1 ♂, C, slide Inv. No. 12161; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14652; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14780; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14716; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15645; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 2 ♂♂, C+J+M, slides Inv. No. 12094 and 12107; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13410.

Distribution: A rather rare Submediterranean species, registered only from Serbia, Greece, Czech Republic, and Slovakia so far (Ježek *et al.* 2013).

Environmental notes, dates: From May until September, 405-593 m a.s.l. A total 15 sites; chemical analyzes of water come from 6 global mine sites: 37, 54, 134 (incomplete), 161, 165, 200.

pH 2.34-8.75; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-4.011; **N-NO₃⁻ (mg/l)** 0.001-4.882; **N org. (mg/l)** 0-3.619; **TN (mg/l)** 0.430-9.21; **TP (mg/l)** 0.006-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0.1-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 10.1-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (μS/cm)** 63-21528.

Comments: Rare European species; it inhabits banks of small brooks and saline water reservoirs. Critically endangered in Czech Republic (Ježek 2005).

Duckhousiella Vaillant, 1972

24. *Paramormia (Duckhousiella) cornuta* Nielsen, 1964

Material examined: „Klondike“ nr. Vintřív, Modráčkový rybník pond (134), 9.viii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19570.

Distribution: Known only from Madeira, Czech Republic, and Poland (Ježek 2003, 2007).

Environmental notes, dates: The beginning of August, 474 m a.s.l. Only one site (134) where water analysis was carried out (not completely).

pH 6.57-8.23; **alkalinity (mmol/l)** 2.24-10.5; **N-NH₄⁺ (mg/l)** 0.014-0.072; **N-NO₃⁻ (mg/l)** 0.002-0.079; **N org. (mg/l)** 0.45-0.94; **TN (mg/l)** 0.55-0.97; **TP (mg/l)** 0.01-0.052; **conductivity (μS/cm)** 3367.

Comments: Very rare European species, vulnerable in the Czech Republic (Ježek 2005).

25. *Paramormia (Duckhousiella) ustulata* (Walker, 1856)

Published records: between Lipnice and Vintřív, Panský rybník pond (25); between Loket and Nové Sedlo (28); between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); Chodová Planá (67); Františkovy Lázně (94); Lázně Kynžvart (148); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Pastviny area (165); Vřesová env. Chodov, sludge water defecation and sedimentation (263) (Ježek 1990b, 1999).

Material examined: between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19516; between Lomnice and Vintřív, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19489 and 19641; between Lomnice and Vintřív, experimental waterfall (38), 26.v and 18.vi.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17497 and 17620; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 29.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18676; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13437; Dolní Rychnov, golf course edge (85), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16945; Dolní Rychnov, golf course water reservoir (86), 25.vi.2007, MT, 1 ♀, J, slide Inv. No. 16795; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 22.ix.1997 and 30.ix.1998, SW, 1 ♂, 1 ♀, J, slides Inv. No. 6580 and 8607; Horní Rozmyšl, Slané údolí valley (115), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19586; Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake (130), 28.ix.1998, SW, 1 ♂, J, slide Inv. No. 8606; „Klondike“ nr. Vintřív, Modráčkový rybník pond (134), 28.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11204; Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 8604; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♂, J, slide Inv. No. 10455; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v and 10.ix.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17470 and 17588; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14651; Nejda env. Ostrov, Malá Nejda pond (184), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10569; Nejda env. Ostrov, Velká Hruška pond (185), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6647; Nová Role, Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14682; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi.2005, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 14607 and 14775; Ostrov env., Ottův rybník pond (211), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 8605; Soos NNR env. Františkovy Lázně, Císařský pramen spring (231), 22.ix.1997, SW, 1 ♀, J, slide Inv. No. 6584; Soos NNR env.

Františkovy Lázně, moffettes in a volcanic caldera lake (232), 22.ix.1997, SW, 1 ♂, 1 ♀, J, slides Inv. No. 6607 and 6608; Svatava env., Medard pit, sludge bed (241), 23.ix.1997, SW, 1 ♀, J, slide Inv. No. 6582; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13399; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10. and 29.vi.2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18545 and 18668.

Distribution: A widespread species or complex of species occurring in the Holarctic region. Ježek & Yağci (2005) list occurrences from the following countries: Afghanistan, Algeria, Armenia, the Azores, Belgium, Bosnia-Herzegovina, Bulgaria, the Canary Islands, China, Corsica, Czech Republic, Denmark, France, Germany, Great Britain, Greece, Hungary, Iran, Ireland, Israel, Italy, Macedonia, Madeira, Mongolia, Morocco, the Netherlands, Olanda Island, Poland, Romania, Sardinia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia, Turkey, and the USA (Ježek *et al.* 2018a, b).

Environmental notes, dates: From May until September, 390-925 m a.s.l. A total 33 sampling sites; water analysis was performed on the following 9 sites: 16, 37, 85, 134 (not all values), 161, 163, 165, 166, 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.7-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 9-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: It inhabits a vicinity of extreme localities: salt works, thermal springs, calcareous water and mineral-rich springs.

Paramormia s. str.

26. *Paramormia (Paramormia) polyascoidea* (Krek, 1971)

Published records: between Svatava and Lomnice, aggregated small localities (54); Pastviny area (165); Úhošťany (254); Vřesová env. Chodov, sludge water defecation and sedimentation (263) (Ježek 1990b, 1999).

Material examined: between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7700; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15578; between Lomnice and Vintířov, experimental waterfall (38), 5., 26.v. and 18.vi.2008, MT, 3 ♂♂, C+J+M, slides Inv. No. 17498, 17545 and 17614; Horní Rozmyšl, dump edge, water reservoir (114), 18.v.1998, SW, 1 ♂, C, slide Inv. No. 10554; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002, 21.vi. and 9.viii.2010, MT, 3 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11180, 19558 and 19676; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii. and 10.viii.2001, MT, 2 ♂♂, C+J+M, slides Inv. No. 10462 and 10516; Lomnice env., Pastviny area, marshes 2.5 km N (165), 28.vi.1995, SW, 1 ♂, C, slide Inv. No. 12158; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14649; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15632; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16726; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 1 ♂, J, slide Inv. No. 654; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13395.

Distribution: This is a common European and west Siberian species known from Austria, Belgium, Bosnia and Herzegovina, Czech Republic, Estonia, Finland, Germany, Poland, Abkhazia, Armenia and Russia (Novosibirsk region) (Salmela & Piirainen 2005, Ježek & Omelkova 2012, Salmela *et al.* 2014, Ježek *et al.* 2018a, b).

Environmental notes, dates: From May until August, 407-593 m a.s.l. A total 14 sampling sites; water chemistry is known from 6 localities: 54, 134 (not all values), 163, 165, 200, 263.

pH 2.34-8.85; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-14.980; **N org. (mg/l)** 0-3.619; **TN (mg/l)** 0.430-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 1.7-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.01-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 9-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: It was collected near forest brooks and reservoirs, in habitats of treeless tufa fens and marshes, and in alluvium of meandering flows from lowlands to hilly areas.

Peripsychoda Enderlein, 1935

27. *Peripsychoda auriculata* (Haliday in Curtis, 1839)

Published records: between Královské Poříčí and Staré Sedlo (23); between Loket and Nové Sedlo (28); between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Dvory env. Loket (90); Karlovy Vary, central part of the town (127); Loket, Lněný vrch hill (154); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165); Starý Jiří open-cast mine (166); Vřesová env. Chodov, sludge water defecation and sedimentation (263) (Ježek 1999).

Material examined: between Hluboký and Kfely, Malý hlubocký rybník pond (15), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9606; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19509; between Josefův and Hřebený, pond in field (18), 31.v.1997 and 1.vi.2000, SW, 2 ♂♂, J, slides Inv. No. 7691 and 9673; between Kacěřov and Hluboká, streams (20), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 8609; between Lipnice and Vintířov, Panský rybník pond (25), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11149; between Loket and Staré Sedlo, Ohře river (29), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7728; between Lomnice and Svatava, Matyáš dump, forest water reservoir (36), 15.vi.2000, SW, 1 ♂, C, slide Inv. No. 10561; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19494; between Lomnice and Vintířov, Klára water reservoir (39), 8.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17479; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14725; between Nová Role and Mezirolí, forest brook (45), 26.v.1997, SW, 1 ♂, J, slide Inv. No. 6664; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12071; Černý Mlýn nr. Tisová, wet meadows (73), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 7758; Dasnické rozcestí crossroad env. Nové Bukovany, forest marshes (77), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11234; Dolní Rychnov, Rychnovský potok brook (87), 27.viii.2007, SW, 1 ♂, J, slide Inv. No. 16926; Habartov - Kluč, water reservoirs (97), 3.vi.1999, SW, 1 ♂, J, slide Inv. No. 8608; Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15491 and 15562; Hluboká env. Habartov, Libocký potok brook (105), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 10577; Kacěřov env. Kynšperk nad Ohří, dungy ponds (126), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 7757; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11194; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 25.vi.2002, SW, 2 ♂♂, J, slides Inv. No. 11142 and 11224; Kolová env. Kynšperk nad Ohří, forest spring area (137), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9595; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8610; Lazy env., between Smrkovec (abolished settlement) and Žitný hill, Malá Libava brook (149), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9579; Lítov, dump, water reservoir, Částkovský potok brook (152), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7709; Loket, Lněný vrch hill, forest spring area (154), 22.vi.1999, SW, 1 ♂, J, slide Inv. No. 8611; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10456; Lomnice env., Pastviny area, marshes 2.5 km N (165), 28.vi.2003, SW, 1 ♂, C, slide Inv. No. 12159; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 2 ♂♂, C+J+M, slides Inv. No. 14614 and 14672; Nová Role, ponds (187), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9628; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14707; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11239; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7659; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15636; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12113; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7631; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 1 ♂, J, slide Inv. No. 626; Velký Rybník nr. Hroznětín, Velký rybník pond (255), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9587; Vintířov env., Vintířovská výsypka dump, Transects 4BN-5BN (256), 12.v.-9.vii.1998, MT, 1 ♀, C+J+M, slide Inv. No. 9567; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 19536; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18629.

Distribution: European, as well Transcaucasian species. Distribution in detail see Wagner (1990, 2018), Ježek (2004b) or Ježek *et al.* (2018a,b).

Environmental notes, dates: From May until August, 340-712 m a.s.l. Adults of this species were captured in western Bohemia at 52 sampling sites. Water analysis was performed on the following 12 sites: 16, 37, 54, 134 (not all values), 160, 161, 163, 165, 166, 200, 257 (incomplete), 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: Abundant, large black conspicuous species, very common, ranging from lowlands to hilly regions.

Psycmera Ježek, 1984

28. *Psycmera integella* (Jung, 1956)

Published records: Dvory env. Loket (90); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165); Starý Jiří open-cast mine (166) (Ježek 1999).

Material examined: between Hluboký and Kfely, Malý hlubocký rybník pond (15), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9605; between Josefův and Hřebený, pond in field (18), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9674; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 6693;

between Nová Role and Mezirolí, forest brook (45), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6668; between Ruprechtov and Odeř, forest pond (49), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9590; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003 and 26.v.2008, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 12073 and 17526; Bublák nr. Vackovec, Plesná brook (63), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8612; Černý Mlýn nr. Tisová, wet meadows (73), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7760; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9618; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6683; Hluboký env. Ostrov, Hlubocký rybník pond (106), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9641; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14669; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7656; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7625.

Distribution: Not common European and Western Siberian species, known from Bosnia and Herzegovina, Czech Republic, Germany, Poland and Russia (Siberia: Novosibirsk area) (Ježek & Omelkova 2012).

Environmental notes, dates: From May until June, 340-593 m a.s.l. A total 22 sampling sites; the water analysis was captured in the following 5 sites: 54, 160, 161, 165, 166.

pH 2.2-8.75; **alkalinity (mmol/l)** 0.0-19.08; **N-NH₄⁺ (mg/l)** 0.000-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.430-10.252; **TP (mg/l)** 0.006-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0.1-170; **Ca (mg/l)** 7.3-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 60-21528.

Comments: A species of wet meadows, forest brooks, shaded ponds springs of mineral water. In the Czech Republic critically endangered (Ježek 2005).

Telmatoscopus Eaton, 1904

29. *Telmatoscopus advena* (Eaton, 1893)

Material examined: Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18493.

Distribution: A rare European species, known from Czech Republic, Germany, Great Britain, Slovakia, and Ireland (Ježek 2009b, Wagner 2018, Oboňa & Ježek 2012a).

Environmental notes, dates: June, 479 m a.s.l. A male of this species was captured in western Bohemia at 1 sampling site. Water analysis was performed (263).

pH 7-7.87; **alkalinity (mmol/l)** 0.315-3.2; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.014-14.980; **N org. (mg/l)** 1.8; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.069-0.936; **Na (mg/l)** 4.7-265.5; **K (mg/l)** 1.2-9.8; **Ca (mg/l)** 6.7-153.0; **Mg (mg/l)** 1.2-36.1; **Fe (mg/l)** 0.08-0.230; **Cl⁻ (mg/l)** 4.0-241.6; **SO₄²⁻ (mg/l)** 14.1-570.5; **Mn (mg/l)** 0.041-0.27; **conductivity (µS/cm)** 59-2110.

Comments: On the basis of literary sources, the species develops mostly in dendrotelmates (see e.g. Oboňa & Ježek 2012a); it is a question of whether the larvae can occur in some sediment of the sludge water defecation reservoir with wooded banks. Critically endangered in the Czech Republic (Ježek 2005).

Seoda Kvifte, 2014

30. *Seoda carthusiana* (Vaillant, 1972)

Published records: Loket, Lněný vrch hill (154); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Starý Jiří open-cast mine (166); Tatrovice – Na skále env. Vřesová (249) (Ježek 1999).

Material examined: Antonínova Výšina, Dvoreček pond (2), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10582; between Josefův and Hřebený, pond in field (18), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9672; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19502; between Lomnice and Vintířov, experimental waterfall (38), 18.vi.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17504; between Svatava, Krajková and Habartov, Radvanovský potok brook (52), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6779; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003 and 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 12087 and 17528; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6685; Habartov - Úžlabí, Habartovský potok brook (98), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15505; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 27.v.1997, SW, 1 ♂, J, slide Inv. No. 6613; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 4.vi.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19660; Libavské Údolí env. Kynšperk nad Ohří, Velká Libava brook as tributary of Ohře river (150), 20.v.1998, SW, 1 ♂, J, slide Inv. No. 8613; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14676; Nejdek, Limnice brook (186), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 10599; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18538; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16725; Tatrovice - Na skále env. Vřesová, meadow spring area (249), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 8614; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood

edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18486; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10599.

Distribution: The locally abundant European species, known from Czech Republic, France, Germany, Poland, Slovakia, and Slovenia (Ježek & Omelkova 2012).

Environmental notes, dates: From May until July, 340-620 m a.s.l. Adults of this species were captured in western Bohemia at 25 sampling sites. Water analysis was performed on the following 8 sites: 37, 54, 134 (not all values), 160, 161, 166, 235 and 263.

pH 2.2-8.75; **alkalinity (mmol/l)** 0.0-12.7; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.55-26.92; **TP (mg/l)** 0.006-1.93; **Na (mg/l)** 0.1-1205; **K (mg/l)** 0.1-45; **Ca (mg/l)** 6.7-484; **Mg (mg/l)** 1.2-368; **Fe (mg/l)** 0.08-968; **Cl⁻ (mg/l)** 0.8-719; **SO₄²⁻ (mg/l)** 5-5845; **Mn (mg/l)** 0.003-19.5; **conductivity (µS/cm)** 59-6870.

Comments: It inhabits banks of forest springs and streams, brooks and ponds from lowlands to more elevated regions.

31. *Seoda gressica* (Vaillant, 1972)

Published records: between Loket and Nové Sedlo (28); between Lomnice and Svatava, Matyáš dump (36); „Klondike“ nr. Vintířov, Modráčkový rybník pond (134); Pastviny area (165) (Ježek 1999).

Material examined: between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 6696; between Lipnice and Vintířov, Panský rybník pond (25), 27.v. and 2.vi.1997, SW, 2 ♂♂, J, slides Inv. No. 6619 and 6628; between Loket and Svatošské skály rocks, Ohře river (30), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7664; between Lomnice and Vintířov, experimental waterfall (38), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17619; between Nebanice and Odrava, Ohře river (42), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8617; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12069; Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8615; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6680; Habartov - Úžlabí, Habartovský potok brook (98), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15504; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 21.v.2001, SW, 1 ♂, C, slide Inv. No. 10611; Kopanina nr. Habartov, Horka water reservoir env. (138), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 7696; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8616; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14678; Nejdek, Limnice brook (186), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 10600; Nová Role env., Vlčí potok brook, cowshed, ponds (192), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6640; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14700; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11213; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7660; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15646; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6727; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18525; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7628; Úhošť NNR nr. Úhošťany env. Kadaň (254), 11.vi.1981, SW, 1 ♂, J, slide Inv. No. 734; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10629.

Distribution: European species, known from Austria, Czech Republic, France, and Poland (Ježek & Omelkova 2012).

Environmental notes, dates: From May until June, 391-620 m a.s.l. A total 27 sampling sites in western Bohemia; water analysis was performed on 5 sites: 54, 134 (not all values), 165, 200 and 235.

pH 2.34-8.65; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-4.011; **N-NO₃⁻ (mg/l)** 0.001-4.882; **N org. (mg/l)** 0-3.619; **TN (mg/l)** 0.430-9.21; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 1.7-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 2.4-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 13-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 103-21528.

Comments: A species locally abundant, penetrates to the same habitats as *S. carthusiana*.

32. *Seoda labeculosa* (Eaton, 1893)

Material examined: between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 29.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18563; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18483.

Distribution: Known from Belgium, Czech Republic, Denmark, France, Great Britain, and Ireland (Ježek 2003).

Environmental notes, dates: June, 479-500 m a.s.l. Adults of this species was captured in western Bohemia at 2 sampling sites. Water analysis was carried out only at site 263.

pH 7-7.87; **alkalinity (mmol/l)** 0.315-3.2; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.014-14.980; **N org. (mg/l)** 1.8; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.069-0.936; **Na (mg/l)** 4.7-265.5; **K (mg/l)** 1.2-9.8; **Ca (mg/l)** 6.7-153.0; **Mg (mg/l)** 1.2-36.1; **Fe (mg/l)** 0.08-0.230; **Cl⁻ (mg/l)** 4.0-241.6; **SO₄²⁻ (mg/l)** 14.1-570.5; **Mn (mg/l)** 0.041-0.27; **conductivity (µS/cm)** 59-2110.

Comments: The species known only from a small area of distribution in Europe, endangered in the Czech Republic (Ježek 2005).

TRICHOPSYCHODINA

Feuerborniella Vaillant, 1971

33. *Feuerborniella obscura* (Tonnoir, 1919)

Published records: between Lomnice and Svatava, Matyáš dump (36); between Svatava and Lomnice, aggregated small localities (54); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Pastviny area (165); Starý Jiří open-cast mine (166) (Ježek 1999).

Material examined: between Lipnice and Vintířov, Panský rybník pond (25), 24.vi.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11090; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19500 and 19643; between Lomnice and Vintířov, experimental waterfall (38), 18.vi.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17502; between Lomnice and Vintířov, Klára water reservoir (39), 8.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17481; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12086; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18576 and 18656; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9625; Dolní Rychnov, golf course water reservoir (86), 25.vi.2007, MT, 1 ♀, J, slide Inv. No. 16801; Habartov – Úžlabí, Habartovský potok brook (98), 13.vi.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15506; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 21.vi. and 9.viii.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19556 and 19677; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, SW, 1 ♀, J, slide Inv. No. 10477; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), MT, 1 ♀, C+J+M, slide Inv. No. 14653; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14604; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7729; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7723; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 10.-11.vi.1981, SW, 2 ♂♂, 1 ♀, J, slides Inv. No. 107, 627 and 629; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 19553 and 19627; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18492 and 18536.

Distribution: A common European species, distributed in central Europe, along the Atlantic coast, in the British Isles and reaching the Apennines and the Balkans in the south (Ježek & Omelkova 2012).

Environmental notes, dates: From May until September, 405-593 m a.s.l. A total 22 sampling sites, water chemistry measured at 8 sites: 37, 54, 134 (not all values), 161, 163, 165, 166 and 257 (partially).

pH 2.2-8.85; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.302-8.415; **TN (mg/l)** 0.430-10.252; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 8.0-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.01-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 9-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 63-21528.

Comments: It prefers mats of bryophytes of springs and small streams meandering in a wide range of altitudes.

Philosepedon Eaton, 1904

Philosepedon s. str.

34. *Philosepedon (Philosepedon) austriacum* Vaillant, 1974

Published records: between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54) (Ježek 1999).

Material examined: between Chocovice and Doubí, oxbows of Ohře river (8), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8618; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15545; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 20.ix.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15439; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 6752; Kynšperk nad Ohří, gutter (146), 9.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15466; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10541; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14647.

Distribution: Distributed in Europe (Austria, Czech Republic, Germany, Greece, Russia, Slovakia, and Slovenia) and western Siberia (Ježek & Omelkova 2012).

Environmental notes, dates: From May until September, 343-444 m a.s.l. Adults of this species were captured in western Bohemia at 9 sampling sites. Water analysis was conducted at sites 54 and 166.

pH 2.2-8.35; **alkalinity (mmol/l)** 0.0-11.6; **N-NH₄⁺ (mg/l)** 0.007-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 1.22-10.252; **TP (mg/l)** 0.030-1.35; **Na (mg/l)** 1.7-695; **K (mg/l)** 2.1-45; **Ca (mg/l)** 10.9-

409; **Mg (mg/l)** 3.5-278; **Fe (mg/l)** 0.1-968; **Cl⁻ (mg/l)** 2.1-719; **SO₄²⁻ (mg/l)** 13-5845; **Mn (mg/l)** 0.05-19.5; **conductivity (μS/cm)** 120-4682.

Comments: The water analysis would be pointless unless it is proven in the future that larvae of this species develop only in dead snails or have a completely different biology unknown to us (see *Philosepedon humerale*).

35. *Philosepedon (Philosepedon) balkanicum* Krek, 1971

Material examined: Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18528.

Distribution: Recorded in Bosnia and Herzegovina, Czech Republic, Germany, Slovakia, Slovenia, and Caucasus (Abkhazia) (Ježek & Omelkova 2012).

Environmental notes, dates: A beginning of June, 620 m a.s.l. The male of this species was captured in western Bohemia in 1 sites; the water analysis was carried out: 235, but the larvae may develop only in dead land snails (this is not yet known) (see *Philosepedon humerale*).

pH 5.2-6.15; **alkalinity (mmol/l)** 0.05-0.3; **N-NH₄⁺ (mg/l)** 0.01-0.256; **N-NO₃⁻ (mg/l)** 0.362-0.65; **N org. (mg/l)** 0.59; **TN (mg/l)** 1.25; **TP (mg/l)** 0.031-0.21; **Na (mg/l)** 3.2-3.6; **K (mg/l)** 1.4-1.9; **Ca (mg/l)** 9-13; **Mg (mg/l)** 2.4-5.47; **Fe (mg/l)** 0.25-0.35; **Cl⁻ (mg/l)** 5.01-5.3; **SO₄²⁻ (mg/l)** 26.4-32.7; **Mn (mg/l)** 0.08-0.24; **conductivity (μS/cm)** 103-124.

Comments: Rare predominantly European species, in the Czech Republic critically endangered (Ježek 2005).

36. *Philosepedon (Philosepedon) hrudkai* Ježek, 1999

Published records: between Svatava and Lomnice, aggregated small localities (54); Hroznetín (120) (Ježek 1999).

Material examined: Choječná env. Cheb, pond (69), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 9744; Dvoreček, Mělký rybník pond (88), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10638.

Distribution: Probably central European species, known only from the Czech Republic (Ježek 1999).

Environmental notes, dates: May, 343-451 m a.s.l. A total 4 sampling sites; water analysis was conducted at site 54 only.

pH 6.23-8.35; **alkalinity (mmol/l)** 0.4-11.6; **N-NH₄⁺ (mg/l)** 0.007-4.011; **N-NO₃⁻ (mg/l)** 0.001-1.58; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 1.22-9.21; **TP (mg/l)** 0.030-0.410; **Na (mg/l)** 1.7-695; **K (mg/l)** 2.1-45; **Ca (mg/l)** 10.9-361; **Mg (mg/l)** 3.5-278; **Fe (mg/l)** 0.1-13.449; **Cl⁻ (mg/l)** 2.1-16.45; **SO₄²⁻ (mg/l)** 13-2099; **Mn (mg/l)** 0.05-2.833; **conductivity (μS/cm)** 120-3963.

Comments: In spite of the water analysis above, maybe useless, biological demands of this species are quite unknown so far. Vulnerable in the Czech Republic (Ježek 2005).

37. *Philosepedon (Philosepedon) humerale* (Meigen, 1818)

Published records: between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); Svatava env., Svatava river (242); Tachov (247) (Ježek 1985, 1999).

Material examined: between Chocovice and Doubí, oxbows of Ohře river (8), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8619; Erika sand pit, small water reservoirs and pools (91), 30.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12135; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15440 and 15628; Hroznetín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 6753; Kraslice, Svatava river (143), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9659.

Distribution: Very common and widely distributed European species, known from Belgium, Czech Republic, Great Britain, France, Germany, Ireland, Denmark, Hungary, Slovakia, Spain, and former Yugoslavia (present also in North Africa) (Ježek *et al.* 2013).

Environmental notes, dates: From May until September, 343-521 m a.s.l. Adults of this species were captured in western Bohemia at 8 sampling sites.

Comments: Water analysis was not done anywhere, but in this case it would be pointless. Larvae of this species develop as long as it is known only during winter in dead terrestrial snails and the eclosion from their conchs is taking place soon after the melting of snow in the spring months (some details see Nielsen (1961) and Beaver (1972)). Schmitz (1917) recorded the eclosion of this species from potatoes, however, it was not verified so far.

38. *Philosepedon (Philosepedon) nickerli* Ježek, 1995

Material examined: Chlum Sv. Máří, Litov-Boden dump edge, small pools (65), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11151.

Distribution: Probably central European species, known only from CZ so far (Ježek 1995).

Environmental notes, dates: An ending of June, 512 m a.s.l. A water analysis of the single locality was not carried out on it.

Comments: The biology of the species is not known. Vulnerable in the Czech Republic (Ježek 2005).

Threticus Eaton, 1904

39. *Threticus lucifugus* (Walker, 1856)

Published records: Loket, Lněný vrch hill (154); Pastviny area (165); Měděnec (174); Rotava railway station env. Kraslice (221); Snežná nr. Kraslice, Hlinitý vrch hill (228); Stanovice dam (237); Tatrovce – Na skále env. Vřesová (249) (Ježek 1985, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 4.vi.1998, SW, 1 ♂, J, slide Inv. No. 7641; between Nový Fojtov and Lužec, Nad Matysem hill (47), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9709; between Výhledy and Skalka, Hazlovský potok brook (58), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8621; Chvoječná env. Cheb, pond (69), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 9742; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6699; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13490; Dvoreček, Mělký rybník pond (88), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10636; Horní Rozmyšl, cowshed, marshes (113), 16.ix.1997, SW, 1 ♂, J, slide Inv. No. 8620; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13387; Kopanina nr. Habartov, „Nad stráněmi“, Kopaninský potok brook (139), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 10644; Kynšperk nad Ohří env., Studánka farming lonely houses, spring area (147), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9611; Lázně Kynžvart env., forest brook nr. Kladské rašeliny NNR peatbogs (148), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9735; Lobzy nr. Březová, Lobézský potok brook (153), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9728; Lužec env. Nová Role, Lužecký potok brook (170), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9663; Milíkov env., U těšovské hájenky hill, slope swamps (176), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10621; Milíkov nr. Dolní Žandov, Braunova strouha brook (177), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7818; Nejdek, Limnice brook (186), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 10596; Oldřichov env. Pernink, Oceán NR (207), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9664; Podstrání env. Rovná, Lobézský potok brook (213), 13.ix.2000, SW, 1 ♂, J, slide Inv. No. 9716; Rotava railway station env. Kraslice, Mezní potok brook (221), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9699; Spomyšl env. Tatrovce, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18541 and 18586; Tatrovce env. Vřesová, forest brook, waterworks (248), 2.viii. and 28.viii.2002, MT, 2 ♂♂, C+J+M, slides Inv. No. 11116 and 11185; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 3 ♂♂, J, slides Inv. No. 104, 613 and 628.

Distribution: A European species, known from Belgium, Czech Republic, Great Britain, Denmark, Germany, Hungary, Ireland, Poland, Slovakia, and Switzerland (Ježek 2007).

Environmental notes, dates: From May until September, 416-925 m a.s.l. Adults of this species were captured in western Bohemia at 29 sampling sites. The water analysis was performed on 2 sites: 165 and 235.

pH 2.34-8.65; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-2.090; **N-NO₃⁻ (mg/l)** 0.001-3.60; **N org. (mg/l)** 0.302-3.56; **TN (mg/l)** 0.430-8.735; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 2.3-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 9-943.63; **Mg (mg/l)** 2.4-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 26.4-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 103-21528.

Comments: Jung (1956) characterized habitats as slow flows, wet mats of bryophytes, weirs and waterfalls. Szabó (1965) collected larvae in a spring area with pH 5.3.

40. *Threticus silvaticus* Ježek, 1985

Published records: Snežná nr. Kraslice, Hlinitý vrch hill (228) (Ježek 1999).

Material examined: Horní Rozmyšl, cowshed, marshes (113), 16.ix.1997, SW, 1 ♂, J, slide Inv. No. 15628; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13384; Spomyšl env. Tatrovce, Tatrovická stoka drain (235), 19.v.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18584.

Distribution: European species, known only from the Czech Republic so far.

Environmental notes, dates: From May until September, 578-675 m a.s.l. Adults of this species were captured in western Bohemia at 4 sampling sites. Water analysis was performed only at site 235.

pH 5.2-6.15; **alkalinity (mmol/l)** 0.05-0.3; **N-NH₄⁺ (mg/l)** 0.01-0.256; **N-NO₃⁻ (mg/l)** 0.362-0.65; **N org. (mg/l)** 0.59; **TN (mg/l)** 1.25; **TP (mg/l)** 0.031-0.21; **Na (mg/l)** 3.2-3.6; **K (mg/l)** 1.4-1.9; **Ca (mg/l)** 9-13; **Mg (mg/l)** 2.4-5.47; **Fe (mg/l)** 0.25-0.35; **Cl⁻ (mg/l)** 5.01-5.3; **SO₄²⁻ (mg/l)** 26.4-32.7; **Mn (mg/l)** 0.08-0.24; **conductivity (µS/cm)** 103-124.

Comments: Collected in dunging spring areas, marches and near drains. Vulnerable in CZ (Ježek 2005).

Trichopsychoda Tonnoir, 1922

41. *Trichopsychoda hirtella* (Tonnoir, 1919)

Published records: between Svatava and Lomnice, aggregated small localities (54); Oloví, Svatava river (208); Tatrovce – Na skále env. Vřesová (249) (Ježek 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16737 and 16890; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15539; between Kacěřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15595; between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008,

MT, 1 ♀, C+J+M, slide Inv. No. 17434; between Lomnice and Vintřov, experimental waterfall (38), 18.vi.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17505; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14736; between Rosnice and Stará Role, Václav flooded pit (48), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 6601; between Tatrovce and Chodov, Nové Chalupy seclusion, forest glade (55), 29.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18573; Citice env. Sokolov, Ohře river (70), 31.v.1998, SW, 1 ♀, J, slide Inv. No. 7787; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 6697; Dolní Rotava (foundry), Rotava brook (84), 14.ix.2000, SW, 1 ♀, J, slide Inv. No. 9679; Dolní Rychnov, golf course edge (85), 27.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16840; Dolní Rychnov, Rychnovský potok brook (87), 27.viii. and 20.ix.2007, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 16830 and 16931; Erika sand pit, small water reservoirs and pools (91), 30.vi and 27.viii.2003, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 12129 and 12154; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15455 and 15610; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15592; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13424; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13381; „Klondike“ nr. Vintřov, Modráčkový rybník pond (134), 28.viii.2002 and 27.vi.2010, MT, 1 ♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11202 and 19668; Kopanina nr. Habartov, Horka water reservoir env. (138), ?, SW, 1 ♀, J, slide Inv. No. 7694; Kraslice env., Rájecké údolí valley, Rájecký (Stříbrný) potok brook (144), 16.ix.2000, SW, 1 ♀, J, slide Inv. No. 9725; Kynšperk nad Ohří, gutter (146), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15454; Loket - Split camping area and Staré koupaliště swimming pool, Ohře river (156), 2.vi.1998, SW, 1 ♀, J, slide Inv. No. 7643; Loket, Ohře river nr. Šibeniční vrch hill (155), 2.vi.1998, SW, 1 ♀, J, slide Inv. No. 8623; Lomnice env., Lomnický les forest, Smrdutá and Topolová water reservoirs (159), 17.ix.1997, SW, 1 ♀, J, slide Inv. No. 6594; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 17.vii.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12121; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001 and 10.ix.2008, SW, MT, 2 ♀♀, J, C+J+M, slides Inv. No. 10540 and 17460; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 2 ♂♂, C+J+M, slides Inv. No. 16749 and 16919; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 1 ♂, J, slide Inv. No. 16807; Spomyšl env. Tatrovce, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♀, C+J+M, slide Inv. No. 18513; Spomyšl env. Tatrovce, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+M, slide Inv. No. 18605; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 28.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16792 and 16873; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 1 ♀, J, slide Inv. No. 106; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 6.ix.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 19622; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18547; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10.vi. and 27.vii.2009, MT, 2 ♂♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11071, 18488 and 18651.

Distribution: Generally, a common species, distributed from the British Isles to north and central Europe, the Apennines and the Balkans (Ježek & Omelkova 2012).

Environmental notes, dates: From May until October, 394-943.2 m a.s.l. A total 39 sampling sites; water chemistry was detected in 8 sites: 54, 85, 134 (not all values), 163, 166, 235, 257 (incomplete) and 263.

pH 2.2-8.85; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.55-26.92; **TP (mg/l)** 0.003-1.35; **Na (mg/l)** 1.7-835; **K (mg/l)** 0-45; **Ca (mg/l)** 6.7-506; **Mg (mg/l)** 1.2-356.1; **Fe (mg/l)** 0.01-968; **Cl⁻ (mg/l)** 1.2-719; **SO₄²⁻ (mg/l)** 9-5845; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-6100.

Comments: Abundant European species, the larvae are frequent in decaying plants and fruits as well far from water (Vaillant 1974). Adults often with a massive presence in MT and YPT.

PSYCHODINI

42. *Chodopsycha lobata* (Tonnoir, 1940)

Published records: between Lipnice and Vintřov, Panský rybník pond (25); between Loket and Nové Sedlo (28); between Svataava and Lomnice, aggregated small localities (54); Borek env. Bernartice (61); Citice env. Sokolov, Výsypka Antonín dump (71); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165); Rotava railway station env. Kraslice (221); Šindelová env. Kraslice (246); Vřesová env. Chodov, sludge water defecation and sedimentation (263) (Ježek 1990a, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 13.ix.2000, 18.vii. and 8.viii.2007, SW, 3 ♀♀, MT, J, C+J+M, slides Inv. No. 9713, 16736 and 16891; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15551; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13455; between Dvorečky and former Libava, Malá Libava forest brook (12), 13.ix.2000, SW, 1 ♀, J, slide Inv. No. 9676; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♀, C+J+M, slide Inv. No. 19507; between Kacěřov and Bučina hill, Libocký

potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15569; between Lipnice and Vintířov, Panský rybník pond (25), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11167; between Lipnice and Vřesová, dry ridge dump (26), 21.vi. and 14.vii.2010, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 19608 and 19631; between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17431; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 6.ix.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19653; between Lomnice and Vintířov, experimental waterfall (38), 18.vi.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17501; between Lomnice and Vintířov, Klára water reservoir (39), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17574; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12092; between Tatrovce and Chodov, forest glade (55), 10. and 29.vi. 2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18575 and 18661; between Tatrovce and Chodov, forest brook (56), 27.vi.2002, SW, 1 ♀, J, slide Inv. No. 11164; Bystřina (summer camp) nr. Kostelní Bříza, Velká Libava brook (64), 13.ix.2000, SW, 1 ♀, J, slide Inv. No. 9577; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13445; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16844 and 16946; Dolní Rychnov, golf course water reservoir (86), 25.vi. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16797 and 16856; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16823; Erika sand pit, small water reservoirs and pools (91), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12176; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15612 and 15447; Habartov, Habartovský potok brook (96), 23.ix.1997, SW, 1 ♀, J, slide Inv. No. 6599; Habartov - Kluč, water reservoirs (97), 10.vii.2002, SW, 1 ♀, C, slide Inv. No. 12142; Hora Svatého Šebastiána, Bezručovo údolí valley, Chomutovka brook (107), 16.ix.2000, SW, 1 ♀, J, slide Inv. No. 9740; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13470; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15617; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13363; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13431; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13390; Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake (130), 28.ix.1998, SW, 3 ♀♀, J, slides Inv. No. 7678, 8625 and 9706; Kfely env. Ostrov, Jesenice brook (132), 4.vi.2000, SW, 1 ♀, J, slide Inv. No. 9702; Kladská env. Mariánské Lázně, Třebízského potok brook (133), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9685; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 25.vi., 28.viii. and 26.x.2002, SW, MT, 3 ♀♀, J, C+J+M, slides Inv. No. 11084, 11146 and 11206; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11136; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 4.vi.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19658; Kynšperk nad Ohří, gutter (146), 31.x.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15514; Lobzy nr. Březová, Lobézský potok brook (153), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9729; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10501; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10487; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, SW, 1 ♂, J, slide Inv. No. 10521; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, 17.vii.2003, MT, 2 ♀♀, C+J+M, slides Inv. No. 10468 and 12119; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001 and 10.ix.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 10546 and 17472; Mariánské Lázně env., U Nimroda hill, Mnichovský potok brook (173), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9732; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14692; Nový Drahov env. Františkovy Lázně, Stodolský potok brook (202), 28.ix.1998, SW, 1 ♀, J, slide Inv. No. 7649; Ostrov env., Ottův rybník pond (211), 21.ix.1997, SW, 1 ♀, J, slide Inv. No. 8624; Podstrání env. Rovná, Lobézský potok brook (213), 13.ix.2000 and 18.viii.2007, SW, MT, 1 ♂, 1 ♀, J, C+J+M, slides Inv. No. 9717 and 16754; Přebuz env., Přebuzské vřesoviště heathland NM (219), 14.ix.2000, SW, 1 ♀, J, slide Inv. No. 9739; Rotava railway station env. Kraslice, Mezní potok brook (221), 14.ix.2000, SW, 1 ♀, J, slide Inv. No. 9700; Smrčina nr. Plesná, Pstruhový potok brook (227), 29.ix.1998, SW, 1 ♀, J, slide Inv. No. 7763; Soos NNR env. Františkovy Lázně, moffettes in a volcanic caldera lake (232), 6.viii.1998, SW, 1 ♀, J, slide Inv. No. 8626; Spomyšl env. Tatrovce, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18514; Spomyšl env. Tatrovce, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18604; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 28.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16783 and 16875; Stříbrná env., Rájecký potok brook, Nancy camping (240), 16.ix.2000, SW, 1 ♀, J, slide Inv. No. 9724; Svatava env., Svatavský vrch hill, small forest pond (243), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12077; Tatrovce env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11117 and 11178; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19545 and 19613; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13414; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 10.vi.2009, MT, 1 ♂, C+J+M, slide Inv. No. 18566; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 29.vi.2009, MT, 1 ♀, C+J+K+M,

slide Inv. No. 18666; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10.vi. and 27.vii.2009, MT, 3 ♀♀, C+J+M, slides Inv. No. 11065, 18487 and 18623.

Distribution: A very common European (Transcaucasian) species. Known from Belgium, Bulgaria, Czech Republic, France, Germany, Great Britain, Hungary, Ireland, Italy, Norway, Slovakia, Slovenia, and Ukraine (Kvifite *et al.* 2011; Ježek & Omelková 2012; Ježek *et al.* 2013, 2017).

Environmental notes, dates: From May until October, 340-879 m a.s.l. Adults of this species were captured in 70 sites in western Bohemia. The chemical analysis is applied here from 13 sites - the most significant monitored localities within Sokolovská uhelná a.s.: 16, 37, 54, 85, 134 (not all values), 160, 161, 163, 165, 166, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.7-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: It is known that the larvae of species develop in mushrooms; the question is, how much water analysis corresponds to its development outside of the mentioned medium associated with fungi. Present in lowlands as well as in hills and mountains; generally abundant species, often with a massive presence in MT and YPT.

Copropsychoda Vaillant, 1971

43. *Copropsychoda brevicornis* (Tonnoir, 1940)

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀ C+J+M, slides Inv. No. 16743 and 16894; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15531; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13463; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19526; between Kacéřov and Bučina hill, Libocký potok brook (19), 30.x.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15535; between Lipnice and Vřesová, dry ridge dump (26), 21.vi. and 14.vii.2010, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 19599 and 19633; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17559; between Lomnice and Vintřov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 17487 and 17570; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14734; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi.2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18653 and 18675; Dolní Rychnov, golf course edge (85), 27.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16847; Dolní Rychnov, golf course water reservoir (86), 25.vi.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16800; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15620; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13362; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13375; Kynšperk nad Ohří, gutter (146), 31.x.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15528; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10484; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10478; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10547; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14667; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15482; Podstrání env. Rovná, Lobězský potok brook (213), 29.viii.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16920; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18619; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 28.viii.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16877; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13407; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18503; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002 and 27.vii.2009, MT, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11077 and 18637.

Distribution: A western Palaearctic distribution; known from the Belgium, Czech Republic, Denmark, France, Germany, Great Britain, Ireland, the Netherlands, Norway, Russia, Slovakia, Sweden, and Turkey (Ježek & Omelková 2012, Ježek *et al.* 2018b).

Environmental notes, dates: From May until October, 346-720 m a.s.l. Adults of this species were collected in total in 27 sites. Water analyzes refer to 7 sites - the most significant monitored localities within Sokolovská uhelná a. s.: 16, 85, 160, 163, 166, 200, 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.35; **Na (mg/l)** 1.7-2052.4; **K (mg/l)** 0-39.4; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: A common saprophagous species, generally abundant, often with a massive presence of adults in MT and YPT.

Logima Eaton, 1904

44. *Logima albipennis* (Zetterstedt, 1850)

Published records: between Loket and Nové Sedlo (28); Chodová Planá (67); Lomnice env., Matyáš dump (36); between Svatava and Královské Pořící, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Františkovy Lázně (94); Jáchymov – Nové Město (122); Kynšperk nad Ohří (146); Lázně Kynžvart (148); Lomnický les forest, water bodies (158); (159); (160); (161); (162); Měděnec (174); Pastviny area (165); Snežná nr. Kraslice, Hlinitý hill (228); Šindelová env. Kraslice (246); Tachov (247); Teplá env. Mariánské Lázně (250) (Ježek 1983, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16748 and 16895; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15502 and 15548; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13460; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19522; between Kacérov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15536 and 15581; between Lipnice and Vintířov, Panský rybník pond (25), 24.vi.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11109; between Lipnice and Vřesová, dry ridge dump (26), 21.vi. and 14.vii.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19606 and 19630; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17561; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v. and 30.vii.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17435 and 17604; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19499 and 19651; between Lomnice and Vintířov, experimental waterfall (38), 5., 26.v. and 18.vi.2008, MT, 3 ♀♀, C+J+M, slides Inv. No. 17511, 17540 and 17621; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17485 and 17578; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14733; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12089; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 29.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18673; Chlum Sv. Máří, Lítov-Boden dump edge, small pools (65), 26.vi.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11153; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 6700; Dasnice, wet meadows (74), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9635; Děvín NR env. Milhostov, Lužní potok brook (79), 30.ix.1998, SW, 1 ♀, J, slide Inv. No. 7769; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16852 and 16952; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16832; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15458 and 15622; Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15508 and 15568; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 22.ix.1997, SW, 1 ♀, J, slide Inv. No. 6579; Hájek env. Ostrov, Umučený rybník pond (102), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 10618; Hora Svatého Šebastiána, Bezručovo údolí valley, Chomutovka brook (107), 16.ix.2000, SW, 1 ♂, J, slide Inv. No. 9741; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998 and 9.viii.2006, SW, MT, 2 ♀♀, J, C+J+M, slides Inv. No. 9694 and 15599; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13356; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13425; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♀, J, slide Inv. No. 6758; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16776 and 16908; Jimlíkov env. Nová Role, kaoline-pits, Jimlíkovský potok brook (123), 28.v.1997, SW, 1 ♀, J, slide Inv. No. 6573; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13393; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 9.viii.2010, MT, 3 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11097, 11246 and 19564; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11139; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 10.v.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19598; Kynšperk nad Ohří, gutter (146), 9.viii. and 31.x.2006, MT, 3 ♀♀, C+J+M, slides Inv. No. 15461, 15478 and 15526; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10483; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10522; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001 and 17.vii.2003, MT, 2 ♀♀, C+J+M, slides Inv. No. 10463 and 12117; Lomnice env., Pastviny area, Julie water reservoir (164), 4.ix.1996, SW, 1 ♀, C, slide Inv. No. 12162; Lomnice env., Pastviny area, marshes 2.5 km N (165), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17539; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001 and 5.v.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 10544 and 17596; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14624 and 14648; Nová Role env., Černý

potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14698; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi.2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14610 and 14781; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14699 and 14712; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15488; Nový Drahov env. Františkovy Lázně, Stodolský potok brook (202), 28.ix.1998, SW, 1 ♀, J, slide Inv. No. 7647; Plesná, Plesná brook (212), 29.ix.1998, SW, 1 ♀, J, slide Inv. No. 7634; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16764 and 16921; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 1 ♀, J, slide Inv. No. 16811; Soos NNR env. Františkovy Lázně, moffettes in a volcanic caldera lake (232), 22.ix.1997, SW, 1 ♀, J, slide Inv. No. 6609; Soos NNR env. Františkovy Lázně, Vonšov area, peatlands (234), 28.ix.1998, SW, 1 ♀, J, slide Inv. No. 9727; Spomyšl env. Tatrovce, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18523 and 18596; Spomyšl env. Tatrovce, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18622; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 16728; Stříbrná env., Rájecký potok brook, Nancy camping (240), 16.ix.2000, SW, 1 ♀, J, slide Inv. No. 9726; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12111; Tatrovce env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11102 and 11186; Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook (254), 11.vi.1981, SW, 1 ♀, J, slide Inv. No. 105; Vintířov env., Vintířovská výsypka dump, Transects 4BN – 5BN (256), 12.v. - 9.vii.1998, MT, 1 ♀, C+J+M, slide Inv. No. 9568; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 19552; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13406; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18567; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10. and 29.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18552 and 18681; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10. and 27.vi.2009, MT, 3 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11074, 18495 and 18635.

Distribution: A cosmopolitan species. In Europe, it is known from Austria, Azores, Belgium, Bosnia and Herzegovina, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Luxemburg, Madeira, the Netherlands, Norway, Poland, Portugal, Romania, Russia, Sardinia, Serbia, Slovakia, Slovenia, and Sweden. In Asia from Armenia, Azerbaijan, Afghanistan, China, India, Japan, North Korea, Syria and Turkey. In Afrika, from Algeria, the Canary Islands, Gambia, South Africa, Tunisia; also from Australia, New Zealand, South America, USA; Campbell Island, Juan Fernandez Island, Kerguelen Island, Macquarie Island (Ježek & Yağci 2005, Kvifte 2012, Afzan & Belqat 2016, Ježek *et al.* 2018a).

Environmental notes, dates: From Marz until October, 340-925 m a.s.l. A total 82 sites, water analyzes known from 14 sites: 16, 37, 54, 85, 134 (incomplete), 160, 161, 163, 165, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: Very abundant species, common from lowlands to mountains, often with a massive presence of adults in MT and YPT.

45. *Logima erminea* (Eaton, 1893)

Published records: Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Starý Jiří open-cast mine (166) (Ježek 1999).

Material examined: between Bystřina and Rovná, spring area (7), 8.viii.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16744; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slide Inv. No. 15500 and 15549; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19520; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15519 and 15597; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17557; between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17429; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17445; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19481 and 19652; between Svatava and Lomnice, aggregated small localities (54), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17537; Čankov nr. Karlovy Vary, pond (72), 2.ix.1997, SW, 1 ♂, J, slide Inv. No. 6704; Dolní Rychnov, golf course edge (85), 27.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16845 and 16943; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16827; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15445 and 15613; Horní Pochlovice, Libocký potok brook (112) 7.viii.1998 and 9.viii.2006, SW, MT, 2 ♀♀, J, C+J+M, slides Inv. No. 9687 and 15605; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004,

MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13433; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 6755; Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake (130), 28.ix.1998, SW, 1 ♂, J, slide Inv. No. 7680; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 26.x.2002 and 9.vii.2010, MT, 1 ♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11086 and 19574; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11110; Kopanina nr. Habartov, „Nad stráněmi“, Kopaninský potok brook (139), 30.ix.1998, SW, 1 ♀, J, slide Inv. No. 8632; Kynšperk nad Ohří, gutter (146), 9.viii. and 31.x.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15467 and 15512; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10497; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10488; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10523; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii. and 10.viii.2001, 19.v.2003, MT, 1 ♂, 2 ♀♀, C+J+M, slides Inv. No. 10479, 10509 and 12098; Lomnice env., Starý Jirí open-cast mine and orange water reservoir (166), 10.viii.2001 and 10.ix.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 10537 and 17467; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15474; Nový Kostel Luby, U kyselky well, Svažecký potok brook (204), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7782; Nový Kostel railway station env., Hrzinský les forest, ponds (205), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7651; Plesná, Plesná brook (212), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7635; Podstrání env. Rovná, Lobězský potok brook (213), 8.viii.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16761; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 1 ♂, J, slide Inv. No. 16809; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 28.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16789 and 16870; Tatrovice env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11119 and 11171; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19551 and 19624; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002 and 27.vii.2009, MT, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11073 and 18640.

Distribution: Palearctic species. In Europe, known from Belgium, Czech Republic, Croatia, Germany, Great Britain, Ireland, Norway, Poland, Slovakia, Slovenia, the Netherlands (Kvifte *et al.* 2011, Ježek & Omelková 2012).

Environmental notes, dates: From May until October, 340-720 m a.s.l. A total 38 sites; water analysis was performed at 12 sites: 16, 37, 54, 85, 134 (not all values), 160, 161, 163, 166, 200, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: Common and known from various altitudes, registered in caves. The biology is, unfortunately, little known.

46. *Logima satchelli* (Quate, 1955)

Published records: between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); Citice env. Sokolov, Výsypka Antonín dump (71); Lobzy nr. Březová (153); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165); Snežná nr. Kraslice, Hlinitý vrch hill (228); Svatava env., Svatava river (242); Šindelová env. Kraslice (246) (Ježek 1999).

Material examined: between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii. and 31.x.2006, MT, 2 ♂♂, C+J+M, slide Inv. No. 15501 and 15547; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19530; between Josefův and Hřebeny, pond in field (18), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 7688; between Kacěřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15582; between Lipnice and Vřesová, dry ridge dump (26), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19605; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17562; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17605; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19498; between Lomnice and Vintířov, experimental waterfall (38), 5.v. and 18.vi.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17510 and 17535; between Lomnice and Vintířov, Klára water reservoir (39), 8.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17486; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14739; between Nový Fojtov and Lužec, Nad Matysem hill (47), 2.vi.2000, SW, 1 ♀, J, slide Inv. No. 9708; between Rosnice and Stará Role, Václav flooded pit (48), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 6603; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 12037 and 12090; between Tatrovice and Chodov, forest glade (55), 10. and 29.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18672 and 18674; Bublák nr. Vackovec, Plesná brook (63), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7800; Chlum Sv. Máří, Lítov-Boden dump edge, small pools (65), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11152; Chvoječná env. Cheb, pond (69), 16.v.2000, SW, 1 ♀, J, slide Inv. No. 9748; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 6707; Děpoltovice,

wet meadows (78), 3.vi.2000, SW, 1 ♀, J, slide Inv. No. 9621; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 16849 and 16950; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, SW, 1 ♀, J, slide Inv. No. 16833; Dvorek, Stodolský potok brook (89), 22.ix.1997, SW, 1 ♂, J, slide Inv. No. 6610; Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8633; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15457 and 15625; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 29.-30.ix.1998, SW, 2 ♀♀, J, slide Inv. No. 8634 and 8635; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15604; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13426; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♀, J, slide Inv. No. 6754; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♂♂, J, slides Inv. No. 16777 and 16903; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13374; Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake (130), 28.ix.1998, SW, 1 ♂, J, slide Inv. No. 7679; „Klondike“ nr. Vintřov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, MT, 2 ♂♂, C+J+M, slides Inv. No. 11098 and 11248; Kynšperk nad Ohří, gutter (146), 9.viii. and 31.x.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15459 and 15516; Lítov, dump, water reservoir, Částkovský potok brook (152), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7706; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001 and 19.v.2003, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 10472 and 12096; Lomnice env., Pastviny area, marshes 2.5 km N (165), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17536; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17592; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, MT, 2 ♂♂, C+J+M, slides Inv. No. 14641 and 14658; Mírová env. Chodov, Zátíší, floodplain forest (179), 28.v.1997, SW, 1 ♀, J, slide Inv. No. 6605; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14782; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 11.v.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14745; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♂♂, C+J+M, slide Inv. No. 15487; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 16760 and 16922; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♀, J, slide Inv. No. 6726; Rotava railway station env. Kraslice, Mezní potok brook (221), 14.ix.2000, SW, 1 ♀, J, slide Inv. No. 9698; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, MT, 2 ♂, C+J+K+M, slides Inv. No. 18524 and 18597; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18621; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v. and 28.viii.2007, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 16729 and 16879; Tatrovice env. Vřesová, forest brook, waterworks (248), 28.viii.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11187; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2009, MT, 2 ♀, C+J+K+M, slide Inv. No. 19548 and 19626; Vřesová env. Chodov, Černý potok brook nr. Rájecký Špičák hill (258), 27.vi.2002, SW, 1 ♂, J, slide Inv. No. 11161; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v. and 10.vi.2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18520 and 18568; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10. and 29.vi.2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18546 and 18682; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10.vi. and 27.vii.2009, MT, 2 ♂♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11078, 18496 and 18634.

Distribution: Holarctic species. In Europe, known from e.g. Austria, Belgium, Czech Republic, Ireland, Italy, Norway, Russia, Slovakia, Slovenia, Sweden, the Netherlands, Ukraine and former Yugoslavia; Azerbaijan; Canada, USA (Ježek & Goutner 1995, Svensson 2009, Kvifte *et al.* 2011, Ježek *et al.* 2017, 2018a, b).

Environmental notes, dates: From April until October, 340-735.8 m a.s.l. A total 66 sites, water analyzes known from 14 sites: 16, 37, 54, 85, 134 (incomplete), 160, 161, 163, 165, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: Abundant and common species, eurybiontic, often of a massive presence of adults in MT and YPT.

47. *Logima sigma* Kincaid, 1899

Material examined: Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18646.

Distribution: Known from Belgium, Czech Republic, Finland, France, Great Britain, Norway, Poland, Slovakia, Spain (incl. Madeira); Antipodes Is., Auckland L, Australia, Campbell L, Chile, Enderby L, Ewing L, French L, Macquarie L, New Zealand, Ocean L, Rose L, Saint Helena, USA (Ježek 2003, Kvifte & Andersen 2012, Kvifte 2012, Oboňa & Kozánek 2018, Ježek *et al.* 2018b).

Environmental notes, dates: July, 479 m a.s.l. The single female of this species was captured in the area of SUAS where water analysis was performed (263).

pH 7-7.87; **alkalinity (mmol/l)** 0.315-3.2; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.014-14.980; **N org. (mg/l)** 1.8; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.069-0.936; **Na (mg/l)** 4.7-265.5; **K (mg/l)** 1.2-9.8; **Ca (mg/l)** 6.7-153.0; **Mg (mg/l)** 1.2-36.1; **Fe (mg/l)** 0.08-0.230; **Cl⁻ (mg/l)** 4.0-241.6; **SO₄²⁻ (mg/l)** 14.1-570.5; **Mn (mg/l)** 0.041-0.27; **conductivity (µS/cm)** 59-2110.

Comments: Well known European *Psychoda surcoufi* Tonnoir, 1922 was synonymized with American *Psychoda sigma* Kincaid, 1899 by Del Rosario (1936). Nationally scarce species (NS).

48. *Logima zetterstedti* Ježek, 1983

Published records: between Svatava and Královské Pořící, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Jáchymov – Nové Město (122); Kynšperk nad Ohří (146); Lázně Kynžvart (148); Pastviny area (165); Oloví (208); Tachov (247) (Ježek 1983, 1999).

Material examined: between Kacéřov and Bučina hill, Libocký potok brook (19), 30.x.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15537; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♀, J, slide Inv. No. 8628; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17563; between Lomnice and Vintřov, Klára water reservoir (39), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17577; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14740; between Nebanice and Odava, Ohře river (42), 16.v.1999, SW, 1 ♀, J, slide Inv. No. 8637; between Vonšov and Kateřina, kaolin reservoir (57), 28.ix.1998, SW, 1 ♀, J, slide Inv. No. 8630; Březová, Tisová forest brook (62), 1.vi.1997, SW, 1 ♀, J, slide Inv. No. 6739; Bublák nr. Vackovec, Plesná brook (63), 16.v.1999, SW, 1 ♀, J, slide Inv. No. 8627; Chlum Sv. Máří, Lítov-Boden dump edge, small pools (65), 26.vi.2002, SW, 1 ♀, J, slide Inv. No. 11159; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 6702; Dolní Nivy, Pstruhový potok brook (82), 1.ix.2004, MT, 1 ♀, C+J+M, slide Inv. No. 13461; Dolní Rychnov, golf course edge (85), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16951; Habartov – Ůzlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15554; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 29.-30.ix.1998, SW, 2 ♀♀, J, slides Inv. No. 8629 and 8631; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13474; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15603; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13355; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 2 ♀♀, C+F+J+M+S, slides Inv. No. 13434 and 13492; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♀, J, slide Inv. No. 6757; Hrušková env. Sokolov, Hruškovský potok brook (121), 5.vi.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16778; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13392; Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake (130), 22.ix.1997, SW, 1 ♀, J, slide Inv. No. 6586; „Klondike“ nr. Vintřov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11099 and 11247; „Klondike“ nr. Vintřov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11125; Kopanina nr. Habartov, „Nad stráněmi“, Kopaninský potok brook (139), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 8636; Kynšperk nad Ohří, gutter (146), 9.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15468 and 15527; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10498; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 19.v.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12125; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10545; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14623; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14722; Tatrovce env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11106 and 11182; Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259), 27.vi.2002, SW, 1 ♀, J, slide Inv. No. 11244; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13417; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11089.

Distribution: European (Belgium, Czech Republic, Great Britain, Slovakia, Slovenia, The Netherlands) and west Siberian species (Ježek 1983, Ježek *et al.* 2018b).

Environmental notes, dates: From May until October, 343-925 m a.s.l., Adults of this species were captured in western Bohemia at 43 sampling sites. Water analysis was performed on the following 7 localities: 54, 85, 134 (not all values), 163, 165, 166 and 263.

pH 2.2-8.85; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.430-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 1.7-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.7-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.01-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 9-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: Larvae are saprobiont; eurybiontic species collected frequently from lowlands to mountains together with *Logima albipennis* and *L. satchelli* on the same localities. E.g. moist heaps of hay and rubbish from potatoes (Ježek 1983).

49. *Psycha griseascens* (Tonnoir, 1922)

Published records: between Svatava and Královské Pořící, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Jáchymov – Nové Město (122) (Ježek 1990a, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16740 and 16892; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slide Inv. No. 15499 and 15546; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19528; between Kacéřov and Bučina hill, Libocký potok brook (19), 30.x.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15533; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15477 and 15513; between Lipnice and Vřesová, dry ridge dump (26), 21.vi. and 14.vii.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19607 and 19634; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17552; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v.2008, 1 ♀, C+J+M, slide Inv. No. 17609; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, 1 ♂, C+J+M, slide Inv. No. 17442; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19501 and 19644; between Lomnice and Vintířov, experimental waterfall (38), 5., 26.v. and 18.vi.2008, MT, 2 ♂♂, 1 ♀, C+J+M, slides Inv. No. 17514, 17542 and 17616; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17491 and 17576; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14741; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12038; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18577 and 18660; Bublák nr. Vackovec, Plesná brook (63), 30.ix.1998, SW, 1 ♀, J, slide Inv. No. 7802; Dolní Nivy, Pstruhový potok brook (82), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13464; Dolní Rychnov, golf course edge (85), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16944; Dolní Rychnov, golf course water reservoir (86), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16858; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16826; Erika sand pit, small water reservoirs and pools (91), 30.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12151; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 8639; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13466; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19585; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13365; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13427; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16769 and 16901; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13376; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002 and 9.viii.2010, MT, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11096 and 19575; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11249; „Klondike“ nr. Vintířov, older forest recultivation (136), 10.v. and 4.vi.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19591 and 19659; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, SW, 1 ♂, J, slide Inv. No. 10500; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, SW, 1 ♂, J, slide Inv. No. 10486; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii. and 10.viii.2001, 19.v.2003, MT, 3 ♀♀, C+J+M, slides Inv. No. 10480, 10514 and 12097; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, 5.v. and 10.ix.2008, MT, 3 ♀♀, C+J+M, slides Inv. No. 10548, 17465 and 17595; Mírová env. Chodov, Jimlíkovský (Vlčí) pook brook (178), 12.v. and 22.vi.2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14640 and 14664; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14691; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi.2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14611 and 14773; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14717; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15483; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16752 and 16916; Smrčina nr. Plesná, Kamenné Vrchy Nature Park, Pstruhový potok brook (227), 29.ix.1998, SW, 1 ♀, J, slide Inv. No. 7764; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18539 and 18590; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18616; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii. and 20.ix.2007, MT, 3 ♀♀, C+J+M, slides Inv. No. 16716, 16787 and 16876; Stříbrná env., Rájecký potok brook, Nancy camping (240), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9733; Tatrovice env. Vřesová, forest brook, waterworks (248), 2.viii.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11107; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19544 and 19618; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13404; Vřesová env. Chodov, sludge water defecation and sedimentation, central part,

reedswamp edge (262), 10. and 29.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18543 and 18664; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10.vi. and 27.vii.2009, MT, 3 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11088, 18484 and 18647.

Distribution: A European and North African species. Recorded from Algeria, Austria, Belgium, Bosnia and Herzegovina, Czech Republic, Denmark, the Faroe Islands, France, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Mallorca, Morocco, the Netherlands, Norway, Slovakia, Slovenia, Sweden, Tunisia, Turkey, and Ukraine (Andersen 1999, Ježek 2004, Ježek & Yağci 2005, Salmela *et al.* 2014, Kvifte *et al.* 2016, Ježek *et al.* 2017).

Environmental notes, dates: From May until October, 346-846 m a.s.l. A total 53 sampling sites; water chemistry was detected in 12 sites: 16, 37, 54, 85, 134 (not all values), 160, 163, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 1.7-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: Abundant species, often with a massive presence in MT and YPT. The larvae are saprobiontic; adults are sometimes found in sheaths of *Arum maculatum* which they pollinate, together with *Psychoda phalaenoides* (e.g. Tonnoir 1940, Grensted 1947).

Psychoda Latreille, 1796

50. *Psychoda crassipennis* Tonnoir, 1940

Material examined: Dvoreček, Mělký rybník pond (88), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10637; Erika sand pit, small water reservoirs and pools (91), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12175; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 6.ix.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19623; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18572.

Distribution: A European species, known from British Isles, Czech Republic, France, Germany, the Netherlands, Denmark, Sweden, and Norway (Ježek 2009b).

Environmental notes, dates: From May until September, 451-520 m a.s.l. Adults of this species were captured in western Bohemia at 4 sampling sites. Water analysis was performed only in site 257 (not all values).

pH 6.35-7.39; **alkalinity (mmol/l)** 0.4-2.3; **N-NH₄⁺ (mg/l)** 0.085-0.163; **N-NO₃⁻ (mg/l)** 1.754-3.173; **TP** 0.018-0.46; **Na (mg/l)** 8.4-8.8; **K (mg/l)** 4.4-4.5; **Ca (mg/l)** 20; **Mg (mg/l)** 5.4-6.6; **Fe (mg/l)** 0.1; **Cl⁻ (mg/l)** 16.8-17.7; **SO₄²⁻ (mg/l)** 31.2-36; **Mn (mg/l)** 0.05; **conductivity (µS/cm)** 236-2340.

Comments: It lives in the littoral zone of polluted water reservoirs and swampy areas and in sewage water. Some females were recorded in sheaths of *Arum cylindraceum* as pollinators (Ježek & Omelková 2012).

51. *Psychoda phalaenoides* (Linnaeus, 1758)

Published records: between Lipnice and Vintířov, Panský rybník pond (25); Lomnice env., Matyáš dump (36); between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Citice env. Sokolov, Výsypka Antonín dump (71); Lázně Kynžvart env. (148); Lobzy nr. Březová (153); Loket, Lněný vrch hill (154); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165); Starý Jiří open-cast mine (166); Šindelová env. Kraslice (246); Zlatá env. Kynšperk nad Ohří (265) (Ježek 1990a, 1999).

Material examined: Antonínova Výšina, Dvoreček pond (2), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10583; between Bystřina and Rovná, spring area (7), 13.ix.2000, 18.vii. and 8.viii.2007, SW, MT, 1 ♂, 2 ♀♀, J, C+J+M, slides Inv. No. 9712, 16734 and 16887; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15517 and 15532; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13459; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19515; between Kacéřov and Bučina hill, Libocký potok brook (19), 30.x.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15522; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15462 and 15509; between Lipnice and Vřesová, dry ridge dump (26), 21.vi. and 14.vii.2010, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 19601 and 19637; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♀, J, slide Inv. No. 8641; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17553; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v. and 30.vii.2008, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 17427 and 17601; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17439; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 19495 and 19655; between Lomnice and Vintířov, experimental waterfall (38), 18.vi.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17509; between Lomnice and Vintířov, Klára water reservoir (39), 5., 26.v. and 8.vii.2008, MT, 2 ♂♂, 2 ♀♀, C+J+M, slides Inv. No. 17488, 17547, 17564 and 17618; between Mírová and Počerny, Chodovský potok brook (40), 12.v.2005, MT, 1 ♀, C+J+M, slide

Inv. No. 14727; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003, MT, 2 ♀♀, C+J+M, slide Inv. No. 12050 and 12068; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 29.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18581; between Vonšov and Kateřina, kaolin reservoir (57), 28.ix.1998, SW, 1 ♂, J, slide Inv. No. 9705; Bublák nr. Vackovec, Plesná brook (63), 30.ix.1998 and 16.v.1999, SW, 2 ♀♀, J, slides Inv. No. 7801 and 8640; Chlum Sv. Máří, Lítov-Boden dump edge, small pools (65), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11155; Dasnice, small water reservoir (75), 26.vi.2002, SW, 1 ♀, J, slide Inv. No. 11232; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13446; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16838 and 16940; Dolní Rychnov, golf course water reservoir (86), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16857; Dolní Rychnov, Rychnovský potok brook (87), 27.viii. and 20.ix.2007, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 16819 and 16928; Erika sand pit, small water reservoirs and pools (91), 10. and 30.vi.2003, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 12153 and 12179; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 1 ♀, 1 ♂, C+J+M, slides Inv. No. 15442 and 15611; Habartov – Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15496 and 15558; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 8643; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13469; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15615; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19588; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13370; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13423; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16767 and 16905; Jindřichovice, pond (124), 28.v.1998, SW, 1 ♀, J, slide Inv. No. 7812; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13380; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 21.vi. and 9.viii.2010, MT, 3 ♂♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11108, 11196, 19554 and 19669; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11123; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 10.v. and 4.vi.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19594 and 19657; Lipnice env. Vintířov, put under fence of the Division Jiří Administration (151), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11226; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10502; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10529; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, 19.v. and 17.vii.2003, MT, 3 ♀♀, C+J+M, slide Inv. No. 10466, 12103 and 12122; Lomnice env., Pastviny area, Julie water reservoir (164), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17534; Lomnice env., Pastviny area, marshes 2.5 km N (165), 28.vi.1995, MT, 1 ♀, C+J+M, slide Inv. No. 12157; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, 5.v. and 10.ix.2008, MT, 2 ♂♂, 1 ♀, C+J+M, slides Inv. No. 10543, 17461 and 17587; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.iv., 12.v. and 22.vi.2005, MT, 3 ♀♀, C+J+M, slides Inv. No. 14622, 14636 and 14661; Nová Role, Vlčí potok brook, Pod Lišším vrchem fork (190), 11.v.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14742; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14697; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi.2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14602 and 14772; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14723; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15484; Nový Kostel nr. Luby, Svažecký potok brook (204), 30.ix.1998, SW, 1 ♀, J, slide Inv. No. 8642; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16750 and 16911; Prameny env. Mariánské Lázně, Mokřady pod Vlčkem NR (216), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9707; Přebuz env., Přebuzské vřesoviště heathland NM (219), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9738; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♀, J, slide Inv. No. 6728; Skalná nr. Františkovy Lázně, Ovčárna pond (223), 29.ix.1998, SW, 1 ♀, J, slide Inv. No. 7676; Soos NNR env. Františkovy Lázně, Sázek brook, turf banks (233), 23.vi.1999, SW, 1 ♀, C, slide Inv. No. 12149; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, SW, 2 ♀♀, J, slides Inv. No. 18516 and 18591; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18594; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii. and 20.ix.2007, MT, 3 ♀♀, C+J+M, slides Inv. No. 16715, 16784 and 16868; Tatrovice env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 1 ♂, 1 ♀, C+J+M, slide Inv. No. 11115 and 11189; Vintířov env., Vintířovská výsypka dump, Transects 4BN-5BN (256), 8.xi.1998, MT, 1 ♀, C+J+M, slide Inv. No. 9570; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19537 and 19614; Vřesová env. Chodov, Černý potok brook nr. Rájecký Špičák hill (258), 27.vi.2002, SW, 1 ♂, J, slide Inv. No. 11160; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13401; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v. and 10.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18507 and 18559; Vřesová env. Chodov, sludge water defecation and sedimentation,

central part, reedswamp edge (262), 10. and 29.vi.2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18549 and 18667; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10.vi. and 27.vii.2009, MT, 3 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11079, 18625 and 18677; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9610.

Distribution: Common Holarctic species, in Europe known from Austria, Balearic Islands, Belarus, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy (incl. Sardinia), Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, and the Netherlands (Wagner 2018).

Environmental notes, dates: From May until October, 346-925 m a.s.l. A total of 84 sites, water analyzes was made at 14 frequently merged lowland sites: 16, 37, 54, 85, 134 (incomplete), 160, 161, 163, 165, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: Abundant species, often with a massive presence in MT and YPT. The larvae are saprobiontic; adults are sometimes found in sheaths of *Arum maculatum* which they pollinate, together with *Psychoda grisescens* (e.g. Tonnoir 1940, Grensted 1947).

52. *Psychoda uniformata* Haseman, 1907

Published records: between Svatava and Lomnice, aggregated small localities (54); Františkovy Lázně (94); Lázně Kynžvart env. (148); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Tachov (247) (Ježek 1990a, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16741 and 16889; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19523; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15598; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15476; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♀, J, slide Inv. No. 8644; between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17422; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17447; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix. 2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19482 and 19654; between Lomnice and Vintířov, experimental waterfall (38), 5.v. and 18.vi.2008, MT, 1 ♀, 1 ♂, C+J+M, slides Inv. No. 17512 and 17541; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 1 ♀, 1 ♂, C+J+M, slides Inv. No. 17490 and 17572; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13440; Dolní Rychnov, golf course edge (85), 27.viii.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16843; Dolní Rychnov, golf course water reservoir (86), 25.vi.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16798; Erika sand pit, small water reservoirs and pools (91), 30.vi., 27.viii. and 17.ix.2003, MT, 3 ♀♀, C+J+M, slides Inv. No. 12114, 12116 and 12152; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15594; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13385; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 9.viii.2010, MT, 3 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11095, 11209 and 19565; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11135; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii. and 10.viii.2001, MT, 2 ♂♂, C+J+M, slides Inv. No. 10471 and 10510; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, 5.v. and 10.ix. 2008, MT, 1 ♂, 2 ♀♀, C+J+M, slides Inv. No. 10535, 17466 and 17597; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16763 and 16912; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18618; Stříbrná env., Rájecký potok brook, Nancy camping (240), 16.ix.2000, SW, 1 ♀, J, slide Inv. No. 9723; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13405; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002 and 27.vii.2009, MT, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11067 and 18648.

Distribution: A Holarctic species, recorded from Europe (Austria, Czech Republic, Italy, Slovakia, Slovenia, Greece), Armenia, Turkey, Iran, Israel, Mongolia, Morocco and the USA (Ježek & Omelková 2012, Oboňa & Ježek 2014, Afzan & Belqat 2016, Ježek *et al.* 2018a).

Environmental notes, dates: From May until October, 340-925 m a.s.l. A total 34 sampling sites in western Bohemia. Water analysis was performed on 10 sites: 16, 37, 54, 85, 134 (not all values), 160, 161, 163, 166, 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.7-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.01-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: *Psychoda moravica* Vaillant, 1966 was synonymized with *P. uniformata* Haseman, 1907 by Ježek (1986).

Psychodocha Ježek, 1984

53. *Psychodocha cinerea* (Banks, 1894)

Published records: between Svatava and Královské Počicí, Marie open-cast mine foreground (53); Horní Slavkov (118); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161) (Ježek 1999).

Material examined: between Bystřina and Rovná, spring area (7), 8.viii.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16742; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15541; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13462; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19517; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15534 and 15579; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15465; between Lipnice and Vintířov, Panský rybník pond (25), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11166; between Lipnice and Vřesová, dry ridge dump (26), 21.vi.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19632; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17556; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v. and 30.vii.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17426 and 17606; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17446; between Lomnice and Svatava, Matyáš dump, forest water reservoirs (36), 15.vi.2000, MT, 1 ♂, C+J+M, slide Inv. No. 10563; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19492 and 19648; between Lomnice and Vintířov, experimental waterfall (38), 5., 26.v. and 18.vi.2008, MT, 1 ♂, 2 ♀♀, C+J+M, slides Inv. No. 17507, 17543 and 17615; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17480 and 17575; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14730; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003, 26.v.2008, MT, 3 ♀♀, C+J+M, slides Inv. No. 12039, 12066 and 17521; between Tatrovce and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18579 and 18662; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13447; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16841 and 16937; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16822; Erika sand pit, small water reservoirs and pools (91), 27.viii.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12115; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15448 and 15626; Habartov – Úžlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15557; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15601; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+J+M, slide Inv. No. 13361; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13432; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16773 and 16900; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13379; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 9.viii.2010, MT, 3 ♀♀, C+J+M, C+J+K+M, slide Inv. No. 11094, 11198 and 19555; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11138; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 10.v. and 4.vi.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19593 and 19663; Lipnice env. Vintířov, put under fence of the Division Jiří Administration (151), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6612; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10504; Lomnice env., Lomnický les forest, Smrdutá and Topolová water reservoirs (159), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 6593; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10493; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10528; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii. and 10.viii.2001, 19.v. and 17.vii.2003, MT, 4 ♀♀, C+J+M, slides Inv. No. 10470, 10511, 12100 and 12118; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v. and 10.ix. 2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17462 and 17586; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, MT, 3 ♀♀, C+J+M, slides Inv. No. 14618, 14635 and 14663; Nová Role, Vlčí potok brook, Pod Liščím vrchem fork (190), 11.v.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14744; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14689; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 22.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14777; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14710; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15473; Staré Podstrání env. Rovná, Lobězský potok brook (213), 8. and 29.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16757 and 16918; Sokolov env., Michal water

reservoir vicinity, small pond (230), 28.viii.2007, SW, 2 ♀♀, J, slides Inv. No. 16805 and 16813; Spomyšl env. Tatrovce, Tatrovická stoka drain (235), 19.v.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18601; Spomyšl env. Tatrovce, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18613; Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii. and 20.ix.2007, MT, 3 ♀♀, C+J+M, slides Inv. No. 16727, 16788 and 16874; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12112; Tatrovce env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11118 and 11177; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vi. and 6.ix.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19546 and 19611; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13409; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18556; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18561; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10. and 27.vi.2009, MT, 2 ♂♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11066, 18499 and 18633.

Distribution: This is a very common cosmopolitan species, in Europe, it is known from Austria, Azores, Belgium, Bosnia and Herzegovina, Bulgaria, Canary Islands, Cyprus, Czech Republic, Denmark, Finland, France, Finland, Germany, Great Britain, Greece, Hungary, Ireland, Italy (including Sardinia), Madeira, the Netherlands, Norway, Poland, Romania, Russia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey and Ukraine. In Asia, from Abkhazia, Afghanistan, Armenia, Iran, and Israel. In Africa, from Algeria, Morocco, South Africa, and Tunisia. In the Americas, from Argentina; Brazil, Canada, Chile, Jaun Fernández Island, Puerto Rico, USA. Also known from Australia and New Zealand (Krek 1985, Ježek & Goutner 1995, Ježek & Yağci 2005, Kvifte *et al.* 2011, Kvifte 2012, Wagner 1990, 2018, Salmela *et al.* 2014, Afzan & Belqat 2016, Ježek *et al.* 2017, 2018a, b).

Environmental notes, dates: From May until October, 340-720 m a.s.l. Adults of this species were captured at 48 sampling sites. Water analysis was performed on 13 localities: 16, 37, 54, 85, 134 (not all values), 160, 161, 163, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: A cosmopolitan species, very common from lowlands to mountains, saprobiontic, the adults are often found in unclean toilets.

54. *Psychodocha elegans* (Kincaid, 1897)

Published records: „Klondike“ nr. Vintířov, Modráčkový rybník pond (134) (Ježek 2003).

Material examined: „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11253.

Distribution: Known from USA, and Czech Republic (Ježek 2003).

Environmental notes, dates: July, 474 m a.s.l. A female of this species was captured at site 134. Water analysis has incomplete values (see text below).

pH 6.57-8.23; **alkalinity (mmol/l)** 2.24-10.5; **N-NH₄⁺ (mg/l)** 0.014-0.072; **N-NO₃⁻ (mg/l)** 0.002-0.079; **N org. (mg/l)** 0.45-0.94; **TN (mg/l)** 0.55-0.97; **TP (mg/l)** 0.01-0.052; **conductivity (µS/cm)** 3367.

Comments: Nationally scarce species, very rare and unique.

55. *Psychodocha gemina* (Eaton, 1904)

Published records: Lomnice env., Matyáš dump (36); between Svatava and Královské Pořící, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Citice env. Sokolov, Výsypka Antonín dump (71); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Starý Jiří open-cast mine (166); Smolná env. Kraslice (224); Šindelová env. Kraslice (246) (Ježek 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vi. and 8.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16739 and 16884; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15543; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13458; between Dvorečky and former Libava, Malá Libava forest brook (12), 13.ix.2000, SW, 1 ♀, J, slide Inv. No. 9677; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19508; between Kacěřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15538 and 15571; between Klest and Krapice, Amerika pond (22), 15.v.1999, SW, 1 ♀, J, slide Inv. No. 10590; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15453; between Lipnice and Vintířov, Panský rybník pond (25), 27.v.1997, 24.vi. and 26.x.2002, SW, MT, 3 ♀♀, J, C+J+M, slides Inv. No. 6632, 11108 and 11150; between Lipnice and Vřesová, dry ridge dump (26), 14.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 19603; between Lomnice and Dolní Nivy, water reservoir (31), 29.v.1997, SW, 1 ♀, J, slide Inv. No. 6769; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17558; between Lomnice and

Sokolov, Prasečí water reservoir (34), 26.v. and 30.vii.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17428 and 17599; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17437; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19485 and 19649; between Lomnice and Vintířov, experimental waterfall (38), 5., 26.v. and 18.vi.2008, MT, 3 ♀♀, C+J+M, slides Inv. No. 17506, 17548 and 17617; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 17475 and 17571; between Mírová and Počerny, Chodovský potok brook (40), 12.v. and 14.vii.2005, SW, MT, 2 ♀♀, J, C+J+M, slide Inv. No. 14645 and 14729; between Nebanice and Odava, Ohře river (42), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8647; between Nebesa and Výhledy, Halštrovský les forest (43), 18.v.1999, SW, 1 ♀, J, slide Inv. No. 10594; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003, 26.v.2008, MT, 1 ♂, 2 ♀♀, C+J+M, slide Inv. No. 12046, 12067 and 17516; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18582 and 18644; Březová, Tisová forest brook (62), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6740; Chlum Sv. Máří, water reservoir (66), 26.vi.2002, SW, 1 ♀, J, slide Inv. No. 11154; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♀, J, slide Inv. No. 9622; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 3 ♀♀, C+J+M, slides Inv. No. 16839 and 16935; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16824; Dvoreček, Mělký rybník pond (88), 14.v.1999, SW, 1 ♀, J, slide Inv. No. 10639; Františkovy Lázně, Klára forest pond (92), 14.v.1999, SW, 1 ♀, J, slide Inv. No. 10576; Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8645; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15441 and 15638; Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15494 and 15552; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13473; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998 and 9.viii.2006, SW, MT, 2 ♀♀, 1 ♂, C, C+J+M, slides Inv. No. 9689, 9695 and 15607; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13364; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13422; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 6751; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16770 and 16904; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13382; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 21.vi. and 9.viii.2010, MT, 1 ♂, 3 ♀♀, C+J+M, C+J+K+M, slide Inv. No. 11085, 11195, 19560 and 19674; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11122; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 10.v. and 4.vi.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19595 and 19656; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 28.viii. and 12.ix.2001, SW, 2 ♀♀, C, J, slide Inv. No. 10491 and 10505; Lomnice env., Lomnický les forest, Smrdutá and Topolová water reservoirs (159), 17.ix.1997, SW, 1 ♀, J, slide Inv. No. 6591; Lomnice env., Velký Březák water reservoir (161), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 8646; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, SW, 1 ♀, J, slide Inv. No. 10524; Lomnice env., hayloft, treeless tufa fens (163), 6.vii.2001, 19.v. and 17.vii.2003, MT, 3 ♀♀, C+J+M, slides Inv. No. 10454, 12102 and 12124; Lomnice env., Pastviny area, Julie water reservoir (164), 4.ix.1996, SW, 1 ♀, C, slide Inv. No. 12163; Lomnice env., Pastviny area, marshes 2.5 km N (165), 28.vi.1995, SW, 1 ♀, C, slide Inv. No. 12156; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, 5.v. and 10.ix.2008, MT, 3 ♀♀, C+J+M, slide Inv. No. 10549, 17464 and 17585; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, MT, 4 ♀♀, C+J+M, slides Inv. No. 14626, 14637, 14666 and 14757; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♀, J, slide Inv. No. 11238; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15479; Podstrání env. Rovná, Lobězský potok brook (213), 8. and 18.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16756 and 16915; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♀, J, slide Inv. No. 6724; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.vii.2007, SW, 1 ♂, J, slide Inv. No. 16812; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18518 and 18589; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18606; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii. and 20.ix.2007, MT, 1 ♂, 2 ♀♀, C+J+M, slides Inv. No. 16717, 16782 and 16866; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12083; Tatrovice env. Vřesová, forest brook, waterworks (248), 27.vi., 2. and 28.viii.2002, SW, MT, 3 ♀♀, J, C+J+M, slides Inv. No. 11113, 11176 and 11241; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 19534 and 19616; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13416; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v. and 10.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18509 and 18557; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18534; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263),

26.x.2002, 10.vi. and 27.vii.2009, MT, 1 ♂, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11069, 18489 and 18624; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17.v.1999, SW, 1 ♀, J, slide Inv. No. 8648.

Distribution: A common European species. Recorded from Austria, Belgium, Bosnia and Herzegovina, Croatia, Czech Republic, Great Britain, Denmark, France, Finland, Germany, Greece, Hungary, Ireland, Norway, Romania, Serbia, Slovakia, Slovenia, Spain, Switzerland, the Netherlands, and Ukraine (Ježek & Goutner 1995, Krek 1999, Ježek 2002, Kvifite *et al.* 2011, 2013, Salmela *et al.* 2014, Ježek *et al.* 2017).

Environmental notes, dates: From April until October, 340-720 m a.s.l. Adults of this species were captured in western Bohemia at 73 sampling sites. The following ranges of water chemical analysis data are derived from 14 sites of the most significant monitored localities within SUAS - see table: 16, 37, 54, 85, 134 (incomplete), 160, 161, 163, 165, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: A common European species, abundant, often with massive presence in MT and YPT. The larvae are saprobiontic, inhabits as well nests of water birds (Büttiker 1969).

56. *Psychodocha itoco* (Tokunaga et Komyo, 1955)

Material examined: between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17560; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17443; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12091; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16835; Habartov – Úžlabí, Habartovský potok brook (98), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15507; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15608; „Klondike“ nr. Vintířov, Modráčový rybník pond (134), 9.viii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19566; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17593; Nová Role env., Vlčí potok brook, forest, 480 m a.s.l. (189), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14711; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14696; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15486; Podstrání env. Rovná, Lobézský potok brook (213), 8.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16759; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi. and 27.vii.2009, MT, 2 ♂♂, C+J+K+M, slide Inv. No. 18512 and 18650.

Distribution: Japan, Ryukyu Is., and the Czech Republic (Ježek 2003).

Environmental notes, dates: From May until September, 408-720 m a.s.l. A total 13 sampling sites. Water analysis was performed on 5 localities: 54, 134 (not all values), 166, 200 and 263.

pH 2.2-8.35; **alkalinity (mmol/l)** 0.0-11.6; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.55-26.92; **TP (mg/l)** 0.01-1.35; **Na (mg/l)** 1.7-695; **K (mg/l)** 1.2-45; **Ca (mg/l)** 6.1-409; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-968; **Cl⁻ (mg/l)** 2.1-719; **SO₄²⁻ (mg/l)** 13-5845; **Mn (mg/l)** 0.02-19.5; **conductivity (µS/cm)** 59-4682.

Comments: Probably Eurasian species, nationally scarce in CZ.

Psychodula Ježek, 1984

57. *Psychodula minuta* (Banks, 1894)

Published records: between Svatava and Lomnice, aggregated small localities (54); Šindelová env. Kraslice (246) (Ježek 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 1 ♀, 1 ♂, C+J+M, slides Inv. No. 16745 and 16885; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15529; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13454; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19525; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15587; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15463; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17554; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17444; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19497; between Lomnice and Vintířov, experimental waterfall (38), 26.v. and 18.vi.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17500 and 17622; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 17483 and 17569; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14728; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003,

MT, 2 ♀♀, C+J+M, slide Inv. No. 12045 and 12070; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 29.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18574; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13438; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16842 and 16938; Dolní Rychnov, golf course water reservoir (86), 25.vi. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16799 and 16859; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16820; Erika sand pit, small water reservoirs and pools (91), 10. and 30.vi., 27.viii.2003, MT, 3 ♀♀, C+J+M, slides Inv. No. 12130, 12136 and 12177; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15624; Habartov - Úžlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15559; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13472; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15618; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19587; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13368; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13430; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16906; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13378; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 21.vi. and 9.viii.2010, MT, 1 ♂, 3 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11093, 11208, 19559 and 19667; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11124; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 10.v.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19590; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 10496 and 10499; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10490; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10525; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii. and 10.viii.2001, 19.v.2003, MT, 3 ♀♀, C+J+M, slides Inv. No. 10469, 10512 and 12099; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, 5.v. and 10.ix.2008, MT, 1 ♂, 2 ♀♀, C+J+M, slide Inv. No. 10531, 17474 and 17598; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, MT, 2 ♂♂, 1 ♀, C+J+M, slides Inv. No. 14617, 14639 and 14675; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14694; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2.vi.2005, MT, 2 ♀♀, C+J+M, slide Inv. No. 14606 and 14781; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15480; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 1 ♂, 2 ♀♀, C+J+M, slides Inv. No. 16751, 16762 and 16917; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18600; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18614; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii. and 20.ix.2007, MT, 1 ♂, 2 ♀♀, C+J+M, slides Inv. No. 16730, 16791 and 16872; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12082; Tatrovice env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 10531 and 11179; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19535 and 19610; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13408; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v. and 10.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18521 and 18569; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18544; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10. and 27.vi.2009, MT, 1 ♂, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11072, 18485 and 18638.

Distribution: Recorded from Abkhazia, Austria, Belgium, Britain, Bulgaria, Cyprus, Czech Republic, Denmark, France, Finland, Germany, Greece, Hungary, Ireland, Italy (incl. Sardinia), Madeira, the Netherlands, Norway, Romania, Slovakia, Slovenia, Spain (incl. Balearic Islands), Sweden, Switzerland, and Ukraine; Canada, Syria, U.S.A. (Ježek 1990a, Wagner 2018, Salmela *et al.* 2014, Ježek *et al.* 2017).

Environmental notes, dates: From May until October, 340-720 m a.s.l. In Western Bohemia 52 sampling localities. Water chemistry was investigated at 12 sites: 16, 37, 54, 85, 134 (not all values), 160, 163, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 1.7-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: A generally common Holarctic species, abundant, often with a massive presence in MT and YPT.

Psychomora Ježek, 1984

58. *Psychomora mycophila* (Vaillant, 1988)

syn. *Psychomora vanharai* Ježek 1995

Published records: between Lipnice and Vintířov, Panský rybník pond (25); „Klondike“ nr. Vintířov, Modráčkový rybník pond (134); Lomnice env., Lomnický les forest, Šídlo water reservoir (160) (Ježek 2003 as *vanharai*).

Material examined: between Lipnice and Vintířov, Panský rybník pond (25), 26.x.2002, MT, 2 ♂♂, C+J+M, slides Inv. No. 11168 and 11169; between Lomnice and Vintířov, Klára water reservoir (39), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17579; Dolní Rychnov, golf course edge (85), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16947; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15602; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11252; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10485; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18565; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi. and 27.vii.2009, MT, 2 ♂♂, C+J+K+M, slide Inv. No. 18497 and 18649.

Distribution: Known only from Czech Republic, France, Slovakia, Slovenia, Switzerland, and Ukraine (Ježek & Omelková 2012, Ježek *et al.* 2017).

Environmental notes, dates: From May until October, 346-500 m a.s.l. A total of 8 sampling sites; although water analysis was performed on 4 localities: 85, 134 (not all values), 160 and 263, however, it may be pointless if the species develops only in mushrooms as is known from the literature (Vaillant 1988).

pH 5.89-8.23; **alkalinity (mmol/l)** 0.315-10.5; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-14.980; **N org. (mg/l)** 0.021-2.500; **TN (mg/l)** 0.55-26.92; **TP (mg/l)** 0.006-0.936; **Na (mg/l)** 1.7-265.5; **K (mg/l)** 0.6-10.9; **Ca (mg/l)** 6.7-429.8; **Mg (mg/l)** 1.2-66.1; **Fe (mg/l)** 0.02-1.031; **Cl⁻ (mg/l)** 1.0-241.6; **SO₄²⁻ (mg/l)** 5-610.5; **Mn (mg/l)** 0.020-1.725; **conductivity (µS/cm)** 59-3367.

Comments: A rare European species (see Wagner 2018).

59. *Psychomora trinodulosa* (Tonnoir, 1922)

Published records: Šindelová env. Kraslice (246); Úhošťany (254) (Ježek 1990a, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16732 and 16886; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii. and 31.x.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15518 and 15550; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13452; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19512. between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15521 and 15588; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii. and 31.x.2006, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 15464 and 15511; between Lipnice and Vintířov, Panský rybník pond (25), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11165; between Lipnice and Vřesová, dry ridge dump (26), 21.vi. and 14.vii.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19600 and 19636; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17555; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v. and 30.vii.2008, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 17421 and 17608; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17436; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19483 and 19646; between Lomnice and Vintířov, experimental waterfall (38), 5., 26.v. and 18.vi.2008, MT, 3 ♀♀, C+J+M, slides Inv. No. 17508, 17546 and 17623; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17484 and 17565; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14731; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003 and 26.v.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 12051 and 17518; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi. 2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18580 and 18643; Děvín NR env. Milhostov, Lužní potok brook (79), 30.ix.1998, SW, 1 ♀, J, slide Inv. No. 7770; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13441; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16837 and 16936; Dolní Rychnov, golf course water reservoir (86), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16855; Dolní Rychnov, Rychnovský potok brook (87), 27.viii.2007, SW, 1 ♀, J, slide Inv. No. 16927; Erika sand pit, small water reservoirs and pools (91), 10. and 30.vi., 27.viii.2003, MT, 3 ♀♀, C+J+M, slides Inv. No. 12132, 12137 and 12180; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 1 ♀, 1 ♂, C+J+M, slides Inv. No. 15444 and 15619; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 29. and 30.ix.1998, SW, 1 ♂, 1 ♀, J, slides Inv. No. 8649 and 8650; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998 and 9.viii.2006, SW, MT, 1 ♂, 1 ♀, C, C+J+M, slides Inv. No. 9696 and 15593; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19581; Horní Rozmyšl, primary meadows, brook (116),

12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13369; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13429; Hrušková env. Sokolov, Hruškovský potok brook (121), 5.vi.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16774; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13373; „Klondike“ nr. Vintřov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 21.vi. and 9.viii.2010, MT, 3 ♂♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11092, 11191, 19562 and 19671; „Klondike“ nr. Vintřov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11128; „Klondike“ nr. Vintřov, terrestrial ecosystem, older forest recultivation (136), 10.v. and 4.vi. 2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19592 and 19662; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, SW, 1 ♀, J, slide Inv. No. 10530; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii. and 10.viii. 2001, 19.v. and 17.vii.2003, MT, 2 ♂♂, 2 ♀♀, C+J+M, slides Inv. No. 10458, 10519, 12101 and 12123; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, 5.v. and 10.ix.2008, MT, 3 ♀♀, C+J+M, slides Inv. No. 10542, 17463 and 17594; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, MT, 2 ♂♂, 1 ♀, C+J+M, slides Inv. No. 14620, 14638 and 14668; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14693; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi. 2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14601 and 14776; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14718; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15498; Nový Drahov env. Františkovy Lázně, Stodolský potok brook (202), 28.ix.1998, SW, 1 ♀, J, slide Inv. No. 7645; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16753 and 16910; Skalná nr. Františkovy Lázně, Kamenné Vrchy Nature Park, Ovčárna, pond (223), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7675; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 1 ♀, J, slide Inv. No. 16810; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi. 2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18530 and 18599; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18595; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii. and 20.ix.2007, MT, 2 ♂♂, 1 ♀, C+J+M, slides Inv. No. 16722, 16786 and 16867; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12105; Tatrovice env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11104 and 11172; Úhošť NNR nr.Úhošťany env. Kadaň, Donínský potok brook (254), 10.vi.1981, SW, 1 ♀, J, slide Inv. No. 108; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19549 and 19619; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13397; Vřesová env. Chodov, alder grove edge (261), 19.v. and 10.vi.2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18505 and 18558; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10. and 29.vi. 2009, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 18548 and 18670; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10.vi. and 27.vii.2009, MT, 2 ♂♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11076, 18626 and 18678.

Distribution: Known from Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greek mainland, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Romania, Russia, Sardinia, Slovakia, Slovenia, Spanish mainland, Sweden, and Ukraine; Algeria, U.S.A. (Ježek 1990a, Salmela *et al.* 2014, Ježek *et al.* 2017, Wagner 2018).

Environmental notes, dates: From May until October, 340-720 m a.s.l. Adults registered at 58 sampling sites. The following ranges of chemical analysis data from the water are from 11 localities of the most important monitored biotopes within SUAS - see table (measured values for 2 habitats were not complete - 134 and 257): 16, 37, 54, 85, 134, 163, 166, 200, 235, 257 and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 1.7-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 9-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: A very common Holarctic species (European distribution see in Wagner 2018), abundant, often with a massive presence in MT and YPT.

Tinearia Schellenberg, 1803

60. *Tinearia alternata* (Say, 1824)

Published records: Chodová Planá (67); Karlovy Vary (127); Kynšperk nad Ohří (146); Lázně Kynžvart (148); Lomnice env., Starý Jiří open-cast mine (166); Nové Bukovany (198); Tachov (247); Teplá env. Mariánské Lázně (250) (Ježek 1977, 1999).

Material examined: between Bystrina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀, J, slides Inv. No. 16733 and 16893; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15530; between Dvorečky and former Libava, Malá Libava forest brook (12), 13.ix.2000,

SW, 1 ♀, J, slide Inv. No. 9675; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15520 and 15574; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii. and 31.x.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15449 and 15510; between Lipnice and Vintířov, Panský rybník pond (25), 25.vi.2002, SW, 1 ♀, J, slide Inv. No. 11130; between Lipnice and Vřesová, dry ridge dump (26), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19604; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♀, J, slide Inv. No. 8652; between Lomnice and Vintířov, Olegovy výštelky shothole pools (37), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19503; Bublák nr. Vackovec, Plesná brook (63), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7799; Dasnice, wet meadows (74), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9638; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13442; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16836 and 16934; Dolní Rychnov, golf course water reservoir (86), 25.vi. and 20.ix.2007, MT, 2 ♀♀, J, slides Inv. No. 16796 and 16854; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16825; Erika sand pit, small water reservoirs and pools (91), 27.viii.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12133; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 20.ix.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15446; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 6.viii.1998, SW, 1 ♂, 1 ♀, C, J, slides Inv. No. 8653 and 12143; Hájek env. Ostrov, Umučený rybník pond (102), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 10615; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006 and 7.viii.1998, SW, MT, 1 ♂, 1 ♀, J, C+J+M, slides Inv. No. 9688 and 15600; Horní Rozmyšl, cowshed, marshes (113), 16.ix.1997, SW, 1 ♀, J, slide Inv. No. 8651; Horní Rozmyšl, Slané údolí valley (115), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19583; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13435; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13383; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, MT, 2 ♂♂, C+J+M, slides Inv. No. 11081 and 11197; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 26.x.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11127; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♀, J, slide Inv. No. 10461; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.ix.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17457; Nejda env. Ostrov, Malá Nejda pond (184), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 10572; Nejda env. Ostrov, Velká Hruška pond (185), 20.ix.1997, SW, 1 ♀, J, slide Inv. No. 6649; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♀, J, slide Inv. No. 7661; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v. and 13.vi.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15485 and 15634; Nový Drahov env. Františkovy Lázně, Stodolský potok brook (202), 28.ix.1998, SW, 1 ♀, J, slide Inv. No. 7648; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 16758 and 16913; Soos NNR env. Františkovy Lázně, moffettes in a volcanic caldera lake (232), 22.ix.1997, SW, 1 ♀, J, slide Inv. No. 6606; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18515; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18609; Staré Sedlo env. Sokolov, Starosedelský a Hruškovský potok brooks (238), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16785; Tatrovice env. Vřesová, forest brook, waterworks (248), 28.viii.2002, MT, 1 ♀, C+J+M, slide Inv. No. 11174; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13415; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 29.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18665; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002 and 27.vi.2009, MT, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11061 and 18642.

Distribution: This is a cosmopolitan species that is generally very common. In Europe, it is known from Austria, Balearic Islands, Belgium, Bulgaria, Crete, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Madeira, Norway, Poland, Romania, Sardinia, Slovenia, Spain, Sweden, Switzerland, the Netherlands, and Ukraine. In Asia, from Afghanistan, Armenia, Azerbaijan, and UAE. In Africa from Algeria, Cape Verde Islands, Canary Islands, D.R. Congo, Egypt, Gambia, Ghana, Morocco, Nigeria, the Seychelles, Socotra Island, South Africa, Tanzania, and Tunisia. In Asia from Bangladesh, Borneo, Philippines, India, Jamaica, Japan, Malaysia, Mongolia, North Korea, Ryukyu Islands, Taiwan. From North and South America, including Panama, Puerto Rico, and Trinidad. Also from Australia, Hawaii, and from Micronesia, Macquarie Islands, New Zealand, and Samoa. (Ježek 1981, Ježek & van Harten 1996, Kvitte *et al.* 2011, Kvitte 2012, Ježek & Tkoč 2012, Afzan and Belqat 2016, Ježek *et al.* 2017, 2018a, b, Wagner 2018).

Environmental notes, dates: From May until October, 369-925 m a.s.l. Adults of this species were captured in western Bohemia at 49 sampling sites. The following ranges of chemical analysis data from the water are from 8 sites from the most significant monitored localities within SUAS - see table: 37, 85, 134 (incomplete), 163, 166, 200, 235 and 263.

pH 2.2-8.85; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.55-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 2.32-1205; **K (mg/l)** 0-34; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-368; **Fe (mg/l)** 0.01-968; **Cl⁻ (mg/l)** 0.8-719; **SO₄²⁻ (mg/l)** 9-5845; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-6870.

Comments: A cosmopolitan species, generally very common, abundant, often with a massive presence in MT and YPT.

61. *Tinearia lativentris* (Berdén, 1952)

Published records: Bečov nad Teplou (3); Chodová Planá (67); Františkovy Lázně (94); Lázně Kynžvart (148) (Ježek 1977).

Material examined: between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15544; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13457; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19505; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15575; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15405; between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17420; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17448; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 19484 and 19650; between Lomnice and Vintířov, Klára water reservoir (39), 8.vii.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17482; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13443; Dolní Rychnov, golf course edge (85), 27.viii.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16846; Erika sand pit, small water reservoirs and pools (91), 30.vi., 27.viii. and 17.ix.2003, MT, 3 ♀♀, C+J+M, slides Inv. No. 12095, 12131 and 12138; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♀♀, C+J+M, slides Inv. No. 15456 and 15623; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15616; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19584; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13359; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13389; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 9.viii.2010, MT, 3 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11087, 11193 and 19557; Lomnice env., Lomnický les forest, Šídlo water reservoir (160), 28.viii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10492; Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161), 17.ix.1997, SW, 1 ♀, J, slide Inv. No. 8654; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10481; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001 and 10.ix.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 10539 and 17473; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, SW, 2 ♀♀, C+J+M, slides Inv. No. 14621 and 14665; Nejša env. Ostrov, Velká Hruška pond (185), 20.ix.1997, MT, 1 ♀, J, slide Inv. No. 6648; Nová Role env., Černý potok brook (191), 22.vi. and 2.viii.2005, MT, 2 ♀♀, C+J+M, slides Inv. No. 14695 and 14771; Ostrov env., Ostrovské rybníky NR, Dolní Štít pond (210), 21.ix.1997, SW, 1 ♀, J, slide Inv. No. 7730; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18593; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 28.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16793 and 16869; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 6.ix.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19547; Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259), 27.vi.2002, SW, 1 ♀, J, slide Inv. No. 11222; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13394; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 29.vi.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18669; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002 and 27.vii.2009, MT, 2 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11070 and 18641.

Distribution: Known from Europe (Balearic Islands, Belgium, Czech Republic, Denmark, Finland, France, Ireland, Italy, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, and the Netherlands); north Africa (Ježek *et al.* 2018b, Wagner 2018).

Environmental notes, dates: From June until October, 346-925 m a.s.l. This species was found in 37 sites. Water analyzes come from 10 sites of the most significant monitored localities within SUAS: 16, 37, 85, 134 (incomplete), 160, 161, 163, 166, 257 (incomplete), 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-39.4; **Ca (mg/l)** 6.7-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (μS/cm)** 59-9630.

Comments: A Holarctic species, generally very common and abundant, sometimes with a massive presence in traps (YPT, MT).

62. *Ypsidocha setigera* (Tonnoir, 1922)

Material examined: between Bystřina and Rovná, spring area (7), 18.vii. and 8.viii.2007, MT, 2 ♀♀, 1 ♂, C+J+M, slides Inv. No. 16738, 16746 and 16888; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13456; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19518; between Kacérov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15580; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 31.x.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15515; between Lipnice and Vřesová, dry ridge dump (26), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19609; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17607; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17441; between Lomnice and Vintířov, experimental waterfall (38), 18.vi.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17513; between Lomnice and Vintířov, Klára water reservoir (39), 26.v. and 8.vii.2008, MT, 2 ♀♀, C+J+M, slides Inv. No. 17489 and 17573; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14735; between Svatava and Lomnice, aggregated small localities (54), 26.v.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17522; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi. 2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18578 and 18654; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13450; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16848 and 16941; Dolní Rychnov, golf course water reservoir (86), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16860; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♀, C+J+M, slide Inv. No. 16829; Erika sand pit, small water reservoirs and pools (91), 10.vi.2003, MT, 1 ♀, C+J+M, slide Inv. No. 12178; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. 2006, MT, 1 ♀, C+J+M, slide Inv. No. 15627; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 29.ix.1998, SW, 1 ♀, J, slide Inv. No. 8655; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13467; Horní Pochlovice, Libocký potok brook (112), 9.viii.2006, MT, 1 ♀, C+J+M, slide Inv. No. 15606; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19580; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13371; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13428; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♀♀, C+J+M, slides Inv. No. 16771 and 16907; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13377; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii. and 26.x.2002, 9.viii.2010, MT, 3 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11091, 11250 and 19561; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 4.vi.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19661; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10503; Lomnice env., Lomnický les forest, Sídlo water reservoir (160), 28.viii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10489; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♀, C+J+M, slide Inv. No. 10467; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.ix.2008, MT, 1 ♀, C+J+M, slide Inv. No. 17469; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14625; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14690; Nová Role env., Smolnická výsypka dump, *Phragmites* monoculture (193), 2. and 22.vi.2005, MT, 2 ♀, C+J+M, slides Inv. No. 14605 and 14778; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♀, C+J+M, slide Inv. No. 14721; Nový Drahov env. Františkovy Lázně, Stodolský potok brook (202), 28.ix.1998, SW, 1 ♂, J, slide Inv. No. 7646; Podstrání env. Rovná, Lobézský potok brook (213), 8. and 29.viii.2007, MT, 1 ♂, 1 ♀, C+J+M, slides Inv. No. 16755 and 16914; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18588; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♀, C+J+K+M, slide Inv. No. 18607; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii. and 20.ix.2007, MT, 1 ♂, 2 ♀♀, C+J+M, slides Inv. No. 16720, 16790 and 16871; Tatrovice env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♀♀, C+J+M, slides Inv. No. 11100 and 11170; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 1 ♂, 1 ♀, C+J+K+M, slides Inv. No. 19541 and 19629; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13402; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v. and 10.vi.2009, MT, 2 ♀♀, C+J+K+M, slides Inv. No. 18511 and 18554; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18533; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10.vi. and 27.vii. 2009, MT, 3 ♀♀, C+J+M, C+J+K+M, slides Inv. No. 11075, 18498 and 18636.

Distribution: In Europe known from Belgium, Czech Republic (Bohemia), Denmark, France, Germany, Great Britain, Ireland, Italy, Norway, Romania, Slovakia, Spain, Sweden; Canada, Japan, USA (Ježek 2003).

Environmental notes, dates: From April until October, 346-720 m a.s.l. A total 48 sampling sites; detected water chemistry come from 10 sites of the most significant monitored localities within SUAS - see table: 16, 54, 85, 134 (incomplete), 160, 163, 166, 235, 257 (incomplete values) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.35; **Na (mg/l)** 1.7-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.7-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: Locally very abundant Holarctic species.

PERICOMAINI

Berdeniella Vaillant, 1976

63. *Berdeniella chvojikai* Ježek, 1999

Published records: Lobzy nr. Březová (153) (Ježek 1999).

Material examined: Bečov nad Teplou, Zlatý potok brook (3), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 10628; between Děpoltovice and Nivy, Vitický potok brook (10), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9680; between Josefův and Hřebený, pond in field (18), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9668; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003, MT, 3 ♂♂, C+J+M, slides Inv. No. 12035, 12048 and 12065; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13488; Habartov – Úžlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15556; Hluboká env. Habartov, Libocký potok brook (105), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 10579; Horní Rozmyšl, dump edge, water reservoir (114), 18.v.1998, SW, 2 ♂♂, C, slides Inv. No. 10551 and 10552; Horní Rozmyšl, Vřesový potok brook below quarry (117), 20.v.2004, SW, 1 ♂, J, slide Inv. No. 13493; Hrušková env. Sokolov, Hruškovský potok brook (121), 5.vi.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16779; Lobzy nr. Březová, Lobézský potok brook (153), 5.vi.2002, SW, 2 ♂♂, C, slides Inv. No. 12139 and 12167; Luh nad Svatavou, Svatava river (168), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9654; Nejdeč, Limmice brook (186), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 10597; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12110.

Distribution: Probably central European species, known only from the Czech Republic so far (Ježek 1999).

Environmental notes, dates: May and June, 416-664.5 m a.s.l. Adults of this species were captured at 14 sampling sites. Water analysis was performed only at the locality 54.

pH 6.23-8.35; **alkalinity (mmol/l)** 0.4-11.6; **N-NH₄⁺ (mg/l)** 0.007-4.011; **N-NO₃⁻ (mg/l)** 0.001-1.58; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 1.22-9.21; **TP (mg/l)** 0.030-0.410; **Na (mg/l)** 1.7-695; **K (mg/l)** 2.1-45; **Ca (mg/l)** 10.9-361; **Mg (mg/l)** 3.5-278; **Fe (mg/l)** 0.1-13.449; **Cl⁻ (mg/l)** 2.1-16.45; **SO₄²⁻ (mg/l)** 13-2099; **Mn (mg/l)** 0.05-2.833; **conductivity (µS/cm)** 120-3963.

Comments: Vulnerable in CZ (Ježek 2005).

64. *Berdeniella illiesi* Wagner, 1973

Published records: Habartov - Úžlabí, Habartovský potok brook (98); Nové Bukovany, Habartovský potok brook (199) (Ježek 2009b).

Material examined: Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15503 and 15561; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15642; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18527; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18551.

Distribution: Known from Bulgaria, Czech Republic, France, Germany, and Slovakia (Wagner 2018).

Environmental notes, dates: May and June, 443-620 m a.s.l. A total 5 sampling sites; the water analysis was performed on the localities 200 and 235.

pH 5.2-7.49; **alkalinity (mmol/l)** 0.05-0.72; **N-NH₄⁺ (mg/l)** 0.006-0.328; **N-NO₃⁻ (mg/l)** 0.362-4.882; **N org. (mg/l)** 0-1.061; **TN (mg/l)** 1.25-5.398; **TP (mg/l)** 0.031-0.21; **Na (mg/l)** 3.2-15.2; **K (mg/l)** 1.4-8.4; **Ca (mg/l)** 6.1-16.9; **Mg (mg/l)** 2.4-11.1; **Fe (mg/l)** 0.08-0.505; **Cl⁻ (mg/l)** 5.01-588.6; **SO₄²⁻ (mg/l)** 26.4-63; **Mn (mg/l)** 0.02-0.24; **conductivity (µS/cm)** 103-268.

Comments: Not quite common European species.

65. *Berdeniella manicata* (Tonnoir, 1920)

Published records: between Královské Poříčí and Staré Sedlo (23) (Ježek 1999).

Material examined: Bečov nad Teplou, Zlatý potok brook (3), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 10627; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7698; Hradiště nr. Vojkovice, confluence of Bystřice brook and Ohře river (119), 3.viii.1998, SW, 1 ♂, C, slide Inv. No. 12171; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 28.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16865.

Distribution: Known from Austria, Belgium, Bulgaria, Czech Republic, France, Germany, Hungary, Italy, Slovakia, Switzerland, and former Yugoslavia (Wagner 2018).

Environmental notes, dates: From May until August, 431-664.5 m a.s.l. Adults of this species were captured at 5 sites in western Bohemia, where water analysis was not performed.

Comments: Relative common European species.

66. *Berdeniella matthesi* (Jung, 1954)

Published records: Březová (62); Lomnice env., Pastviny area (165) (Ježek 2003).

Material examined: Březová, Tisová forest brook (62), 1.vi.1997, SW, 2 ♂♂, J, slides Inv. No. 6744 and 6745; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 10.vi.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13465.

Distribution: It has been collected in Austria, Czech Republic, Germany, Italy, Slovakia, and Ukraine (Ježek & Omelková 2012, Kroča & Ježek 2015, Ježek *et al.* 2017).

Environmental notes, dates: June, 593-653 m a.s.l. A total 3 sampling localities in western Bohemia; water chemistry is detected only at the site 165.

pH 2.34-8.65; **alkalinity (mmol/l)** 0.0-19.08; **N-NH₄⁺ (mg/l)** 0.000-2.090; **N-NO₃⁻ (mg/l)** 0.001-3.60; **N org. (mg/l)** 0.302-3.56; **TN (mg/l)** 0.430-8.735; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 2.3-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 14.7-943.63; **Mg (mg/l)** 28.2-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 132.8-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 453-21528.

Comments: A locally common species in Europe, the knowledge on its distribution is, however, quite poor so far.

67. *Berdeniella stavniensis* (Krek, 1969)

Published records: between Boučí and Dolní Nivy (4); Březová (62); Lítov (152); Lobzy nr. Březová (153) (Ježek 2003).

Material examined: between Boučí and Horní Nivy, forest stream (5), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6770; Březová, Tisová forest brook (62), 1.vi.1997, SW, 2 ♂♂, J, slides Inv. No. 6738 and 6741; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13484; Habartov – Úžlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15560; Horní Rozmyšl, Vřesový potok brook below quarry (117), 20.v.2004, SW, 1 ♂, J, slide Inv. No. 13494; Lobzy nr. Březová, Lobézský potok brook (153), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6764; Spomyšl env. Tatrovice, Tatrovičká stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18529; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16723.

Distribution: Known from Austria, Bosnia and Herzegovina, Czech Republic, France, Germany, Serbia, Slovakia, and Ukraine (Krek 1999, Ježek 2003, Ježek *et al.* 2017).

Environmental notes, dates: From May until June, 455-630 m a.s.l. A total 10 sampling sites; chemistry is known from the locality 235.

pH 5.2-6.15; **alkalinity (mmol/l)** 0.05-0.3; **N-NH₄⁺ (mg/l)** 0.01-0.256; **N-NO₃⁻ (mg/l)** 0.362-0.65; **N org. (mg/l)** 0.59; **TN (mg/l)** 1.25; **TP (mg/l)** 0.031-0.21; **Na (mg/l)** 3.2-3.6; **K (mg/l)** 1.4-1.9; **Ca (mg/l)** 9-13; **Mg (mg/l)** 2.4-5.47; **Fe (mg/l)** 0.25-0.35; **Cl⁻ (mg/l)** 5.01-5.3; **SO₄²⁻ (mg/l)** 26.4-32.7; **Mn (mg/l)** 0.08-0.24; **conductivity (µS/cm)** 103-124.

Comments: European species, apparently not quite common.

68. *Berdeniella unispinosa* (Tonnoir, 1919)

Material examined: Bečov nad Teplou, Zlatý potok brook (3), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 10625; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6714; Hluboký env. Ostrov, Hlubocký rybník pond (106), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9640; Lazy env., between Smrkovec (abolished settlement) and Žitný hill, Malá Libava brook (149), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9589; Lobzy nr. Březová, Lobézský potok brook (153), 5.vi.2002, SW, 1 ♂, C, slide Inv. No. 12166; Loket, Lněný vrch hill, forest spring area (154), 22.vi.1994, SW, 1 ♂, J, slide Inv. No. 8657.

Distribution: Central zone of Europe from France to Poland and Slovakia, the south margin of the distribution is restricted to Italy and Balkan countries (Ježek 2009b).

Environmental notes, dates: From May until June, 426-712 m a.s.l. Adults of this species were captured at 6 sites in western Bohemia, where water analysis was not performed.

Comments: Generally, locally a common species.

69. *Berdeniella vimmeri* Ježek, 1995

Material examined: Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16899.

Distribution: Known from Czech Republic, Slovakia, and Ukraine (Ježek 1997, 2009b, Ježek & Omelková 2012, Ježek *et al.* 2017).

Environmental notes, dates: April, 566 m a.s.l. Male of this species was captured only at 1 site in western Bohemia, where water analysis was not performed.

Comments: Mainly a central European species (knowledge of distribution is poor so far).

Clytocerus Eaton, 1904

Boreoclytocerus Duckhouse, 1978

70. *Clytocerus (Boreoclytocerus) dalii* (Eaton, 1893)

Material examined: Nebesa env. Aš, pond (183), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 10602.

Distribution: Known from Belgium, Denmark, Czech Republic, Great Britain, Hungary, Ireland, Slovakia, and Slovenia (Ježek 2003).

Environmental notes, dates: May, 615 m a.s.l. Adults of this species were captured only at 1 site in western Bohemia, where water analysis was not performed.

Comments: Relatively rare European species.

71. *Clytocerus (Boreoclytocerus) longicorniculatus* Křek, 1987

Material examined: between Bystřina and Rovná, spring area (7), 18.vii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16881; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19506; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17423 and 17600; between Lomnice and Vintřov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19479 and 19645; between Svatava and Lomnice, aggregated small localities (54), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17520; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18658; Dolní Rychnov, Rychnovský potok brook (87), 27.viii. and 20.ix.2007, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 16816 and 16930; Lomnice env., Pastviny area, Julie water reservoir (164), 8.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17477; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v. and 10.ix.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17456 and 17580; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18517 and 18587; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18610; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19543 and 19625; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v. and 10.vi.2009, MT, 2 ♂♂, C+J+K+M, slide Inv. No. 18504 and 18570; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18627.

Distribution: Known only from Belgium, Bosnia and Herzegovina, Czech Republic, Slovakia, and Ukraine (Ježek *et al.* 2013, 2017, 2018b).

Environmental notes, dates: From May until September, 408-668 m a.s.l. Adults of this species were captured in western Bohemia at 14 sampling sites. The following water chemistry summary data ranges are from 7 biotopes of the most significant monitored localities within SUAS - see table: 16, 37, 54, 166, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-14.473; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.006-1.93; **Na (mg/l)** 1.7-2052.4; **K (mg/l)** 1.2-45; **Ca (mg/l)** 6.7-484; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 13-21294.0; **Mn (mg/l)** 0.001-19.5; **conductivity (µS/cm)** 59-9630.

Comments: Probably not common European species, nationally scarce in CZ.

72. *Clytocerus (Boreoclytocerus) ocellaris* (Meigen, 1804)

Published records: between Královské Pořící and Staré Sedlo (23); between Loket and Nové Sedlo (28); between Lomnice and Svatava, Matyáš dump (36); between Svatava and Královské Pořící, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Citice env. Sokolov, Výsypka Antonín dump (71); Dvory env. Loket (90); Horní Slavkov (118); Hrušková env. Sokolov (121); Lobzy nr. Březová (153); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165); Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166); Svatava env., Svatavský vrch hill (243); Šindelová env. Kraslice (246) (Ježek 1999).

Material examined: Anenská Ves, wet meadow (1), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9704; Antonínova Výšina, Dvoreček pond (2), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10584; between Boučí and Horní Nivy, forest stream (5), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6773; between Bystřina and Rovná, spring area (7), 1. and 4.vi.1998, 18.vii. and 8.viii.2007, SW, MT, 4 ♂♂, J, C+J+M, slides Inv. No. 6671, 7654, 16747 and 16882; between Chocovice and Doubí, oxbows of Ohře river (8), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8659; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 7.viii.1998 and 31.viii.2006, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 8660 and 15542; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT,

1 ♂, C+J+M, slide Inv. No. 13451; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7702; between Hazlov and Nebesa, spring area (14), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8662; between Hluboký and Kfely, Malý hluboký rybník pond (15), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9607; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19531; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15524 and 15577; between Kacéřov and Hluboká, streams (20), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 8666; between Klest and Krapice, Amerika pond (22), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10591; between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 26.v. and 2.vi.1998, SW, 3 ♂♂, J, slides Inv. No. 7671, 7740 and 8668; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 4.vi.1997 and 9.viii.2006, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6695 and 15451; between Lipnice and Vintířov, Panský rybník pond (25), 27.v. and 2.vi.1997, 25.vi.2002, SW, 3 ♂♂, J, slides Inv. No. 6614, 6629 and 11132; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8671; between Loket and Staré Sedlo, Ohře river (29), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7714; between Loket and Svatošovské skály rocks, Ohře river (30), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7682; between Lomnice and Dolní Nivy, water reservoir (31), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6768; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17550; between Lomnice and Sokolov, Kosík's water reservoir (33), 22.v.2001, SW, 1 ♂, J, slide Inv. No. 10612; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v. and 30.vii. 2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17432 and 17603; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, 1 ♂, C+J+M, slide Inv. No. 17440; between Lomnice and Svatava, Matyáš dump, forest water reservoirs (36), 15.vi.2000, SW, 1 ♂, C, slide Inv. No. 10559; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19496; between Mírová and Počerny, Chodovský potok brook (40), 14.vii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14737; between Mokřiny and Verněřov, Bílý Halštrov brook (41), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8674; between Nebanice and Odava, Ohře river (42), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8675; between Nebesa and Výhledy, Halštrovský les forest (43), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 10595; between Nová Role and Mezirolí, forest brook (45), 26.v.1997, SW, 1 ♂, J, slide Inv. No. 6667; between Nové Bukovany and Chlum Sv. Máří, U vodojemu water tank (46), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7747; between Skalka and Ovčín, ponds (50), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8678; between Svatava, Krajková and Habartov, Radvanovský potok brook (52), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6780; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003, 26.v.2008, MT, 3 ♂♂, C+J+M, slides Inv. No. 12053, 12058 and 17515; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18659; between Výhledy and Skalka, Hazlovský potok brook (58), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8685; Bublák nr. Vackovec, Plesná brook (63), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8658; Chlum Sv. Máří, water reservoir (66), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 6746; Chvoječná env. Cheb, pond (69), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 9745; Citice env. Sokolov, Ohře river (70), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7788; Citice env. Sokolov, Výsypka Antonín dump (71), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11218; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6698; Černý Mlýn nr. Tisová, wet meadows (73), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7743; Dasnice, wet meadows (74), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9633; Dasnice, small water reservoir (75), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11231; Děvín NR env. Milhostov, Lužní potok brook (79), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7771; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6712; Dolní Nivy, large growths of *Phragmites australis* (81), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 10641; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13489; Dolní Pochlovice, Boží Požehnutí water reservoir (83), 24.vi.1999, SW, 1 ♂, C, slide Inv. No. 10652; Dolní Rychnov, golf course edge (85), 27.viii. and 20.ix. 2007, MT, 2 ♂♂, C+J+M, slides Inv. No. 16851 and 16948; Dolní Rychnov, Rychnovský potok brook (87), 27.viii. and 20.ix.2007, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 16828 and 16929; Dvoreček, Mělký rybník pond (88), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10634; Dvory env. Loket, brook (90), 4.v.1994, SW, 1 ♂, J, slide Inv. No. 10586; Erika sand pit, small water reservoirs and pools (91), 27.viii.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12134; Františkovy Lázně, Klára forest pond (92), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10575; Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8661; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. and 20.ix.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15443 and 15609; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6686; Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi. 2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15492 and 15566; Habartov - V zátiší (99), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6734; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 6.viii.1998, SW, 1 ♂, J, slide Inv. No. 8680; Hájek env. Ostrov, Umučený rybník pond (102), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10616; Hazlov env., Ovčín forest ponds (103), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8663; Hledsebské rybníky ponds nr. Ostroh (104), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10649; Hluboká env. Habartov, Libocký potok brook (105), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 10578; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 19.v.2004, SW, 1 ♂, C, slide Inv. No. 13479; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998 and 9.viii.2006, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 9690 and 15589; Horní Rozmyšl, dump edge, water

reservoir (114), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 8664; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13366; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13420; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 6760; Jimlíkov env. Nová Role, kaoline-pits, Jimlíkovský potok brook (123), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6575; Jindřichovice, pond (124), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7815; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13391; Kacéřov env. Kynšperk nad Ohří, dungy ponds (126), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 7754; Karlovy Vary – central part of the town, Ohře river (127), 5.viii.1998, SW, 1 ♂, C, slide Inv. No. 12126; Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake (130), 28.ix.1998, SW, 1 ♂, J, slide Inv. No. 8679; Kfely env. Ostrov, Bystřice brook (131), 21.ix.1997 and 3.viii.1998, SW, 2 ♂, C, J, slides Inv. No. 8667 and 12185; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 18.ix.1997, 9.viii.2010, SW, MT, 2 ♂♂, J, C+J+K+M, slides Inv. No. 6638 and 19577; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 18.ix.1997 and 26.x.2002, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6627 and 11137; Kopanina env. Habartov, Pustý rybník pond (140), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 8682; Krapice nr. Františkovy Lázně, Amerika pond (142), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10647; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8669; Libavské Údolí env. Kynšperk nad Ohří, Velká Libava brook as tributary of Ohře river (150), 20.v.1998, SW, 1 ♂, J, slide Inv. No. 8670; Lipnice env. Vintířov, areas put under fence of the Division Jiří Administration (151), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11228; Lomnice env., Lomnický les forest, Smrdutá and Topolová water reservoirs (159), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 6590; Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 8672; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 10.viii.2001, 19.v. and 17.vii. 2003, MT, 3 ♂♂, C+J+M, slides Inv. No. 10517, 12104 and 12120; Lomnice env., Pastviny area, Julie water reservoir (164), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17566; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001, 5.v. and 10.ix.2008, MT, 2 ♂♂, 1 ♀, C+J+M, slide Inv. No. 10533, 17459 and 17590; Lužná env. Františkovy Lázně, Horní rodinný rybník small forest pond (171), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10606; Lužná env. Františkovy Lázně, Horní Rybník (Miska) pond (172), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8665; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7734; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, SW, MT, 4 ♂♂, J, C+J+M, slides Inv. No. 14632, 14654, 14758 and 14769; Mlýnské Chalupy (abolished settlement) nr. Přebuz, stream (181), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7717; Mokřina env. Kynšperk nad Ohří, Lipoltovský potok brook (182), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10588; Nejsa env. Ostrov, Velká Hruška pond (185), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6646; Nová Role, Vlčí potok brook, forest, 480 m a.s.l. (189), 11.v.2005, SW, 1 ♂, J, slide Inv. No. 14765; Nová Role, Vlčí potok brook, Pod Liščím vrchem fork (190), 11.v.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 14743 and 14760; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14687; Nová Role env., Vlčí potok brook, cowshed, ponds (192), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6644; Nová Role, Vlčí potok brook, forest, 450 m a.s.l. (194), 30.v.1997 and 2.vi.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6774 and 14701; Nová Ves env. Bečov nad Teplou, brook nr. Dominova skalka rockery NM (195), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 7639; Nová Ves env. Bečov nad Teplou, U myslivny forester's lodge, wet meadow (196), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 7797; Nová Ves env. Bečov nad Teplou, Za Hospodou pond (197), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 8676; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11210; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v. and 13.vi.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15471 and 15643; Nový Kostel nr. Luby, U kyselky well, Svažecký potok brook (204), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7783; Ostrov env., Ostrovské rybníky NR, Dolní Štít pond (210), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 7731; Plesná, Plesná brook (212), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7636; Pozorka nr. Nejde, Smolný vrch hill, small forest brook (214), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6655; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6720; Skalka nr. Hazlov, Hazlovský potok brook (222), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8677; Smolné Pece env. Nová Role, forest ponds (225), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6661; Smrčina nr. Jindřichovice, brook (226), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7772; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 2 ♂♂, J, slides Inv. No. 16806 and 16808; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi. 2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18532 and 18602; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii. 2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18608; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v. and 20.ix.2007, MT, 2 ♂♂, C+J+M, slides Inv. No. 16721 and 16781; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12079; Svatošské skály rocks NM between Loket and Doubí, Ohře river (244), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7790; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7624; Tatrovice env. Vřesová, forest brook, waterworks (248), 28.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11173; Tatrovice - Na skále env. Vřesová, meadow spring area (249), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 8681; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 6.ix.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19615; Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259), 27.vi.2002, SW, 1 ♂, J, slide Inv. No. 11132; Vřesová env. Chodov,

primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13403; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v. and 10.vi. 2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18506 and 18555; Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge (262), 29.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18663; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, 10. and 27.vi.2009, MT, 2 ♂♂, 1 ♀, C+J+M, C+J+K+M, slides Inv. No. 11060, 18500 and 18631; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17.-18.v.1999, SW, 2 ♂♂, J, slides Inv. No. 8683 and 8684; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10632.

Distribution: A very common central and western European species. Known from Austria, Belgium, Great Britain, Bulgaria, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Lithuania, the Netherlands, Norway, Poland, Sardinia, Slovakia, Slovenia, Switzerland, and Ukraine (Ježek *et al.* 2014, 2017, Wagner 2018).

Environmental notes, dates: From May until October, 340-828 m a.s.l. Adults were registered in 146 sites in total. The following ranges of chemical analysis water data are from 14 sites of the most significant monitored localities within SUAS - see table: 16, 37, 54, 85, 134 (incomplete), 160, 161, 163, 165, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: Very abundant species, often with a massive presence in MT and YPT.

73. *Clytocerus (Boreoclytocerus) rivosus* (Tonnoir, 1919)

Published records: between Lipnice and Vintířov, Panský rybník pond (25); between Svatava and Královské Pořící, Marie open-cast mine foreground (53); Citice env. Sokolov, Výsypka Antonín dump (71); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Lomnice env., Pastviny area (165); Vřesová env. Chodov, sludge water defecation and sedimentation (263) (Ježek 1999).

Material examined: between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19529; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19486; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10459; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14679.

Distribution: Known from Belgium, Czech Republic, Denmark, France, Germany, Great Britain, Slovakia, and Sweden (Ježek 2003).

Environmental notes, dates: From July until August, 340-593 m a.s.l. A total 14 sampling sites; water analyzes come from 7 sites of the most significant monitored localities within SUAS - see table: 16, 37, 160, 161, 163, 165 and 263.

pH 2.34-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.0-16.5; **N-NO₃⁻ (mg/l)** 0.001-14.980; **N org. (mg/l)** 0.302-3.56; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.7-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: Not common European species, critically endangered in CZ (Ježek 2005).

74. *Clytocerus (Boreoclytocerus) splendidus* Ježek & Hájek, 2007

Published records: Dolní Nivy, Pstruhový potok brook (82); Kacéřov env. Kynšperk nad Ohří (126); Loket, Lněný vrch hill (154); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Nová Role env., Černý potok brook (191) (Ježek & Hájek 2007).

Material examined: between Horní Rozmyšl and Lipnice, marshes (16), 14.vii. 2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19527; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17551; between Lomnice and Sokolov, Prasečí water reservoir (34), 26.v. and 30.vii. 2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17430 and 17602; between Lomnice and Sokolov, Přesličková water reservoir (35), 30.vii.2008, MT, 1 ♂, C+J+ M, slide Inv. No. 17438; between Svatava and Lomnice, aggregated small localities (54), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17524; Dolní Rychnov, golf course edge (85), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16949; Dolní Rychnov, Rychnovský potok brook (87), 27.viii. and 20.ix.2007, SW, 2 ♂♂, J, slides Inv. No. 16834 and 16933; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16902; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17455 and 17589; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18615; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18522.

Distribution: So far known only from the Belgium, Czech Republic, Poland and Slovakia, (Ježek *et al.* 2012, 2018b, Oboňa & Ježek 2014).

Environmental note, dates: From April until September, 340-620 m a.s.l. A total 20 sampling sites; water analyzes come from 6 localities: 16, 54, 85, 160, 161 and 166.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-14.473; **N-NH₄⁺ (mg/l)** 0.001-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.021-8.415; **TN (mg/l)** 0.339-10.252; **TP (mg/l)** 0.006-1.35; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0.1-45; **Ca (mg/l)** 7.3-429.8; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.001-19.5; **conductivity (μS/cm)** 60-9630.

Comments: Biology unknown. The assessment of the current conservation status: NS.

Parabazarella Vaillant, 1983

75. *Parabazarella subneglecta* (Tonnoir, 1922)

Published records: between Královské Poříčí and Staré Sedlo (23); between Lomnice and Svatava, Matyáš dump (36); between Svatava and Lomnice, aggregated small localities (54); Lobzy nr. Březová, Lobézský potok brook (153); Svatava env., Medard pit (241); Vřesová env. Chodov, sludge water defecation and sedimentation (263) (Ježek 1999).

Material examined: between Bystřina and Rovná, spring area (7), 18.vii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16883; between Mokřiny and Vernéřov, Bílý Halštrov brook (41), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8656; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12042; Habartov - Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6677; Hled'sebské rybníky ponds nr. Ostroh (104), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10651; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♀, Ko, slide Inv. No. 13386; Mlýnek env. Luby, pond (180), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7806; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6729; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 6.ix.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19612.

Distribution: Known from Europe (western and central Europe, Finland, Lithuania, the Balkans) and Turkey (Ježek & Omelková 2012).

Environmental notes, dates: From May until September, 399-668 m a.s.l. Adults of this species were captured in western Bohemia at 14 sampling sites. The following chemical analysis water data ranges are from 3 biotopes of the most significant monitored localities within SUAS - see table: 54, 257 (incomplete) and 263.

pH 6.23-8.35; **alkalinity (mmol/l)** 0.315-11.6; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-14.980; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.018-0.936; **Na (mg/l)** 1.7-695; **K (mg/l)** 1.2-45; **Ca (mg/l)** 6.7-361; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-13.449; **Cl⁻ (mg/l)** 2.1-241.6; **SO₄²⁻ (mg/l)** 13-2099; **Mn (mg/l)** 0.041-2.833; **conductivity (μS/cm)** 59-3963.

Comments: A common species but not abundant.

Pericoma Walker, 1856

Pachypericoma Vaillant, 1978

76. *Pericoma (Pachypericoma) blandula* Eaton, 1893

Published records: between Královské Poříčí and Staré Sedlo (23); between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Bochoř env. Karlovy Vary (59); Loket, Ohře river (156); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Lomnice env., Pastviny area (165); Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166); vodní nádrž Stanovice dam (237) (Ježek 1999).

Material examined: between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 9.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15475; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7701; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19533; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15586; between Loket and Svatošovské skály rocks, Ohře river (30), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7665; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003 and 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 12054 and 17531; Habartov - Úžlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15567; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998 and 9.viii.2006, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 9686 and 15591; Horní Rozmyšl, dump edge, water reservoir (114), 18.v.1998, SW, 1 ♂, C, slide Inv. No. 10550; Horní Rozmyšl, Vřesový potok brook below quarry (117), 20.v.2004, SW, 1 ♂, J, slide Inv. No. 13491; Jimlíkov env. Nová Role, kaoline-pits, Jimlíkovský potok brook (123), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6574; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001 and 10.ix.2008, SW, MT, 2 ♂♂, C, C+J+M, slides Inv. No. 10538 and 17468; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, SW, MT, 3 ♂♂, J, C+J+M, slides Inv. No. 14633, 14670 and 14770; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14709; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v. and 13.vi.2006,

MT, 2 ♂♂, C+J+M, slides Inv. No. 15472 and 15630; Odeř env. Hroznětín, Jesenice forest brook (206), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9645; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v.2009, SW, 1 ♂, J, slide Inv. No. 18598; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16724; Těšovice env. Sokolov, Ohře river floodplain (251), 26.v.1998, SW, 1 ♂, J, slide Inv. No. 9571; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vi. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19538 and 19628; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13413.

Distribution: Austria, Belgium, Bosnia and Herzegovina, Croatia, Great Britain, Bulgaria, Czech Republic, Denmark, European Turkey, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Macedonia, Montenegro, the Netherlands, Norway, Poland, Romania, Russia, Sardinia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, and Ukraine; recorded also in Transcaucasia, Armenia and Azerbaijan); Tunisia, and Morocco (Ježek 2004, Kvifite *et al.* 2011, 2013, Ježek *et al.* 2017, 2018a,b).

Environmental notes, dates: From May until September, 340-668 m a.s.l. A total 32 sampling sites in western Bohemia; 9 localities measured: 16, 54, 160, 161, 165, 166, 200, 235 and 257 (incomplete).

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.0-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-10.252; **TP (mg/l)** 0.006-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0.1-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 5-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (μS/cm)** 60-21528.

Comments: Common, abundant and well-known species widespread mainly in Europe.

77. *Pericoma (Pachypericoma) fallax* Eaton, 1893

Published records: between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Karlovy Vary, Ohře river (127); Lomnice env., Lomnický les forest, Velký Břizák water reservoir (161); Vřesová env. Chodov (257) (Ježek 1999).

Material examined: between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 7.viii.1998, SW, 2 ♂♂, C, J, slides Inv. No. 8686 and 12128; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7683; between Kfely and Ostrov, Bystřice stream (21), 3.viii.1998, SW, 1 ♂, C, slide Inv. No. 12184; between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 26.v. and 2.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 7666 and 8690; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 6692; between Loket and Nové Sedlo, Ohře river (28), 23.vi.1994, SW, 1 ♂, J, slide Inv. No. 6673; between Loket and Svatošovské skály rocks, Ohře river (30), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7681; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12184; Bystřina (summer camp) nr. Kostelní Břiza, Velká Libava brook (64), 4.vi.1998, SW, 1 ♂, J, slide Inv. No. 7810; Dasnice, wet meadows (74), 20.v.1998 and 15.ix.2000, SW, 2 ♂♂, J, slides Inv. No. 8687 and 9632; Františkovy Lázně, woodpark (94), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 8688; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 20.v.1998, SW, 1 ♂, J, slide Inv. No. 8691; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998, SW, 1 ♂, J, slide Inv. No. 9693; Horní Rozmyšl, dump edge, water reservoir (114), 16.ix.1997, SW, 1 ♂, J, slide Inv. No. 7819; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13357; Hradiště nr. Vojkovice, confluence of Bystřice brook and Ohře river (119), 3.viii.1998, SW, 1 ♂, C, slide Inv. No. 12148; Jimlíkov env. Nová Role, kaoline-pits, Jimlíkovský potok brook (123), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6577; Karlovy Vary - Tašovice, Ohře river and brook (129), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 8689; Kraslice, Svatava river (143), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9660; Loket - Split camping area and Staré koupaliště swimming pool, Ohře river (156), 29.v. and 2.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 7644 and 7761; Loket, Ohře river nr. Šibeniční vrch hill (155), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 8692; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.ix.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17471; Luh nad Svatavou, Svatava river (168), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9655; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 14650 and 14766; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6719; Soos NNR env. Františkovy Lázně, Sázek brook, turf banks (233), 23.vi.1999, SW, 1 ♂, C, slide Inv. No. 12148; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12078; Svatošské skály rocks NM between Loket and Doubí, Ohře river (244), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7792; Tisová (power station), V Mokřině, brook (252), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7798.

Distribution: Belgium, Bosnia and Herzegovina, Czech Republic, France, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Macedonia, Montenegro, the Netherlands, Russia, Slovakia, Slovenia, Spain, and Ukraine (Ježek 1992, 2004, 2018, Ježek *et al.* 2017, Wagner 2018).

Environmental notes, dates: From May until September, 369-569 m a.s.l. Adults of this species were captured in western Bohemia at 33 sampling sites. The following chemical analysis water data are from 4 biotopes of the most significant monitored localities within SUAS - see table: 54, 161, 166 and 257 (incomplete).

pH 2.2-8.75; **alkalinity (mmol/l)** 0.0-11.6; **N-NH₄⁺ (mg/l)** 0.002-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.765-10.252; **TP (mg/l)** 0.018-1.35; **Na (mg/l)** 0.1-695; **K (mg/l)** 0.1-45; **Ca (mg/l)** 8.0-

409; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-968; **Cl⁻ (mg/l)** 1.0-719; **SO₄²⁻ (mg/l)** 10.1-5845; **Mn (mg/l)** 0.009-19.5; **conductivity (µS/cm)** 63-4682.

Comments: A European and western Siberian species, abundant.

78. *Pericoma (Pachypericoma) nielsenii* Kvifte, 2010

Material examined: Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13421; Hradiště nr. Vojkovice, confluence of Bystřice brook and Ohře river (119), 3.viii.1998, SW, 1 ♂, C, slide Inv. No. 12173; Kfely env. Ostrov, Bystřice brook (131), 3.viii.1998, SW, 1 ♂, C, slide Inv. No. 12183; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14615; Soos NNR env. Františkovy Lázně, Sázek brook, turf banks (233), 23.vi.1999, SW, 1 ♂, C, slide Inv. No. 12147; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12109.

Distribution: Czech Republic, Denmark, Finland, France, Norway, Slovakia, and Ukraine (Ježek 2009b, Kvifte 2010, Kvifte *et al.* 2011, Ježek *et al.* 2017).

Environmental notes, dates: From June until September, 407-521 m a.s.l. Males of this species were captured at 6 sites in western Bohemia, where water analysis was not performed.

Comments: Not quite common European species.

Pericoma s. str.

79. *Pericoma (Pericoma) pseudoexquisita* Tonnoir, 1940

Material examined: Dasnice, wet meadows (74), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9637; Dolní Rychnov, golf course edge (85), 27.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16853.

Distribution: Known from Austria, Belgium Bulgaria, Czech Republic, France, Germany, Greece, Great Britain, Hungary, Ireland, Italy, Slovakia, Slovenia, Spain, and Switzerland (Ježek *et al.* 2012, Wagner 2018).

Environmental notes, dates: From August until September, 414-450 m a.s.l. Adults of this species were registered in western Bohemia at 2 sampling sites. Water analysis was performed only at locality 85.

pH 6.71-8.10; **alkalinity (mmol/l)** 0.49-3.010; **N-NH₄⁺ (mg/l)** 0.001-0.147; **N-NO₃⁻ (mg/l)** 0.013-5.872; **N org. (mg/l)** 0.021-2.500; **TN (mg/l)** 0.583-7.005; **TP (mg/l)** 0.012-0.120; **Na (mg/l)** 2.4-145.1; **K (mg/l)** 3.5-10.9; **Ca (mg/l)** 12.2-429.8; **Mg (mg/l)** 4.6-66.1; **Fe (mg/l)** 0.02-0.776; **Cl⁻ (mg/l)** 2.19-56.8; **SO₄²⁻ (mg/l)** 23.6-610.5; **Mn (mg/l)** 0.020-1.725; **conductivity (µS/cm)** 184-1346.

Comments: A not common European species.

Pneumia Enderlein, 1935

80. *Pneumia canescens* (Meigen, 1804)

Published records: between Svatava and Lomnice, aggregated small localities (54); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162); Pastviny area (165) (Ježek 1999).

Material examined: between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15572; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003 and 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 12044 and 17527; Horní Rozmyšl, dump edge, water reservoir (114), 16.ix.1997, SW, 1 ♂, J, slide Inv. No. 7823; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 18.ix.1997, SW, 1 ♂, J, slide Inv. No. 6636; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v. and 10.ix.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17453 and 17582; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 14629 and 14754; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14686; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14702; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13400.

Distribution: Most of Europe (Austria, Belgium, Great Britain, Czech Republic, Denmark, European Turkey, France, Germany, Greece, Hungary, Slovakia, Sweden, the Netherlands and former Yugoslavia); in addition, penetrates to Turkey, Kyrgyzstan, Afghanistan, Armenia and China; ranges as well Nearctic Region (Ježek 2006, Omelková & Ježek 2012a, Ježek *et al.* 2013, 2018a).

Environmental notes, dates: From May until September, 346-620 m a.s.l. The species was found in 15 localities in total. Water analyzes refer to 3 aggregated sites: 54, 134 (incomplete) and 166.

pH 2.2-8.35; **alkalinity (mmol/l)** 0.0-11.6; **N-NH₄⁺ (mg/l)** 0.007-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.55-10.252; **TP (mg/l)** 0.01-1.35; **Na (mg/l)** 1.7-695; **K (mg/l)** 2.1-45; **Ca (mg/l)** 10.9-409; **Mg (mg/l)** 3.5-278; **Fe (mg/l)** 0.1-968; **Cl⁻ (mg/l)** 2.1-719; **SO₄²⁻ (mg/l)** 13-5845; **Mn (mg/l)** 0.05-19.5; **conductivity (µS/cm)** 120-4682.

Comments: Holarctic Region, common.

81. *Pneumia gracilis gracilis* (Eaton, 1893)

Published records: between Svatava and Lomnice, aggregated small localities (54); Lomnice env., Lomnický les forest, water bodies (158); (159); (160); (161); (162) (Ježek 1996, 1999).

Material examined: between Hazlov and Nebesa, spring area nr. Goethův vrch hill (14), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8693; between Mokřiny and Verněřov, Bílý Halštrov brook (41), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8695; between Skalka and Ovčín, ponds (50), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8697; Hazlov env., Ovčín forest ponds (103), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8694; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14634; Skalka nr. Hazlov, Hazlovský potok brook (222), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8696; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 28.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16878.

Distribution: A subspecies published from several countries, not too frequent in Europe: Albania, Belgium, Bosnia and Herzegovina, Czech Republic, France, Germany, Great Britain, Greece, Italy, Serbia, Slovakia, Slovenia, and Ukraine; Transcaucasia: Abkhazia (Ježek 2002, 2004, Ježek *et al.* 2012, 2017, 2018b).

Environmental notes, dates: From May until August, 340-634 m a.s.l. A total 13 sampling sites; the water analysis summary ranges below are derived from 3 sites: 54, 160 and 161.

pH 5.1-8.75; **alkalinity (mmol/l)** 0.15-11.6; **N-NH₄⁺ (mg/l)** 0.002-4.011; **N-NO₃⁻ (mg/l)** 0.001-1.58; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 0.765-9.21; **TP (mg/l)** 0.006-0.410; **Na (mg/l)** 0.1-695; **K (mg/l)** 0.1-45; **Ca (mg/l)** 7.3-361; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-15.143; **Cl (mg/l)** 1.0-16.45; **SO₄²⁻ (mg/l)** 5-2099; **Mn (mg/l)** 0.009-8.919; **conductivity (µS/cm)** 60-3963.

Comments: The subspecies *Pneumia gracilis kandavanica* (Ježek, 1990) was published from Iran, see Omelková & Ježek (2012a).

82. *Pneumia mutua* (Eaton, 1893)

Published records: between Loket and Nové Sedlo (28); Březová (62); Dvory env. Loket (90); Horní Slavkov (118); Lomnice env., Pastviny area (165); Tatrovice env. Vřesová (248) (Ježek 1999).

Material examined: between Boučí and Dolní Nivy, salt marshes (4), 3.vi.1997, SW, 1 ♂, J, slide Inv. No. 6583; between Boučí and Horní Nivy (5), forest stream, 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6771; between Bystřina and Rovná, spring area (7), 4.vi.1998, SW, 1 ♂, J, slide Inv. No. 7653; between Děpoltovice and Nivy, Vitický potok brook (10), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9683; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7684; between Fojtov and Nový Fojtov, Vitický potok brook (13), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9649; between Josefův and Hřebený, pond in field (18), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9671; between Kacěřov and Hluboká, streams (20), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 8700; between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7670; between Nová Role and Mezirolí, forest brook (45), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6662; between Nový Fojtov and Lužec, Nad Matysem hill (47), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9710; between Ruprechtov and Odeř, forest pond (49), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9597; between Svatava, Krajková and Habartov, Radvanovský potok brook (52), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6778; between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18645; between Tatrovice and Chodov, Nové Chalupy seclusion, forest brook (56), 27.vi.2002, SW, 1 ♂, J, slide Inv. No. 11162; Bublák nr. Vackovec, Plesná brook (63), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8698; Bystřina (summer camp) nr. Kostelní Bříza, Velká Libava brook (64), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6670; Chlum Sv. Máří, water reservoir (66), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 6750; Černý Mlýn nr. Tisová, wet meadows (73), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7746; Dasnické rozcestí crossroad env. Nové Bukovany, forest marshes (77), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11236; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9620; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6715; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13485; Habartov - Kluč, water reservoir (97), 31.v.1997 and 3.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 6681 and 8699; Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15489 and 15555; Habartov - V zátiší (99), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6733; Horní Lazy env. Lázně Kynžvart, sludge bed (108), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9602; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 19.v. and 10.vi.2004, SW, MT, 2 ♂♂, C, C+F+J+M+S, slides Inv. No. 13471 and 13478; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13354; Hrušková env. Sokolov, Hruškovský potok brook (121), 5.vi.2007, MT, 1 ♂, J, slide Inv. No. 16775; Kolová env. Kynšperk nad Ohří, forest spring area (137), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9596; Kopanina nr. Habartov, Horka water reservoir env. (138), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 7672; Kopanina env. Habartov, Pustý rybník pond (140), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 8704; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8701; Lazy env., between Smrkovec (abolished settlement) and Žitný hill, Malá Libava brook (149), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9581; Litov, dump, water reservoir, Částkovský potok brook (152), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7707; Lobzy nr. Březová, Lobézský potok brook (153), 5.vi.2002, SW, 1 ♂, C, slide Inv. No. 12169; Lužec env. Nová Role, Jezero pond (169), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9652; Lužec env. Nová Role, Lužecký potok brook (170), 3.vi.2000, SW, 1 ♂, J, slide Inv. No.

9661; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7737; Milíkov env., U těšovské hájenky hill, slope swamps (176), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10623; Mírová nr. Chodov, Jimlíkovský (Vlčí) potok brook (178), 22.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14662; Mlýnské Chalupy (abolished settlement) nr. Přebuz, stream (181), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7719; Nová Role, ponds (187), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9630; Nová Role, Vlčí potok brook, forest, 480 m a.s.l. (189), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14708; Nová Role env., Vlčí potok brook, cowshed, ponds (192), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6641; Nová Ves env. Bečov nad Teplou, U myslivny forester's lodge, wet meadow (196), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 7796; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7662; Nový Kostel nr. Luby, Nad milířem hill, forest swamps (203), ?, SW, 1 ♂, J, slide Inv. No. 8702; Odeř env. Hroznětín, Jesenice forest brook (206), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9646; Oldřichov env. Pernink, Oceán NR (207), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9666; Pozorka nr. Nejde, Smolný vrch hill, small forest brook (214), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6654; Přebuz, Rotava brook (217), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7780; Smolné Pece env. Nová Role, forest ponds (225), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6660; Smrčina nr. Jindřichovice, brook (226), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7776; Spomyšl env. Tatrovce, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18531; Spomyšl env. Tatrovce, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18611 and 18620; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7627; Tatrovce - Na skále env. Vřesová, meadow spring area (249), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 8703; Velký Rybník nr. Hroznětín, Velký rybník pond (255), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9586; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8705; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9614. **Distribution:** A species distributed largely in western and central Europe, and Scandinavia; known from Austria, Belgium, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Slovakia, Slovenia, and Ukraine (Kvifte *et al.* 2011, 2013, Oboňa & Ježek 2014, Ježek *et al.* 2017).

Environmental notes, dates: From May until August, 391-908 m a.s.l. Adults of this species were captured in western Bohemia at 68 sampling sites. The water analysis was performed on 2 localities: 165 and 235.

pH 2.34-8.65; **alkalinity (mmol/l)** 0.0-19.8; **N-NH₄⁺ (mg/l)** 0.000-2.090; **N-NO₃⁻ (mg/l)** 0.001-3.60; **N org. (mg/l)** 0.302-3.56; **TN (mg/l)** 0.430-8.735; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 2.3-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 9-943.63; **Mg (mg/l)** 2.4-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 26.4-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 103-21528.

Comments: A species of hilly and mountain areas, common.

83. *Pneumia nubila* (Meigen, 1818)

Published records: between Lipnice and Vintířov, Panský rybník pond (25); between Loket and Nové Sedlo, Ohře river (28); between Lomnice and Svatava, Matyáš dump, forest water reservoirs (36); between Sokolov and Svatava, Riesel dump, water reservoir (51); between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Citice env. Sokolov, Výsypka Antonín dump (71); Bochoř env. Karlovy Vary (59); Dvory env. Loket (90); Horní Slavkov (118); „Klondike“ nr. Vintířov, Modráčkový rybník pond (134); Královské Poříčí, Pískový vrch hill (141); Lobzy nr. Březová, Lobézský potok brook (153); Loket, Lněný vrch hill (154); Lomnice (settlement) nr. Sokolov (167); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Lomnice env., Starý Jiří open-cast mine (166); Oloví, Svatava river (208); Sokolov env., Michal water reservoir vicinity (230); Svatava, Svatavský vrch hill (243); Tatrovce - Na skále env. Vřesová (249); Vintířov env., Vintířovská výsypka dump (256); Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259) (Ježek 1999).

Material examined: Antonínova Výšina, Dvoreček pond (2), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10580; between Chocovice and Doubí, oxbows of Ohře river (8), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8707; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 7.viii.1998, SW, 1 ♂, J, slide Inv. No. 8708; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7686; between Hazlov and Nebesa, spring area (14), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8711; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii. 2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19511; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15523 and 15596; between Klest and Krapice, Amerika pond (22), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10593; between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7741; between Lipnice and Vintířov, Panský rybník pond (25), 27.v. and 2.vi.1997, SW, 2 ♂♂, J, slides Inv. No. 6616 and 6630; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8717; between Loket and Nové Sedlo, Ohře river (28), 23.vi.1994, SW, 1 ♂, J, slide Inv. No. 6676; between Lomnice and Sokolov, Kosík's water reservoir (33), 22.v.2001, SW, 1 ♂, J, slide Inv. No. 10614; between Lomnice and Svatava, Matyáš dump, forest water reservoirs (36), 15.vi.2000, SW, MT, 2 ♂♂, C, C+J+M, slides Inv. No. 10558 and 12145; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. 2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19491; between Mírová and Počerny, Chodovský potok brook (40), 12.v.2005, SW, 1 ♂, J, slide Inv. No. 14644; between

Nebanice and Odrava, Ohře river (42), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8720; between Nová Role and Mezirolí, forest brook (45), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6665; between Rosnice and Stará Role, Václav flooded pit (48), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6602; between Ruprechtov and Odeř, forest pond (49), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9599; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003, 26.v.2008, MT, 3 ♂♂, C+J+M, slides Inv. No. 12052, 12060 and 17517; Bor env. Milhostov, Plesná brook (60), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 10624; Bublák nr. Vackovec, Plesná brook (63), 30.ix.1998 and 16.v.1999, SW, 2 ♂♂, J, slide Inv. No. 7803 and 8706; Bystřina (summer camp) nr. Kostelní Bříza, Velká Libava brook (64), 4.vi.1998 and 13.ix.2000, SW, 2 ♂♂, J, slides Inv. No. 7807 and 9575; Chvoječná env. Cheb, pond (69), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 9747; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6706; Dasnice, wet meadows (74), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9636; Dasnice, small water reservoir (75), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11229; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6710; Dolní Rychnov, Rychnovský potok brook (87), 27.viii.2007, SW, 1 ♂, J, slide Inv. No. 16925; Františkovy Lázně, Klára forest pond (92), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10574; Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8710; Františkovy Lázně, woodpark (94), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 8709; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 20.v.1998, SW, 1 ♂, J, slide Inv. No. 8716; Habartov – Kluč, water reservoirs (97), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6684; Habartov - Úžlabí, Habartovský potok brook (98), 13.vi. 2006, MT, 1 ♂, C+J+M, slide Inv. No. 15497; Habartov - V zátiší (99), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6736; Hájek env. Ostrov, Umučený rybník pond (102), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10619; Hazlov env., Ovčín forest ponds (103), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8712; Hleděbské rybníky ponds nr. Ostroh (104), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10650; Hluboký env. Ostrov, Hlubocký rybník pond (106), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9644; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998, SW, 1 ♂, J, slide Inv. No. 9692; Horní Rozmyšl, cowshed, marshes (113), 16.ix.1997, SW, 1 ♂, J, slide Inv. No. 8713; Horní Rozmyšl, dump edge, water reservoir (114), 16.ix.1997 and 18.v.1998., SW, 2 ♂♂, C, J, slides Inv. No. 7820 and 10556; Kacéřov env. Kynšperk nad Ohří, dungy ponds (126), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 7752; Kfely env. Ostrov, Bystřice brook (131), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 8715; Kfely env. Ostrov, Jesenice brook (132), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9701; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 21.v.2001, 26.x.2002, 21.vi. and 9.viii.2010, SW, MT, 4 ♂♂, C, C+J+M, C+J+K+M, slides Inv. No. 10609, 11080, 19568 and 19665; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 18.ix.1997 and 26.x.2002, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6625 and 11121; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 10.v. and 4.vi.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19597 and 19664; Krapice nr. Františkovy Lázně, Amerika pond (142), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10645; Lipnice env. Vintířov, areas put under fence of the Division Jiří Administration (151), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11223; Lítov, dump, water reservoir, Částkovský potok brook (152), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7705; Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161), 17.ix.1997, SW, 2 ♂♂, J, slides Inv. No. 8718 and 8719; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10460; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001 and 5.v.2008, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 10534 and 17584; Lužná env. Františkovy Lázně, Horní rodinný rybník small forest pond (171), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10608; Lužná env. Františkovy Lázně, Horní Rybník (Miska) pond (172), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8714; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi. 2005, SW, MT, 3 ♂♂, J, C+J+M, slides Inv. No. 14630, 14674 and 14751; Mlýnek env. Luby, pond (180), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7804; Nejda env. Ostrov, Malá Nejda pond (184), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10571; Nejda env. Ostrov, Velká Hruška pond (185), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6650; Nová Role, Vlčí potok brook, forest, 480 m a.s.l. (189), 11.v.2005, SW, 1 ♂, J, slide Inv. No. 14762; Nová Role env., Černý potok brook (191), 11.v. and 2.viii.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 14681 and 14746; Nová Role env., Vlčí potok brook, cowshed, ponds (192), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6643; Nová Role env., Vlčí potok brook, forest, 450 m. a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14705; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11211; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15629; Nový Kostel nr. Luby, U kyselky well, Svažecký potok brook (204), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7785; Nový Kostel railway station env., Hrzínský les forest, ponds (205), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7673; Ostrov env., Konopka pond (209), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10567; Ostrov env., Ostrovské rybníky NR, Dolní Štít pond (210), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 7732; Ostrov env., Ottův rybník pond (211), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 8721; Plesná, Plesná brook (212), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7633; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6725; Smrčina nr. Jindřichovice, brook (226), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7774; Smrčina nr. Plesná, Kamenné Vrchy Nature Park, Pstruhový potok brook (227), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7766; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 1 ♂, J, slide Inv. No. 16803; Staré Sedlo env. Sokolov, Staropsedelský and Hruškovský potok brooks (238), 28.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16863; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7629; Tatrovce env. Vřesová,

forest brook, waterworks (248), 2.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11103; Údolíčko env. Klášterec nad Ohří, Malodolský potok brook (253), 16.ix.2000, SW, 1 ♂, J, slide Inv. No. 9719; Velký Rybník nr. Hroznětín, Velký rybník pond (255), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9585; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19550 and 19620; Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259), 27.vi.2002, SW, 1 ♂, J, slide Inv. No. 11245; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002 and 27.vii. 2009, MT, 2 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11064 and 18628; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17. and 18.v.1999, SW, 2 ♂♂, J, slides Inv. No. 8722 and 8723; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10631.

Distribution: Recorded from throughout Europe and the Canary Islands - Austria, Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Denmark, Finland, France, Georgia, Germany, Great Britain, Greece, Hungary, Ireland, Italy, Luxembourg, Macedonia, Montenegro, Poland, Romania, Sardinia, Serbia, Slovakia, Slovenia, Spain, Switzerland, the Netherlands and Ukraine; Armenia (Wagner 1981, Ježek & Goutner 1995, Krek 1999, Ježek 2002, Kvifte *et al.* 2013, Ježek *et al.* 2017, 2018a).

Environmental notes, dates: From May until October, 388-676 m a.s.l. A total 102 sampling sites; chemical analyzes of water come from 10 biotopes of the most significant monitored localities: 16, 37, 54, 134 (incomplete), 161, 163, 166, 200, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 0.1-2052.4; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-514.5; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.5-719; **SO₄²⁻ (mg/l)** 9-21294.0; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 59-9630.

Comments: A very common species, one of the most abundant species of the family Psychodidae in CZ.

84. *Pneumia palustris* (Meigen, 1804)

Published records: between Svatava and Lomnice, aggregated small localities (54) (Ježek 1999).

Material examined: between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15585; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003 and 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 12049 and 17530; Hazlov env., Ovčín forest ponds (103), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8724; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v.2005, SW, 1 ♂, J, slide Inv. No. 14756.

Distribution: Known from Austria, Belgium, Czech Republic, Great Britain, Corsica, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Crete, Romania, Slovakia, Slovenia, Sweden, and the Netherlands, widespread too in the Canary Islands, and Turkey (Wagner 2018).

Environmental notes, dates: From May until August, 407-597 m a.s.l. Adult of this species were captured in western Bohemia at 4 sampling localities. Water samples for analysis were collected in one site only: 54.

pH 6.23-8.35; **alkalinity (mmol/l)** 0.4-11.6; **N-NH₄⁺ (mg/l)** 0.007-4.011; **N-NO₃⁻ (mg/l)** 0.001-1.58; **N org. (mg/l)** 0.199-3.619; **TN (mg/l)** 1.22-9.21; **TP (mg/l)** 0.030-0.410; **Na (mg/l)** 1.7-695; **K (mg/l)** 2.1-45; **Ca (mg/l)** 10.9-361; **Mg (mg/l)** 3.5-278; **Fe (mg/l)** 0.1-13.449; **Cl⁻ (mg/l)** 2.1-16.45; **SO₄²⁻ (mg/l)** 13-2099; **Mn (mg/l)** 0.05-2.833; **conductivity (µS/cm)** 120-3963.

Comments: A common mainly European species.

85. *Pneumia pilularia* (Tonnoir, 1940)

Published records: between Lipnice and Vintířov, Panský rybník pond (25); between Sokolov and Svatava, Riesel dump, water reservoir (51); between Svatava and Lomnice, aggregated small localities (54); Citice env. Sokolov, Výsypka Antonín dump (71); „Klondike“ nr. Vintířov, slope treeless tufa fens (135); Královské Poříčí, Pískový vrch hill (141); Lomnice env., Pastviny area, marshes 2.5 km N (165); Sokolov env., Michal water reservoir vicinity (230) (Ježek 1996, 1999).

Material examined: between Boučí and Svatava, opposite seepage slope to the Erika sand pit (6), 18.ix.1997, SW, 1 ♂, J, slide Inv. No. 6588; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12043; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6703; Děvín NR env. Milhostov, Lužní potok brook (79), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7768; Dolní Rychnov, golf course edge (85), 26.iv. and 20.ix.2007, MT, 2 ♂♂, C+J+M, slides Inv. No. 16898 and 16942; Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16817; Dvory env. Loket, brook (90), 4.v.1994, SW, 1 ♂, J, slide Inv. No. 10587; Horní Rozmyšl, cowshed, marshes (113), 16.ix.1997, SW, 2 ♂♂, J, slides Inv. No. 6716 and 8725; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♀, C+F+J+M+S, slide Inv. No. 13419; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 18.ix.1997 and 26.x.2002, SW, 2 ♂♂, J, slide Inv. No. 6635 and 11082; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 18.ix.1997 and 26.x.2002, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6626 and 11120; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 10.v.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19596; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.ix. 2008, MT,

1 ♂, C+J+M, slide Inv. No. 17449; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 14628 and 14750; Nejda env. Ostrov, Malá Nejda pond (184), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10568; Nová Role, Vlčí potok brook, forest, 480 m a.s.l. (189), 11.v.2005, SW, 1 ♂, J, slide Inv. No. 14764; Nová Role, Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14704; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15470; Ostrov env., Konopka pond (209), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10564; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16718; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11062.

Distribution: Distributed almost throughout Europe, including Spain, the British Isles and Scandinavia, collected also in Algeria, Morocco, Central Caucasus (Terskol, Russia), Armenia and Tajikistan (Wagner 1990, Vaillant & Joost 1983, Ježek 2004, Ježek *et al.* 2014, 2018a).

Environmental notes, dates: From April until October, 396-593 m a.s.l. A total 27 sampling localities; water chemistry is detected in 7 biotopes (most significant sites): 54, 85, 134 (incomplete), 165, 166, 200 and 263.

pH 2.2-8.65; **alkalinity (mmol/l)** 0.0-19.08; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.430-26.92; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 1.7-2683.8; **K (mg/l)** 0.9-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.02-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 13-14847; **Mn (mg/l)** 0.0-27.662; **conductivity (μS/cm)** 59-21528.

Comments: Locally abundant species, but relatively sporadic.

86. *Pneumia plumicornis* (Tonnoir, 1922)

Material examined: Dolní Rychnov, Rychnovský potok brook (87), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16818.

Distribution: A central European species, known from Austria, Czech Republic, Germany, Italy, Slovakia, and Slovenia (Wagner 2018).

Environmental notes, dates: September, 490 m a.s.l. Adults of this species were captured only at one site in western Bohemia, where water analysis was not performed.

Comments: A conspicuous large autumn species from hilly and mountain areas.

87. *Pneumia rivularis* Berdén, 1954

Published records: between Loket and Staré Sedlo, Ohře river (29); Černý Mlýn nr. Tisová (73); Nové Bukovany, Habartovský potok brook (199); Šabina nr. Tisová (245) (Ježek 2003).

Material examined: between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade (55), 10. and 29.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18564 and 18657; „Klondike“ nr. Vintřív, slope treeless tufa fens (135), 21.vi.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19666; Lobzy nr. Březová, Lobézský potok brook (153), 5.vi.2002, SW, 1 ♂, C, slide Inv. No. 12168; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11215; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15637; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18526; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii.2010, MT, 1 ♀, C+J+K+M, slide Inv. No. 19539; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18491 and 18560.

Distribution: A European species, known from Czech Republic, Great Britain, Finland, Germany, Ireland, Norway, Slovakia, Sweden and Far East of Russia (Omelková & Ježek 2012a, Wagner 2018).

Environmental notes, dates: From June until July, 410-630 m a.s.l. Adults of this species were captured in western Bohemia at 12 sampling sites. The following water chemistry summary data are from 4 the most significant monitored localities within SUAS - see table: 200, 235, 257 (incomplete) and 263.

pH 5.2-7.87; **alkalinity (mmol/l)** 0.05-3.2; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.014-14.980; **N org. (mg/l)** 0-1.8; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.014-0.936; **Na (mg/l)** 3.2-265.5; **K (mg/l)** 1.2-9.8; **Ca (mg/l)** 6.1-153.0; **Mg (mg/l)** 1.2-36.1; **Fe (mg/l)** 0.08-0.505; **Cl⁻ (mg/l)** 4.0-588.6; **SO₄²⁻ (mg/l)** 14.1-570.5; **Mn (mg/l)** 0.02-0.27; **conductivity (μS/cm)** 59-2340.

Comments: Endangered in CZ (Ježek 2005), rare.

88. *Pneumia trivialis* (Eaton, 1893)

Published records: between Lipnice and Vintřív, Panský rybník pond (25); between Loket and Nové Sedlo (28); between Lomnice and Svatava, Matyáš dump, forest water reservoirs (36); between Sokolov and Svatava, Riesel dump, water reservoir (51); between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); between Svatava and Lomnice, aggregated small localities (54); Bochoř env. Karlovy Vary (59); Březová (62); Chránišov env. Nové Sedlo (68); Citice env. Sokolov, Výsypka Antonín dump (71); Dvory env. Loket (90); Nový Kostel nr. Luby (98); Horní Slavkov (118); Karlovy Vary (127); „Klondike“ nr. Vintřív, Modráčkový rybník pond (134); Královské Poříčí, Pískový vrch hill (141); Lobzy nr. Březová, Lobézský potok brook (153); Loket,

Lněný vrch hill (154); Loket env., Nadlesí nr. Údolí (157); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Lomnice env., Pastviny area (165); Lomnice env., Starý Jiří open-cast mine (166); Lomnice (settlement) nr. Sokolov (167); Mezihorská nr. Jindřichovice (175); Oloví (208); Smolná env. Kraslice (224); Snežná nr. Kraslice, Hlinitý hill (228); vodní nádrž Stanovice dam (237); Staré Sedlo env. Sokolov, Michal former open-cast coal mine vicinity (238); Svatava env., Svatava river nr. Svatavský vrch hill (242); Šindelová env. Kraslice (246); Tatrovice env. Vřesová, forest brook, waterworks (248); Tatrovice - Na skále env. Vřesová, meadow spring area (249); Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259); Zlatý Kopec env. Boží Dar (266) (Ježek 1999).

Material examined: Antonínova Výšina, Dvoreček pond (2), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10581; Bečov nad Teplou, Zlatý potok brook (3), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 10626; between Boučí and Svatava, opposite seepage slope to the Erika sand pit (6), 18.ix.1997, SW, 1 ♂, J, slide Inv. No. 6589; between Bystřina and Rovná, spring area (7), 13.ix.2000, 18.vii. and 8.viii.2007, SW, MT, 3 ♂♂, J, C+J+M, slides Inv. No. 9714, 16731 and 16880; between Chocovice and Doubí, oxbows of Ohře river (8), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8726; between Dasnice, Šabina and Libavské Údolí, Ohře river (9), 7.viii.1998 and 31.viii.2006, SW, MT, 2 ♂♂, C, C+J+M, slides Inv. No. 8727 and 15540; between Děpoltovice and Nivy, Vitický potok brook (10), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9681; between Dolní Nivy and Holý vrch hill, Pstruhový potok brook (11), 1.ix.2004, MT, 1 ♂, C+J+M, slide Inv. No. 13453; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7685; between Fojtov and Nový Fojtov, Vitický potok brook (13), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9650; between Hluboký and Kfely, Malý hlubocký rybník pond (15), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9604; between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19510; between Josefov and Hřebeň, pond in field (18), 31.v.1997 and 1.vi.2000, SW, 2 ♂♂, J, slide Inv. No. 7690 and 9669; between Kacěřov and Bučina hill, Libocký potok brook (19), 31.viii. and 30.x.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15525 and 15570; between Kacěřov and Hluboká, streams (20), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 8734; between Klest and Krapice, Amerika pond (22), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10592; between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 26.v. and 2.vi.1998, SW, 3 ♂♂, J, slides Inv. No. 7667, 7742 and 8738; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 4.vi.1997 and 9.viii.2006, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6691 and 15450; between Lipnice and Vintřov, Panský rybník pond (25), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11148; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8741; between Loket and Nové Sedlo, Ohře river (28), 23.vi.1994, SW, 1 ♂, J, slide Inv. No. 6674; between Loket and Staré Sedlo, Ohře river (29), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7692; between Loket and Svatošovské skály rocks, Ohře river (30), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7663; between Lomnice and Sokolov, Karasí water reservoir (32), 26.v.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17549; between Lomnice and Sokolov, Kosík's water reservoir (33), 22.v.2001, SW, 1 ♂, J, slide Inv. No. 10613; between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17425; between Mírová and Počerny, Chodovský potok brook (40), 12.v. and 14.vii.2005, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 14643 and 14724; between Mokřiny and Verněřov, Bílý Halštrov brook (41), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8743; between Nebanice and Odava, Ohře river (42), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8744; between Nejdek and Přebuz, Liščí údolí valley, Skřiván brook (44), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9720; between Nová Role and Mezirolí, forest brook (45), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6663; between Rosnice and Stará Role, Václav flooded pit (48), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6600; between Ruprechtov and Odeř, forest pond (49), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9591; between Skalka and Ovčín, ponds (50), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8748; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003 and 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 12062 and 17523; between Tatrovice and Chodov, Nové Chalupy seclusion, forest brook (56), 27.vi.2002, SW, 1 ♂, J, slide Inv. No. 11163; between Výchledy and Skalka, Hazlovský potok brook (58), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8753; Bystřina (summer camp) nr. Kostelní Bříza, Velká Libava brook (64), 4.vi.1998 and 13.ix.2000, SW, 2 ♂♂, J, slides Inv. No. 7809 and 9576; Choječná env. Cheb, pond (69), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 9746; Citice env. Sokolov, Výsypka Antonín dump, forest meadow (71), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11217; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6705; Černý Mlýn nr. Tisová, wet meadows (73), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7759; Dasnice, wet meadows (74), 7.viii.1998 and 15.ix.2000, SW, 2 ♂♂, C, J, slides Inv. No. 9634 and 12127; Dasnice, small water reservoir (75), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11230; Dasnice, Habartovský potok brook (76), 10.vii.2002, SW, 1 ♂, C, slide Inv. No. 12146; Dasnické rozcestí crossroad env. Nové Bukovany, forest marshes (77), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11235; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9624; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6708; Dolní Nivy, large growths of *Phragmites australis* (81), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 10640; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13483; Dolní Rotava (foundry), Rotava brook (84), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9678; Dolní Rychnov, golf course edge (85), 20.ix.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16939; Dolní Rychnov, Rychnovský potok brook (87), 27.viii. and 20.ix.2007, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 16814 and 16923; Dvoreček, Mělký rybník pond (88), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10635; Dvorek, Stodolský potok brook (89), 22.ix.1997, SW, 1 ♂, J, slide Inv. No. 6611;

Dvory env. Loket, brook (90), 4.v.1994, SW, 1 ♂, J, slide Inv. No. 10585; Františkovy Lázně, Klára forest pond (92), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10573; Františkovy Lázně, Natálie water reservoir (93), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8729; Františkovy Lázně, woodpark (94), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 8728; Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river (95), 18.vii. 2006, MT, 1 ♂, C+J+M, slide Inv. No. 15614; Habartov – Kluč, water reservoirs (97), 31.v.1997 and 10.vii.2002, SW, 2 ♂♂, C, J, slides Inv. No. 6690 and 12141; Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi. 2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15495 and 15564; Habartov - V zátíší (99), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6731; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 6.viii.1998 and 15.ix.2000, SW, 2 ♂♂, J, slide Inv. No. 8750 and 9711; Hájek env. Ostrov, Umučený rybník pond (102), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10617; Hazlov env., Ovčín forest ponds (103), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8730; Hleďsebské rybníky ponds nr. Ostroh (104), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10648; Hluboký env. Ostrov, Hlubocký rybník pond (106), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9642; Horní Lazy env. Lázně Kynžvart, sludge bed (108), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9609; Horní Nivy env. Vřesová, Lomnický potok brook (109), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6776; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 19.v.2004, SW, 1 ♂, C, slide Inv. No. 13477; Horní Pochlovice, Libocký potok brook (112), 7.viii.1998 and 9.viii.2006, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 9691 and 15590; Horní Rozmyšl, cowshed, marshes (113), 16.ix.1997, SW, 3 ♂♂, J, slides Inv. No. 6717, 7821 and 8732; Horní Rozmyšl, dump edge, water reservoir (114), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 8731; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13367; Horní Rozmyšl, Vřesový potok brook below quarry (117), 29.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13418; Hradiště nr. Vojkovice, confluence of Bystřice brook and Ohře river (119), 3.viii.1998, SW, 1 ♂, C, slide Inv. No. 12174; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 6759; Hrušková env. Sokolov, Hruškovský potok brook (121), 26.iv. and 5.vi.2007, MT, 2 ♂♂, C+J+M, slides Inv. No. 16766 and 16897; Jimlíkov env. Nová Role, kaoline-pits, Jimlíkovský potok brook (123), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6576; Jindřichovice, pond (124), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7813; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13372; Kacéfův env. Kynšperk nad Ohří, dungy ponds (126), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 7755; Karlovy Vary - Doubí, Ohře river (128), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 8735; Karlovy Vary - Tašovice, Ohře river and brook (129), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 8736; Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake (130), 22.ix.1997 and 28.ix.1998, SW, 2 ♂♂, J, slides Inv. No. 6585 and 8749; Kfely env. Ostrov, Bystřice brook (131), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 8737; Kfely env. Ostrov, Jesenice brook (132), 3.viii.1998 and 4.vi.2000, SW, 1 ♂, C, J, slides Inv. No. 9703 and 12182; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 18.ix.1997, SW, 1 ♂, J, slide Inv. No. 6634; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 18.ix.1997 and 25.vi.2002, SW, 3 ♂♂, J, slides Inv. No. 6623, 11144 and 11158; Kolová env. Kynšperk nad Ohří, forest spring area (137), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9583; Kopanina nr. Habartov, „Nad stráněmi“, Kopaninský potok brook (139), 3.vi.1998, SW, 1 ♂, J, slide Inv. No. 7693; Krápice nr. Františkovy Lázně, Amerika pond (142), 14.v.1999, SW, 1 ♂, J, slide Inv. No. 10646; Kraslice, Svatava river (143), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9658; Krásná Lípa (water reservoir) nr. Rovná env. Kostelní Bříza (145), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9737; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8739; Lázně Kynžvart env., forest brook nr. Kladské rašeliny NNR peatbogs (148), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9734; Lazy env., between Smrkovec (abolished settlement) and Žitný hill, Malá Libava brook (149), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9582; Libavské Údolí env. Kynšperk nad Ohří, Velká Libava brook as tributary of Ohře river (150), 20.v.1998, SW, 1 ♂, J, slide Inv. No. 8740; Lítov, dump, water reservoir, Částkovský potok brook (152), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7703; Lobzy nr. Březová, Lobézský potok brook (153), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6762; Loket – Split camping area and Staré koupaliště swimming pool, Ohře river (156), 29.v.1998 and 22.vi.1999, SW, 2 ♂♂, C, J, slides Inv. No. 7762 and 10589; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♂, J, slide Inv. No. 10508; Lomnice env., Lomnický les forest, Smrdutá and Topolová water reservoirs (159), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 6592; Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 8742; Lomnice env., Pastviny area, Julie water reservoir (164), 4.ix.1996, SW, 1 ♂, C, slide Inv. No. 12164; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v. and 10.ix.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17452 and 17581; Luh nad Svatavou, Svatava river (168), 1.vi.2000, SW, 1 ♂, J, slide Inv. No. 9657; Lužná env. Františkovy Lázně, Horní rodinný rybník small forest pond (171), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 10607; Lužná env. Františkovy Lázně, Horní Rybník (Miska) pond (172), 15.v.1999, SW, 1 ♂, J, slide Inv. No. 8733; Mariánské Lázně env., U nimroda hill, Mnichovský potok brook (173), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9731; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7712; Milíkov nr. Dolní Žandov, Braunova strouha brook (177), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7817; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, SW, MT, 4 ♂♂, J, C+J+M, slides Inv. No. 14612, 14660 14753 and 14767; Mlýnek env. Luby, pond (180), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7805; Mlýnské Chalupy (abolished settlement) nr. Přebuz, stream (181), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7718; Nebesa env. Aš, pond (183), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 10605; Nejda env. Ostrov, Malá Nejda

pond (184), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10570; Nová Role, ponds (187), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9627; Nová Role, Rolava river (188), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9572; Nová Role, Vlčí potok brook, forest, 480 m a.s.l. (189), 11.v.2005, SW, 1 ♂, J, slide Inv. No. 14761; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14680; Nová Role env., Vlčí potok brook, cowshed, ponds (192), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6645; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14706; Nová Ves env. Bečov nad Teplou, brook nr. Dominova skalka rockery NM (195), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 7638; Nová Ves env. Bečov nad Teplou, U myslivny forester's lodge, wet meadow (196), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 7793; Nová Ves env. Bečov nad Teplou, Za Hospodou pond (197), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 8745; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11212; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7658; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v. and 13.vi.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15469 and 15633; Nové Hamry nr. Nejdek, Jelení vrch Nature Park, Rolava river (201), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9730; Nový Drahov env. Františkovy Lázně, Stodolský potok brook (202), 28.ix.1998, SW, 1 ♂, J, slide Inv. No. 7650; Nový Kostel nr. Luby, U kyselky well, Svažecký potok brook (204), 30.ix.1998, SW, 1 ♂, J, slide Inv. No. 7784; Nový Kostel railway station env., Hrzínský les forest, ponds (205), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7652; Oloví, Svatava river (208), 20.v.1998, SW, 1 ♂, C, slide Inv. No. 12155; Ostrov env., Ostrovské rybníky, Dolní Štít pond (210), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 7751; Ostrov env., Ottův rybník pond (211), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 8746; Ostrov env., Konopka pond (209), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10566; Plesná, Plesná brook (212), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7637; Podstrání env. Rovná, Lobézský potok brook (213), 13.ix.2000 and 29.viii.2007, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 9715 and 16909; Pozorka nr. Nejdek, Smolný vrch hill, small forest brook (214), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6652; Prameny env. Mariánské Lázně, Dlouhá stoka brook (215), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9722; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6723; Rotava railway station env. Kraslice, Mezní potok brook (221), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9697; Skalka nr. Hazlov, Hazlovský potok brook (222), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8747; Skalná nr. Františkovy Lázně, Kamenné Vrchy Nature Park, Ovčárna, pond (223), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7677; Smrčina nr. Jindřichovice, brook (226), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7775; Smrčina nr. Plesná, Kamenné Vrchy Nature Park, Pstruhový potok brook (227), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7765; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 1 ♂, J, slide Inv. No. 16802; Soos NNR env. Františkovy Lázně, Sázek brook, turf banks (233), 23.vi.1999, SW, 1 ♂, C, slide Inv. No. 12150; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 19.v. and 10.vi.2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18519 and 18592; Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain (236), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18612; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v., 28.viii and 20.ix.2007, MT, 3 ♂♂, C+J+M, slides Inv. No. 16714, 16780 and 16862; Stříbrná, Přebuz Nature Park, Stříbrný potok brook (239), 16.ix.2000, SW, 1 ♂, J, slide Inv. No. 9667; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12084; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7632; Tatrovice env. Vřesová, forest brook, waterworks (248), 2. and 28.viii.2002, MT, 2 ♂♂, C+J+M, slides Inv. No. 11112 and 11175; Údolíčko env. Klášterec nad Ohří, Malodolský potok brook (253), 16.ix.2000, SW, 1 ♂, J, slide Inv. No. 9718; Velký Rybník nr. Hroznětín, Velký rybník pond (255), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9588; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19542 and 19617; Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259), 27.vi. and 26.x.2002, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 11063 and 11221; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 19.v.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18510; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10. and 27.vi. 2009, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 18501 and 18630; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17. and 18.v.1999, SW, 2 ♂♂, J, slide Inv. No. 8751 and 8752; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10630.

Distribution: Known from Austria, Belgium, Bosnia and Herzegovina, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, the Netherlands, Norway, Poland, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, and Ukraine (Krek 1999, Ježek 2002, Kvifte *et al.* 2011, 2013, Ježek *et al.* 2017).

Environmental notes, dates: From April until October, 343-925 m a.s.l. A total 184 sampling localities in western Bohemia. The following ranges of chemistry come from 11 sites: 16, 54, 85, 134 (incomplete), 161, 165, 166, 200, 235, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.08; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.008-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0.1-170; **Ca (mg/l)** 6.1-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-968; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 10.1-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: A very common and abundant European species. Sweep netting activities (SW) and traps (MT, YPT) show often a massive presence of this species on suitable different wet localities (see above the material examined).

Saraiella Vaillant, 1973

89. *Saraiella rotunda* (Krek, 1970)

Published records: Oloví (208); Sněžná (229); Tatrovce - Na skále env. Vřesová, meadow spring area (249) (Ježek 1996, 1997, 1999).

Material examined: Březová, Tisová forest brook (62), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6743; Habartov – Úžlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15565; Lobzy nr. Březová, Lobézský potok brook (153), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6763; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7710; Mlýnské Chalupy (abolished settlement) nr. Přebuz, stream (181), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7721; Pozorka nr. Nejdek, Smolný vrch hill, small forest brook (214), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6651; Přebuz, Rotava brook (217), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7778; Tatrovce env. Vřesová, forest brook, waterworks (248), 2.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11114; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8754.

Distribution: European species, known from Bosnia and Herzegovina, Czech Republic, Italy, Serbia, and Slovakia (Ježek 2006).

Environmental notes, dates: From May until August, 484-856 m a.s.l. Adults of this species were captured in 12 sites in western Bohemia, where water analysis was not performed.

Comments: The species of hilly and mountain areas, in CZ critically endangered (Ježek 2005), rare.

Szaboiella Vaillant, 1979

90. *Szaboiella hibernica* (Tonnoir, 1940)

Published records: Háje env. Březová (100); Ježek 2004a - between Boučí and Dolní Nivy (4); between Kacéřov and Hluboká (20); between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23); Bublák nr. Vackovec, Plesná brook (63); Habartov-Kluč (97); Kolová env. Kynšperk nad Ohří (137); Mezihorská nr. Jindřichovice (175); Milíkov env., U těšovské hájenky hill (176); Skalka nr. Hazlov (222); Výhledy env. Hazlov (264) (Ježek 1999).

Material examined: between Boučí and Horní Nivy, forest stream (5), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6772; between Kacéřov and Hluboká, streams (20), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 8756; between Královské Poříčí and Staré Sedlo, Údolí Ohře NM (23), 2.vi.1998, SW, 1 ♂, J, slide Inv. No. 7723; Bublák nr. Vackovec, Plesná brook (63), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8755; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6711; Habartov-Kluč, water reservoirs (97), 10.vii.2002, SW, 1 ♂, C, slide Inv. No. 12140; Habartov - Úžlabí, Habartovský potok brook (98), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15493; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 19.v.2004, SW, 1 ♂, C, slide Inv. No. 13481; Kolová env. Kynšperk nad Ohří, forest spring area (137), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9594; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7711; Milíkov env., U těšovské hájenky hill, slope swamps (176), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10620; Skalka nr. Hazlov, Hazlovský potok brook (222), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8757; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18494; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8758.

Distribution: Rare mainly European species, known from Iberian Peninsula, British Isles, countries along Northern Sea and Central European regions, Apennines, Balkans, and Transcaucasia (Abkhazia) (Ježek 2009b).

Environmental notes, dates: From May until July, 431-667 m a.s.l. Adults of this species were captured in western Bohemia in 16 sites, where water analysis was performed on only one of them (263).

pH 7-7.87; **alkalinity (mmol/l)** 0.315-3.2; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.014-14.980; **N org. (mg/l)** 1.8; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.069-0.936; **Na (mg/l)** 4.7-265.5; **K (mg/l)** 1.2-9.8; **Ca (mg/l)** 6.7-153.0; **Mg (mg/l)** 1.2-36.1; **Fe (mg/l)** 0.08-0.230; **Cl⁻ (mg/l)** 4.0-241.6; **SO₄²⁻ (mg/l)** 14.1-570.5; **Mn (mg/l)** 0.041-0.27; **conductivity (µS/cm)** 59-2110.

Comments: A species of hilly and mountain areas, in CZ critically endangered (Ježek 2005).

Tonnoiriella Vaillant, 1972

91. *Tonnoiriella nigricauda* (Tonnoir, 1919)

Published records: between Svatava and Královské Poříčí, Marie open-cast mine foreground (53); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161) (Ježek 1996, 1999).

Material examined: between Bystřina and Rovná, spring area (7), 8.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16735; between Hazlov and Nebesa, spring area nr. Goethův vrch hill (14), 18.v.1999, SW, 1 ♂, J, slide Inv. No.

8759; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15573; between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river (24), 9.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15460; between Lipoltov and Tuřany, Lipoltovský potok brook (27), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8760; between Lomnice and Dolní Nivy (31), water reservoir, 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6767; between Lomnice and Sokolov, Prasečí water reservoir (34), 30.vii.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17433; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. 2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19493; between Svatava and Lomnice, aggregated small localities (54), 19.v.2003, MT, 1 ♂, C+J+M, slide Inv. No. 12041; Lomnice env., Lomnický les forest, Rašelinná water reservoir (158), 12.ix.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10506; Lomnice env., Lomnický les forest, Záhadná water reservoir (162), 9.viii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10526; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 10.viii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10515; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.viii.2001 and 10.ix.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 10532 and 17454; Nová Ves env. Bečov nad Teplou, U myslivny forester's lodge, wet meadow (196), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 7795; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 24.v.2006, MT, 1 ♂, C+M+J, slide Inv. No. 15481; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 6.ix.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19621; Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge (261), 10.vi. 2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18553; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8761.

Distribution: European species, known from Belgium, Great Britain, Czech Republic, Denmark, Germany, Hungary and Slovakia (Wagner 2018).

Environmental notes, dates: From May until September, 340-762 m a.s.l. A total 20 sampling localities; water analyzes come from 7 sites: 37, 54, 161, 163, 166, 200 and 257 (incomplete).

pH 2.2-8.85; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.562-10.252; **TP (mg/l)** 0.003-1.93; **Na (mg/l)** 0.1-1205; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-368; **Fe (mg/l)** 0.01-968; **Cl⁻ (mg/l)** 0.8-719; **SO₄²⁻ (mg/l)** 9-5845; **Mn (mg/l)** 0.003-19.5; **conductivity (μS/cm)** 63-6870.

Comments: Locally common, in CZ critically endangered (Ježek 2005).

92. *Tonnoiriella pulchra* (Eaton, 1893)

Published records: Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Lomnice env., Pastviny area, hayloft, treeless tufa fens (163); Lomnice env., Pastviny area, marshes 2.5 km N (165); Smolná env. Kraslice (224); Sokolov env., Michal water reservoir vicinity (230) (Ježek 1999).

Material examined: between Horní Rozmyšl and Lipnice, marshes (16), 14.vii. 2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19521; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15584; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19487 and 19639; between Lomnice and Vintířov, experimental waterfall (38), 26.v.2008, MT, 1 ♂, C+J+M, slides Inv. No. 17611; between Svatava and Lomnice, aggregated small localities (54), 19.v. and 9.vi.2003, MT, 2 ♂♂, C+J+M, slides Inv. No. 12040 and 12063; Bublák nr. Vackovec, Plesná brook (63), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8762; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6713; Dolní Rychnov, Rychnovský potok brook (87), 27.viii.and 20.ix.2007, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 16831 and 16932; Habartov – Úžlabí, Habartovský potok brook (98), 24.v.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15553; Horní Nivy, Ovčí vrch hill, flat spring area (110), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13475; Horní Rozmyšl env., Slané údolí valley (115), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19579; Horní Rozmyšl, primary meadows, brook (116), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13358; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 18.ix.1997, 28.viii.2002 and 9.viii. 2010, SW, MT, 3 ♂♂, J, C+J+M, C+J+K+M, slides Inv. No. 6637, 11201 and 19563; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 18.ix.1997 and 26.x.2002, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6622 and 11111; „Klondike“ nr. Vintířov, terrestrial ecosystem, older forest recultivation (136), 25.v.2002, SW, 1 ♂, J, slide Inv. No. 11143; Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 8763; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v. and 10.ix. 2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17458 and 17591; Nová Role, Černý potok brook (191), 11.v.2005, SW, 2 ♂♂, J, slides Inv. No. 14685 and 14749; Nová Role env., Vlčí potok brook, forest, 450 m a.s.l. (194), 2.vi.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14715; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 28.viii.2002, MT, 1 ♂, C+J+M, slide Inv. No. 11183; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 26.x.2002 and 27.vii.2009, MT, 2 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11068 and 18639; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8764.

Distribution: Known from Western, Southern and Central Europe (Belgium, Bulgaria, Czech Republic, Great Britain, France, Germany, Hungary, Ireland, Italy, Romania, Slovakia, and Spain), also recorded in North Africa, not very common (Ježek & Omelková 2012, Wagner 2018).

Environmental notes, dates: From May until October, 405-667 m. a.s.l. Adult of this species were captured in western Bohemia at 26 sampling localities. The following ranges of chemical analysis data for water analysis are derived from 10 most significant monitored sites within SUAS - 16, 37, 54, 134 (incomplete), 161, 163, 165, 166, 235 and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.7-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 9-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: A species of hilly areas.

Ulomyia Walker, 1856

93. *Ulomyia annulata annulata* (Tonnoir, 1919)

Published records: between Svatava and Lomnice, aggregated small localities (54); Citice env. Sokolov, Výsypka Antonín dump (71); Lobzy nr. Březová, Lobézský potok brook (153); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Lomnice env., Pastviny area, hayloft, treeless tufa fens (163); Lomnice env., Pastviny area, marshes 2.5 km N (165); Lomnice env., Starý Jiří open-cast mine (166); Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259) (Ježek 1999).

Material examined: between Horní Rozmyšl and Lipnice, marshes (16), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19513; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15583; between Lipnice and Vintířov, Panský rybník pond (25), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11133; between Lomnice and Vintířov, Olegovy výstřelky shothole pools (37), 14.vii. and 6.ix.2010, MT, 2 ♂♂, C+J+K+M, slides Inv. No. 19640 and 19480; Dolní Nivy, large growths of *Phragmites australis* (81), 1.ix.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13449; Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs (101), 6.viii.1998, SW, 1 ♂, C, slide Inv. No. 12165; Jindřichovice, dunging spring area (125), 12.viii.2004, MT, 1 ♂, Ko, slide Inv. No. 13388; „Klondike“ nr. Vintířov, Modráčkový rybník pond (134), 28.viii.2002 and 9.viii.2010, MT, 2 ♂♂, C+J+M, C+J+K+M, slides Inv. No. 11192 and 19576; „Klondike“ nr. Vintířov, slope treeless tufa fens (135), 25.vi.2002, SW, 1 ♂, J, slide Inv. No. 11157; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♂, C+J+M, slide Inv. No. 10457; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 10.ix.2008, MT, 1 ♂, C+J+M, slide Inv. No. 17451; Nová Role env., Černý potok brook (191), 2.viii.2005, MT, 1 ♂, C+J+M, slide Inv. No. 14683; Vintířov env., Vintířovská výsypka dump, Transects 4BN-5BN (256), 12.v.-22.vi.1998, MT, 1 ♂, Fr, slide Inv. No. 9569; Vřesová env. Chodov, artificial channel of brook-transfers in the dump area (257), 14.vii.2010, MT, 1 ♂, C+J+K+M, slide Inv. No. 19540; Vřesová env. Chodov, primary alder forest (260), 12.viii.2004, MT, 1 ♂, C+F+J+M+S, slide Inv. No. 13398; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 27.vii.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18632;

Distribution: Euro-West Siberian not very abundant subspecies. In Europe known from Austria, Belgium Czech Republic, Germany, Slovakia, Lithuania and Russia (Ježek & Omelková 2012).

Environmental notes, dates: From May until September, 405-651 m a.s.l. A total 22 sampling sites; the detected chemical chemistry of the water samples comes from 10 localities: 16, 37, 54, 134 (incomplete), 161, 163, 165, 166, 257 (incomplete) and 263.

pH 2.2-8.93; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.000-16.5; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0.199-8.415; **TN (mg/l)** 0.339-26.92; **TP (mg/l)** 0.003-6.602; **Na (mg/l)** 0.1-2683.8; **K (mg/l)** 0-170; **Ca (mg/l)** 6.7-943.63; **Mg (mg/l)** 1.2-1108; **Fe (mg/l)** 0.009-4100; **Cl⁻ (mg/l)** 0.0-1866; **SO₄²⁻ (mg/l)** 9-21294.0; **Mn (mg/l)** 0.0-27.662; **conductivity (µS/cm)** 59-21528.

Comments: *Ulomyia annulata chinganensis* Ježek, 1997 was described from Tien Shan - Uzbekistan (Ježek 1997).

94. *Ulomyia cognata* (Eaton, 1893)

Published records: Tatrovce - Na skále env. Vřesová, meadow spring area (249); Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259) (Ježek 1999).

Material examined: between Hazlov and Nebesa, spring area (14), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8767; between Nebanec and Odrava, Ohře river (42), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8766; between Skalka and Ovčín, ponds (50), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8769; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003, SW, 1 ♂, J, slide Inv. No. 12055; between Výhledy and Skalka, Hazlovský potok brook (58), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8772; Březová, Tisová forest brook (62), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6737; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13487; Habartov - V zátiší (99), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6732; Hazlov env., Ovčín forest ponds (103), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8765; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 19.v. and 10.vi.2004, SW, MT, 2 ♂♂, J, C+ F+J+M+S, slide Inv. No. 13468 and 13476; Hrušková env. Sokolov, Hruškovský potok brook (121), 5.vi.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16768; Lobzy nr. Březová, Lobézský potok brook (153),

1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6765; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7733; Nebesa env. Aš, pond (183), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 10604; Nejedek, Lomnice brook (186), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 10598; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15639; Skalka nr. Hazlov, Hazlovský potok brook (222), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8768; Smolné Pece env. Nová Role, forest ponds (225), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6658; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 28.viii.2002, 19.v. and 10.vi.2009, SW, MT, 3 ♂♂, J, C+J+K+M, slides Inv. No. 11184, 16864 and 18540; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brook (238), 28.viii.2007, MT, 1 ♂, C+J+M, slide Inv. No. 16864; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, SW, 1 ♂, J, slide Inv. No. 12080; Tatrovice env. Vřesová, forest brook, waterworks (248), 2.viii.2002, SW, 1 ♂, J, slide Inv. No. 11101; Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge (263), 10.vi. 2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18679; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17. and 18.v.1999, SW, 2 ♂♂, J, slides Inv. No. 8770 and 8771.

Distribution: A common European species known from Austria, Czech Republic, Finland, France, Germany, Great Britain, Italy, Lithuania, Poland, Slovakia, Slovenia and Ukraine; Armenia (Ježek & Omelková 2012, Salmela *et al.* 2014, Ježek *et al.* 2017, 2018a).

Environmental notes, dates: From May until August, 416-667 m a.s.l. Adults of this species were captured at 26 sampling sites. Measurement of water chemistry comes from 4 localities: 54, 200, 235 and 263.

pH 5.2-8.35; **alkalinity (mmol/l)** 0.05-11.6; **N-NH₄⁺ (mg/l)** 0.001-16.5; **N-NO₃⁻ (mg/l)** 0.001-14.980; **N org. (mg/l)** 0-3.619; **TN (mg/l)** 0.558-26.92; **TP (mg/l)** 0.014-0.936; **Na (mg/l)** 1.7-695; **K (mg/l)** 1.2-45; **Ca (mg/l)** 6.1-361; **Mg (mg/l)** 1.2-278; **Fe (mg/l)** 0.08-13.449; **Cl⁻ (mg/l)** 2.1-588.6; **SO₄²⁻ (mg/l)** 13-2099; **Mn (mg/l)** 0.02-2.833; **conductivity (µS/cm)** 59-3963.

Comments: A species of bryomadiculous and hygropetric habitats known from different altitudes (Ježek *et al.* 2014).

95. *Ulomyia fuliginosa* (Meigen, 1804)

Published records: between Loket and Nové Sedlo (28); between Lomnice and Svatava, Matyáš dump (36); between Svatava and Lomnice, aggregated small localities (54); Dvory env. Loket (90); Háje env. Březová (100); Karlovy Vary - central part of the town, Ohře river (127); „Klondike“ nr. Vintířov, Modráčkový rybník pond (134); Kraslice, Svatava river (143); Loket, Lněný vrch hill (154); Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161); Lomnice env., Pastviny area, hayloft, treeless tufa fens (163); Lomnice env., Starý Jiří open-cast mine (166); Lomnice (settlement) nr. Sokolov (167); Oloví, Svatava river (208); Smolná env. Kraslice (224); Sokolov env., Michal water reservoir vicinity (230); vodní nádrž Stanovice dam (237); Šindelová env. Kraslice (246); Tatrovice env. Vřesová, forest brook, waterworks (248); Vřesová env. Chodov, parallel water bodies to the sludge water defecation (259) (Ježek 1999).

Material examined: between Bystřina and Rovná, spring area (7), 4.vi.1998, SW, 1 ♂, J, slide Inv. No. 7642; between Děpoltovice and Nivy, Vitický potok brook (10), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9682; between Dvorečky and former Libava, Malá Libava forest brook (12), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7687; between Hazlov and Nebesa, spring area nr. Goethův vrch hill (14), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8775; between Josefov and Hřebený, pond in field (18), 31.v.1997 and 1.vi.2000, SW, 2 ♂♂, J, slides Inv. No. 7689 and 9670; between Kacéřov and Bučina hill, Libocký potok brook (19), 31.viii.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15576; between Kacéřov and Hluboká, streams (20), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 8779; between Lipnice and Vintířov, Panský rybník pond (25), 27.v. and 2.vi.1997, SW, 2 ♂♂, J, slides Inv. No. 6617 and 6631; between Loket and Staré Sedlo, Ohře river (29), 2.vi.1998, SW, 5 ♂♂, J, slides Inv. No. 7669, 7713, 7727, 7750 and 8783; between Lomnice and Svatava, Matyáš dump, forest water reservoir (36), 15.vi.2000, SW, 1 ♂, C, slide Inv. No. 10560; between Mírová and Počerny, Chodovský brook (40), 12.v. and 14.vii.2005, SW, MT, 2 ♂♂, J, J+C+M, slides Inv. No. 14642 and 14726; between Mokřiny and Vernéřov, Bílý Halštrov brook (41), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 8785; between Nová Role and Mezirolí, forest brook (45), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6666; between Svatava, Krajková and Habartov, Radvanovský potok brook (52), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6777; between Svatava and Lomnice, aggregated small localities (54), 9.vi.2003 and 26.v.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 12057 and 17529; between Výhledy and Skalka, Hazlovský potok brook (58), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8791; Březová, Tisová forest brook (62), 1.vi.1997, SW, 1 ♂, J, slide Inv. No. 6742; Bublák nr. Vackovec, Plesná brook (63), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 8773; Bystřina (summer camp) nr. Kostelní Břiza, Velká Libava brook (64), 1.iv.1997 and 4.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 6672 and 7808; Chlum Sv. Máří, water reservoir (66), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 6749; Chvoječná env. Cheb, pond (69), 16.v.1999, SW, 1 ♂, J, slide Inv. No. 9743; Čankov nr. Karlovy Vary, pond (72), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 6701; Černý Mlýn nr. Tisová, wet meadows (73), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7745; Dasnické rozcestí crossroad env. Nové Bukovany, forest marshes (77), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11233; Děpoltovice, wet meadows (78), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9619; Dolní Nivy, spring area (80), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6709; Dolní Nivy, Pstruhový potok brook (82), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13486; Dolní Rychnov, Rychnovský potok brook (87), 27.viii. and 20.ix.2007, SW, MT, 2 ♂♂, J, C+J+M,

slides Inv. No. 16815 and 16924; Habartov - Kluč, water reservoirs (97), 31.v.1997 and 3.vi.1998, SW, 2 ♂♂, J, slides Inv. No. 6679 and 8774; Habartov - Úžlabí, Habartovský potok brook (98), 24.v. and 13.vi.2006, MT, 2 ♂♂, C+J+M, slides Inv. No. 15490 and 15563; Habartov - V zátíši (99), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6735; Hazlov env., Ovčín forest pond (103), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8776; Hluboký env. Ostrov, Hluboký rybník pond (106), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9643; Horní Lazy env. Lázně Kynžvart, sludge bed (108), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9600; Horní Nivy env. Vřesová, Lomnický potok brook (109), 29.v.1997, SW, 1 ♂, J, slide Inv. No. 6775; Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13482; Horní Rozmyšl, dump edge, water reservoir (114), 16.ix.1997, 18.v.1998 and 29.v.1999, SW, 3 ♂♂, C and J, slides Inv. No. 7822, 8777 and 10555; Horní Rozmyšl, primary meadows, brook (116), 16.ix.1997, SW, 1 ♂, J, slide Inv. No. 6718; Hroznětín, dried Alnetum, Jesenice brook (120), 21.ix.1997, SW, 1 ♂, J, slide Inv. No. 6756; Hrušková env. Sokolov, Hruškovský potok brook (121), 5. and 26.vi.2007, MT, 2 ♂♂, C+J+M, slides Inv. No. 16765 and 16896; Jindřichovice, pond (124), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7814; Kacéřov env. Kynšperk nad Ohří, dungy ponds (126), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 7753; Kladská env. Mariánské Lázně, Třebízského potok brook (133), 15.ix.2000, SW, 1 ♂, J, slide Inv. No. 9684; „Klondike“ nr. Vintřov, Modráčkový rybník pond (134), 18.ix.1997 and 21.v.2001, SW, 2 ♂♂, C, J, slides Inv. No. 6639 and 10610; „Klondike“ nr. Vintřov, slope treeless tufa fens (135), 18.ix.1997 and 26.x.2002, SW, MT, 2 ♂♂, J, C+J+M, slides Inv. No. 6624 and 11129; Kolová env. Kynšperk nad Ohří, forest spring area (137), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9593; Kopanina nr. Habartov, Horka water reservoir env. (138), 3.vi. and 30.ix.1998, SW, 2 ♂♂, J, slides Inv. No. 7695 and 8780; Krásná Lípa (water reservoir) nr. Rovná env. Kostelní Bříza (145), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9736; Kynšperk nad Ohří, gutter (146), 4.vi.1997, SW, 1 ♂, J, slide Inv. No. 8781; Lazy env., between Smrkovec (abolished settlement) and Žitný hill, Malá Libava brook (149), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9578; Lítov, dump, water reservoir, Částkovský potok brook (152), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7704; Lobzy nr. Březová, Lobézský potok brook (153), 1.vi.1997 and 5.vi.2002, SW, 2 ♂♂, C, J, slide Inv. No. 6761 and 12170; Loket, Lněný vrch hill, forest spring area (154), 22.vi.1994, SW, 1 ♂, J, slide Inv. No. 8782; Loket, Ohře river nr. Šibeniční vrch hill (155), 23.vi.1994, SW, 1 ♂, J, slide Inv. No. 6675; Lomnice env., Lomnický les forest, Velký Břízák water reservoir (161), 17.ix.1997, SW, 1 ♂, J, slide Inv. No. 8784; Lomnice env., Pastviny area, hayloft, treeless tufa fens (163), 6.vii.2001, MT, 1 ♂, J, slide Inv. No. 10453; Lomnice env., Starý Jiří open-cast mine and orange water reservoir (166), 5.v. and 10.ix.2008, MT, 2 ♂♂, C+J+M, slides Inv. No. 17450 and 17583; Lužec env. Nová Role, Jezero pond (169), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9651; Lužec env. Nová Role, Lužecký potok brook (170), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9662; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7735; Milíkov env., U těšovské hájenky hill, slope swamps (176), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 10622; Milíkov nr. Dolní Žandov, Braunova strouha brook (177), 27.v.1998, SW, 1 ♂, J, slide Inv. No. 7816; Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook (178), 12.v. and 22.vi.2005, SW, MT, 4 ♂♂, J, J+C+M, slides Inv. No. 14631, 14677, 14752, 14768; Mlýnské Chalupy (abolished settlement) nr. Přebuz, stream (181), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7722; Nebesa env. Aš, pond (183), 18.v.1999, SW, 1 ♂, J, slide Inv. No. 10601; Nová Role, ponds (187), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9626; Nová Role env., Černý potok brook (191), 11.v. and 2.vi.2005, SW, MT, 2 ♂♂, J, J+C+M, slides Inv. No. 14703 and 14748; Nová Role env., Vlčí potok brook, cowshed, ponds (192), 28.v.1997, SW, 1 ♂, J, slide Inv. No. 6642; Nová Ves env. Bečov nad Teplou, U myslivny forester's lodge, wet meadow (196), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 7794; Nová Ves env. Bečov nad Teplou, Za Hospodou pond (197), 30.v.1998, SW, 1 ♂, J, slide Inv. No. 8786; Nové Bukovany, forest marshes and small water reservoirs (198), 26.vi.2002, SW, 1 ♂, J, slide Inv. No. 11214; Nové Bukovany, Habartovský potok brook, sewage treatment (199), 1.vi.1998, SW, 1 ♂, J, slide Inv. No. 7657; Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook (200), 13.vi.2006, MT, 1 ♂, C+J+M, slide Inv. No. 15635; Odeř env. Hroznětín, Jesenice forest brook (206), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9648; Ostrov env., Konopka pond (209), 20.ix.1997, SW, 1 ♂, J, slide Inv. No. 10565; Pozorka nr. Nejdek, Smolný vrch hill, small forest brook (214), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6653; Přebuz, Rotava brook (217), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7781; Přebuz env., Přebuz Nature Park, Günterovy domky forest area (218), 14.ix.2000, SW, 1 ♂, J, slide Inv. No. 9592; Radvanov env. Habartov, vicinity brook (220), 31.v.1997, SW, 1 ♂, J, slide Inv. No. 6721; Skalka nr. Hazlov, Hazlovský potok brook (222), 17.v.1999, SW, 1 ♂, J, slide Inv. No. 8787; Skalná nr. Františkovy Lázně, Kamenné Vrchy Nature Park, Ovčárna, pond (223), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7674; Smolné Pece env. Nová Role, forest ponds (225), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6657; Smrčina nr. Jindřichovice, brook (226), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7777; Smrčina nr. Plesná, Kamenné Vrchy Nature Park, Pstruhový potok brook (227), 29.ix.1998, SW, 1 ♂, J, slide Inv. No. 7767; Sokolov env., Michal water reservoir vicinity, small pond (230), 28.viii.2007, SW, 1 ♂, J, slide Inv. No. 16804; Spomyšl env. Tatrovice, Tatrovická stoka drain (235), 10.vi.2009, MT, 1 ♂, C+J+K+M, slide Inv. No. 18542; Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks (238), 15.v. and 28.viii.2007, MT, 2 ♂♂, C+J+M, slides Inv. No. 16719 and 16861; Svatava env., Svatava river nr. Svatavský vrch hill (242), 10.vi.2003, SW, 1 ♂, J, slide Inv. No. 12081; Svatošské skály rocks NM between Loket and Doubí, Ohře river (244), 29.v.1998, SW, 1 ♂, J, slide Inv. No. 7791; Šabina nr. Tisová, spring of mineral water (245), 31.v.1998, SW, 1 ♂, J, slide Inv. No. 7626; Tatrovice env. Vřesová, forest brook, waterworks (248), 27.vi.2002,

SW, 1 ♂, J, slide Inv. No. 11242; Tatrovce - Na skále env. Vřesová, meadow spring area (249), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 8788; Velký Rybník nr. Hroznětín, Velký rybník pond (255), 4.vi.2000, SW, 1 ♂, J, slide Inv. No. 9584; Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook (264), 17. and 18.v.1999, SW, 2 ♂♂, J, slides Inv. No. 8789 and 8790; Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond (265), 5.vi.2000, SW, 1 ♂, J, slide Inv. No. 9612; Zlatý Kopec env. Boží Dar, Zlatý Kopec Nature Park, Zlatý potok brook (266), 16.ix.2000, SW, 1 ♂, J, slide Inv. No. 9721.

Distribution: A very common and often frequent European species, known from Austria, Belgium, Bosnia and Herzegovina, Croatia, Czech Republic, Denmark, Finland, France, Germany, Great Britain, Hungary, Ireland, Italy, Kosovo, Macedonia, the Netherlands, Norway, Poland, Romania, Slovakia, Slovenia, Spain, Switzerland and Ukraine (Krek 1999, Ježek 2002, Kvifte *et al.* 2011, 2013, Salmela *et al.* 2014, Ježek *et al.* 2017).

Environmental notes, dates: From April until October, 343-856 m a.s.l. A total 107 sampling sites; water chemistry is surveyed on 7 localities: 54, 134 (incomplete), 161, 163, 166, 200 and 235.

pH 2.2-8.85; **alkalinity (mmol/l)** 0.0-19.3; **N-NH₄⁺ (mg/l)** 0.001-8.2; **N-NO₃⁻ (mg/l)** 0.001-27; **N org. (mg/l)** 0-8.415; **TN (mg/l)** 0.55-10.252; **TP (mg/l)** 0.003-1.35; **Na (mg/l)** 0.1-835; **K (mg/l)** 0-45; **Ca (mg/l)** 6.1-506; **Mg (mg/l)** 1.2-356.1; **Fe (mg/l)** 0.01-968; **Cl⁻ (mg/l)** 1.0-719; **SO₄²⁻ (mg/l)** 9-5845; **Mn (mg/l)** 0.0-19.5; **conductivity (µS/cm)** 63-6100.

Comments: One of the most abundant species, ranging from lowland to mountains. Sweep netting activities (SW) and traps (MT, YPT) show often a massive presence of this species on suitable different wet localities (see above the material examined).

96. *Ulomyia plumata* (Tonnoir, 1919)

Material examined: Horní Nivy, Ovčí vrch hill, authentic floodplain, stream (111), 19.v.2004, SW, 1 ♂, J, slide Inv. No. 13480; Lužec env. Nová Role, Jezero pond (169), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9653; Mezihorská nr. Jindřichovice, Chodovský potok brook (175), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7736; Mlýnské Chalupy (abolished settlement) nr. Přebuz, stream (181), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7720; Nová Role, ponds (187), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 7779; Odeř env. Hroznětín, Jesenice forest brook (206), 3.vi.2000, SW, 1 ♂, J, slide Inv. No. 9647; Oldřichov env. Pernink, Oceán NR (207), 2.vi.2000, SW, 1 ♂, J, slide Inv. No. 9665; Pozorka nr. Nejdek, Smolný vrch hill, small forest brook (214), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6656; Přebuz, Rotava brook (217), 28.v.1998, SW, 1 ♂, J, slide Inv. No. 7779; Smolné Pece env. Nová Role, forest ponds (225), 30.v.1997, SW, 1 ♂, J, slide Inv. No. 6659; Tatrovce env. Vřesová, forest brook, waterworks (248), 27.vi.2002, SW, 1 ♂, J, slide Inv. No. 11240.

Distribution: Known from Albania, Belgium, Czech Republic and France (Ježek 2004b, Ježek *et al.* 2018b).

Environmental notes, dates: May and June, 456-908 m a.s.l. Adults of this species were captured in 11 sites in western Bohemia, where water analysis was not performed.

Comments: Rare European species, critically endangered in CZ (Ježek 2005).

LIST OF LOCALITIES WITH RECORDED SPECIES

(see map. 3)

1	Anenská Ves, wet meadow	<i>ocellaris</i>
2	Antonínova Výšina, Dvoreček pond	<i>carthusiana, phalaenoides, ocellaris, nubila, trivialis</i>
3	Bečov nad Teplou, Zlatý potok brook	<i>lativentris, chvojikai</i> [VU], <i>manicata, unispinosa, trivialis</i>
4	between Boučí and Dolní Nivy, salt marshes	<i>notabilis, stavniensis, mutua, hibernica</i> [CR]
5	between Boučí and Horní Nivy, forest stream	<i>stavniensis, ocellaris, mutua, hibernica</i> [CR]
6	between Boučí and Svatava, opposite seepage slope to the Erika sand pit	<i>vaillanti</i> [CR], <i>notabilis, pilularia, trivialis</i>
7	between Bystřina and Rovná, spring area	<i>longicornis, lucifugus, hirtella, lobata, brevicornis, albipennis, erminea, griseescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, setigera, longicorniculatus</i> [NS], <i>ocellaris, subneglecta, mutua, trivialis, nigricauda</i> [CR], <i>fuliginosa</i>
8	between Chocovice and Doubí, oxbows of Ohře river	<i>austriacum, humerale, ocellaris, nubila, trivialis</i>

9	between Dasnice, Šabina and Libavské Údolí, Ohře river	<i>austriacum, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, grisescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, ocellaris, blandula, fallax, nubila, trivialis</i>
10	between Děpoltovice and Nivy, Vitický potok brook	<i>chvojkai</i> [VU], <i>mutua, trivialis, fuliginosa</i>
11	between Dolní Nivy and Holý vrch, Pstruhový potok brook	<i>lobata, brevicornis, albipennis, phalaenoides, cinerea, gemina, minuta, trinodulosa, lativentris, setigera, ocellaris, trivialis</i>
12	between Dvorečky and former Libava, Malá Libava forest brook	<i>longicornis, polyascoidea, lobata, gemina, alternata, manicata, ocellaris, blandula, fallax, mutua, nubila, trivialis, fuliginosa</i>
13	between Fojtov and Nový Fojtov, Vitický potok brook	<i>mutua, trivialis</i>
14	between Hazlov and Nebesa, spring area, Goethův vrch hill	<i>ocellaris, gracilis gracilis, nubila, nigricauda</i> [CR], <i>cognata, fuliginosa</i>
15	between Hluboký and Kfely, Malý hluboký rybník pond	<i>longicornis, auriculata, integella</i> [CR], <i>ocellaris, trivialis</i>
16	between Horní Rozmyšl and Lipnice, marshes	<i>vaillanti</i> [CR], <i>denticulatus, maynei</i> [EN], <i>notabilis, ustulata, auriculata, lobata, brevicornis, albipennis, erminea, satchelli, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, lativentris, setigera, longicorniculatus</i> [NS], <i>ocellaris, rivosus</i> [CR], <i>splendidus</i> [NS], <i>blandula, nubila, trivialis, pulchra, annulata annulata</i>
17	between Horní Rozmyšl and Lomnice, Chvojkova jezerní plošina lake basin	<i>notabilis</i>
18	between Josefův and Hřebeny, pond in field	<i>auriculata, integella</i> [CR], <i>carthusiana, satchelli, chvojkai</i> [VU], <i>mutua, trivialis, fuliginosa</i>
19	between Kacěřov and Bučina hill, Libocký potok brook	<i>polyascoidea, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris, blandula, canescens, nubila, palustris, trivialis, nigricauda</i> [CR], <i>pulchra, annulata annulata, fuliginosa</i>
20	between Kacěřov and Hluboká, streams	<i>longicornis, auriculata, ocellaris, mutua, trivialis, hibernica</i> [CR], <i>fuliginosa</i>
21	between Kfely and Ostrov, Bystřice stream	<i>fallax</i>
22	between Klest and Krapice, Amerika pond	<i>gemina, ocellaris, nubila, trivialis</i>
23	between Královské Poříčí and Staré Sedlo, Údolí Ohře NM	<i>hygrophila, soleata, valachica, longicornis, pseudolongicornis</i> [CR], <i>auriculata, manicata, ocellaris, subneglecta, blandula, fallax, mutua, nubila, trivialis, hibernica</i> [CR]
24	between Kynšperk nad Ohří and Dolní Pochlovice, Ohře river	<i>longicornis, integella</i> [CR], <i>gressica, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris, fallax, trivialis, nigricauda</i> [CR]
25	between Lipnice and Vintířov, Panský rybník pond	<i>denticulatus, maynei</i> [EN], <i>notabilis, longicornis, ustulata, auriculata, gressica, obscura, lobata, albipennis, phalaenoides, cinerea, gemina, mycophila, trinodulosa, alternata, ocellaris, rivosus</i> [CR], <i>nubila, pilularia, trivialis, annulata annulata</i>
26	between Lipnice and Vřesová, dry ridge dump	<i>kreki</i> [VU], <i>lobata, brevicornis, albipennis, satchelli, grisescens, phalaenoides, cinerea, gemina, trinodulosa, alternata, setigera</i>
27	between Lipoltov and Tuřany, Lipoltovský potok brook	<i>longicornis, zetterstedti, phalaenoides, uniformata, alternata, ocellaris, nubila, trivialis, nigricauda</i> [CR]

28	between Loket and Nové Sedlo, Ohře river	<i>longicornis, ustulata, auriculata, gressica, lobata, albipennis, ocellaris, fallax, mutua, nubila, trivialis, fuliginosa</i>
29	between Loket and Staré Sedlo, Ohře river	<i>soleata, valachica, auriculata, ocellaris, rivularis</i> [EN], <i>trivialis, fuliginosa</i>
30	between Loket and Svatošské skály rocks, Ohře river	<i>gressica, ocellaris, blandula, fallax, trivialis</i>
31	between Lomnice and Dolní Nivy, water reservoir	<i>longicornis, gemina, ocellaris, nigricauda</i> [CR]
32	between Lomnice and Sokolov, Karasí water reservoir	<i>brevicornis, albipennis, erminea, satchelli, zetterstedti, griseescens, phalaenoides, cinerea, gemina, itoco</i> [NS], <i>minuta, trinodulosa, ocellaris, splendidus</i> [NS], <i>trivialis</i>
33	between Lomnice and Sokolov, Kosík's water reservoir	<i>ocellaris, nubila, trivialis</i>
34	between Lomnice and Sokolov, Prasečí water reservoir	<i>consors, hirtella, lobata, albipennis, erminea, satchelli, griseescens, phalaenoides, uniformata, cinerea, gemina, trinodulosa, lativentris, setigera, longicorniculatus</i> [NS], <i>ocellaris, splendidus</i> [NS], <i>trivialis, nigricauda</i> [CR]
35	between Lomnice and Sokolov, Přesličková water reservoir	<i>erminea, griseescens, phalaenoides, uniformata, cinerea, gemina, itoco</i> [NS], <i>minuta, trinodulosa, lativentris, setigera, ocellaris, splendidus</i> [NS].
36	between Lomnice and Svatava, Matyáš dump, forest water reservoirs	<i>soleata, valachica, denticulatus, longicornis, auriculata, gressica, obscura, albipennis, phalaenoides, cinerea, gemina, ocellaris, subneglecta, nubila, trivialis, fuliginosa</i>
37	between Lomnice and Vintířov, Olegovy výstřelky shothole pools	<i>vaillantii</i> [CR], <i>denticulatus, maynei</i> [EN], <i>notabilis, serbica</i> [CR], <i>ustulata, auriculata, carthusiana, obscura, lobata, albipennis, erminea, satchelli, griseescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, longicorniculatus</i> [NS], <i>ocellaris, rivosus</i> [CR], <i>nubila, nigricauda</i> [CR], <i>pulchra, annulata annulata</i>
38	between Lomnice and Vintířov, experimental waterfall	<i>vaillantii</i> [CR], <i>denticulatus, maynei</i> [EN], <i>notabilis, consors, serbica</i> [CR], <i>ustulata, polyascoidea, carthusiana, gressica, obscura, hirtella, lobata, albipennis, satchelli, griseescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, setigera, pulchra</i>
39	between Lomnice and Vintířov, Klára water reservoir	<i>vaillantii</i> [CR], <i>denticulatus, notabilis, consors, auriculata, obscura, lobata, brevicornis, albipennis, satchelli, zetterstedti, griseescens, phalaenoides, uniformata, cinerea, gemina, minuta, mycophila, trinodulosa, lativentris, setigera</i>
40	between Mírová and Počerny, Chodovský potok brook	<i>denticulatus, notabilis, auriculata, hirtella, brevicornis, albipennis, satchelli, zetterstedti, griseescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, setigera, ocellaris, nubila, trivialis, fuliginosa</i>
41	between Mokřiny and Vernéřov, Bílý Halštrov brook	<i>ocellaris, subneglecta, gracilis gracilis, trivialis, fuliginosa</i>
42	between Nebanice and Odrava, Ohře river	<i>longicornis, gressica, zetterstedti, gemina, ocellaris, nubila, trivialis, cognata</i>
43	between Nebesa and Výhledy, Halštrovský les forest	<i>gemina, ocellaris</i>
44	between Nejdek and Přebuz, Liščí údolí valley, Skřiváň brook	<i>trivialis</i>
45	between Nová Role and Mezirolí, forest brook	<i>longicornis, auriculata, integella</i> [CR], <i>ocellaris, mutua, nubila, trivialis, fuliginosa</i>
46	between Nové Bukovany and Chlum Sv. Máří, U vodojemu water tank	<i>ocellaris</i>

47	between Nový Fojtov and Lužec, Nad Matysem hill	<i>lucifugus, satchelli, mutua</i>
48	between Rosnice and Stará Role, Václav flooded pit	<i>hirtella, satchelli, nubila, trivialis</i>
49	between Ruprechtov and Odeř, forest pond	<i>longicornis, integella</i> [CR], <i>mutua, nubila, trivialis</i>
50	between Skalka and Ovčín, ponds	<i>ocellaris, gracilis gracilis, trivialis, cognata</i>
51	between Sokolov and Svatava, Riesel dump	<i>nubila, pilularia, trivialis</i>
52	between Svatava, Krajková and Habartov, Radvanovský potok brook	<i>carthusiana, ocellaris, mutua, fuliginosa</i>
53	between Svatava and Královské Poříčí, Marie open-cast mine foreground	<i>urbica</i> [CR], <i>longicornis, pseudolongicornis</i> [CR], <i>ustulata, auriculata, austriacum, humerale, albipennis, satchelli, zetterstedti, grisescens, phalaenoides, cinerea, gemina, ocellaris, rivosus</i> [CR], <i>blandula, fallax, nubila, trivialis, nigricauda</i> [CR]
54	between Svatava and Lomnice, aggregated small localities	<i>urbica</i> [CR], <i>vaillantii</i> [CR], <i>hygrophila, soleata, valachica, albifacies</i> [EN], <i>denticulatus, kreki</i> [VU], <i>notabilis, longicornis, prikryli</i> [VU], <i>pseudolongicornis</i> [CR], <i>serbica</i> [CR], <i>polyascoidea, auriculata, integella</i> [CR], <i>carthusiana, gressica, obscura, austriacum, hrudkai</i> [VU], <i>hirtella, lobata, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, itoco</i> [NS], <i>minuta, trinodulosa, setigera, chvojkai</i> [VU], <i>longicorniculatus</i> [NS], <i>ocellaris, splendidus</i> [NS], <i>subneglecta, blandula, fallax, canescens, gracilis gracilis, nubila, palustris, pilularia, trivialis, nigricauda</i> [CR], <i>pulchra, annulata annulata, cognata, fuliginosa</i>
55	between Tatrovice and Chodov, Nové Chalupy seclusion, forest glade	<i>rothschildi</i> [NS], <i>ustulata, labeculosa</i> [EN], <i>obscura, hirtella, lobata, brevicornis, albipennis, satchelli, grisescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, setigera, longicorniculatus</i> [NS], <i>ocellaris, mutua, rivularis</i> [EN]
56	between Tatrovice and Chodov, Nové Chalupy seclusion, forest brook	<i>lobata, mutua, trivialis</i>
57	between Vonšov and Kateřina, kaolin reservoir	<i>zetterstedti, phalaenoides</i>
58	between Výhledy and Skalka, Hazlovský potok brook	<i>lucifugus, ocellaris, trivialis, cognata, fuliginosa</i>
59	Bochov env. Karlovy Vary, Bochovický potok brook	<i>blandula, nubila, trivialis</i>
60	Bor env. Milhostov, Plesná brook	<i>nubila</i>
61	Borek env. Bernartice, Čankovský potok brook	<i>lobata</i>
62	Březová, Tisová forest brook	<i>zetterstedti, gemina, matthesi, stavniensis, mutua, trivialis, rotunda</i> [CR], <i>cognata, fuliginosa</i>
63	Bublák nr. Vackovec, Plesná brook	<i>integella</i> [CR], <i>satchelli, zetterstedti, grisescens, phalaenoides, alternata, ocellaris, mutua, nubila, hibernica</i> [CR], <i>pulchra</i>
64	Bystřina (summer camp) nr. Kostelní Břiza, Velká Libava brook	<i>lobata, fallax, mutua, nubila, trivialis, fuliginosa</i>
65	Chlum Sv. Máří, Litov-Boden dump edge, small pools	<i>nickerli</i> [VU], <i>albipennis, satchelli, zetterstedti, phalaenoides</i>

66	Chlum Sv. Máří, water reservoir	<i>longicornis, gemina, ocellaris, mutua, fuliginosa</i>
67	Chodová Planá	<i>longicornis, ustulata, albipennis, alternata, lativentris</i>
68	Chranišov env. Nové Sedlo	<i>trivialis</i>
69	Chvoječná env. Cheb, pond	<i>hrudkai</i> [VU], <i>lucifugus, satchelli, ocellaris, nubila, trivialis, fuliginosa</i>
70	Citice env. Sokolov, Ohře river	<i>longicornis, prikryli</i> [VU], <i>hirtella, ocellaris</i>
71	Citice env. Sokolov, Výsypka Antonín dump	<i>denticulatus, maynei</i> [EN], <i>notabilis, serbica</i> [CR], <i>lobata, satchelli, phalaenoides, gemina, ocellaris, rivosus</i> [CR], <i>nubila, pilularia, trivialis, annulata annulata</i>
72	Čankov nr. Karlovy Vary, pond	<i>lucifugus, hirtella, albipennis, erminea, satchelli, zetterstedti, ocellaris, nubila, pilularia, trivialis, fuliginosa</i>
73	Černý Mlýn nr. Tisová, wet meadows	<i>longicornis, auriculata, integella</i> [CR], <i>ocellaris, mutua, rivularis</i> [EN], <i>trivialis, fuliginosa</i>
74	Dasnice, wet meadows	<i>albipennis, alternata, ocellaris, fallax, pseudoexquisita, nubila, trivialis</i>
75	Dasnice, small water reservoir	<i>phalaenoides, ocellaris, nubila, trivialis</i>
76	Dasnice, Habartovský potok brook	<i>trivialis</i>
77	Dasnické rozcestí crossroad env. Nové Bukovany, forest marshes	<i>denticulatus, auriculata, mutua, trivialis, fuliginosa</i>
78	Děpoltovice, wet meadows	<i>hygrophila, soleata, valachica, longicornis, integella</i> [CR], <i>obscura, satchelli, gemina, mutua, trivialis, fuliginosa</i>
79	Děvín NR env. Milhostov, Lužní potok brook	<i>albipennis, trinodulosa, ocellaris, pilularia</i>
80	Dolní Nivy, spring area	<i>notabilis, unispinosa, ocellaris, mutua, nubila, trivialis, hibernica</i> [CR], <i>pulchra, fuliginosa</i>
81	Dolní Nivy, large growths of <i>Phragmites australis</i>	<i>strobli</i> [VU], <i>bohdanecensis</i> [NS], <i>consors, longicornis, ustulata, lobata, phalaenoides, uniformata, cinerea, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris, trivialis, annulata annulata</i>
82	Dolní Nivy, Pstruhový potok brook	<i>lucifugus, zetterstedti, grisescens, chvojkai</i> [VU], <i>stavniensis, ocellaris, splendidus</i> [NS], <i>mutua, trivialis, cognata, fuliginosa</i>
83	Dolní Pochlovice, Boží Požehnaní water reservoir	<i>ocellaris</i>
84	Dolní Rotava (foundry), Rotava brook	<i>hirtella, trivialis</i>
85	Dolní Rychnov, golf course edge	<i>notabilis, ustulata, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, mycophila, trinodulosa, alternata, lativentris, setigera, ocellaris, splendidus</i> [NS], <i>psedoexquisita, pilularia, trivialis</i>
86	Dolní Rychnov, golf course water reservoir	<i>denticulatus, ustulata, obscura, lobata, brevicornis, grisescens, phalaenoides, uniformata, minuta, trinodulosa, alternata, setigera</i>
87	Dolní Rychnov, Rychnovský potok brook	<i>auriculata, hirtella, lobata, albipennis, erminea, satchelli, grisescens, phalaenoides, cinerea, gemina, itoco</i> [NS], <i>minuta, trinodulosa, alternata, setigera, longicorniculatus</i> [NS], <i>ocellaris, splendidus</i> [NS], <i>nubila, pilularia, plumicornis, trivialis, pulchra, fuliginosa</i>
88	Dvoreček, Mělký rybník pond	<i>hrudkai</i> [VU], <i>lucifugus, crassipennis</i> [NS], <i>gemina, ocellaris, trivialis</i>

89	Dvorek, Stodolský potok brook,	<i>satchelli, trivialis</i>
90	Dvory env. Loket, brook	<i>auriculata, integella [CR], ocellaris, mutua, nubila, pilularia, trivialis, fuliginosa</i>
91	Erika sand pit, small water reservoirs and pools	<i>serbica [CR], humerale, hirtella, lobata, grisescens, crassipennis [NS], phalaenoides, uniformata, cinerea, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris</i>
92	Františkovy Lázně, Klára forest pond	<i>gemina, ocellaris, nubila, trivialis</i>
93	Františkovy Lázně, Natálie water reservoir	<i>ellisi [CR], longicornis, gressica, satchelli, gemina, ocellaris, nubila, trivialis</i>
94	Františkovy Lázně, woodpark	<i>ustulata, albipennis, uniformata, lativentris, fallax, nubila, trivialis</i>
95	Gaserův Mlýn env. Libavské Údolí, confluence of Libava brook and Ohře river	<i>maynei [EN], austriacum, humerale, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, phalaenoides, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris, fallax, nubila, trivialis</i>
96	Habartov, Habartovský potok brook	<i>lobata</i>
97	Habartov - Kluč, water reservoirs	<i>hygrophila, soleata, valachica, notabilis, longicornis, auriculata, integella [CR], carthusiana, gressica, lobata, ocellaris, subneglecta, mutua, nubila, trivialis, hibernica [CR], fuliginosa</i>
98	Habartov - Úžlabí, Habartovský potok brook	<i>auriculata, carthusiana, gressica, obscura, albipennis, zetterstedti, phalaenoides, cinerea, gemina, itoco [NS], minuta, chvojikai [VU], illiesi, stavniensis, ocellaris, blandula, mutua, nubila, trivialis, rotunda [CR], hibernica [CR], pulchra, fuliginosa</i>
99	Habartov - V zátiší	<i>longicornis, ocellaris, mutua, nubila, trivialis, cognata, fuliginosa</i>
100	Háje env. Březová	<i>hibernica [CR], fuliginosa</i>
101	Hájek env. Františkovy Lázně, Soos Museum, small neighbouring moss water reservoirs	<i>ustulata, albipennis, satchelli, zetterstedti, grisescens, phalaenoides, trinodulosa, alternata, setigera, ocellaris, trivialis, annulata annulata</i>
102	Hájek env. Ostrov, Umučený rybník pond	<i>albipennis, alternata, ocellaris, nubila, trivialis</i>
103	Hazlov env., Ovčín forest ponds	<i>ocellaris, gracilis gracilis, nubila, palustris, trivialis, cognata, fuliginosa</i>
104	Hleďsebské rybníky ponds nr. Ostroh	<i>ocellaris, subneglecta, nubila, trivialis</i>
105	Hluboká env. Habartov, Libocký potok brook	<i>auriculata, chvojikai [VU], ocellaris</i>
106	Hluboký env. Ostrov, Hluboký rybník pond	<i>longicornis, integella [CR], unispinosa, nubila, trivialis, fuliginosa</i>
107	Hora Svatého Šebastiána, Bezručovo údolí valley, Chomutovka brook	<i>lobata, albipennis</i>
108	Horní Lazy env. Lázně Kynžvart, sludge bed	<i>longicornis, pseudolongicornis [CR], mutua, trivialis, fuliginosa</i>
109	Horní Nivy env. Vřesová, Lomnický potok brook	<i>trivialis, fuliginosa</i>
110	Horní Nivy, Ovčí vrch hill, flat spring area,	<i>pulchra</i>

111	Horní Nivy, Ovčí vrch hill, authentic floodplain	<i>lobata, zetterstedti, griseescens, phalaenoides, gemina, minuta, setigera, matthesi, ocellaris, mutua, trivialis, hibernica</i> [CR], <i>cognata, fuliginosa, plumata</i> [CR]
112	Horní Pochlovice, Libocký potok brook	<i>hirtella, lobata, albipennis, erminea, satchelli, zetterstedti, phalaenoides, uniformata, cinerea, gemina, itoco</i> [NS], <i>minuta, mycophila, trinodulosa, alternata, lativentris, setigera, ocellaris, blandula, fallax, nubila, trivialis</i>
113	Horní Rozmyšl, cowshed, marshes	<i>lucifugus, silvaticus</i> [VU], <i>alternata, nubila, pilularia, trivialis</i>
114	Horní Rozmyšl, dump edge, water reservoir	<i>longicornis, polyascoidea, chvojkai</i> [VU], <i>ocellaris, blandula, fallax, canescens, nubila, trivialis, fuliginosa</i>
115	Horní Rozmyšl, Slané údolí valley	<i>maynei</i> [EN], <i>consors, ustulata, griseescens, phalaenoides, minuta, trinodulosa, alternata, lativentris, setigera, pulchra</i>
116	Horní Rozmyšl, primary meadows, brook	<i>vaillantii</i> [CR], <i>lobata, brevicornis, albipennis, zetterstedti, griseescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, lativentris, setigera, ocellaris, fallax, mutua, trivialis, pulchra, fuliginosa</i>
117	Horní Rozmyšl, Vřesový potok brook below quarry	<i>hirtella, lobata, albipennis, erminea, satchelli, zetterstedti, griseescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, alternata, setigera, chvojkai</i> [VU], <i>stavniensis, ocellaris, blandula, nielseni, pilularia, trivialis</i>
118	Horní Slavkov, Třídómí forester's house, swamps	<i>cinerea, ocellaris, mutua, nubila, trivialis</i>
119	Hradiště nr. Vojkovice, confluence of Bystřice brook and Ohře river	<i>manicata, fallax, nielseni, trivialis</i>
120	Hroznětín, dried Alnetum, Jesenice brook,	<i>austriacum, hrudkai</i> [VU], <i>humerale, albipennis, erminea, satchelli, zetterstedti, gemina, ocellaris, trivialis, fuliginosa</i>
121	Hrušková env. Sokolov, Hruškovský potok brook	<i>valachica, albipennis, satchelli, zetterstedti, griseescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, setigera, chvojkai</i> [VU], <i>vimmeri, ocellaris, splendidus</i> [NS], <i>mutua, trivialis, cognata, fuliginosa</i>
122	Jáchymov – Nové Město	<i>albipennis, zetterstedti, griseescens</i>
123	Jimlíkov env. Nová Role, kaoline-pits, Jimlíkovský potok brook	<i>albipennis, ocellaris, blandula, fallax, trivialis</i>
124	Jindřichovice, pond	<i>longicornis, phalaenoides, ocellaris, trivialis, fuliginosa</i>
125	Jindřichovice, dunging spring area	<i>lucifugus, silvaticus</i> [VU], <i>hirtella, lobata, brevicornis, albipennis, satchelli, zetterstedti, griseescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris, subneglecta, trivialis, annulata annulata</i>
126	Kacěřov env. Kynšperk nad Ohří, dungy ponds	<i>longicornis, auriculata, ocellaris, splendidus</i> [NS], <i>nubila, trivialis, fuliginosa</i>
127	Karlovy Vary – central part of the town, Ohře river	<i>auriculata, alternata, ocellaris, fallax, trivialis, fuliginosa</i>
128	Karlovy Vary - Doubí, Ohře river	<i>trivialis</i>
129	Karlovy Vary - Tašovice, Ohře river and brook	<i>fallax, trivialis</i>
130	Kateřina env. Františkovy Lázně, Černá jezírka lakes and Hadačovo jezírko lake	<i>ustulata, lobata, erminea, satchelli, zetterstedti, ocellaris, trivialis</i>
131	Kfely env. Ostrov, Bystřice brook	<i>ocellaris, nielseni, nubila, trivialis</i>

132	Kfely env. Ostrov, Jesenice brook	<i>lobata, nubila, trivialis</i>
133	Kladská env. Mariánské Lázně, Třebízského potok brook	<i>lobata, fuliginosa</i>
134	Klondike“ nr. Vintřřov, Modrářkovř rybnřk pond	<i>incerta, vaillantii [CR], denticulatus, maynei [EN], notabilis, bohdanecensis [NS], consors, longicornis, prikryli [VU], pseudolongicornis [CR], serbica [CR], cornuta [VU], ustulata, polyascoidea, auriculata, carthusiana, gressica, obscura, hirtella, lobata, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, elegans [NS], gemina, itoco [NS], minuta, mycophila, trinodulosa, alternata, lativentris, setigera, ocellaris, canescens, nubila, pilularia, trivialis, pulchra, annulata annulata, fuliginosa</i>
135	Klondike“ nr. Vintřřov, slope treeless tufa fens	<i>denticulatus, maynei [EN], auriculata, lobata, albipennis, erminea, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, ocellaris, nubila, pilularia, rivularis [EN], trivialis, pulchra, annulata annulata, fuliginosa</i>
136	Klondike“ nr. Vintřřov, terrestrial ecosystem, older forest recultivation	<i>carthusiana, lobata, albipennis, grisescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, setigera, nubila, pilularia, pulchra</i>
137	Kolovř env. Kynřperk nad Ohřř, forest spring area	<i>auriculata, mutua, trivialis, hibernica [CR], fuliginosa</i>
138	Kopanina nr. Habartov, Horka water reservoir	<i>longicornis, gressica, hirtella, mutua, fuliginosa</i>
139	Kopanina nr. Habartov, „Nad strřnřmi“, Kopaninskř potok brook	<i>tonnoiri [CR], lucifugus, erminea, zetterstedti, trivialis</i>
140	Kopanina nr. Habartov, Pustř rybnřk pond	<i>ocellaris, mutua</i>
141	Krřlovskř Pořřř, Přskovř vrch hill	<i>nubila, pilularia, trivialis</i>
142	Krapice nr. Frantiřkovy Lřznř, Amerika pond	<i>ocellaris, nubila, trivialis</i>
143	Kraslice, Svatava river	<i>humerale, fallax, trivialis, fuliginosa</i>
144	Kraslice env., Rřjeckř řdolř valley, Rřjeckř (Střřbrnř) potok brook	<i>hirtella</i>
145	Krřsnř Lřpa (water reservoir) nr. Rovnř env. Kostelnř Břřza	<i>trivialis, fuliginosa</i>
146	Kynřperk nad Ohřř, gutter	<i>longicornis, pseudolongicornis [CR], auriculata, gressica, austriacum, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, zetterstedti, alternata, ocellaris, mutua, trivialis, fuliginosa</i>
147	Kynřperk nad Ohřř env., Studřnka farming lonely houses, spring area	<i>lucifugus</i>
148	Lřznř Kynřřvart env., forest brook nr. Kladskř rařeliny NNR peatbogs	<i>ustulata, lucifugus, albipennis, zetterstedti, phalaenoides, uniformata, alternata, lativentris, trivialis</i>
149	Lazy env., between Smrkovec (abolished settlement) and Žitnř hill 793.2 m a.s.l., Malř Libava brook	<i>longicornis, auriculata, unispinosa, mutua, trivialis, fuliginosa</i>

150	Libavské Údolí env. Kynšperk nad Ohří, Velká Libava brook as tributary of Ohře river	<i>carthusiana, ocellaris, trivialis</i>
151	Lipnice env. Vintířov, areas put under fence of the Division Jiří Administration	<i>phalaenoides, cinerea, ocellaris, nubila</i>
152	Lítov, dump, water reservoir, Částkovský potok brook	<i>notabilis, auriculata, satchelli, stavniensis, mutua, nubila, trivialis, fuliginosa</i>
153	Lobzy nr. Březová, Lobézský potok brook	<i>lucifugus, lobata, satchelli, phalaenoides, chvojka [VU], stavniensis, unispinosa, ocellaris, subneglecta, mutua, nubila, rivularis [EN], trivialis, rotunda [CR], annulata annulata, cognata, fuliginosa</i>
154	Loket, Lněný vrch hill, forest spring area	<i>auriculata, carthusiana, lucifugus, phalaenoides, unispinosa, splendidus [NS], nubila, trivialis, fuliginosa</i>
155	Loket, Ohře river nr. Šibeniční vrch hill	<i>hirtella, fallax, fuliginosa</i>
156	Loket - Split camping area and Staré koupaliště swimming pool, Ohře river	<i>hirtella, blandula, fallax, trivialis</i>
157	Loket env., Nadlesí nr. Údolí	<i>trivialis</i>
158	Lomnice env., Lomnický les forest, Rašelinná water reservoir	<i>denticulatus, notabilis, consors, ellisi [CR], longicornis, auriculata, integella [CR], carthusiana, lobata, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, setigera, ocellaris, rivosus [CR], splendidus [NS], blandula, canescens, gracilis gracilis, trivialis, nigricauda [CR]</i>
159	Lomnice env., Lomnický les forest, Smrdutá and Topolová water reservoirs	<i>denticulatus, notabilis, consors, ellisi [CR], longicornis, auriculata, integella [CR], carthusiana, hirtella, lobata, albipennis, erminea, satchelli, phalaenoides, uniformata, cinerea, gemina, ocellaris, rivosus [CR], splendidus [NS], blandula, canescens, gracilis gracilis, trivialis</i>
160	Lomnice env., Lomnický les forest, Šídlo water reservoir	<i>denticulatus, notabilis, consors, ellisi [CR], longicornis, auriculata, integella [CR], carthusiana, lobata, brevicornis, albipennis, erminea, satchelli, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, mycophila, lativentris, setigera, ocellaris, rivosus [CR], splendidus [NS], blandula, canescens, gracilis gracilis</i>
161	Lomnice env., Lomnický les forest, Velký Břízák water reservoir	<i>hygrophila, soleata, valachica, denticulatus, notabilis, consors, ellisi [CR], longicornis, prikryli [VU], pseudolongicornis [CR], serbica [CR], ustulata, auriculata, integella [CR], carthusiana, obscura, lobata, albipennis, erminea, satchelli, phalaenoides, uniformata, cinerea, gemina, lativentris, ocellaris, rivosus [CR], splendidus [NS], blandula, fallax, canescens, gracilis gracilis, nubila, trivialis, nigricauda [CR], pulchra, annulata annulata, fuliginosa</i>
162	Lomnice env., Lomnický les forest, Záhadná water reservoir	<i>denticulatus, notabilis, consors, ellisi [CR], longicornis, auriculata, integella [CR], carthusiana, lobata, albipennis, erminea, satchelli, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, ocellaris, rivosus [CR], splendidus [NS], blandula, canescens, gracilis gracilis, nigricauda [CR]</i>
163	Lomnice env., Pastviny area, hayloft, treeless tufa fens,	<i>denticulatus, maynei [EN], notabilis, ustulata, polyascoidea, auriculata, obscura, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris, rivosus [CR], nubila, nigricauda [CR], pulchra, annulata annulata, fuliginosa</i>
164	Lomnice env., Pastviny area, Julie water reservoir	<i>longicorniculatus [NS], ocellaris, trivialis</i>

165	Lomnice env., Pastviny area, marshes 2.5 km N	<i>incerta, vaillanti</i> [CR], <i>denticulatus, kreki</i> [VU], <i>notabilis, consors, longicornis, prikryli</i> [VU], <i>serbica</i> [CR], <i>ustulata, polyascoidea, auriculata, integella</i> [CR], <i>gressica, obscura, lucifugus, lobata, albipennis, satchelli, zetterstedti, phalaenoides, gemina, matthesi, ocellaris, rivosus</i> [CR], <i>blandula, canescens, mutua, pilularia, trivialis, pulchra, annulata annulata</i>
166	Lomnice env., Starý Jiří open-cast mine and orange water reservoir	<i>hygrophila, soleata, valachica, denticulatus, notabilis, ellisi</i> [CR], <i>longicornis, ustulata, auriculata, integella</i> [CR], <i>carthusiana, obscura, austriacum, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, itoco</i> [NS], <i>minuta, trinodulosa, alternata, lativentris, setigera, longicorniculatus</i> [NS], <i>ocellaris, splendidus</i> [NS], <i>blandula, fallax, canescens, nubila, pilularia, trivialis, nigricauda</i> [CR], <i>pulchra, annulata annulata, fuliginosa</i>
167	Lomnice (settlement) nr. Sokolov	<i>vaillanti</i> [CR], <i>nubila, trivialis, fuliginosa</i>
168	Luh nad Svatavou, Svatava river	<i>notabilis, chvojka</i> [VU], <i>fallax, trivialis</i>
169	Lužec env. Nová Role, Jezero pond	<i>mutua, fuliginosa, plumata</i> [CR]
170	Lužec env. Nová Role, Lužecký potok brook	<i>lucifugus, mutua, fuliginosa</i>
171	Lužná env. Františkovy Lázně, Horní rodinný rybník small forest pond	<i>ocellaris, nubila, trivialis</i>
172	Lužná env. Františkovy Lázně, Horní Rybník (Miska) pond	<i>longicornis, ocellaris, nubila, trivialis</i>
173	Mariánské Lázně env., U Nimroda hill, Mnichovský potok brook	<i>lobata, trivialis</i>
174	Měděnec	<i>lucifugus, albipennis</i>
175	Mezihorská nr. Jindřichovice, Chodovský potok brook	<i>ocellaris, mutua, trivialis, rotunda</i> [CR], <i>hibernica</i> [CR], <i>cognata, fuliginosa, plumata</i> [CR]
176	Milíkov env., U těšovské hájenky hill, slope swamps,	<i>lucifugus, mutua, hibernica</i> [CR], <i>fuliginosa</i>
177	Milíkov nr. Dolní Žandov, Braunova strouha brook	<i>lucifugus, trivialis, fuliginosa</i>
178	Mírová env. Chodov, Jimlíkovský (Vlčí) potok brook	<i>valachica, denticulatus, maynei</i> [EN], <i>notabilis, ellisi</i> [CR], <i>longicornis, prikryli</i> [VU], <i>pseudolongicornis</i> [CR], <i>serbica</i> [CR], <i>ustulata, polyascoidea, auriculata, integella</i> [CR], <i>carthusiana, gressica, obscura, austriacum, brevicornis, albipennis, satchelli, zetterstedti, grisescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, lativentris, setigera, ocellaris, blandula, fallax, nielsenii, canescens, g. gracilis, mutua, nubila, palustris, pilularia, trivialis, fuliginosa</i>
179	Mírová env. Chodov, Zátíší, floodplain forest	<i>satchelli</i>
180	Mlýnek env. Luby, pond	<i>subneglecta, nubila, trivialis</i>
181	Mlýnské Chalupy (abolished settlement) nr. Přebuz, stream	<i>ocellaris, mutua, trivialis, rotunda</i> [CR], <i>fuliginosa, plumata</i> [CR]

182	Mokřina env. Kynšperk nad Ohří, Lipoltovský potok brook	<i>ocellaris</i>
183	Nebesa env. Aš, pond	<i>dalii, trivialis, cognata, fuliginosa</i>
184	Nejda env. Ostrov, Malá Nejda pond	<i>ustulata, alternata, nubila, pilularia, trivialis</i>
185	Nejda env. Ostrov, Velká Hruška pond	<i>ustulata, alternata, lativentris, ocellaris, nubila</i>
186	Nejdek, Limnice brook	<i>carthusiana, gressica, lucifugus, chvojikai</i> [VU], <i>cognata</i>
187	Nová Role	<i>longicornis, auriculata, mutua, trivialis, fuliginosa, plumata</i> [CR].
188	Nová Role, Rolava river	<i>longicornis, trivialis</i>
189	Nová Role, Vlčí potok brook, forest	<i>ellisi</i> [CR], <i>itoco</i> [NS], <i>ocellaris, mutua, nubila, pilularia, trivialis</i>
190	Nová Role, Vlčí potok brook, Pod Liščím vrchem fork	<i>phalaenoides, cinerea, ocellaris</i>
191	Nová Role env., Černý potok brook	<i>consors, ustulata, lobata, albipennis, grisevens, phalaenoides, cinerea, itoco</i> [NS], <i>minuta, trinodulosa, lativentris, setigera, ocellaris, rivosus</i> [CR], <i>splendidus</i> [NS], <i>canescens, nubila, trivialis, pulchra, annulata annulata, fuliginosa</i>
192	Nová Role env., Vlčí potok brook, cowshed, ponds,	<i>gressica, ocellaris, mutua, nubila, trivialis, fuliginosa</i>
193	Nová Role env., Smolnická výsypka dump, <i>Phragmites monocultur</i>	<i>maynei</i> [EN], <i>notabilis, consors, prikryli</i> [VU], <i>serbica</i> [CR], <i>ustulata, obscura, albipennis, satchelli, grisevens, phalaenoides, cinerea, minuta, trinodulosa, setigera</i>
194	Nová Role env., Vlčí potok brook, forest	<i>longicornis, pseudolongicornis</i> [CR], <i>serbica</i> [CR], <i>auriculata, gressica, albipennis, satchelli, zetterstedti, grisevens, phalaenoides, cinerea, trinodulosa, setigera, ocellaris, blandula, canescens, nubila, pilularia, trivialis, pulchra</i>
195	Nová Ves env. Bečov nad Teplou, brook nr. Dominova skalka rockery NM	<i>ocellaris, trivialis</i>
196	Nová Ves env. Bečov nad Teplou, U myslivny forester's lodge, wet meadow	<i>ocellaris, mutua, trivialis, nigricauda</i> [CR], <i>fuliginosa</i>
197	Nová Ves env. Bečov nad Teplou, Za Hospodou pond	<i>longicornis, ocellaris, trivialis, fuliginosa</i>
198	Nové Bukovany, forest marshes and small water reservoirs	<i>denticulatus, auriculata, gressica, gemina, alternata, ocellaris, nubila, rivularis</i> [EN], <i>trivialis, fuliginosa</i>
199	Nové Bukovany, Habartovský potok brook, sewage treatment	<i>soleata, longicornis, auriculata, integella</i> [CR], <i>gressica, alternata, illiesi, mutua, rivularis</i> [EN], <i>trivialis, fuliginosa</i>
200	Nové Bukovany (1 km SW), Obora Dvory deer park, Habartovský potok brook	<i>denticulatus, notabilis, consors, ellisi</i> [CR], <i>longicornis, pseudolongicornis</i> [CR], <i>serbica</i> [CR], <i>polyascoidea, auriculata, gressica, brevicornis, albipennis, erminea, satchelli, grisevens, phalaenoides, cinerea, gemina, itoco</i> [NS], <i>minuta, trinodulosa, alternata, illiesi, ocellaris, blandula, nubila, pilularia, rivularis</i> [EN], <i>trivialis, nigricauda</i> [CR], <i>cognata, fuliginosa</i>
201	Nové Hamry nr. Nejdek, Jelení vrch Nature Park, Rolava river	<i>trivialis</i>

202	Nový Drahov env. Františkovy Lázně, Stodolský potok brook	<i>lobata, albipennis, trinodulosa, alternata, setigera, trivialis</i>
203	Nový Kostel nr. Luby, Nad milířem hill, forest swamps	<i>mutua</i>
204	Nový Kostel nr. Luby, U kyselky well, Svažecký potok brook	<i>erminea, phalaenoides, ocellaris, nubila, trivialis</i>
205	Nový Kostel railway station env., Hrzínský les forest, ponds	<i>erminea, nubila, trivialis</i>
206	Odeř env. Hroznětín, Jesenice forest brook	<i>blandula, mutua, fuliginosa, plumata [CR]</i>
207	Oldřichov env. Pernink, Oceán NR	<i>lucifugus, mutua, plumata [CR]</i>
208	Oloví, Svatava river	<i>hirtella, zetterstedti, nubila, trivialis, rotunda [CR], fuliginosa</i>
209	Ostrov env., Konopka pond	<i>lativentris, ocellaris, nubila, trivialis</i>
210	Ostrov env., Ostrovské rybníky NR, Dolní Štít pond	<i>lativentris, ocellaris, nubila, trivialis</i>
211	Ostrov env., Ottův rybník pond	<i>ustulata, lobata, nubila, trivialis</i>
212	Plesná, Plesná brook	<i>albipennis, erminea, ocellaris, nubila, trivialis</i>
213	Podstrání env. Rovná, Lobézský potok brook	<i>lucifugus, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, griseocens, phalaenoides, uniformata, cinerea, gemina, itoco [NS], minuta, trinodulosa, alternata, setigera, trivialis</i>
214	Pozorka nr. Nejdek, Smolný vrch hill, small forest brook	<i>ocellaris, mutua, trivialis, rotunda [CR], fuliginosa, plumata [CR]</i>
215	Prameny env. Mariánské Lázně, Dlouhá stoka brook	<i>trivialis</i>
216	Prameny env. Mariánské Lázně, Mokřady pod Vlčkem NR	<i>phalaenoides</i>
217	Přebuz, Rotava brook	<i>mutua, rotunda [CR], fuliginosa, plumata [CR]</i>
218	Přebuz env., Přebuz Nature Park, Güntherovy domky forest area	<i>fuliginosa</i>
219	Přebuz env., Přebuzské vřesoviště heathland NM	<i>lobata, phalaenoides</i>
220	Radvanov env. Habartov, vicinity brook	<i>longicornis, gressica, satchelli, phalaenoides, gemina, ocellaris, subneglecta, fallax, nubila, trivialis, fuliginosa</i>
221	Rotava railway station env. Kraslice, Mezní potok brook	<i>lucifugus, lobata, satchelli, trivialis</i>
222	Skalka nr. Hazlov, Hazlovský potok brook	<i>ocellaris, gracilis gracilis, trivialis, hibernica [CR], cognata, fuliginosa</i>
223	Skálná nr. Františkovy Lázně, Kamenné Vrchy Nature Park, Ovčárna, pond	<i>phalaenoides, trinodulosa, trivialis, fuliginosa</i>
224	Smolná env. Kraslice	<i>gemina, trivialis, pulchra, fuliginosa</i>

225	Smolné Pece env. Nová Role, forest ponds	<i>ocellaris, mutua, cognata, fuliginosa, plumata</i> [CR]
226	Smrčina nr. Jindřichovice, brook	<i>longicornis, ocellaris, mutua, nubila, trivialis, fuliginosa</i>
227	Smrčina nr. Plesná, Kamenné Vrchy Nature Park, Pstruhový potok brook	<i>lobata, griseescens, nubila, trivialis, fuliginosa</i>
228	Sněžná nr. Kraslice, Hlinitý vrch hill	<i>lucifugus, silvaticus</i> [VU], <i>albipennis, satchelli, ocellaris, trivialis</i>
229	Sněžná – settlement, Sněžný potok brook	<i>rotunda</i>
230	Sokolov env., Michal water reservoir vicinity, small pond	<i>longicornis, hirtella, albipennis, erminea, cinerea, gemina, trinodulosa, ocellaris, nubila, pilularia, trivialis, pulchra, fuliginosa</i>
231	Soos NNR env. Františkovy Lázně, Císařský pramen spring	<i>ustulata</i>
232	Soos NNR env. Františkovy Lázně, moffettes in a volcanic caldera lake	<i>ustulata, lobata, albipennis, alternata</i>
233	Soos NNR env. Františkovy Lázně, Sázek brook, turf banks	<i>phalaenoides, fallax, nielseni, trivialis</i>
234	Soos NNR env. Františkovy Lázně, Vonšov area, peatlands	<i>albipennis</i>
235	Spomyšl env. Tatrovice, Tatrovická stoka drain	<i>vaillantii</i> [CR], <i>carthusiana, gressica, balkanicum</i> [CR], <i>lucifugus, silvaticus</i> [VU], <i>hirtella, lobata, albipennis, satchelli, griseescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, alternata, setigera, illiesi, stavniensis, longicorniculatus</i> [NS], <i>ocellaris, blandula, mutua, rivularis</i> [EN], <i>trivialis, pulchra, cognata, fuliginosa</i>
236	Spomyšl env. Tatrovice, tributary of Tatrovická stoka drain	<i>longicornis, pseudolongicornis</i> [CR], <i>hirtella, lobata, brevicornis, albipennis, satchelli, griseescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, longicorniculatus</i> [NS], <i>ocellaris, splendidus</i> [NS], <i>mutua, trivialis</i>
237	Stanovice dam, small tributary of Lomnický potok brook	<i>lucifugus, blandula, trivialis, fuliginosa</i>
238	Staré Sedlo env. Sokolov, Starosedelský and Hruškovský potok brooks	<i>polyascoidea, carthusiana, obscura, hirtella, lobata, brevicornis, albipennis, erminea, satchelli, griseescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, manicata, stavniensis, ocellaris, blandula, gracilis gracilis, nubila, pilularia, trivialis, cognata, fuliginosa</i>
239	Stříbrná, Přebuz Nature Park, Stříbrný potok brook	<i>trivialis</i>
240	Stříbrná env., Rájecký potok brook, Nancy camping	<i>lobata, albipennis, griseescens, uniformata</i>
241	Svatava env., Medard pit, sludge bed	<i>ustulata, subneglecta</i>
242	Svatava env., Svatava river nr. Svatavský vrch hill	<i>valachica, maynei</i> [EN], <i>bohdanecensis</i> [NS], <i>prikryli</i> [VU], <i>serbica</i> [CR], <i>auriculata, humerale, albipennis, satchelli, cinerea, gemina, minuta, trinodulosa, chvojka</i> [VU], <i>ocellaris, fallax, nielseni, trivialis, cognata, fuliginosa</i>
243	Svatava env., Svatavský vrch hill, small forest pond	<i>lobata, ocellaris, nubila</i>
244	Svatošské skály rocks NM between Loket and Doubí, Ohře river	<i>ocellaris, fallax, fuliginosa</i>

245	Šabina nr. Tisová, spring of mineral water	<i>longicornis, auriculata, integella</i> [CR], <i>gressica, obscura, ocellaris, mutua, nubila, rivularis</i> [EN], <i>trivialis, fuliginosa</i>
246	Šindelová env. Kraslice	<i>lobata, albipennis, satchelli, phalaenoides, gemina, minuta, trinodulosa, ocellaris, trivialis, fuliginosa</i>
247	Tachov, Mže river	<i>humerale, albipennis, zetterstedti, uniformata, alternata</i>
248	Tatrovice env. Vřesová, forest brook, waterworks	<i>lucifugus, lobata, albipennis, erminea, satchelli, zetterstedti, grisescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, alternata, setigera, ocellaris, mutua, nubila, trivialis, rotunda</i> [CR], <i>cognata, fuliginosa, plumata</i> [CR]
249	Tatrovice - Na skále env. Vřesová, meadow spring area	<i>carthusiana, hirtella, ocellaris, mutua, nubila, trivialis, rotunda</i> [CR], <i>cognata, fuliginosa</i>
250	Teplá env. Mariánské Lázně, Teplá river	<i>albipennis, alternata</i>
251	Těšovice env. Sokolov, Ohře river floodplain	<i>blandula</i>
252	Tisová (power station), V Mokříně, brook	<i>fallax</i>
253	Údolíčko env. Klášterec nad Ohří, Malodolský potok brook	<i>nubila, trivialis</i>
254	Úhošť NNR nr. Úhošťany env. Kadaň, Donínský potok brook	<i>incerta, hygrophila, soleata, valachica, acuminata, procera, denticulatus, polyascoidea, auriculata, gressica, obscura, lucifugus, hirtella, albipennis, trinodulosa</i>
255	Velký Rybník nr. Hroznětín, Velký rybník pond	<i>auriculata, mutua, nubila, trivialis, fuliginosa</i>
256	Vintířov env., Vintířovská výsypka dump, Transects 4BN - 5BN	<i>denticulatus, auriculata, albipennis, phalaenoides, nubila, annulata annulata</i>
257	Vřesová env. Chodov, artificial channel of brook-transfers in the dump area	<i>bohdanecensis</i> [NS], <i>auriculata, obscura, hirtella, lobata, albipennis, erminea, satchelli, grisescens, crassipennis</i> [NS], <i>phalaenoides, cinerea, gemina, minuta, trinodulosa, lativentris, setigera, longicorniculatus</i> [NS], <i>ocellaris, subneglecta, blandula, fallax, nubila, rivularis</i> [EN], <i>trivialis, nigricauda</i> [CR], <i>annulata annulata</i>
258	Vřesová env. Chodov, Černý potok brook nr. Rájecký Špičák hill	<i>satchelli, phalaenoides</i>
259	Vřesová env. Chodov, parallel water bodies to the sludge water defecation	<i>zetterstedti, lativentris, ocellaris, nubila, trivialis, annulata annulata, cognata, fuliginosa</i>
260	Vřesová env. Chodov, primary alder forest	<i>vaillantii</i> [CR], <i>notabilis, consors, serbica</i> [CR], <i>ustulata, polyascoidea, lobata, brevicornis, albipennis, zetterstedti, grisescens, phalaenoides, uniformata, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, ocellaris, blandula, canescens, annulata annulata</i>
261	Vřesová env. Chodov, sludge water defecation and sedimentation, alder grove edge	<i>lobata, brevicornis, albipennis, satchelli, crassipennis</i> [NS], <i>phalaenoides, cinerea, gemina, minuta, mycophila, trinodulosa, setigera, longicorniculatus</i> [NS], <i>splendidus</i> [NS], <i>trivialis, nigricauda</i> [CR]
262	Vřesová env. Chodov, sludge water defecation and sedimentation, central part, reedswamp edge	<i>albifacies</i> [EN], <i>notabilis, bohdanecensis</i> [NS], <i>consors, ustulata, obscura, hirtella, albipennis, satchelli, grisescens, phalaenoides, cinerea, gemina, minuta, trinodulosa, alternata, lativentris, setigera, illiesi, ocellaris</i>

263	Vřesová env. Chodov, sludge water defecation and sedimentation, northern part, brushwood edge	<i>rothschildi</i> [NS], <i>notabilis</i> , <i>consors</i> , <i>ellisi</i> [CR], <i>longicornis</i> , <i>ustulata</i> , <i>polyascoidea</i> , <i>auriculata</i> , <i>advena</i> [CR], <i>carthusiana</i> , <i>labeculosa</i> [EN], <i>hirtella</i> , <i>lobata</i> , <i>brevicornis</i> , <i>albipennis</i> , <i>erminea</i> , <i>satchelli</i> , <i>sigma</i> [NS], <i>zetterstedti</i> , <i>grisescens</i> , <i>phalaenoides</i> , <i>uniformata</i> , <i>cinerea</i> , <i>gemina</i> , <i>itoco</i> [NS], <i>minuta</i> , <i>mycophila</i> , <i>trinodulosa</i> , <i>alternata</i> , <i>lativentris</i> , <i>setigera</i> , <i>longicorniculatus</i> [NS], <i>ocellaris</i> , <i>rivosus</i> [CR], <i>subneglecta</i> , <i>nubila</i> , <i>pilularia</i> , <i>rivularis</i> [EN], <i>trivialis</i> , <i>hibernica</i> [CR], <i>pulchra</i> , <i>annulata annulata</i> , <i>cognata</i>
264	Výhledy env. Hazlov, Halštrov Nature Park, Hazlovský potok brook	<i>gemina</i> , <i>ocellaris</i> , <i>mutua</i> , <i>nubila</i> , <i>trivialis</i> , <i>rotunda</i> [CR], <i>hibernica</i> [CR], <i>nigricauda</i> [CR], <i>pulchra</i> , <i>cognata</i> , <i>fuliginosa</i>
265	Zlatá env. Kynšperk nad Ohří, Studánka deer park, polluted pond	<i>gemina</i> , <i>ocellaris</i> , <i>mutua</i> , <i>nubila</i> , <i>trivialis</i> , <i>rotunda</i> [CR], <i>hibernica</i> [CR], <i>nigricauda</i> [CR], <i>pulchra</i> , <i>cognata</i> , <i>fuliginosa</i>
266	Zlatý Kopec env. Boží Dar, Zlatý Kopec Nature Park, Zlatý potok brook	<i>trivialis</i> , <i>fuliginosa</i>

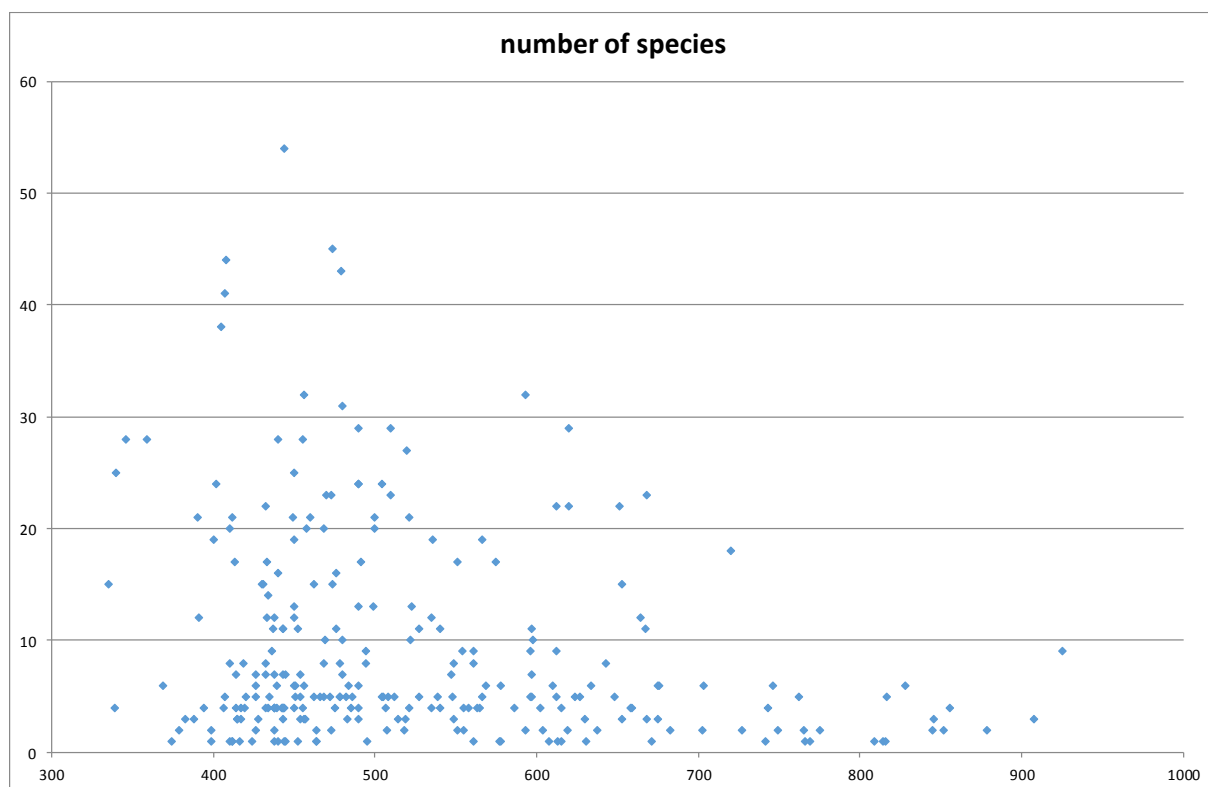
Summary of the results and conclusion

New faunistic data from the western Hercynian mountains, Sokolov open-cast coal mines, dumps and adjacent localities collected mostly in 266 sites in 1993-2010 are presented. Altogether 96 species of moth flies (adults) of 36 genera (55 % of all species of the family known from the Czech Republic) are known to occur in this area, changed by activities of SUAS (Vřesová) and some localities mentioned in this paper are open to complete exploitation. 26 of these species were classified in the national Red List 2005 of threatened invertebrates. Critically endangered species CR (14): *Clytocerus (Boreoclytocerus) rivosus* (Tonnoir, 1919), *Parajungiella ellisi* (Withers, 1987), *P. pseudolongicornis* (Wagner, 1975), *P. serbica* (Krek, 1985), *Philosepedon (P.) balkanicum* Krek, 1971, *Psychomormia vaillanti* (Wagner, 1977), *Psycmera integella* (Jung, 1956), *Saraiella rotunda* (Krek, 1970), *Telmatoscopus advena* (Eaton, 1893), *Sycorax tonnoiri* Jung, 1954, *Szaboiella hibernica* (Tonnoir, 1940), *Tonnoiriella nigricauda* (Tonnoir, 1919), *Trichomyia urbica* Haliday in Curtis, 1839 and *Ulomyia plumata* (Tonnoir, 1919). Endangered species EN (4): *Panimerus albifacies* (Tonnoir, 1919), *P. maynei* (Tonnoir, 1920), *Pneumia rivularis* Berdén, 1954 and *Seoda labeculosa* (Eaton, 1893). Vulnerable species VU (8): *Berdeniella chvojikai* Ježek, 1999, *Katamormia strobli* Ježek, 1986, *Panimerus kreki* Vaillant, 1972, *Parajungiella prikryli* Ježek, 1999, *Paramormia (Duckhousiella) cornuta* Nielsen, 1964, *Philosepedon (P.) hrudkai* Ježek, 1999, *P.(P.) nickerli* Ježek, 1995 and *Threticus silvaticus* Ježek, 1985. Without a Red status so far are eight species nationally scarce NS: *Lepiseodina rothschildi* (Eaton, 1912), *Parajungiella bohdanecensis* Ježek & Hájek, 2007, *Logima sigma* Kincaid, 1899, *Psychoda crassipennis* Tonnoir, 1940, *Psychodocha elegans* (Kincaid, 1897), *P. itoco* (Tokunaga & Komyo, 1955), *Clytocerus (Boreoclytocerus) longicorniculatus* Krek, 1987 and *C. (B.) splendidus* Ježek & Hájek, 2007. Some species of moth flies inhabiting post-mining pools, swamps and seepages are probably not limited by an extreme water chemistry of localities (pH, alkalinity, N-NH₄⁺, N-NO₃⁻, N org., total N, total P, Na, K, Ca, Mg, Fe, Cl⁻, SO₄²⁻, Mn, conductivity were studied): see e. g. *Peripsychoda auriculata* (Haliday in Curtis, 1839), *Logima albipennis* (Zetterstedt, 1850), *Psychoda phalaenoides* (Linné, 1758), *Psychodocha gemina* (Eaton, 1904), *Clytocerus (B.) ocellaris* (Meigen, 1804) and *Pneumia trivialis* (Eaton, 1893). In contrast to the mentioned species rather common *Ulomyia fuliginosa* (Meigen, 1804) can be probably limited by TN (mg/l) 10.252, TP (mg/l) 1.35, Na (mg/l) 835, K (mg/l) 45, Ca (mg/l) 506, Mg (mg/l) 356.1, Cl⁻ (mg/l) 719, SO₄²⁻ (mg/l) 5845 and conductivity (µS/cm) 6100 or *Pneumia canescens* (Meigen, 1804) by alkalinity (mmol/l) 11.6, Na (mg/l) 695, Ca (mg/l) 409, Mg (mg/l) 278 and

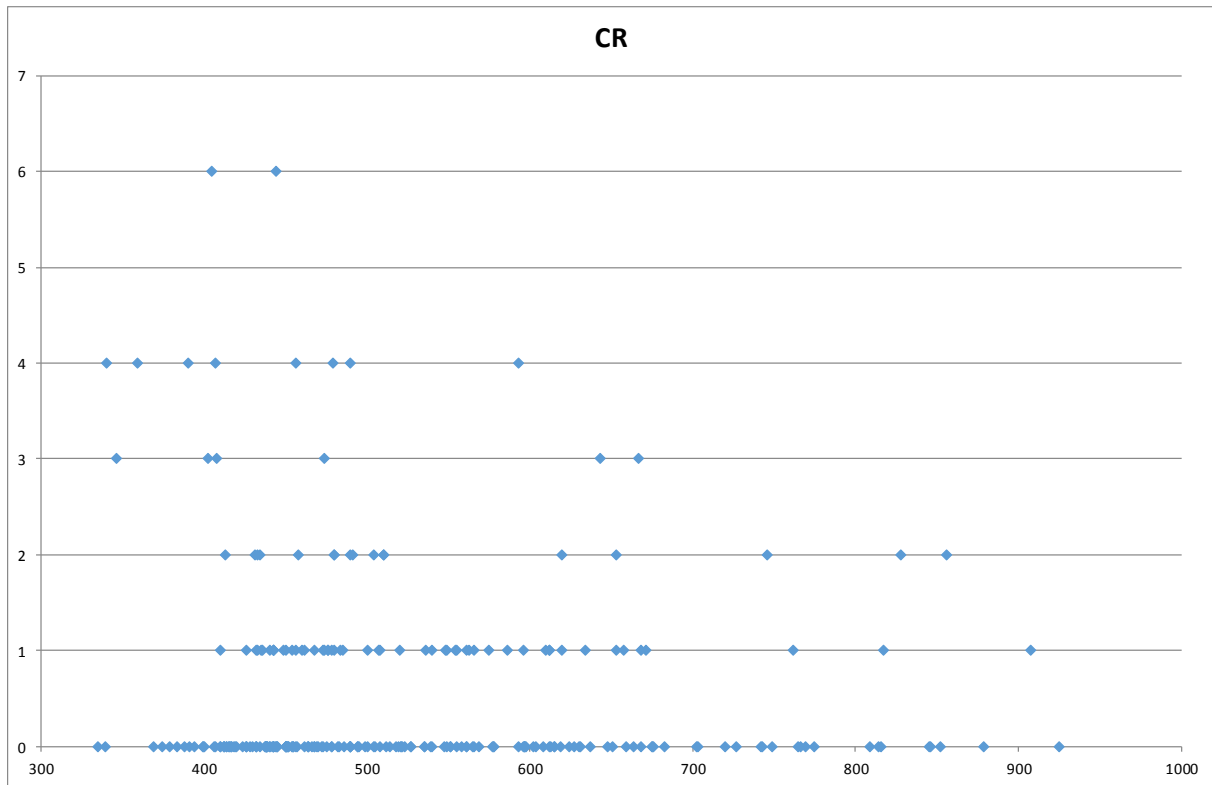
conductivity ($\mu\text{S}/\text{cm}$) 4682. This preliminary our results are in a discrepancy with conclusions of Polášková *et al.* (2017): naturally fragmented a mosaic of quite different microhabitats are more important for a biodiversity of aquatic macroinvertebrates biota than chemical conditions of water biotopes. Moth flies of Sokolov open-cast coal mines and dumps show a maximum of 52 recorded species from one large complicated locality system – inundated funnelled central holes of sunken shafts and old deep mining works with produced secondary unique “taiga” biotopes, most extreme water reservoirs (acidity), where oxidation of Fe is in progress during the periodical drawing and flooding of the aggressive mine water - value pH of the litoral slime represents about 2.2, furrows originated from the activity of the dump stowing machines spontaneously flooded from soaks or by rainfall, slope treeless tufa-forming fens or calcium carbonate encrusted mats of bryophytes. All mentioned biotopes represent a high conservation potential useful for biodiversity refuges in comparison with psychodid flies of western Hercynian Mts.

In higher altitudes is lower the number of species of moth flies found there (See Graph 1). Species richness of critically endangered taxa can decrease with altitude (See Graph 2).

Graph 1: The relationship between site (1-266) altitude /x-axis/ and the number of species of moth flies /y-axis/. Prepared by Ivo Přikryl.



Graph 2: The relationship between site (1-266) altitude /x-axis/ and the number of critically endangered species of moth flies /y-axis/. Prepared by Ivo Přikryl.



Acknowledgements: We thank to the large staff of the Management of the SUAS Vřesová (especially to M. Lisner and M. Bohuslav) and the Management of the PLA Slavkovský les for their support of our research. We are obliged to P. Chvojka, J. Macek, H. Studničková, J. Kabelák and M. Fikáček (all National Museum, Praha), M. Kosík (ENKI, Třeboň), J. Skuhrovec (Group Function of Invertebrate and Plant Biodiversity in Agrosystems, Crop Research Institute, Praha) and J. Frouz (Institute of Soil Biology, České Budějovice) for their help in the field and the sorting of insects in the laboratory. We would like to thank to P. Chvojka for corrections of MS. We would like to thank to laboratories of water analysis performed by VURH, JIVAK, SUAS and ENKI. Thanks are due to P. Chvojka, M. Kopeček, S. Kuncová, J. Schenková, P. Tájek, R. Tyller and P. Znachor for their photographs of important localities and flies, and all anonymous reviewers for their valuable and instructive comments on the manuscript. This work was supported by the Ministry of Culture of the Czech Republic (DKRVO 2019-2023/5.I.a, National Museum, 00023272) and partly supported by the grant agency KEGA Project No. 005PU-4/2019 and by the Slovak Research and Development Agency under the contract No. APVV-16-0236.

References

- Afzan H. & Belqat B. (2016): Faunistic and bibliographical inventory of the Psychodinae moth-flies of North Africa (Diptera, Psychodidae). – *ZooKeys* 558: 119-145.
- Andersen T. (1999): Moth flies (Diptera, Psychodidae) from the Faroes. – *Norwegian J. Ent.* 46: 66.
- Beaver R.A. (1972): Ecological studies on Diptera breeding in dead snails (Mollusca). 1. Biology of the species found in *Cepea nemoralis* (L.). – *Entomologist* 105: 41-52.
- Büttiker W. (1969): Parasiten und Nidicolon der Uferschwalbe (*Riparia riparia* (L.)) in der Schweiz. – *Mitt. Schweiz. Ent. Ges.* 42: 205-220.
- Del Rosario F. (1936): The American species of *Psychoda* (Diptera: Psychodidae). – *Philipp. J. Sci.* 59(1): 85-146.
- Ehrendorfer F. & Hamann U. (1965): Vorschläge zu einer floristischen Kartierung von Mitteleuropa. – *Ber. Deutsch. Bot. Gesell.* 78: 35-50.
- Grensted L.W. (1947): Diptera in the spathes of *Arum maculatum* L. – *Ent. Mont. Mag.* 83: 1-3.
- Ježek J. (1977): Reinstatement of the genus *Tinearia* Schellenberg (Diptera, Psychodidae). – *Acta Ent. Bohemoslov.* 74: 232-241.

- (1982): Some new faunistic records of Psychodidae (Diptera) of Bohemian Karst. In: Rozkošný R. & Vaňhara J. (eds): *Dipterologica Bohemoslovaca* 3. – *Folia Fac. Sci. Nat. Univ. Purk. Brun.* 23, *Biol.* 74(7): 57-60.
- (1983): Contribution to the taxonomy of the genus *Logima* Eat. (Diptera, Psychodidae). – *Acta Ent. Mus. Nat. Pragae* 41: 213-234.
- (1984): A taxonomic study of the genera *Psycmera* Jež. and *Parajungiella* Vail. (Diptera, Psychodidae) of Czechoslovakia. – *Acta Mus. Nat. Pragae* 40B (1984): 1-19.
- (1985): Contribution to the knowledge of a new subtribe *Trichopsychodina* (Diptera, Psychodidae) from Czechoslovakia. – *Acta Mus. Nat. Pragae* 40B (1984): 65-92.
- (1986): Mormiini, Paramormiini a Psychodini (Diptera, Psychodidae) z okolí Českých Budějovic [Mormiini, Paramormiini and Psychodini (Diptera, Psychodidae) in České Budějovice distr.]. In: Olejníček J. & Spitzer K. (eds): *Dipterologica Bohemoslovaca*. Vol. 4. – *Jihočes. Muz., Přír. vědy., České Budějovice*, pp. 95-99 (in Czech, English summ.).
- (1987): *Jungiella hygrophila* sp. n. (Diptera, Psychodidae, Paramormiini) with redescriptions of Czechoslovak species of *Jungiella* s. str. – *Acta Ent. Mus. Nat. Pragae* 42: 207-223.
- (1990a): Redescriptions of nine common palaeartic and holarctic species of Psychodini End. (Diptera: Psychodidae). – *Acta Ent. Mus. Nat. Pragae* 43: 33-83.
- (1990b): Contribution to the taxonomy of some genera of Paramormiine moth flies (Diptera, Psychodidae) with description of a new genus *Karakovounimerus*. – *Acta Ent. Mus. Nat. Pragae* 43: 129-157.
- (1992): Siberian moth flies (Diptera, Psychodidae) – new faunistic records. – *Čas. Nár. Muz., Ř. přírodov.* 160: 63-64.
- (1995): Moth flies (Diptera, Psychodidae) inhabiting Prague city and adjacent localities with description of five new species. – *Acta Ent. Mus. Nat. Pragae* 44: 126-165.
- (1996): New faunistic records of moth flies (Diptera, Psychodidae) from the Czech Republic. – *Čas. Nár. Muz., Ř. Přírodov.* 166: 113-120.
- (1997): New and interesting taxa of moth flies (Diptera, Psychodidae) from different moist biotopes of the Palaeartic region. – *Čas. Nár. Muz., Ř. Přírodov.* 166: 105-122.
- (1999): Moth flies (Diptera, Psychodidae) inhabiting wet extreme biotopes of the Sokolov open-cast coal mines and dumps, with descriptions of three new species from western Bohemia. – *Sb. Nár. Muz. v Praze, ř. B, Přír. V.* 54(3-4): 45-60.
- (2002): The first account of Slovenian moth flies (Psychodidae, Diptera). – *Čas. Nár. Muz., Ř. Přírodov.* 171: 89-116.
- (2003): New faunistic data and check list of non Phlebotomine moth flies (Diptera, Psychodidae) from the Czech and Slovak Republics. – *Čas. Nár. Muz., Ř. Přírodov.* 172: 121-132.
- (2004a): New and interesting moth flies (Diptera, Psychodidae) from protected and underestimated natural areas of the Czech Republic. – *Čas. Nár. Muz., Ř. Přírodov.* 173: 113-128.
- (2004b): New faunistic data of non-phlebotomine moth flies (Diptera, Psychodidae) from the Palaeartic region. In: Kubík Š. & Barták M. (eds), *Dipterologica Bohemoslovaca* Vol. 11. – *Folia Fac. Sci. Nat. Univ. Masaryk. Brun., Biol.* 109: 141-151.
- (2005): Čeled' Psychodidae (koutulovití), pp. 259-261. In: Farkač J., Král D. & Škorpík M. (eds), *Červený seznam ohrožených druhů České republiky. Bezobratlí. Red list of threatened species in the Czech Republic. Invertebrates. Agentura ochrany přírody a krajiny ČR, Praha*, 760 pp.
- (2006): Faunistic records, Psychodidae. In: Kinkorová J. (ed.), *Dipterologica Bohemoslovaca* Vol. 13. – *Acta Univ. Carol., Biol.* 50: 139-141.
- (2007): New records of moth flies (Diptera, Psychodidae) from Poland with description of *Apsycha* gen.nov. – *Acta Zool. Univ. Com.* 47(2): 145-160.
- (2009a): Checklist of Diptera of the Czech Republic and Slovakia, electronic version 2: Psychodidae Newman, 1834. Available from <http://zoology.fns.uniba.sk/diptera2009/Psychodidae.htm> (accessed 8.9.2018).
- (2009b): Further new faunistic records of moth flies (Insecta, Diptera, Psychodidae) from the Czech Republic and Slovakia. – *Folia Faun. Slovaca* 14(15): 101-105.
- Ježek J., Barták M. & Vaněk J. (2010): Koutulovití (Diptera, Psychodidae) vysokých poloh Krkonoš. Psychodidae (Diptera) of the high altitudes of the Krkonoše Mts. – *Opera Corcon.* 47: 265-273.
- Ježek J., Chvojka P., Manko P. & Oboňa J. (2017): Faunistic and bibliographical inventory of moth flies from Ukraine (Diptera, Psychodidae). – *ZooKeys* 693: 109-128.
- Ježek J., Grootaert P., Lock K., Manko P. & Oboňa J. (2018b). Moth flies (Diptera: Psychodidae) from the Belgian transition of the Atlantic to the Central European faunal zones. – *Biodiversity & Environment* 10 (2): 5-17.
- Ježek J. & Goutner V. (1995): Psychodidae (Diptera) of Greece. – *Acta Mus. Nat. Pragae* 50 B (1994): 107-124.

- Ježek J. & Hájek J. (2007): Psychodidae (Diptera) of the Orlické hory Protected Landscape Area and neighbouring areas with descriptions of two new species from the Czech Republic. – *Acta Ent. Mus. Nat. Pragae* 47: 237-285.
- Ježek J., Kubík Š. & Barták M. (2013): Psychodidae (Diptera) of Vráž nr. Písek (Czech Republic), pp. 189-199. In: Kubík Š. & Barták M. (eds): Workshop on biodiversity, Jevany. Česká zemědělská univerzita v Praze, 436 pp.
- Ježek J., Lukáš J., Kvifte G. M. & Oboňa J. (2012): New faunistic records of non-biting moth flies (Diptera: Psychodidae) from the Czech Republic and Slovakia. – *Klapalekiana* 48: 121-126.
- Ježek J., Manko P. & Oboňa J. (2018a): Checklist of known moth flies and sand flies (Diptera, Psychodidae) from Armenia and Azerbaijan. – *ZooKeys* 798: 109-133.
- Ježek J. & Omelková M. (2012): Moth flies (Diptera: Psychodidae) of the Bílé Karpaty Protected Landscape Area and Biosphere Reserve (Czech Republic). In: Malenovský I., Kment P. & Konvička O. (eds): Species inventories of selected insect groups in the Bílé Karpaty Protected Landscape Area and Biosphere Reserve (Czech Republic). – *Acta Mus. Morav., Sci. Biol. (Brno)*, 96(2): 763-802.
- Ježek J., Omelková M. & Heřman P. (2014): Koutulovití (Psychodidae, Diptera) Českého krasu a přilehlých lokalit. Moth flies (Psychodidae, Diptera) of the Český kras/Bohemian Karst and neighbouring localities (Czech Republic). – *Bohemia Centr., Praha*, 32: 321-344.
- Ježek J., Omelková M., Oboňa J. & Tkoč M. (2019): Psychodidae Newman, 1834. In: Jedlička L., Stloukal E., Stloukalová V. & Kúdela M. (eds): Checklist of Diptera of the Czech Republic and Slovakia. Electronic version. Comenius University, Bratislava. (in press).
- Ježek J. & Tkoč M. (2012): A new species of the genus *Gondwanoscurus*, and two new records of non-biting moth flies (Diptera: Psychodidae: Psychodinae) from Socotra Island. – *Acta Ent. Mus. Nat. Pragae* 52 (Supplementum 2): 545-557.
- Ježek J. & van Harten A. (1997): Psychodidae (Diptera) of the Cape Verde Islands, captured with a Johnson-Taylor suction trap. – *Bol. Mus. Mun. Funchal* 48 (266) (1996): 63-86.
- (2005): Further new taxa and little-known species of non-biting moth flies (Diptera, Psychodidae) from Yemen. – *Acta Ent. Mus. Nat. Pragae* 45: 199-220.
- (2009): Order Diptera, Family Psychodidae. Subfamily Psychodinae (non-biting moth flies), pp. 686-711. In: Van Harten A. (ed.): *Arthropod Fauna of the United Arab Emirates*, Vol. 2. Dar Al Ummah Printing, Publishing, Distribution and Advertising, Abu Dhabi, 786 pp.
- Ježek J., Vonička P. & Preisler J. (2008): Koutulovití (Diptera: Psychodidae) Jizerských hor a Frýdlantska. Psychodidae (Diptera) of the Jizerské hory Mts and Frýdlant region (northern Bohemia, Czech Republic). – *Sbor. Severočes. Muz., Přír.V., Liberec*, 26: 129-151.
- Ježek J. & Yağcı Ş. (2005): Common non-biting moth flies (Insecta, Diptera, Psychodidae) new to the fauna of Turkey. – *Acta Parasitol. Turc.* 29: 188-192.
- Jung H.F. (1956): Beiträge zur Biologie, Morphologie und Systematik der Europäischen Psychodiden (Diptera). – *Dtsch. ent. Z., Berlin (N.F.)* 3: 97-257.
- Kitching R.L. (2004): Food webs and container habitats: The natural history and ecology of phytotelmata. Cambridge University Press, Cambridge, 427 pp.
- Krek S. (1985): Die Psychodidaen – Fauna der SR Serbien. – *Proc. Fauna of SR Serbia (Serbian Acad. of Sciences & Arts, Belgrade)* 3: 149-182.
- (1999) Psychodidae (Diptera Insecta) Balkanskog Poluotoka. Federacija Bosne i Hercegovine, Ministarstvo Obrazovanja, Nauke, Kulture i Sporta, Studentska Štamparija Univerziteta Sarajevo, Sarajevo, 417 pp.
- Kročá J. & Ježek J. (2015): Moth flies (Psychodidae: Diptera) of the Moravskoslezské Beskydy Mts and Podbeskydská pahorkatina Upland (Czech Republic). – *Acta Mus. Siles. Sci. Natur.* 64: 27-50.
- Kuncová S. & Tyller R. (2009): Romantické cesty neznámým Sokolovskem – Medard. Fornica Publ., 144 pp.
- Kvifte G.M. (2010): *Pericoma nielseni* nom. nov., a replacement name for *Pericoma formosa* Nielsen, 1964, preoccupied by *Pericoma formosa* Meunier, 1905 (Diptera: Psychodidae). – *Zootaxa* 2726: 68.
- (2012): Catalogue and bibliography of Afrotropical Psychodidae: Bruchomyiinae, Psychodinae, Sycoracinae and Trichomyiinae. – *Zootaxa* 3231(1): 29-52.
- (2014). Nomenclature and taxonomy of *Telmatoscopus* Eaton and *Seoda* Enderlein; with a discussion of parameral evolution in Paramormiini and Pericomaini (Diptera: Psychodidae, Psychodinae). – *Zootaxa*, 3878(4), 390-400.
- Kvifte G.M. & Andersen T. (2012): Moth flies (Diptera, Psychodidae) from Finnmark, northern Norway. – *Norwegian J. Ent.* 59: 108-119.
- Kvifte G.M., Håland Ø. & Andersen T. (2011): A revised check-list of Norwegian moth flies (Diptera, Psychodidae). – *Norwegian J. Ent.* 58: 180-188.
- Kvifte G. M., Ivković M. & Klarić A. (2013) New records of moth flies (Diptera: Psychodidae) from Croatia, with the description of *Berdeniella keroveci* sp.nov. – *Zootaxa* 3737(1): 57-67.

- Kvifte G. M., Stokkan M. & Wagner R. (2016): Review of the Psychodinae from Mallorca, Spain, with description of *Pericoma unipennata*, sp. n. (Diptera, Psychodidae). – ZooKeys 577: 149-160.
- Mayer K. (1938): Zür Kenntnis der Buchenhöhlenfauna. – Archiv Hydrobiol. 33: 388-400.
- Náprstek V. (1958): Přehled geologického vývoje terciéru sokolovské pánve. – Čas. Mineral. Geol. 3:163-178.
- Nielsen B. O. (1961): Studies on the Danish Psychodidae (Diptera, Nematocera). – Ent. Medd., Copenhagen, 31: 127-152.
- Oboňa J., Balážiová E., Dobránsky M., Filipovič P., Ježek J., Matúšová Z., Očadlík M., Ox K., Vojtek P. & Svitok M. (2014): Expanzia druhu *Clogmia albipunctata* (Diptera: Psychodidae) v Európe: súčasný stav poznania, p. 159. In: Manko P. & Baranová B. (eds): Zborník príspevkov z vedeckého kongresu „Zoológia 2014“, 19. Feriancove dni Prešov, Prešovská univerzita v Prešove, 248 pp.
- Oboňa J., Balážiová E., Cáfal R., Dobránsky M., Filipovič P., Ivčič B., Ježek J., Matúšová Z., Očadlík M., Ox K., Smolák R., Tábi L. & Vojtek P. (2016): Additions to the range expansion of the invasive moth midge *Clogmia albipunctata* (Williston, 1893) in Slovakia (Diptera: Psychodidae). – Folia Oecologica 8(1): 5-14.
- Oboňa J. & Ježek J. (2012a): First records of dendrolimnetic moth flies (Diptera: Psychodidae) from Slovakia. Prvónálezy dendrotelmových kútoviek (Diptera: Psychodidae) zo Slovenska. – Klapalekiana 48: 279-287.
- (2012b): Range expansion of the invasive moth midge *Clogmia albipunctata* (Williston, 1893) in Slovakia (Diptera: Psychodidae). – Folia Faun. Slovaca 17(4): 387-391.
- (2013): Kútovky (Diptera: Psychodidae) z okolia Železnej Breznice – Breznický potok (Slovensko). Moth flies (Diptera: Psychodidae) from Železná Breznica – Breznický potok brook (Slovakia). – Acta Univ. Prešov., Folia Oecologica 10: 4-9.
- (2014): Prodromus of moth flies (Diptera: Psychodidae) from Slovakia. – Acta Mus. Siles. Sci. Natur. 63: 193-251.
- Oboňa J. & Kozánek M. (2018): First record of *Logima sigma* (Kincaid, 1899) (Diptera: Psychodidae) from Slovakia. – Biodiversity & Environment 10(2): 22-24.
- Omelková M. & Ježek J. (2012a): Two new species of *Pneumia* Enderlein (Diptera, Psychodidae, Psychodinae) from the Palaearctic region. – Zootaxa 3180: 1-18.
- (2012b): A new species of the genus *Trichomyia* (Diptera: Psychodidae) and new faunistic data on non-plebotomine moth flies from the Podyjí NP and its surroundings (Czech Republic). – Acta Mus. Morav., Sci. Biol. (Brno) 55(2): 505-533.
- (2012c): Two new species of *Philosepedon* Eaton (Diptera, Psychodidae, Psychodinae) from Europe, with comments on subgeneric classification. – Zootaxa 3275: 29-42.
- Omelková M., Bojková J., Rozkošný R., Horsák M. & Helešic J. (2006): Nové a zajímavé larvy dvoukřídlých (Diptera) na flyšových prameništích. /New and interesting larvae of Diptera in flysh spring fens./ P.61. In: Sborník příspěvků 14. konference ČLS a SLS. Česká limnologická společnost, Netčiny, 167 pp.
- (2007): The Diptera taxocoenoses in the Western Carpathian spring fens: preliminary results. P. 234. In: SEFS-5 Symposium for European freshwater sciences programme and abstracts. EFFF – European Federation for Freshwater Sciences, Palermo, Italy, 288 pp.
- Omelková M., Ježek J., Starý J., Roháček J. & Holinka J. (2008): Dvoukřídlí (Diptera). Chapter True flies (Diptera). Pp. 294-298, 304-305. In: Jongepierová I. (ed.): Louky Bílých Karpat. Grasslands of the White Carpathian Mountains. ZO ČSOP Bílé Karpaty, Veselí nad Moravou, 461 pp.
- Polášková V., Schenková J., Bartošová M., Rádková V. & Horsák M. (2017): Post-mining calcareous seepages as surrogate habitats for aquatic macroinvertebrates biota of vanishing calcareous spring fens, p. 119-132. Elsevier, Ecological Engineering, Vol. 109, Part A, 140 pp.
- Pruner L. & Míka P. (1996): Seznam obcí a jejich částí v České republice s čísly mapových polí pro síťové mapování fauny. List of settlements in the Czech Republic with associated map field codes for faunistic grid mapping system. – Klapalekiana 32 (Suppl.): 1-115 (in Czech, English summary).
- Přikryl I. (1997): Hydrobiologie nádrží a toků na území dotčených těžbou uhlí v Sokolovské pánvi. XI. Limnologická konference: Limnologický výzkum pro rozumné hospodaření s vodou. – Česká limnologická společnost a Slovenská limnologická spoločnosť. Pp. 140-142.
- Rojík P. (2004a): Tektonosedimentární vývoj sokolovské pánve a její interakce s územím Krušných hor. – Ph.D. thesis, Přír. Fak. Univ. Karl., Praha, 227 pp.
- (2004b): New stratigraphic subdivision of the Tertiary in the Sokolov Basin in Northwestern Bohemia. – J. Czech Geol. Soc. Praha 2004: 176-184.
- Salmela J. & Piirainen T. (2005): Description of a new Psychodidae (Diptera) species from Estonia. – Entomologica Fennica 16(4): 301.
- Salmela J., Paasivirta L. & Kvifte G. M. (2014): Checklist of the families Chaoboridae, Dixidae, Thaumaleidae, Psychodidae and Ptychopteridae (Diptera) of Finland. – ZooKeys 441: 37-46.
- Schmitz H. (1917): Biologische Beziehungen zwischen Dipteren und Schnecken. – Biol. Zentralblatt 37: 24-43.

- Svensson B. W. (2009): Fjärilsmygga fauna i ett hagmarksområde och en ladugård i östra Blekinges skogsland. Med en översikt av familjen Psychodidae morfologi, systematik och utforskande, samt särskilt de svenska *Psychoda* s. l. – arternas biologi. Entomol. Tidskrift 130: 185-206.
- Szabó J. (1965): Beiträge zur Verbreitung der Psychodiden (Diptera, Nematocera), in der Slowakei. – Acta Ent. Mus. Nat. Pragae 36: 607-631.
- (1983): 10. család: Psychodidae – Lepkeszúnyogok. – Fauna Hungariae 156: 1-78.
- Šuláková H., Gregor F., Ježek J. & Tkoč M. (2014): Nová invaze do našich obcí a měst: koutule *Clogmia albipunctata* a problematika myiáz / A new invasion into Czech towns and municipalities: the mothfly *Clogmia albipunctata* and the problem of myiasis. – Živa 1(2014): 29-32.
- Tkoč M., Pecharová M. & Ježek J. (2014): Catalogue of the type specimens of Diptera deposited in the Department of Entomology, National Museum, Prague, Czech Republic, part 10. Moth flies (Psychodidae). – Acta Ent. Mus. Nat. Pragae 54(2): 789-837.
- Tonnoir A. L. (1940): A synopsis of the British Psychodidae (Dipt.), with descriptions of new species. – Trans. Soc. Brit. Ent., Southampton, 7: 21-64.
- Václ J. (1964): Sokolovská pánev. In: Svoboda J. (ed). Regionální geologie ČSSR I., Vol. 2, 328 -341. NČSAV, Praha.
- Vaillant F. (1971–1983): 9d. Psychodidae – Psychodinae (not finished). In: Lindner E. (ed.): Die Fliegen der palaearktischen Region. Stuttgart. Vols. 287(1971): 1-48; 291 (1972): 49-78; 292(1972): 79-108; 305(1974): 109-142; 310(1975): 143-182; 313(1977): 183-206; 317(1978): 207-238; 320(1979): 239-270; 326(1981): 271-310; 328(1983): 311-357.
- (1988): Contribution a l'étude des Psychodidae mycobiontes (Dipt.). – Bull. Soc. Ent. France 93(5-6): 181-191.
- (1989): Les Psychodinae dendrolimnophiles et dendrolimnobiontes paléarctiques et nearctiques (Insecta, Diptera, Nematocera, Psychodidae). – Spixiana 12: 193-208.
- Vaillant F. & Joost W. (1983): On a small collection of Diptera Psychodidae from Caucasus (USSR) and Bulgaria. – Reichenbachia 21(15): 95-106.
- Vimmer A. (1905): Doplňky ke Kowarzovu seznamu českých dipter. Čas. Čsl. Spol. ent. 2: 102-105.
- (1907): Seznam českého dvojkřídlého hmyzu. Subordo: Diptera orthorrhapha. – Čas. Čsl. Spol. ent. 4: 67-76.
- (1913): Seznam českého hmyzu dvoukřídlého. Catalogus dipterorum. – Ent. Přír. 8: 1-99 (in Czech).
- Wagner R. (1990): Family Psychodidae. In: Soós, A. (ed.), Catalogue of Palaearctic Diptera. Vol. 2. Psychodidae - Chironomidae. Akadémiai Kiadó, Budapest, pp. 11-65.
- (2018). Fauna Europaea: Psychodidae. In: de Jong, H. (ed.): Fauna Europaea: Diptera Nematocera. Fauna Europaea version 2018. Available on: <https://fauna-eu.org> (accessed 21 October 2018).
- Withers P. (1989a): Moth Flies. Diptera: Psychodidae. – Dipt. Digest 4: 1-83.
- (1989b): Some further records of Irish rot-hole moth flies (Diptera: Psychodidae), with a first record for *Telmatoscopus rothschildii*, with a figure of the male terminalia of that species. – Irish Nat. J. 23(1): 16-17.
- Zahradnický J., Mackovčín P. (eds) a kol. (2004): Plzeňsko a Karlovarsko. In: Mackovčín P. a Sedláček M. (eds): Chráněná území ČR, svazek XI. Agentura ochrany přírody a krajiny ČR a EkoCentrum Brno, Praha, 588 pp.
- Zelený J. (1972): Návrh členění Československa pro faunistický výzkum. Entwurf einer Gliederung der Tschechoslowakei für Zwecke der faunistischen Forschung. – Zpr. Čsl. spol. ent. při ČSAV 8: 3-16 (in Czech, German summary).

Authors' addresses: Jan Ježek, Department of Entomology, National Museum, Cirkusová 1740, CZ–193 00, Praha 9 - Horní Počernice, Czech Republic
E-mail: jan.jezek@o2active.cz

Jozef Oboňa, Department of Ecology, Faculty of Humanities and Natural Sciences, University of Prešov, 17. novembra 1, SK – 081 16 Prešov, Slovakia
*corresponding author, E-mail: obonaj@centrum.sk

Ivo Přikryl, ENKI o.p.s., Dukelská 145, CZ – 379 01 Třeboň, Czech Republic
E-mail: prikryl@enki.cz

Blanka Mikatová, Agentura ochrany přírody a krajiny ČR, regionální pracoviště Východní Čechy, Jiráskova 1665, CZ – 530 02 Pardubice, Czech Republic
E-mail: blanka.mikatova@nature.cz

Tab 1 : Chemical long-term parameters of water influencing life history patterns of moth flies of Sokolov open-east coal mines and dumps (only selected localities with 25 – 54 species of Psychodidae are mentioned).

period	numbered locality (incl. vicinity)	pH	alkalinity (mmol/l)	N-NH ₄ ⁺ (mg/l)	N-NO ₃ ⁻ (mg/l)	N org. (mg/l)	TN (mg/l)	TP (mg/l)	Na (mg/l)	K (mg/l)	Ca (mg/l)	Mg (mg/l)	Fe (mg/l)	Cl ⁻ (mg/l)	SO ₄ ²⁻ (mg/l)	Mn (mg/l)	conductivity (µS/cm)
1993-2011	54	6.23-8.35	0.4-11.6	0.007-4.011	0.001-1.58	0.199-3.619	1.22-9.21	0.030-0.410	1.7-695	2.1-19.45	10.9-361	3.5-278	0.1-13.449	2.1-16.45	13-2099	0.05-2.833	120-3963
1996-1998	134	6.57-8.23	2.24-10.5	0.014-0.072	0.002-0.079	0.45-0.94	0.55-0.97	0.01-0.052	-	-	-	-	-	-	-	-	3367
1995-2009	166	2.2-3.31	0.0-0.0	1.010-8.2	0.164-2.7	8.415	1.249-10.252	0.088-1.35	52-164.3	9.1-20.29	239.5-409	80.4-217	56.597-968	7.9-719	1605.6-5845	10.15-119.5	2750-4682
2000-2009	263	7.7-19.87	0.315-3.2	0.001-16.5	0.014-14.980	1.8	0.558-26.92	0.069-0.936	4.7-265.5	1.2-9.8	6.7-153.0	1.2-36.1	0.08-0.230	4.0-241.6	14.1-570.5	0.041-0.27	59-2110
1993-2014	161	5.1-8.75	0.15-2.187	0.002-3.00	0.001-0.42	0.691-1.564	0.765-3.121	0.039-0.41	0.1-4.23	0.1-6.8	8.0-207.5	1.2-10.8	0.08-15.143	1.0-10.6	10.1-64.8	0.009-8.919	63-267
2005-2008	200	6.83-7.49	0.305-0.72	0.006-0.328	1.146-4.882	0.1-0.61	1.475-5.398	0.014-0.128	4.9-15.2	5.4-8.4	6.1-16.9	5.2-11.1	0.08-0.505	5.4-588.6	30-63	0.02-0.137	172-268
1997-2014	165	2.34-8.65	0.0-19.08	0.000-2.090	0.001-3.60	0.302-3.56	0.430-8.735	0.008-6.602	2.3-2683.8	0.9-1.70	14.7-943.63	28.2-1108	0.02-4100	0.0-1866	132.8-14847	0.0-27.662	453-21528
1994-2011	163	6.31-8.85	0.49-19.3	0.001-1.238	0.001-0.634	0.37-1.20	0.624-2.023	0.003-0.39	2.32-835	0-34	8.4-506	3.12-356.1	0.01-48.616	1.2-60.1	9-3998.6	0.0-9.354	75-6100
1993-1994	235	5.2-6.15	0.05-0.3	0.01-0.256	0.362-0.65	0.59	1.25	0.031-0.21	3.2-3.6	1.4-1.9	9-13	2.4-5.47	0.25-0.35	5.01-5.3	26.4-32.7	0.08-0.24	103-124
1993-2011	37	6.7-8.35	3.72-12.7	0.005-2.69	0.004-2.08	0.55-0.91	0.562-1.22	0.006-1.93	78.1-1205	3.3-24.8	98.2-484	88.8-368	0.1-3.16	0.8-17.7	768-4496.0	0.003-5.7	1978-6870
2010-2013	16	8.21-8.93	3.301-14.473	0.001-0.151	0.001-0.239	0.317-0.764	0.339-1.088	0.056-0.131	372.0-2052.4	11.6-39.4	26.7-120.8	114.3-514.5	0.009-0.445	0.5-2.2	1391.4-21294.0	0.001-0.068	2805-9630
2005	160	5.89-6.12	0.60-0.62	0.140-0.289	0.001-0.020	1.256-1.258	1.397-1.605	0.006-0.032	1.7-2.4	0.6-1.7	7.3-9.8	2.1-3.1	1.031	1.0-4.6	5-35	0.048	60-107
1993-1998	257	6.35-7.39	0.4-2.3	0.085-0.163	1.734-3.173	-	-	0.018-0.46	8.4-8.8	4.4-4.5	20	5.4-6.6	0.1	16.8-17.7	31.2-36	0.05	236-2340
2006-2012	85	6.71-8.10	0.49-3.010	0.001-0.147	0.013-5.872	0.021-2.500	0.583-7.005	0.012-0.120	2.4-145.1	3.5-10.9	12.2-429.8	4.6-66.1	0.02-0.776	2.19-56.8	23.6-610.5	0.020-1.725	184-1346

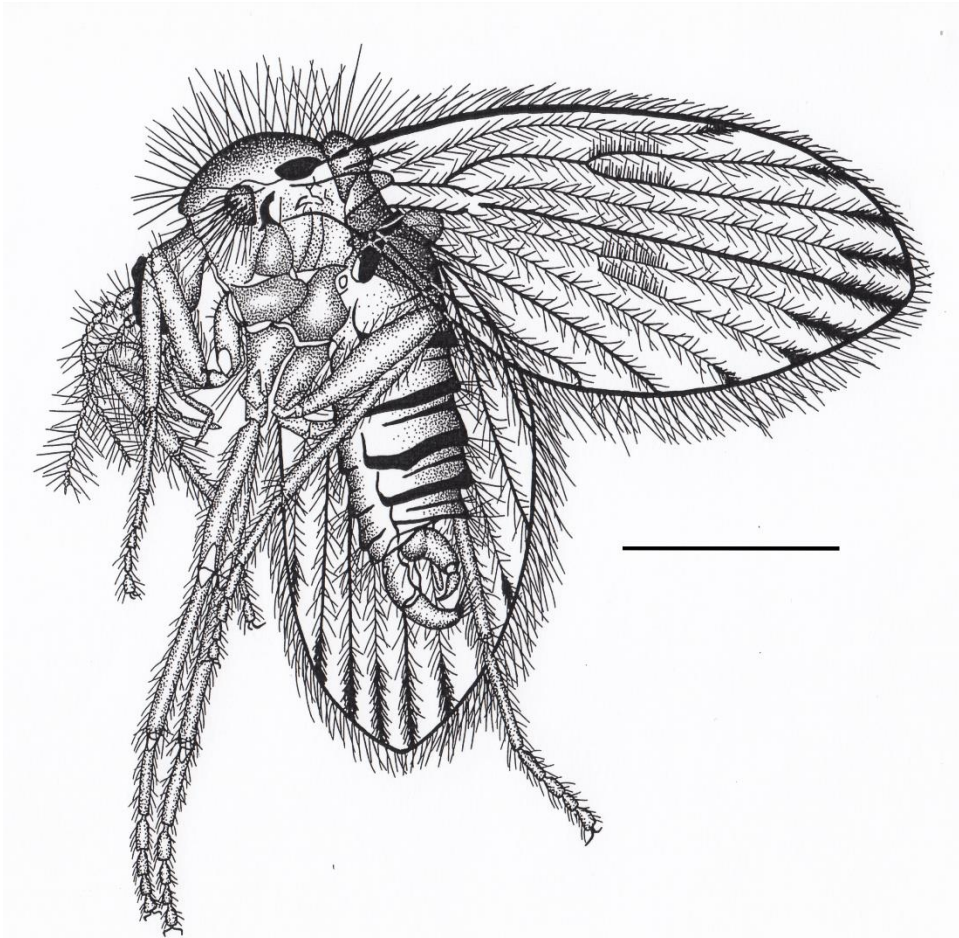


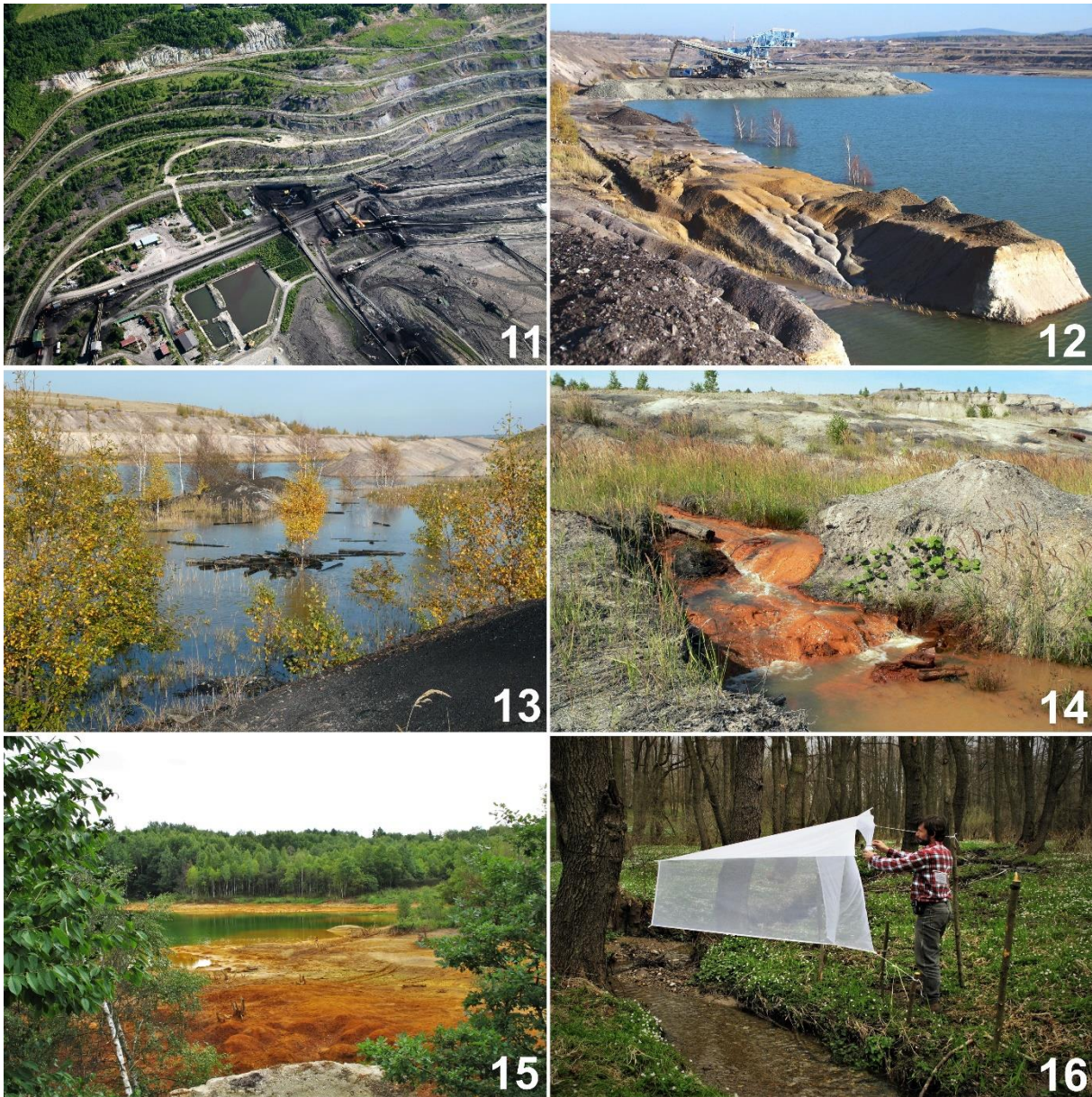
Fig 1: *Pneumia trivialis* (Eat.) – male collected near Horní Slavkov (Třídolí), slide Inv. No. 5911. Illustrated by Jan Ježek.



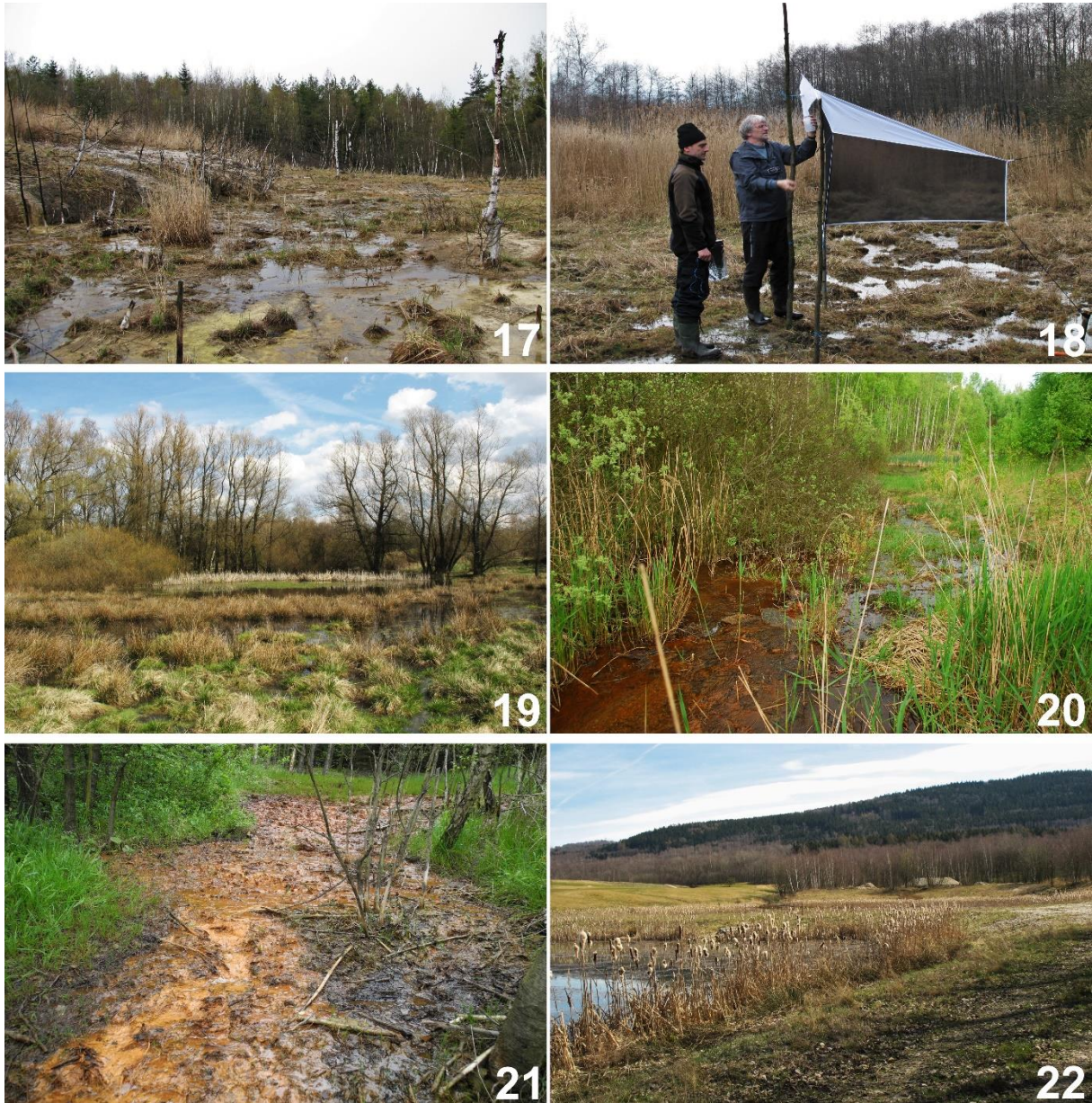
Fig 2: *Psychodocha cinerea* (Banks) – adults. Photo by Miroslav Kopeček.



Figs 3-10: **3:** Tajga NNR, Kladské rašeliny peatbogs env. Mariánské Lázně. Photo by Přemysl Tájek; **4:** Studna u Lužné NR env. Františkovy Lázně. Photo by Přemysl Tájek; **5:** Soos NNR, Císařský pramen spring (pH occasionally limited by 1.7). Photo by Přemysl Tájek; **6:** Ohře river near Dasnice. Photo by Pavel Chvojka; **7:** Aerial view of Locket and Ohře river. Photo by Přemysl Tájek; **8:** Aerial view of Medard water reservoir between Sokolov and Habartov. Photo by Petr Znachor; **9:** Aerial view of the powerful combine of Sokolov coal company, Vřesová. SUAS, provided by Miroslav Bohuslav; **10:** Aerial view of Michal water reservoir. SUAS, provided by Miroslav Bohuslav.



Figs 11-16: **11:** Aerial view of a terrace-like edge of the open-cast coal mine (Družba). SUAS, provided by Miroslav Bohuslav; **12:** The moonscape as a result of the surface mining in the piedmont of the Krušné hory Mts. Photo by Světlana Kuncová; **13:** A romantic dump scenery of Medard lake. Photo by Rudolf Tyller; **14:** Habitats with the aggressive mine water from soaks (different oxidation of Fe) represent a high conservation potential of moth flies. Photo by Rudolf Tyller; **15:** Starý Jiří open pit near Lomnice (Sokolov coalmining area) shows one of the most extreme water reservoir (acidity) (locality has already disappeared). Photo by Pavel Chvojka; **16:** Habartovský potok brook – alluvial forest biotope. Malaise trap for monitoring of insect activities. A removing of samples by Pavel Chvojka from the National museum team work. Photo by Jan Ježek.



Figs 17-22: **17:** Podkrušnohorská výsypka dump, Pastviny area near Lomnice. Crustated swamps with secondary unique „taiga“ biotopes. Photo by Pavel Chvojka; **18:** „Klondike“ env. Vintířov, slope treeless tufa fens with a black Malaise trap. Jan Macek (right) and Jiří Kabelák from the National museum team during a reconstruction of the trap after a windstorm. Photo by Pavel Chvojka; **19:** Přesličková water reservoir between Sokolov and Lomnice. Inundated funnelled holes of sunken shafts in the area of old deep mining works (Pinkoviště) (locality has already disappeared). Photo by Pavel Chvojka; **20:** Podkrušnohorská výsypka dump. Small brook near experimental waterfall with flocculated iron between Lomnice and Vintířov. Photo by Jana Schenková; **21:** „Klondike“ env. Vintířov, a spring with crustated swamps in detail. Photo by Jana Schenková; **22:** Silvestr env. Dolní Rychnov. A quarry and dump in the last time, however, the area is recultivated now (golf course). Photo by Pavel Chvojka.