

**Monitoring of threatened species of the select insect taxa
in Bohemian Switzerland National Park**



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INTRODUCTION

In year 2010 continued the three year's entomological research project (2008-2010) focused on monitoring of occurrence, distribution, population and seasonal dynamics of the select insect taxa in Bohemian Switzerland National Park (Hymenoptera: Symphyta; Diptera: Psychodidae; Trichoptera). The third course focused on the continual sampling of long-term monitoring sites as well as new established short-term (seasonal) sampling sites of threatened, rare or nationally scarce species in the mentioned year.

METHODS

The entomological samples were gathered by various entomological methods as follow:

1) Frequency interception traps (FIT) - modified Malaise traps (size 150 x 100 x 120 cm) (Figs. 1-4) installed in the select flight pathways of insects. Interception traps, running all insect activity season since spring to autumn, were installed at three long-term and two seasonal study sites for monitoring purpose and sampling. The captured insects follow their path up to the collecting chamber treated with the insecticide Vaztak 10 EC on the top of trap. The paralyzed insects drop into the sampling jar with preserving solution (ethylalcohol). The traps were checked up and sampled in the three week periods.



Fig. 1. Installation of interception trap in the flood plain of Křinice stream in Zadní Doubice



Fig. 2. Interception trap on the biomonitoring site in the flood plain of Křinice stream in Zadní Doubice



Fig. 3. Interception trap on the slope spring area of Růžovský vrch hill



Fig. 4. Setting of the interception trap in the long-term monitoring site Prskyřičný důl gorge

2) Emergent trap (ET) – the modified trap adjusted to sampling of soil emerging insects (Figs. 5-8). The trap fits tightly to the ground and emerging insects find their way up to the collecting chamber treated with the insecticide Vaztak 10 EC on the top of the trap. The paralyzed



Fig. 5. Setting of the emergent trap in the spring area above Edmundova soutěska gorge



Fig. 6. Emergent trap installed in the spring area above Edmundova soutěska gorge



Fig. 7. Setting of the emergent trap below the Hadí pramen spring



Fig. 8. Emergent trap below the Hadí pramen spring

insects drop to sampling jar with preserving solution (96% ethylalcohol). The traps were checked up and sampled in the three week periods.

3) Sweeping. Insects sampled by sweeping-netting or individual collecting with exhaustor or pincers on vegetations, stones, stems and stumps.

4) Collecting and rearing sawfly larvae to obtain additional data on foodplants as well as so far unknown larvae of sawflies.

5) Light trapping: fluorescent tube 8W KANDOLite F8T5/BLB („black light“).

The whole samples collected by various methods has been preserved, taxonomically sorted and passed on specialists for processing. The samples were mounted appropriately and determined in successive steps. The faunistic data were processed in electronic database, the localities were specified by precise geographic coordinates and completed by adding map field codes for faunistic grid mapping system (Pruner & Míka 1996). The primary map fields were subdivided to four subfields and each subfield subdivided to more four subsections (Fig. 11).

The list of the select insect taxa for biomonitoring:

- a) Hymenoptera (Symphyta) - guarantee: Mgr. Jan Macek,
- b) Diptera (Psychodidae) - guarantee: RNDr. Jan Ježek, CSc.,
- c) Trichoptera - guarantee: RNDr. Pavel Chvojka.

All document material is preserved in dry mounted state, ethylalcohol (75%) or slides (Canada balsam) in collections of the Department of Entomology of the National Museum, Prague.

The pH, conductivity and temperature values of surface waters on monitoring sites were measured by portable pH/EC/TDS/Temperature Meter HI 991301 (Hanna Instruments®) in the field.

CHARACTERISTICS OF MONITORING SITES

Bohemian Switzerland National Park was declared in year 2000, the total area is 79.25 km². The main subject of conservation in Bohemian Switzerland National Park is the very characteristically developed sandstone phenomenon, i.e. the unique geomorphology of the sandstone rock towns and the biodiversity bound to them. Bohemian Switzerland National Park is part of the more extensive geomorphological set of the Elbe Sandstone Rocks. The bilateral whole of Bohemian and Saxonian Switzerland National Parks provide a representative example of thick-bedded sandstone of the Bohemian Chalk Basin. The forest communities on sandstone rocks were primary represented by acidophilous beech forests, now replaced by the spruce monocultures, and herb-rich beech forests on the basalt bedrock. The vegetation is represented by rare *Lycopodium annotinum* and *Ledum palustre*. A real phenomenon from animals and birds are *Lynx lynx*, *Bubo bubo* and *Falco peregrinus*.

The entomological biomonitoring sites were selected with cooperation of the Bohemian Switzerland National Park Administration: long-term sites 2008-2010 (Fig. 10: localities 1 - 3) and short-term sites 2010 (Fig. 10: localities 4 - 7).

The long-term monitoring sites:

1 - Pryskyřičný důl gorge

Biomonitoring site located 4 km west from Doubice village (Figs. 10, 14; orthophotomap Fig. 12, digital elevation model Fig. 13).

GPS: 50°53'54"N 14°24'12"E; 290 m a.s.l.; map field code: 5152-1-2.

Characteristics: the deep inversion gorge with bog spruce community on the ground (Figs. 4, 9) with herb layer of *Avenella flexuosa*, *Calamagrostis villosa*, *Carex brizoides*, *Carex canescens*, *Oxalis acetosella*, *Pteridium aquilinum*, *Trientalis europaea*, *Vaccinium myrtillus* and sparse *Digitalis pupurea*, in moss layer occur *Bazzania trilobata*, *Polytrichum commune*, *Sphagnum girgensohnii*, in bed of brook occur *Sphagnum riparium* and *S. fallax*.

Sampling methods: interception trap, sweep-netting.



Fig. 9. Pryskyřičný důl gorge with the used interception trap

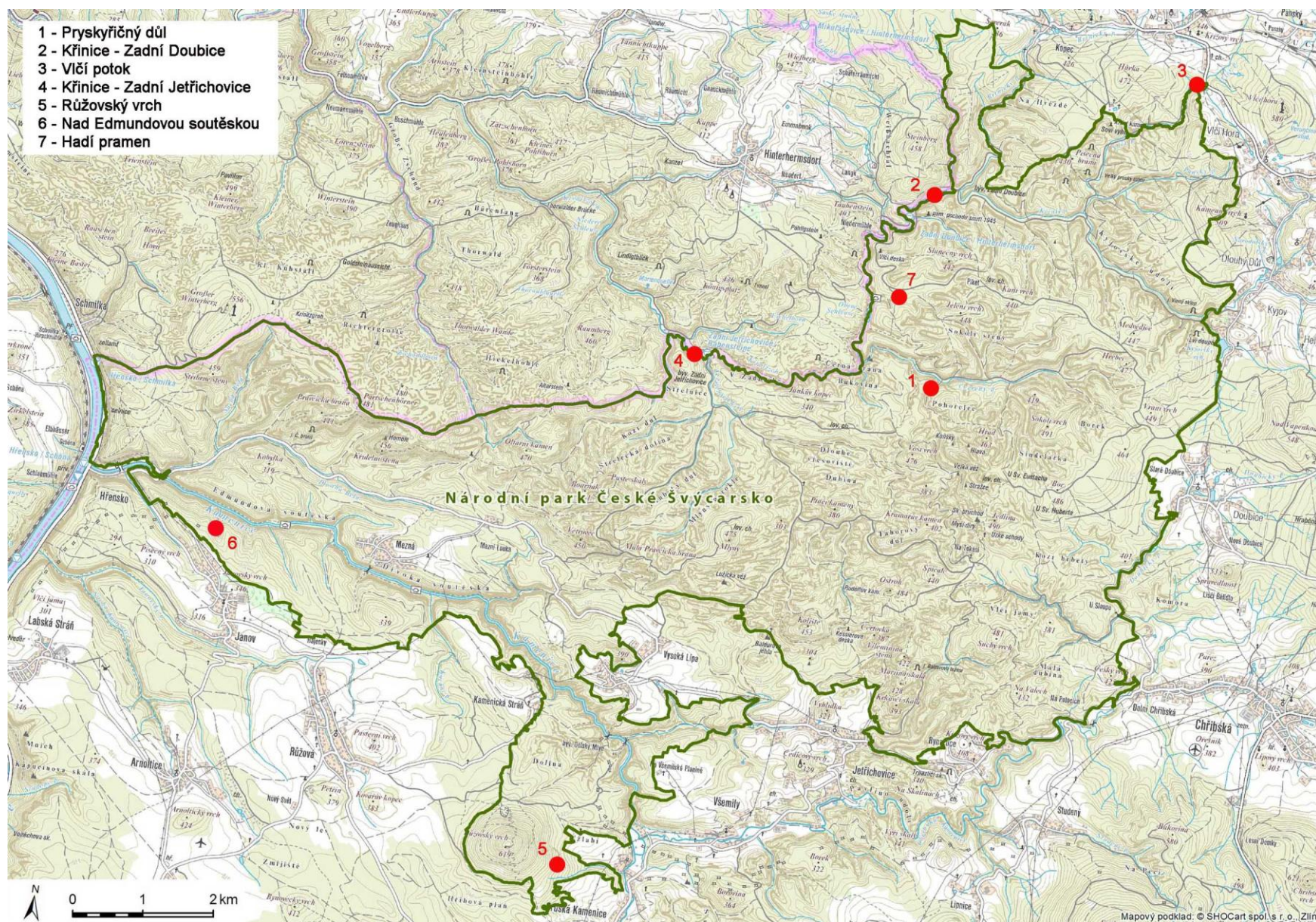


Fig. 10. Map of Bohemian Switzerland National Park with biomonitoring sites 1 – 7 indicated
 (© SHOCart spol. s r. o., Zlín; source: Bohemian Switzerland NP Administration)

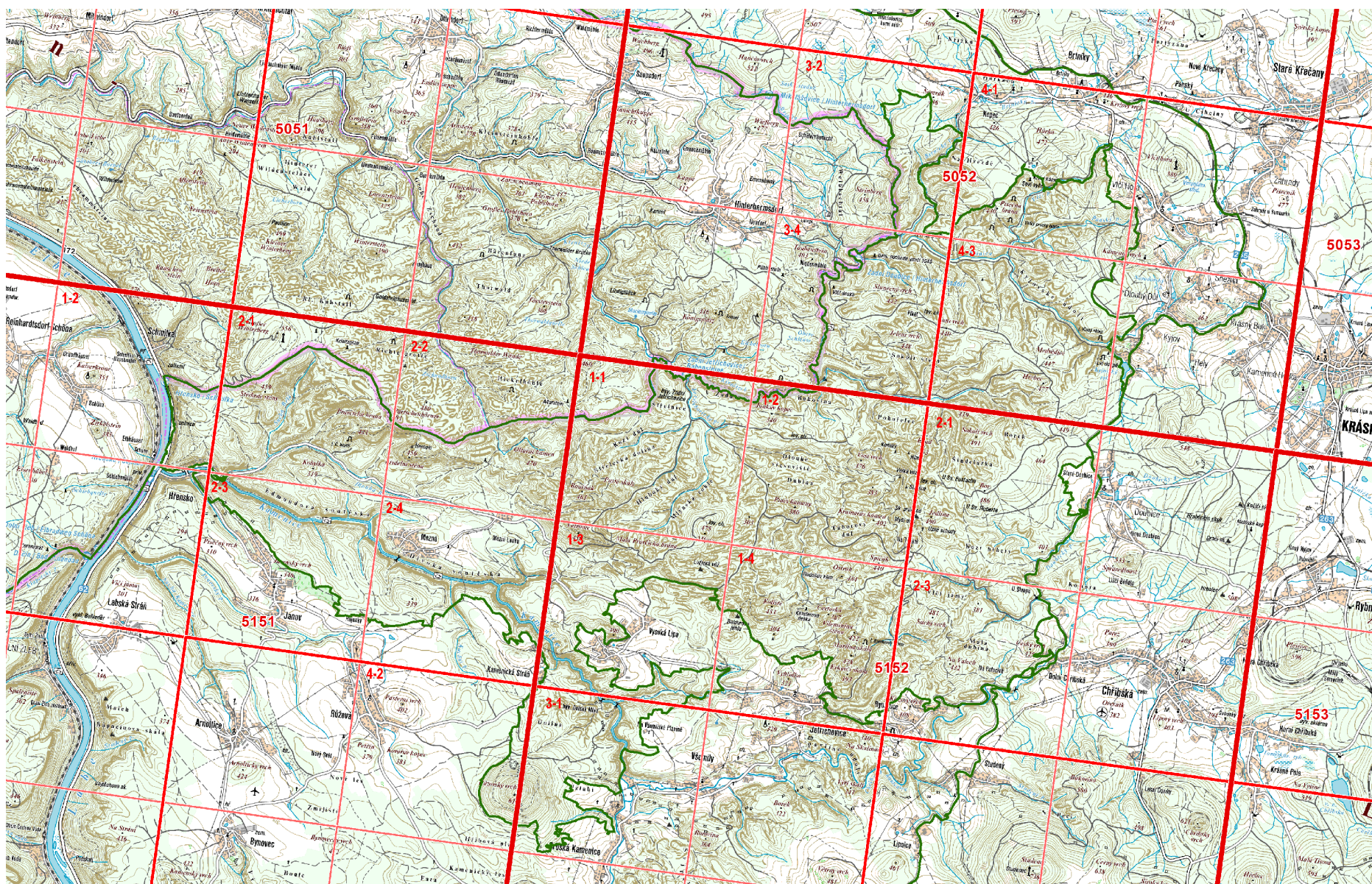


Fig. 11. The area of Bohemian Switzerland National Park with the outline of map field codes (Pruner & Míka 1996) and associated subfields (© SHOCart spol. s r. o., Zlín; source: Bohemian Switzerland NP Administration)

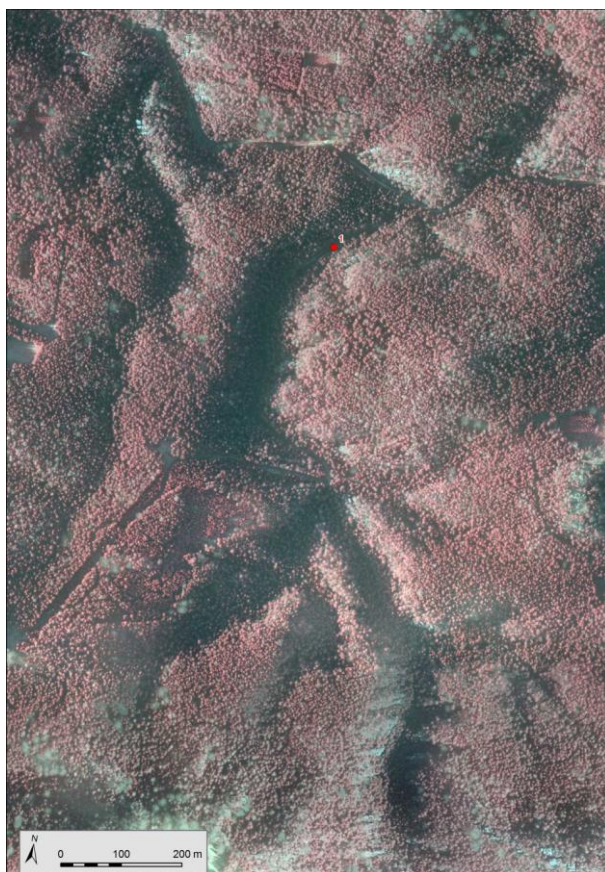


Fig. 12. Orthophotomap of Pyskyřičný důl gorge
(© LPF, Technische Universität Dresden; source: Bohemian Switzerland NP Administration)

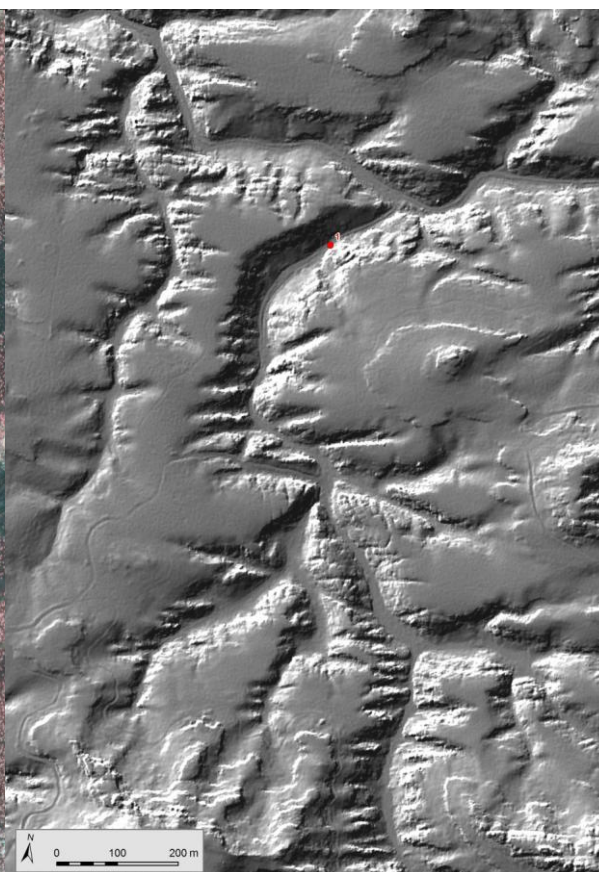


Fig.13. Digital elevation model of the area of Pyskyřičný důl gorge
(© LPF, Technische Universität Dresden; source: Bohemian Switzerland NP Administration)

2 - Křinice stream flood plain near Zadní Doubice

Monitoring site located near to the desert settlement Zadní Doubice (Figs. 10, 15) in the flood plain with winding Křinice stream (orthophotomap Fig. 16; digital elevation model Fig. 17).
GPS: 50°55'23"N 14°23'55"E; 285 m a.s.l.; map field code: 5052-3-4.

Characteristics: In Křinice flood plain (figs. 18-23) there are scattered ash-alder alluvial communities and alder carrs with dominance of *Alnus glutinosa*, and uncommon willows (*Salix fragilis*) scattered through shore-line, but with lack of shrubs. The dominant herb species include here *Urtica dioica*, *Chaerophyllum hirsutum*, *Festuca gigantea*, *Cirsium oleraceum*, *Aegopodium podagraria*, *Lamium maculatum*, *Impatiens noli-tangere*. The shores of Křinice stream are lined with dense formations of *Phalaris arundinacea*. On drier sites in longer distance from stream there occurs *Carex brizoides*, with inclusion of *Stachys sylvatica* and *Impatiens parviflora*.

The pH, conductivity and temperature of the Křinice stream on study site below confluence with the Brtnický and Bílý potok brooks (range of values obtained in the season 2010):

Locality	pH	conductivity (mS/cm)	temperature (°C)
Křinice stream (285 m a.s.l.)	7.4 - 7.5	0.13 - 0.20	5.8 - 18.4

Sampling methods: interception trap, sweep-netting.

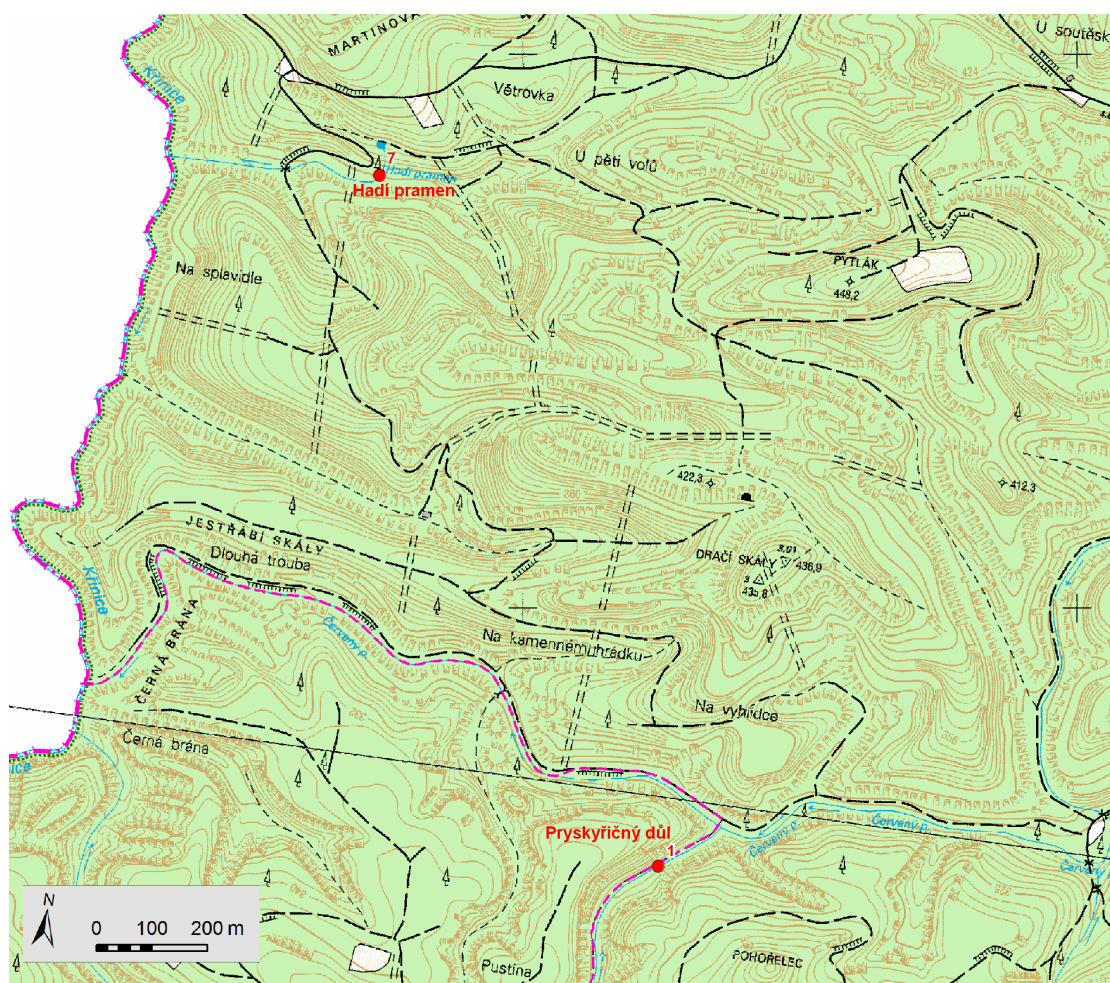


Fig. 14. Map of monitoring area: Pryskyřičný důl gorge (1) and Hadí pramen spring (7)
(© Zeměměřický úřad; source: Bohemian Switzerland NP Administration)

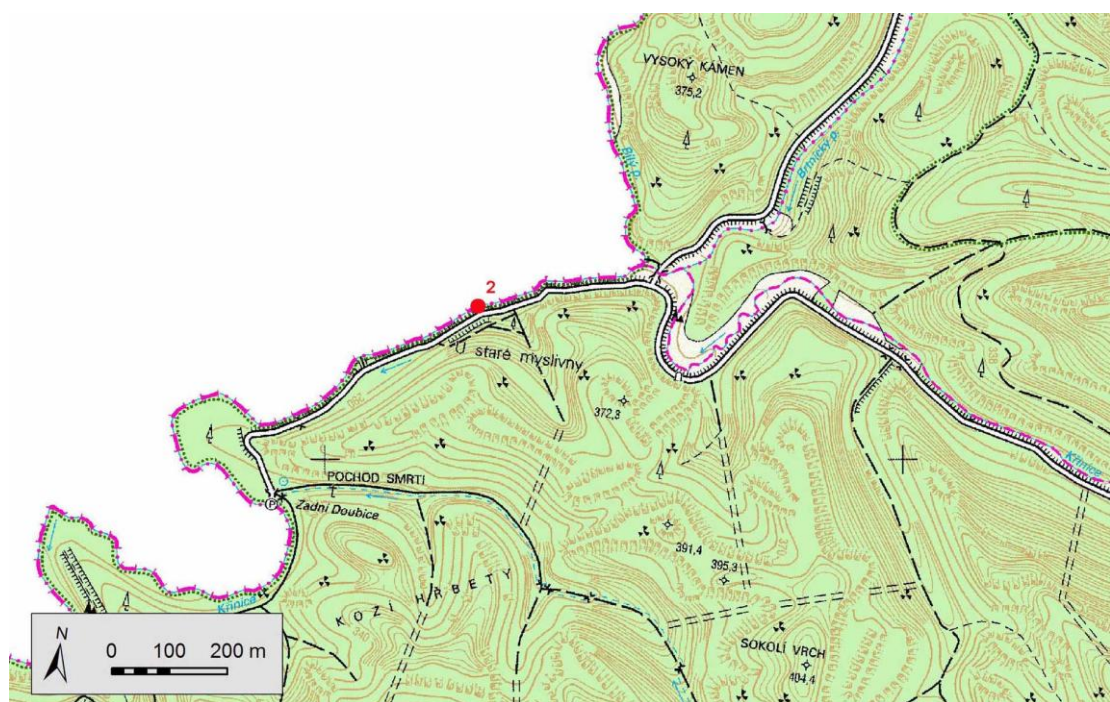


Fig. 15. Map of monitoring area: Křinice stream flood plain near Zadní Doubice (2)
(© Zeměměřický úřad; source: Bohemian Switzerland NP Administration).

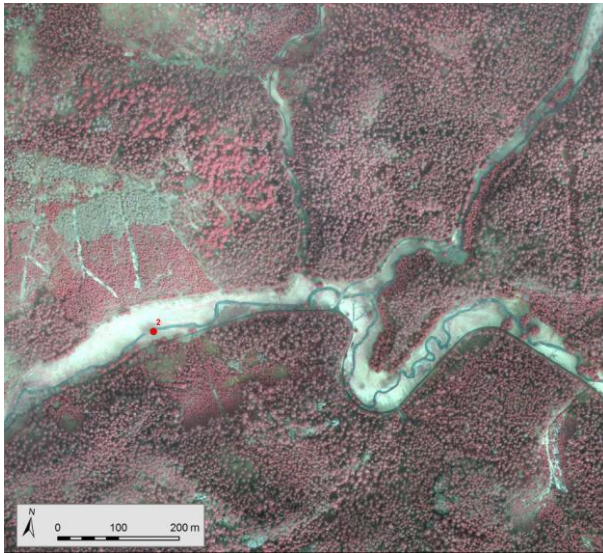


Fig. 16. Orthophotomap of the Křinice stream flood plain near Zadní Doubice
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)

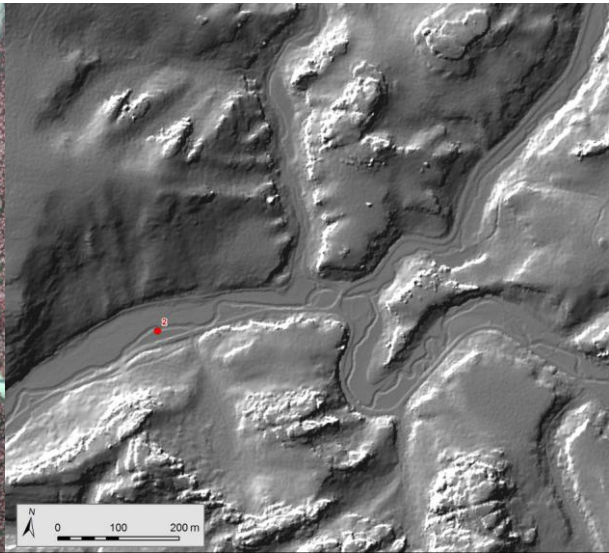


Fig. 17. Digital elevation model of the Křinice flood plain near Zadní Doubice
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)



Fig. 18. Křinice stream flood plain near Zadní Doubice (spring aspect)



Fig. 19. Křinice stream flood plain near Zadní Doubice (summer aspect)



Fig. 20. Křinice stream flood plain near Zadní Doubice (general view)



Fig. 21. Monitoring site after summer floods



Fig. 22. Křínice stream below the junction with the Bílý potok and Brtnický potok brook

Fig. 23. Křínice stream with a growth of macrophytes

3 – Vlčí potok brook flood plain

Biomonitoring site located southeast from Brtníky village in the north part of the National Park (Figs. 10, 30; orthophotomap Fig. 24, digital elevation model Fig. 25).

GPS: 50°56'30"N 14°26'56"E; 390 m a.s.l; map field code: 5052-4-1.

Characteristics: Vlčí potok flood plain covers ash-alder alluvial community (Figs. 26-29) with dominance of alder *Alnus glutinosa*, with admixtures of *Alnus incana*, *Acer pseudoplatanus* and *A. platanoides*, shrub layer consists of *Sambucus nigra* and *S. racemosa* also including the young shrubby deciduous trees. On humid situations there occur various hygrophilous herbs as *Athyrium filix-femina*, *Caltha palustris*, *Chaerophyllum hirsutum*, *Chrysosplenium oppositifolium*, *Crepis paludosa*, *Filipendula ulmaria*, *Geum rivale*, *Impatiens noli-tangere*, *Stachys sylvatica*, *Stellaria nemorum*, *Urtica dioica*, in drier parts *Carex brizoides* with *Equisetum sylvatica*.

The pH, conductivity and temperature of the Vlčí potok brook (ranges of values obtained in the season 2010):

Locality	pH	conductivity (mS/cm)	temperature (°C)
Vlčí potok brook (390 m a.s.l.)	6.5 - 6.8	0.11 - 0.17	5.7 - 15.5

Sampling methods: interception trap, sweep-netting.

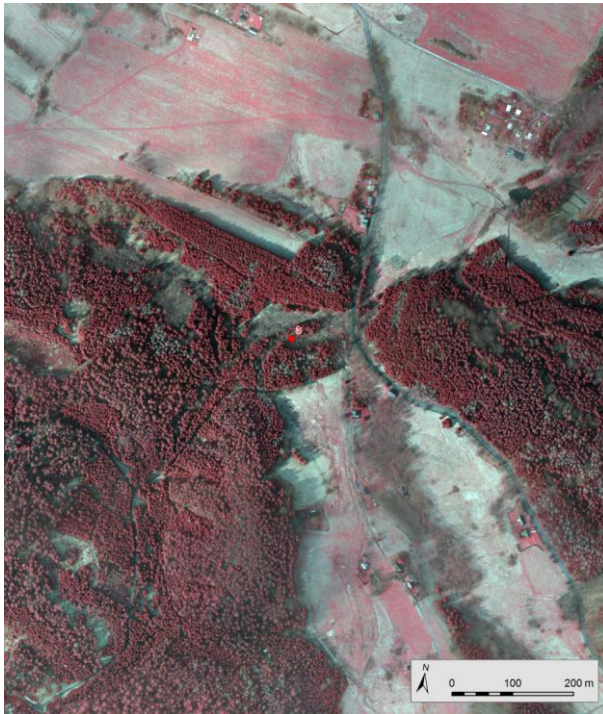


Fig. 24. Orthophotomap of the upper part of the Vlčí potok brook catchment
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)

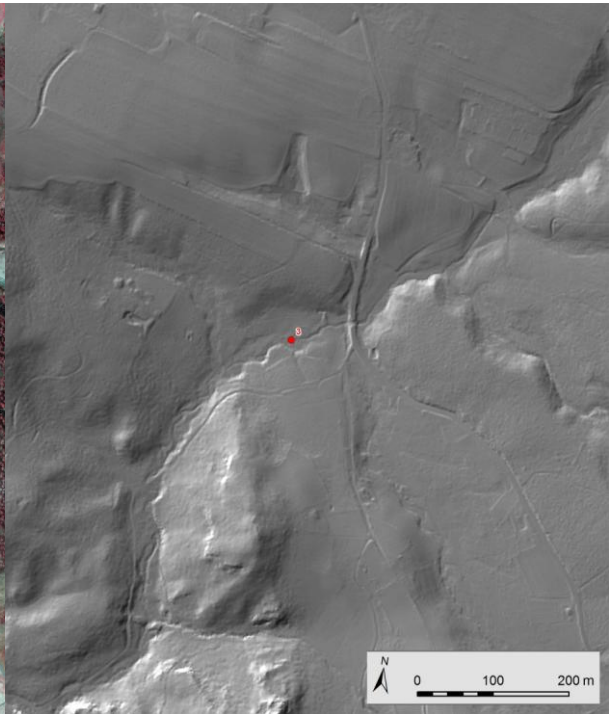


Fig. 25. Digital elevation model of the upper part of the Vlčí potok brook catchment
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)



Fig. 26. The flood plain of Vlčí potok brook (spring aspect)



Fig. 27. The flood plain of Vlčí potok brook, forest with installed Malaise trap



Fig. 28. The flood plain of Vlčí potok brook (spring aspect)



Fig. 29. The flood plain of Vlčí potok brook (summer aspect)

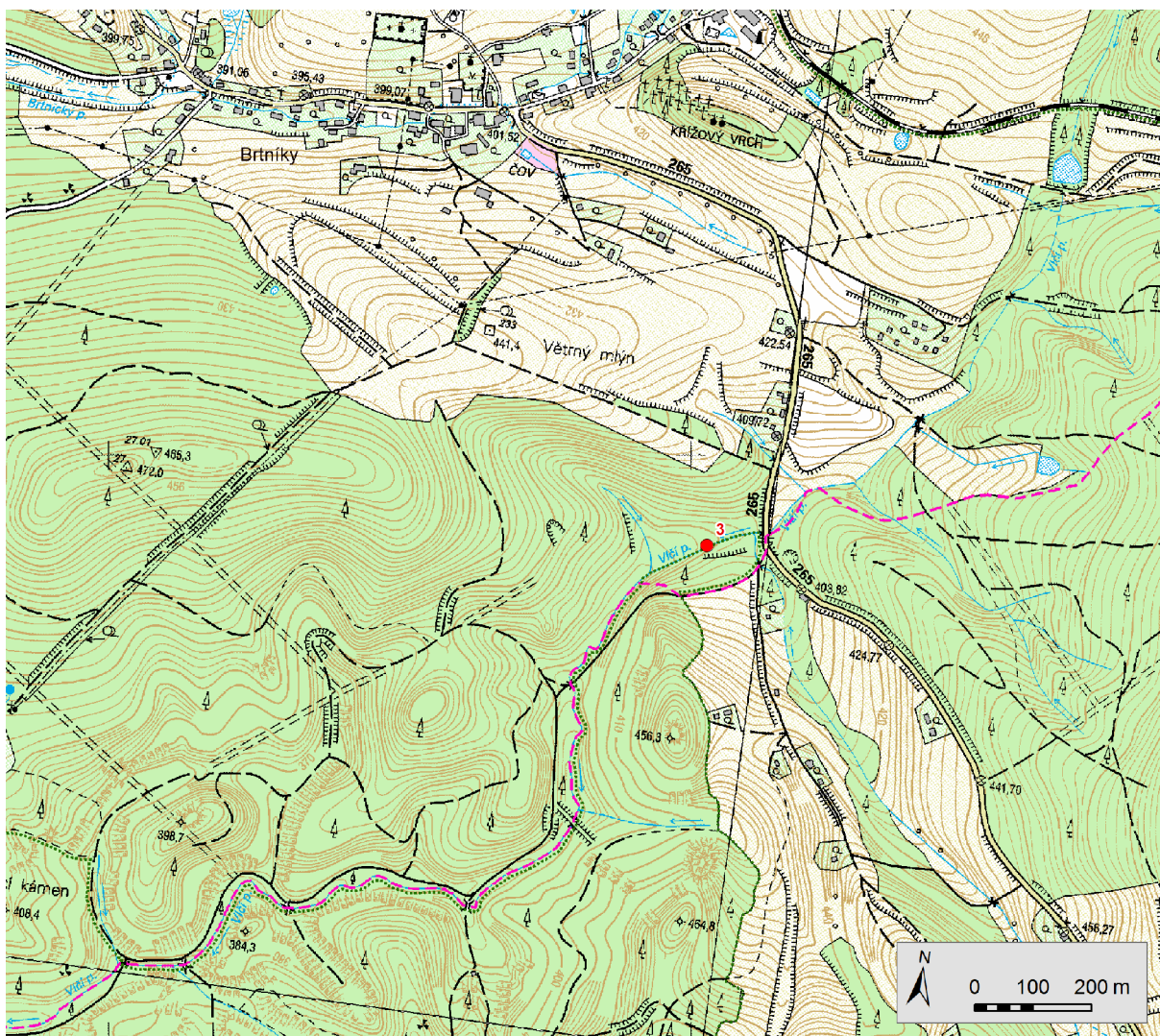


Fig. 30. Map of monitoring area: the flood plain of Vlčí potok brook (3)
(© Zeměměřický úřad; source: Bohemian Switzerland NP Administration)

Seasonal (short-term) sampling sites in 2010

4 – Křínice stream flood plain in Zadní Jetřichovice

The site is located in the area of extinct settlement Zadní Jetřichovice 4.5 km N of Vysoká Lípa (Fig. 10, 31; orthophotomap Fig. 32, digital elevation model Fig. 33).

GPS: 50°53'54"N 14°21'17"E; 240 m a.s.l.; map field code: 5152-1-1.

Characteristics: The flood plain of Křínice stream is a non-man-managed alluvial grassland with growths of *Carex brizoides*. The banks of the flow are covered with communities of *Phalaris arundinacea*, *Urtica dioica*, *Festuca gigantea* and with admixtures of *Chaerophyllum hirsutum*, *Cirsium oleraceum* as well as *Stellaria nemorum*. The occurrence of old alder-trees (*Alnus* spp.) is frequent (Fig. 34-37).

The pH, conductivity and temperature of the Křínice stream on study site in Zadní Jetřichovice (range of values obtained in the season 2010):

Locality	pH	conductivity (mS/cm)	temperature (°C)
Křínice stream (240 m a.s.l.)	6.7 - 6.9	0.12 - 0.14	8.4 - 14.9

Sampling methods: interception trap, sweep-netting, light trapping.

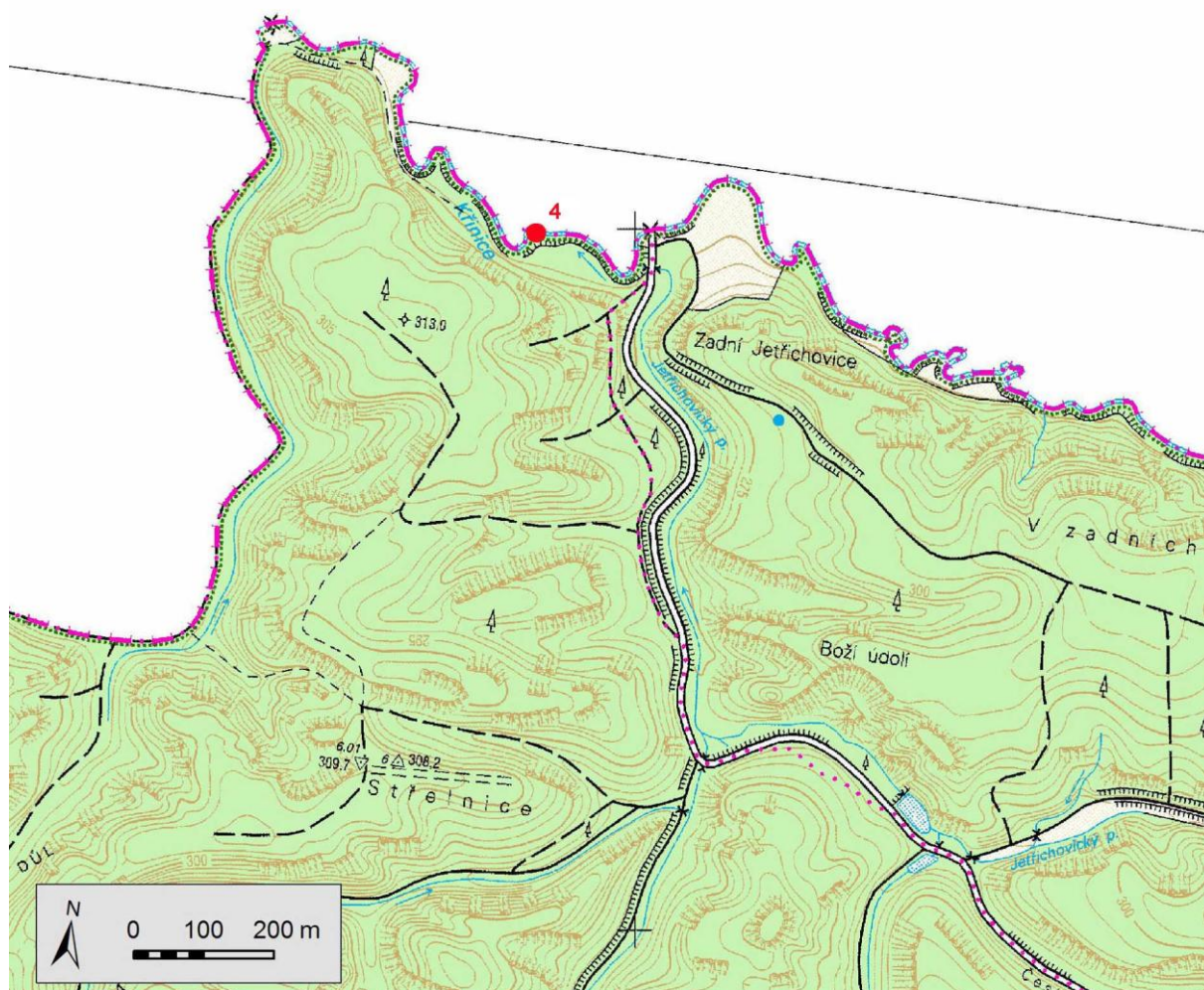


Fig. 31. Map of monitoring area: the flood plain of Křínice stream in Zadní Jetřichovice (4)
(© Zeměměřický úřad; source: Bohemian Switzerland NP Administration)

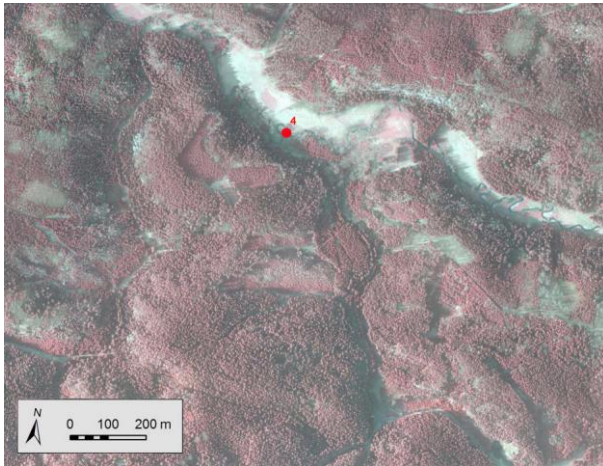


Fig. 32. Orthophotomap of Křinice stream flood plain in Zadní Jetřichovice
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)

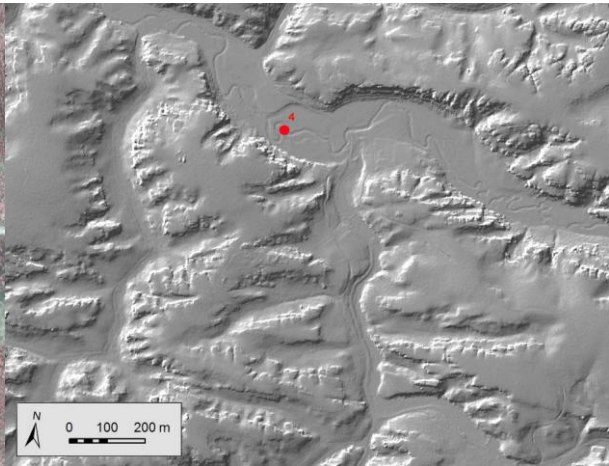


Fig. 33. Digital elevation model of Křinice stream flood plain in Zadní Jetřichovice
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)



Fig. 34. Křinice stream flood plain in Zadní Jetřichovice and used Malaise trap



Fig. 35. Křinice stream flood plain in Zadní Jetřichovice



Fig. 36. Křinice stream in Zadní Jetřichovice



Fig. 37. The interception trap in the short-term site in Zadní Jetřichovice

5 – Růžovský vrch hill

The short-term research started on the swampy spring area on the east slope of the Růžovský vrch hill (619 m a.s.l.) northwest from Srbská Kamenice village (Fig. 10, 40; orthophotomap Fig. 38; digital elevation model Fig. 39).

GPS: 50°49'52"N 14°20'27"E; 300-350 m a.s.l.; map field code: 5152-3-1.

Characteristics: The spring area and the wattercourse drainage incision on the east slope of the hill in ravine forest and herb-rich beech forest (Figs. 45). The rough terrain has a flat dip and sporadically stony surface. The tree layer is rather sparse with a canopy closure about 60%, with a dominance of *Acer pseudoplatanus* and *Fraxinus excelsior*, shrub layer consists of *Fagus sylvatica* and *Carpinus betulus*. The locality is covered with a herb layer (60 %) of *Carex brizoides*, *Rubus pedemontanus* and *Mercurialis perennis*, with admixtures of *Dryopteris filix-mas*, *Urtica dioica*, *Pulmonaria obscura*, *Melica uniflora* and *Galium odoratum*. Some saplings are as well included: *Acer platanooides* and *Fraxinus excelsior*. The unshaded spring area extends to full-grown beech forest and woody glade with saplings of *Acer pseudoplatanus*, *Fagus sylvatica* and *Picea abies* (Figs. 42-44). This rather illuminated part with accrued nutritive substances has an overgrowth of the herb layer (40%) in contrast to the spring. Some species of Macrophyta recorded here are as follows: *Mercurialis perennis*, *Urtica dioica*, *Rubus pedemontanus*, *Circea intermedia*, *Stachys sylvatica*, *Dryopteris filix-mas*, *Festuca gigantea*, *Geum urbanum*, *Rubus idaeus*, *Pulmonaria obscura*, *Stellaria nemorum*, *Veronica montana*, *Cardamine amara* and *Galium odoratum*.

The pH, conductivity and temperature of the brooklet (Fig. 41) below the spring area on eastern slopes of the Růžovský vrch hill (24.6.2010):

Locality	pH	conductivity (mS/cm)	temperature (°C)
Růžovský vrch hill, brooklet (300 m a.s.l.)	7.3	0.20	10.7

Methods of sampling: interception trap, sweep-netting.

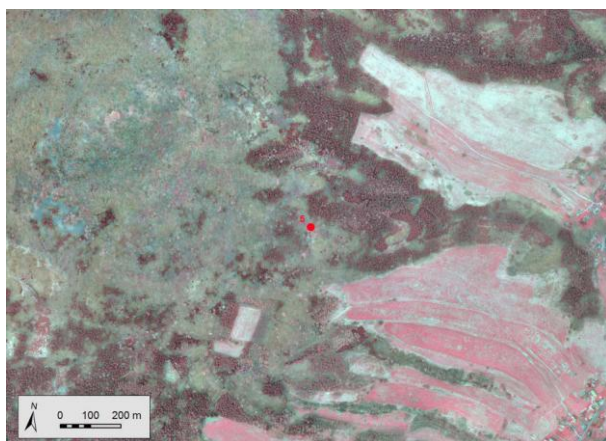


Fig. 38. Orthophotomap of the eastern slope of Růžovský vrch hill
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)

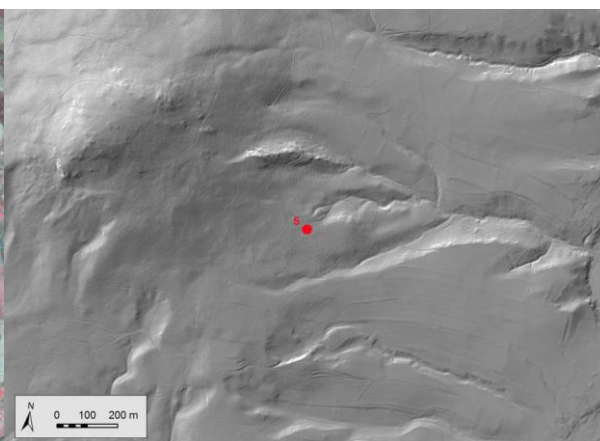


Fig. 39. Digital elevation model of the eastern slope of Růžovský vrch hill
(© LPF, Technische Universität Dresden;
source: Bohemian Switzerland NP Administration)

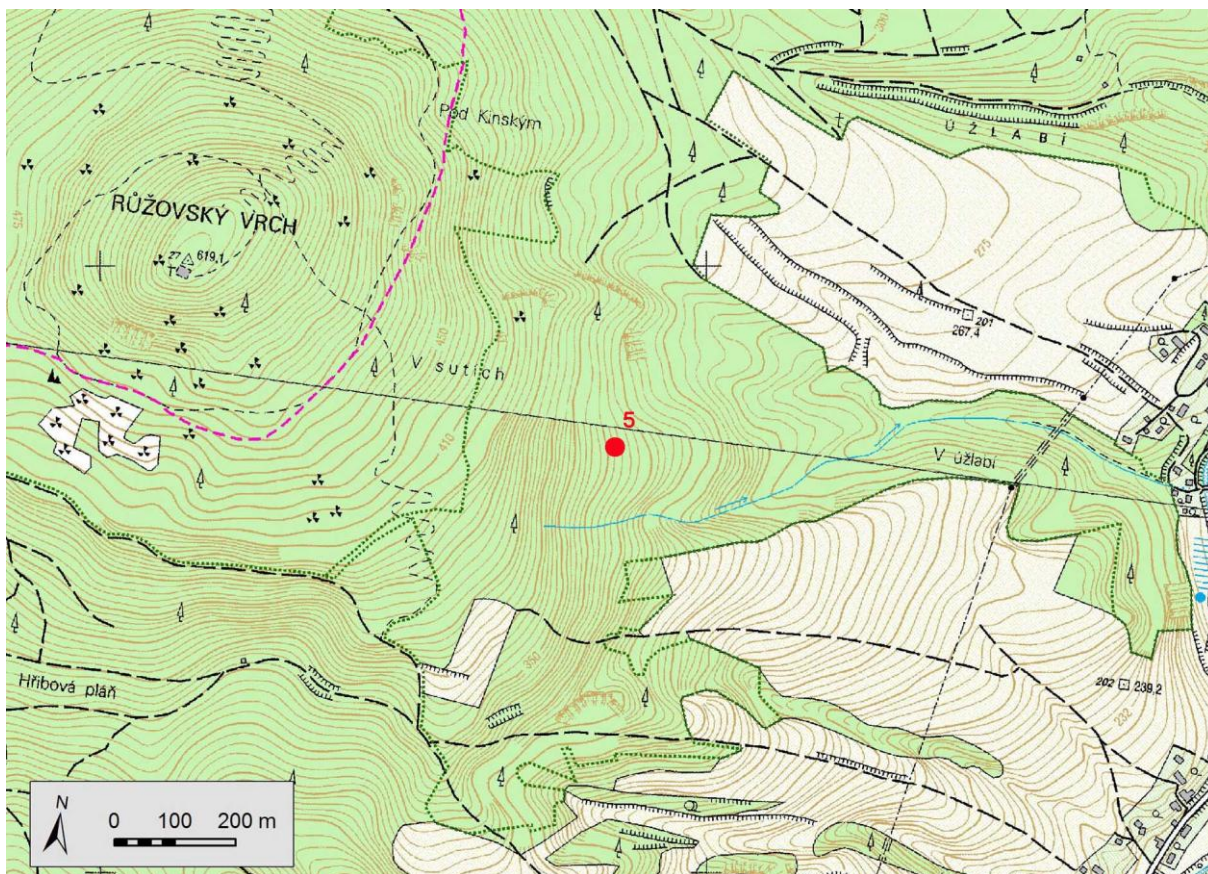


Fig. 40. Map of the monitoring site: Růžovský vrch hill (5)
(© Zeměměřický úřad; source: Bohemian Switzerland NP Administration)



Fig. 41. The spring rill on the short-term monitoring site Růžovský vrch hill



Fig. 42. Růžovský vrch hill – interception trap (summer aspect)



Fig. 43. The habitat on the Růžovský vrch hill with installed interception trap (spring aspect)



Fig. 44. Malaise trap, Růžovský vrch hill (summer aspect)

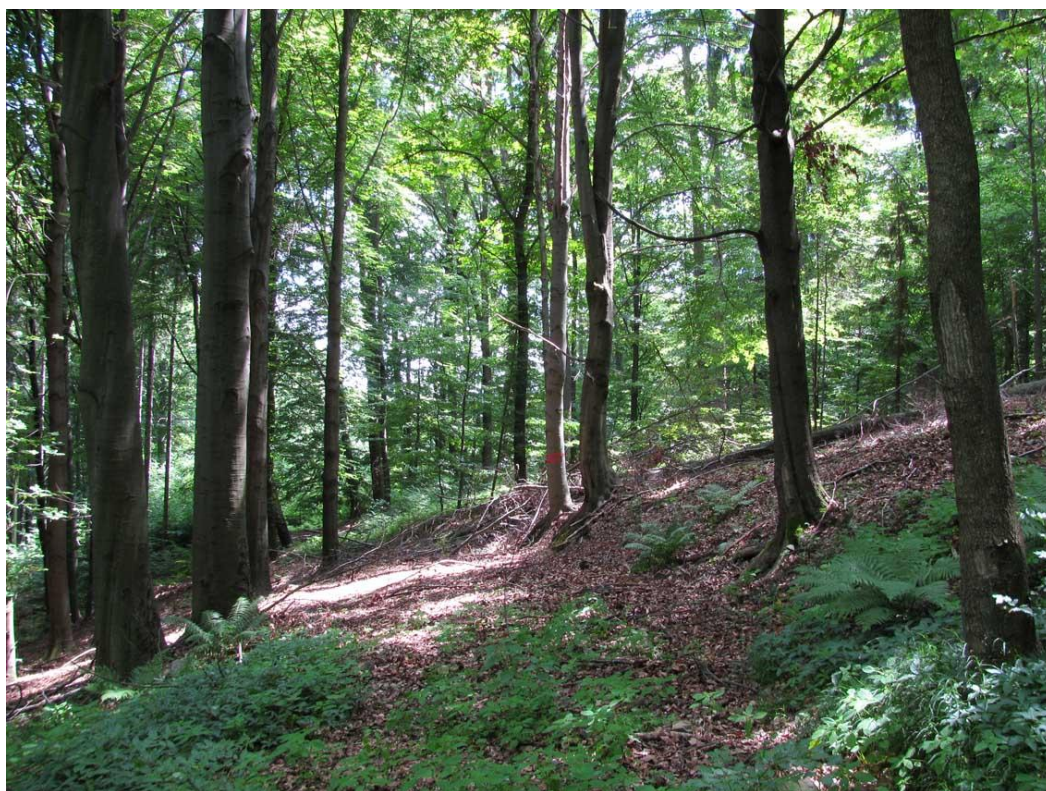


Fig. 45. Forest growth, a hillside of Růžovský vrch hill

6 - Nad Edmundovou soutěskou (above Edmundova soutěska gorge)

Monitoring site located 1 km N of Janov village near rocky edge of Edmundova soutěska gorge, southern slope (Figs. 10, 46).

GPS: 50°52'06"N 14°15'49"E; 235 m a.s.l.; map field code: 5151-2-3.

Characteristics: The slope crest below the mark of sandstone krans in the area of a forest glade with the swampy ledges, spring crevices and unnamed small brook above the Edmund's gorge (Tichá soutěska gorge). The spring area is surrounded by dense spruce and beech copses (Figs. 5, 6). The locality is covered with a herb layer (60 %) with dominance of

Chrysosplenium oppositifolium, further *Carex remota*, *Cardamine amara*, *Juncus effusus*, *Molinia coerulea*, *Dryopteris dilatata*, *Poa palustris* and in a peripheral part *Gymnocarpium dryopteris*. The moss layer is conspicuously developed (30%), mainly with *Sphagnum fallax*, *S. squarrosum* and *S. russowii*, sporadically (dampest places) *S. denticulatum*, and *S. fimbriatum* (borders of swamps). The liverworts are represented by *Scapania undulata*, *Pellia epiphylla*, mosses by *Mnium hornum*, *Polytrichum commune* and rare, endangered *Hookeria lucens* (single locality in the Labské pískovce).

The pH, conductivity and temperature of spring above the Edmundova soutěska gorge near Janov (range of values obtained in the season 2010):

Locality	pH	conductivity (mS/cm)	temperature (°C)
spring above Edmundova soutěska gorge (235 m a.s.l.)	5.5	0.25 - 0.30	7.8 - 8.7

Methods of sampling: emergent trap, sweep-netting.

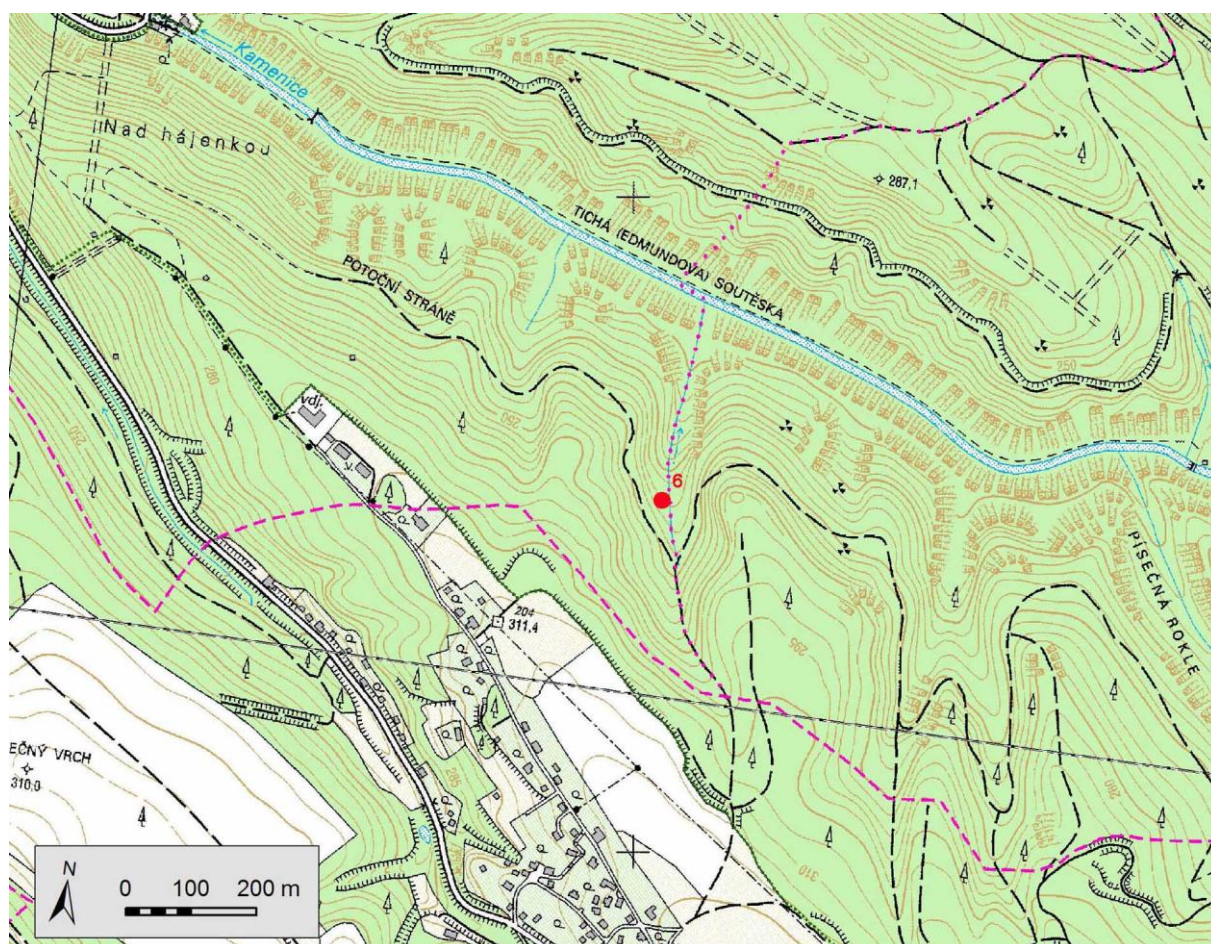


Fig. 46. Map of the monitoring site: the spring area Nad Edmundovou soutěskou (6)
(© Zeměměřický úřad; source: Bohemian Switzerland NP Administration)

7 - Hadí pramen spring

The monitoring site is below the mark of Hadí pramen spring located 1.2 km south from the extinct settlement Zadní Doubice on the small left tributary of Křínice stream (Figs. 10, 14).

GPS: 50°54'33"N 14°23'38"E; 320 m a.s.l.; map field code: 5052-3-4.

Characteristics: the spring with the wattery sandstone cliff (Figs. 8, 47) in inversion gorge with the slope spruce monoculture, 50 m bellow Hadí pramen spring. Nonshaded habitats, tree and shrub layer missing. The locality is covered with a rich herb layer (80 %) with dominance of *Chaerophyllum hirsutum* and *Chrysosplenium oppositifolium*, further admixed with not so frequent *Stachys sylvatica*, *Urtica dioica*, *Deschampsia cespitosa*, *Carex brizoides*, *Athyrium filix-femina*, *Cirsium palustre*, *Equisetum palustre*, *Veronica beccabunga*, *Calamagrostis arundiancea*, *Viola palustris* and *Epilobium hirsutum*. The moss layer is conspicuously developed (25%) with dominance of *Brachythecium rivulare*, *Plagio-mnium undulatum* and *Mnium hornum*. Not rare *Conocephallum conicum*, *Pellia endiviifolia* and *Rhizomnium punctatum* have been observed here recently. The community of the calcareous liverwort *Pellia endiviifolia* and the swampy moss *Cratoneuron filicinum* in the spring rill above the monitoring site represent a proof of rich nutritive mineral substances of the Hadí pramen spring.

The pH, conductivity and temperature of the Hadí pramen spring (range of values obtained in the season 2010):

Locality	pH	conductivity (mS/cm)	temperature (°C)
Hadí pramen spring (330 m a.s.l.)	7.3 - 7.4	0.33 - 0.34	7.0 - 7.1

Methods of sampling: emergent trap, sweep-netting.



Fig. 47. The wattery sandstone cliff below the Hadí pramen spring.

RESULTS

Faunistics

Hymenoptera (Symphyta)

Symphyta or sawflies are a group of largely phytophagous insects with larvae mostly feeding on various gymnosperms or angiosperms.

In some habitats (especially in subarctic zone) sawflies represents one of the most significant constituents of food chains. The most species are exophytophagous (feeding externally on leaves), the few of them are endophytophagous mining inside the plant tissues. In respect to the food-plant associations the sawflies include polyphagous, oligophagous or monophagous species and above all the oligophagous and monophagous species regarding the close food-plant associations are most useful bioindicators for evaluation of ecosystems. The most important are the especially sensitive species responding to any small changes in ecosystems. The non-stop monitoring of those sensitive species could us warn of progressive still noteless negative changes in the environments in advance.

The research in Bohemian Switzerland National Park ascertained 114 species of sawflies in the year 2010, totally representing about 20% of all sawfly fauna known in the Czech Republic, the three of which are vulnerable and one is endangered based on Red species list (Macek 2005). Two species are recorded as new for the Czech Republic and four species are new for Bohemia. All new species concerned were also ascertained in previous monitoring season as well as on the other localities of the Czech republic. The nomenclature is based on the Taeger (2010).

List of species recorded in 2010:

Argidae

Arge ciliaris (Linnaeus, 1767)

In the Czech Republic widely distributed and common; foodplant: *Filipendula ulmaria*, *F. vulgaris*.

Localities: Zadní Doubice (Křínice stream)

Arge cyanocrocea (Förster, 1771)

In the Czech Republic widely distributed and common; foodplant: *Rubus* spp.

Localities: Růžovský vrch.

Arge gracilicornis (Klug, 1814)

In the Czech Republic widely distributed and common species; foodplants: *Rubus idaeus*.

Localities: Růžovský vrch, Vlčí potok, Zadní Jetřichovice (Křínice stream)

Arge metallica (Klug, 1834) - vulnerable (VU)

In the Czech Republic very local and rare, occurring in swampy forests with birch formations; foodplants: *Betula*.

Localities: Vlčí potok.

***Arge nigripes* (Retzius, 1783)**

In the Czech Republic very local and uncommon species; foodplants: *Fragaria* spp., *Rosa* spp.

Localities: Vlčí potok.

***Arge ustulata* (Linnaeus, 1758)**

In the Czech Republic widely distributed and common; foodplants: *Betula*, *Salix*, *Crataegus*.

Localities: Zadní Doubice (Křínice stream)

Cimbicidae

***Abia aenea* (Klug, 1820)**

In the Czech Republic local and uncommon sylvicolous species; foodplants: *Lonicera* spp.; *Symphoricarpos*.

Localities: Zadní Jetřichovice (Křínice stream)

Pamphiliidae

***Cephalcia arvensis* Panzer, 1805**

In the Czech Republic widely distributed and common; foodplants: *Picea*.

Localities: Pryskyřičný důl, Růžovský vrch, Vlčí potok.

***Pamphilius vafer* (Linnaeus, 1767)**

In the Czech Republic widely distributed and common; foodplants: *Alnus glutinosa*.

Localities: Zadní Jetřichovice (Křínice stream).

Tenthredinidae

***Aglaostigma aucupariae* (Klug, 1817)**

Widespread and common species in the Czech Republic; foodplants: *Galium* spp.

Localities Zadní Doubice (Křínice stream)

***Aglaostigma fulvipes* (Scopoli, 1763)**

In the Czech Republic widely distributed and common; foodplants: *Galium* spp.

Localities: Zadní Doubice (Křínice stream)

***Amauronematus amplus* Konow, 1895**

In the Czech Republic widely distributed and common; foodplants: *Betula* spp.

Localities: Pryskyřičný důl.

***Amauronematus berolinensis* (Muche, 1971)**

In the Czech Republic very local and rare; foodplants: *Salix* spp.

Localities: Zadní Jetřichovice (Křínice stream)

***Amauronematus leucolenus* (Zaddach, 1883)**

In the Czech Republic very local and rare; foodplants: (*Salix* spp.). Known from Moravia only (Beneš, 1989), the first record for Bohemia.

Localities: Vlčí potok.

Ametastegia pallipes (Spinola, 1808)

In the Czech Republic widely distributed and common; foodplants: *Viola* spp.

Localities: Zadní Doubice (Hadí pramen).

Aneugmenus coronatus (Klug, 1818) – vulnerable (VU)

In the Czech Republic very local and uncommon; foodplants: *Athyrium*.

Localities: Růžovský vrch.

Anoplonyx apicalis (Brischke, 1883)

In the Czech Republic local and uncommon; foodplant: *Larix decidua*.

Localities: Pryskyřičný důl, Zadní Doubice (Křínice stream).

Anoplonyx lariciphagus (Zaddach, 1883)

Boreomontan species, in the Czech Republic local and uncommon in submontan and montan regions; foodplant: *Larix*. Hitherto known from Moravia only (Beneš, 1989). The first record for Bohemia.

Localities: Vlčí potok, Zadní Doubice (Křínice stream)

Athalia circularis (Klug, 1815)

In the Czech Republic widely distributed and common; foodplants: various herbs.

Localities: Růžovský vrch, Vlčí potok, Zadní Doubice (Křínice stream), Zadní Jetřichovice (Křínice stream).

Athalia liberta (Klug, 1815)

In the Czech Republic widely distributed and common; foodplants: Brassicaceae.

Localities: Pryskyřičný důl, Růžovský vrch.

Athalia lugens (Klug, 1815)

In the Czech Republic widely distributed and common; foodplants: Brassicaceae.

Localities: Růžovský vrch, Vlčí potok, Zadní Doubice (Křínice stream), Zadní Doubice (Hadí pramen), Zadní Jetřichovice (Křínice stream).

Athalia scutellariae Cameron, 1880 – endangered (EN)

In the Czech Republic very local and uncommon; foodplants: *Scutellaria*.

Localities: Vlčí potok.

Birka cinereipes (Klug, 1816)

In the Czech Republic widely distributed and common; foodplants: *Myosotis*.

Localities: Růžovský vrch, Vlčí potok, Zadní Doubice (Křínice stream), Zadní Jetřichovice (Křínice stream).

Caliroa cerasi (Linnaeus, 1758)

In the Czech Republic widely distributed and common; foodplants: various Rosaceae trees and shrubbs, namely on blackthorn (*Prunus spinosa*) a cherry-tree (*Prunus cerasus*).

Localities: Zadní Doubice (Křínice stream).

Caliroa annulipes (Klug, 1816)

In the Czech Republic widely distributed and common; foodplants: various deciduos tree species.

Localities: Pryskyřičný důl.

Caliria cinxia (Klug, 1816)

In the Czech Republic local and uncommon; foodplants: various deciduous trees, namely on oaks (*Quercus* spp.).

Localities: Vlčí potok.

Cladius brullei Dahlbom, 1835

In the Czech Republic widely distributed and common; foodplants: *Rubus*.

Localities: Růžovský vrch.

Cladius compressicornis (Fabricius, 1804)

In the Czech Republic widely distributed and common; foodplants: various tree species of *Rosaceae*.

Localities: Prskyřičný důl, Růžovský vrch.

Claremontia rufipes (Serville, 1823)

In the Czech Republic very local and uncommon; foodplants: elms (*Ulmus*).

Localities: Růžovský vrch.

Claremontia tenuicornis (Klug, 1816)

In the Czech Republic distributed and common; foodplants: *Filipendula*.

Localities: Vlčí potok.

Dineura testaceipes (Klug, 1816)

In the Czech Republic distributed and common; foodplants: *Crataegus*, *Sorbus*.

Localities: Zadní Doubice (Křínice stream).

Dolerus aeneus Hartig, 1837

In the Czech Republic widely distributed and common; foodplants: various grasses e.g. *Hordeum vulgare*, *Poa pratensis* etc.

Localities: Prskyřičný důl, Růžovský vrch, Zadní Doubice (Křínice stream).

Dolerus asper Zaddach, 1859

In the Czech Republic widely distributed and common; foodplants: various sedges (*Carex*).

Localities: Zadní Doubice (Křínice stream), Zadní Jetřichovice (Křínice stream).

Dolerus eversmanni Kirby, 1882

In the Czech Republic widely distributed and uncommon; foodplants: *Equisetum* spp.

Localities: Zadní Doubice (Křínice stream).

Dolerus fumosus Stephens, 1835

In the Czech Republic widely distributed and common; foodplants: Poaceae.

Localities: Zadní Doubice (Křínice stream), Zadní Jetřichovice (Křínice stream).

Dolerus gonager (Fabricius, 1771)

In the Czech Republic widely distributed and common; foodplants: Poaceae.

Localities: Zadní Doubice (Křínice stream).

Dolerus nigratus (Müller, 1776)

In the Czech Republic widely distributed and common; foodplants: Poaceae.

Localities: Zadní Doubice (Křínice stream).

Dolerus vestigialis (Klug, 1818)

In the Czech Republic widely distributed and common; foodplants: *Equisetum*.

Localities: Růžovský vrch, Zadní Doubice (Křínice stream).

Empria liturata (Gmelin, 1790)

In the Czech Republic widely distributed and common; foodplants: *Geum*, *Fragaria*.

Localities: Zadní Doubice (Křínice stream).

Empria pallimacula (Serville, 1823)

In the Czech Republic widely distributed and common; foodplants: *Filipendula*.

Localities: Vlčí potok.

Empria pumiloides Lindqvist, 1968

In the Czech Republic very local and rare, hygrophilous species associated with wetlands and marshes; foodplant: *Filipendula* spp.

Lokality: Vlčí potok.

Eriocampa ovata (Linnaeus, 1758)

In the Czech Republic widely distributed and common; foodplants: *Alnus* spp.

Localities: Vlčí potok.

Eutomostethus ephippium (Panzer, 1798)

In the Czech Republic widely distributed and common; foodplants: Poaceae.

Localities: Prskyřičný důl, Růžovský vrch, Vlčí potok, Zadní Jetřichovice (Křínice stream), Zadní Doubice (Křínice stream).

Eutomostethus luteiventris (Klug, 1816)

In the Czech Republic distributed and common; foodplants: *Juncus*.

Localities: Vlčí potok.

Eutomostethus punctatus (Konow, 1887)

In the Czech Republic very local and uncommon; foodplants: *Carex*.

Localities: Vlčí potok, Zadní Doubice (Křínice stream)

Euura atra (Jurine, 1807)

In the Czech Republic widely distributed and common; foodplants: *Salix fragilis*, *S. alba*.

Localities: Vlčí potok.

Euura mucronata (Hartig, 1837)

In the Czech Republic widely distributed and common; foodplants: *Salix caprea*, *S. aurita*.

Localities: Vlčí potok.

Macrophya alboannulata Costa, 1859

In the Czech Republic widely distributed and common; foodplants: *Sambucus*.

Localities: Vlčí potok.

Macrophya duodecimpunctata (Linnaeus, 1758)

In the Czech Republic widely distributed and common; foodplants: *Carex*.

Localities: Vlčí potok.

Macrophya recognata Zombori, 1979 – vulnerable (VU)

Very local nad rare species, in the Czech Republic known only from several localities including Bohemia Switzerland NP České Švýcarsko; foodplants: unknown.

Localities: Růžovský vrch.

Macrophya ribis (Schränk, 1781)

In the Czech Republic widely distributed and common; foodplants: *Sambucus nigra*, *S. racemosus*, *S. ebulus*).

Localities: Růžovský vrch, Vlčí potok

Metallus albipes (Cameron, 1875)

In the Czech Republic very local and rare; larvae mining in the leaf of *Rubus idaeus*.

Localities: Prýskýřický důl.

Metallus pumilus (Klug, 1816)

In the Czech Republic widely distributed and common; larvae mining in the leaf of *Rubus* spp.

Localities: Růžovský vrch

Monophadnoides rubi (Harris, 1845)

In the Czech Republic widely distributed and uncommon; foodplants: *Filipendula ulmaria*, *Rubus*, *Geum*.

Localities: Zadní Doubice (Křínice stream).

Monophadnus pallescens (Gmelin, 1790)

In the Czech Republic widely distributed and common; foodplants: *Ranunculus*.

Localities: Zadní Doubice (Křínice stream), Vlčí potok.

Monostegia abdominalis (Fabricius, 1798)

In the Czech Republic widely distributed and common; foodplants: *Lysimachia vulgaris*.

Localities: Růžovský vrch, Vlčí potok.

Monsoma pulveratum (Retzius, 1783)

In the Czech Republic widely distributed and common; foodplants: *Alnus*.

Localities: Vlčí potok, Zadní Doubice (Křínice stream), Zadní Jetřichovice (Křínice stream).

Nematinus fuscipennis (Serville, 1823)

In the Czech Republic widely distributed and common; foodplants: *Alnus*.

Localities: Zadní Doubice (Křínice stream), Zadní Jetřichovice (Křínice stream).

Nematinus luteus (Panzer, 1804)

In the Czech Republic local and uncommon; foodplants: *Alnus*.

Localities: Zadní Jetřichovice (Křínice stream).

Nematinus steini Blank, 1998

In the Czech Republic widely distributed and common; foodplants: *Alnus*.

Localities: Vlčí potok, Zadní Doubice (Křínice stream), Zadní Jetřichovice (Křínice stream).

***Nematus coeruleocarpus* Hartig, 1837**

In the Czech Republic widely distributed and common; foodplants: *Salix pentandra*, *S. purpurea*.

Localities: Zadní Doubice (Křínice stream).

***Nematus fuscomaculatus* Förster, 1854**

In the Czech Republic widely distributed, but not common; foodplants: *Salix* spp.; in the Czech Republic known from the Moravia only (Beneš, 1989), the first record for Bohemia.

Localities: Růžovský vrch.

***Nematus hypoxanthus* Förster, 1854**

In the Czech Republic widely distributed and common; foodplants: *Salix*.

Localities: Růžovský vrch.

***Nematus incompletus* Förster, 1854**

In the Czech Republic very local and rare species; foodplant (*Lathyrus pratensis*).

Localities: Vlčí potok, Zadní Doubice (Křínice stream).

***Nematus melanaspis* Hartig, 1840**

In the Czech Republic local and rare species; foodplant: *Salix* spp.

Localities: Růžovský vrch.

***Nematus myosotidis* (Fabricius, 1804)**

In the Czech Republic widely distributed and common; foodplants: *Trifolium*, *Lathyrus pratensis*.

Localities: Růžovský vrch

***Nematus notabilis* (Konow, 1903)**

In the Czech Republic very local and rare species; foodplant: unknown

Localities: Zadní Doubice (Křínice stream).

***Nematus pavidus* Serville, 1823**

In the Czech Republic widely distributed and common; foodplants: *Salix* spp.

Localities: Zadní Doubice (Křínice).

***Nematus viridissimus* Möler, 1882**

In the Czech Republic widely distributed and common; foodplants: *Alnus*.

Localities: Vlčí potok.

***Pachynematus lichtwardti* Konow, 1903**

In the Czech Republic very local and rare; foodplants: *Carex*.

Localities: Zadní Doubice (Křínice stream).

***Pachynematus obductus* (Hartig, 1837)**

In the Czech Republic widely distributed, but uncommon; foodplants: various grasses (Poaceae) and sedges (*Carex*).

Localities: Prýskyřičný důl, Zadní Jetřichovice (Křínice stream).

***Pachynematus vagus* (Fabricius, 1781)**

In the Czech Republic widely distributed and common; foodplants: *Carex nigra*.

Localities: Pryskyřičný důl, Vlčí potok.

Pachyprotasis antennata (Klug, 1817)

In the Czech Republic widely distributed and common; foodplants: *Senecio*, *Galeopsis*, *Circaea*, *Atropa* etc.

Localities: Růžovský vrch, Zadní Jetřichovice (Křinice stream), Zadní Doubice (Křinice stream).

Pachyprotasis rapae (Linnaeus, 1767)

In the Czech Republic widely distributed and common; foodplants: polyphagous on various herbs.

Localities: Pryskyřičný důl, Růžovský vrch, Vlčí potok, Zadní Jetřichovice (Křinice stream), Zadní Doubice (Křinice stream), Zadní Doubice (Hadí pramen).

Perineura rubi (Panzer, 1805)

In the Czech Republic very local and uncommon; foodplants: *Geum* and *Rubus*.

Localities: Vlčí potok.

Phyllocolpa leucapsis (Tischbein, 1846)

In the Czech Republic widely distributed and common species; foodplants: *Salix caprea*.

Localities: Vlčí potok.

Phyllocolpa leucosticta (Hartig, 1837)

In the Czech Republic widely distributed and common species; foodplants: *Salix caprea*.

Localities: Zadní Doubice (Křinice stream)

Phymatocera aterrima (Klug, 1816)

In the Czech Republic local and uncommon; foodplant: *Polygonatum*.

Localities: Vlčí potok.

Pikonema scutellatum (Hartig, 1837)

In the Czech Republic in spruce stands widely distributed and common species; foodplants: *Picea* spp.

Localities: Pryskyřičný důl, Vlčí potok.

Platycampus luridiventris (Fallén, 1808)

In the Czech Republic widely distributed and common; foodplants: *Alnus*.

Localities: Zadní Doubice (Křinice stream), Zadní Jetřichovice (Křinice stream).

Pristiphora abietina (Christ, 1791)

In the Czech Republic widely distributed and common; foodplants: *Picea*.

Localities: Zadní Jetřichovice (Křinice stream), Zadní Doubice (Křinice stream).

Pristiphora cincta Newman, 1837

In the Czech Republic local and common boreomontane species; foodplants: *Betula*, *Vaccinium myrtillus*.

Localities: Růžovský vrch, Vlčí potok.

Pristiphora compressa (Hartig, 1837)

In the Czech Republic widely distributed and common; foodplants: *Picea*.

Localities: Pryskyřičný důl, Vlčí potok, Zadní Doubice (Křinice stream).

Pristiphora coniceps Lindqvist, 1955

In Europe widely distributed and common but till recent mostly neglected species; the first record for the Czech Republic; foodplants: *Salix* spp.

Localities: Růžovský vrch.

Pristiphora conjugata (Dahlbom, 1835)

In the Czech Republic local and not common species; foodplants: *Salix* spp.

Localities: Zadní Doubice (Křinice stream).

Pristiphora leucopodia (Hartig, 1837)

In the Czech Republic widely distributed and common; foodplants: *Picea*.

Localities: Růžovský vrch, Zadní Doubice (Křinice stream).

Pristiphora melanocarpa (Hartig, 1840)

In the Czech Republic widely distributed and common; foodplants: *Betula*.

Localities: Zadní Doubice (Křinice stream).

Pristiphora mollis (Hartig, 1837)

In the Czech Republic widely distributed and common boreomontane species; foodplants: *Vaccinium myrtillus* and *Vaccinium uliginosum*.

Localities: Zadní Doubice (Křinice stream).

Pristiphora nigella (Förster, 1854)

In the Czech Republic widely distributed and common; foodplants: *Picea*.

Localities: Zadní Doubice (Křinice stream).

Pristiphora pallida (Konow, 1904)

In the Czech Republic very local and rare; foodplant: *Picea excelsa*.

Lokality: Pryskyřičný důl, Zadní Jetřichovice (water pool).

Pristiphora pallidiventrīs (Fallén, 1808)

In the Czech Republic widely distributed and common; foodplants: various shrubby and herbaceous Rosaceae (e.g. *Rubus idaeus*, *Filipendula*).

Localities: Růžovský vrch, Vlčí potok.

Pristiphora parva (Hartig, 1837)

Eurosiberian species known from various parts of Central and North Europe; the first record for Bohemia; foodplants: *Picea*.

Localities: Růžovský vrch.

Pristiphora pseudodecipiens Beneš & Křístek, 1976

Eurosiberian species known from various parts of Central and North Europe; the first record for Bohemia; foodplants: *Picea*.

Localities: Pryskyřičný důl, Vlčí potok.

Pristiphora saxesenii (Hartig, 1837)

In the Czech Republic widely distributed and common; foodplants: *Picea*.

Localities: Růžovský vrch, Pryskyřičný důl, Zadní Doubice (Křinice stream).

Pristiphora tenuicornis Lindqvist, 1955

Boreomontan species known from Scandinavia and Poland; foodplant :*Picea excelsa*; the first record for the Czech Republic.

Locality: Pyskyřičný důl, Zadní Doubice (Křínice stream).

Rhogaster chlorosoma (Benson, 1943)

In the Czech Republic widely distributed and common; foodplants: polyphagous on various deciduous shrubs and trees.

Localities: Vlčí potok, Zadní Jetřichovice (Křínice stream), Zadní Doubice (Křínice stream).

Scolioneura betuleti (Klug, 1816)

In the Czech Republic widely distributed and common; foodplants: *Betula*.

Localities: Pyskyřičný důl.

Selandria serva (Fabricius, 1793)

In the Czech Republic widely distributed and common; foodplants: various grasses (Poaceae) and sedges (*Carex*).

Localities: Zadní Jetřichovice (Křínice stream), Zadní Doubice (Křínice stream).

Stethomostus fuliginosus (Schränk, 1781)

In the Czech Republic widely distributed and common; foodplants: *Ranunculus*.

Localities: Vlčí potok.

Stromboceros delicatulus (Fallén, 1808)

In the Czech Republic widely distributed and common; foodplants: *Dryopteris*, *Athyrium*.

Localities: Růžovský vrch, Vlčí potok

Strongylogaster mixta (Klug, 1817)

In the Czech Republic widely distributed and common; foodplants: *Athyrium*.

Localities: Vlčí potok.

Taxonus agrorum (Fallén, 1808)

In the Czech Republic widely distributed and common; foodplants: *Rubus idaeus*.

Localities: : Růžovský vrch, Vlčí potok, Zadní Doubice (Křínice stream).

Tenthredo atra Linnaeus, 1757

In the Czech Republic widely distributed and common; foodplants: various herbs.

Localities: Zadní Doubice (Křínice stream).

Tenthredo colon Klug, 1817

In the Czech Republic widely distributed in submontane and montane forests; foodplants: widely polyphagous on various herbs, shrubs and trees.

Localities: Zadní Doubice (Hadí pramen).

Tenthredo ferruginea Schränk, 1776

In the Czech Republic distributed and common species; foodplants: various deciduous shrubs and ferns.

Localities: Zadní Doubice (Křínice stream).

***Tenthredo livida* Linnaeus, 1758**

In the Czech Republic widely distributed and common species; foodplants: various deciduous shrubs and ferns.

Localities: Prýskyřičný důl, Růžovský vrch, Zadní Jetřichovice (Křinice stream).

***Tenthredo mesomela* Linnaeus, 1758**

In the Czech Republic widely distributed and common; foodplants: various herbs.

Localities: Zadní Doubice (Křinice stream).

***Tenthredo rubricoxis* (Enslin, 1912)**

In the Czech Republic in submontane and montane forests; foodplants: *Senecio* spp. and *Doronicum* spp.

Localities: Vlčí potok, Zadní Doubice (Křinice stream).

***Tenthredo temula* Scopoli, 1763**

In the Czech Republic local and not common species; foodplant: polyphagous on various herbs and shrubs.

Localities: Vlčí potok.

***Tenthredo velox* Fabricius, 1798**

In the Czech Republic very local and uncommon montane species; foodplants: various herbs and deciduous shrubs.

Localities: Vlčí potok

***Tenthredopsis nassata* (Linnaeus, 1767)**

In the Czech Republic widely distributed and common; foodplants: grasses (Poaceae).

Localities: Prýskyřičný důl, Zadní Jetřichovice (Křinice stream).

***Tomostethus nigrinus* (Fabricius, 1804)**

In the Czech Republic very local and not common in mesic deciduous forests; foodplant: *Fraxinus* spp.

Localities: Růžovský vrch.

Hymenoptera (Symphyta) - summary:

Within collecting season 2010 there have been listed on the territory of Bohemian Switzerland NP 114 sawfly species belonging to four families (Argidae – 7 species; Cimbicidae – 1 species; Pamphiliidae – 2 species; Tenthredinidae – 104 species), representing in total 1/5 of all sawfly species listed in the Czech Republic, of all there three species *Arge metallica* (Klug, 1834), *Aneugmenus coronatus* (Klug, 1818) and *Macrophya recognata* Zombori, 1979 ascribed to the category vulnerable and one species (*Athalia scutellariae* Cameron, 1880) to endangered according to the Red List (Macek, 2005).

There are also new species first recorded for the Czech Republic following as: *Pristiphora confusa* Lindqvist, 1955 (Růžovský vrch); *Pristiphora coniceps* Lindqvist, 1955 (Růžovský vrch); *Pristiphora tenuicornis* Lindqvist, 1955 (Prýskyřičný důl, Zadní Doubice), as well as three species new for Bohemia: *Anoplonyx lariciphagus* (Zaddach, 1883) (Vlčí potok, Zadní Doubice (Křinice stream); *Amauronematus leucolenus* (Zaddach, 1883) (Vlčí potok); *Pristiphora parva* (Hartig, 1837) (Růžovský vrch).

Among rare and local species listed there are some of exclusive attention: *Cladius rufipes* (Serville, 1823) (Růžovský vrch); *Empria pumiloides* Lindqvist, 1968 (Vlčí potok); *Eutomostethus punctatus* (Konow, 1887) (Vlčí potok, Zadní Doubice (Křinice stream)); *Metallus albipes* (Cameron, 1875) (Pryskyřičný důl); *Nematus notabilis* (Konow, 1903) (Zadní Doubice); *Pachynematus lichtwardti* Konow, 1903 (Zadní Doubice).

The most specious of all monitoring sites proved to be the flood plain of Křinice stream near Zadní Doubice (53 species) and the flood plain of Vlčí potok brook (46 species).

Diptera: Psychodidae

The area concerned is represented by 56 species of moth flies (Psychodidae, Diptera), i.e. 33.7 % of the psychodid fauna of CZ and 40.3 % of Bohemia (Ježek 2009a). This account is documented by 200 slides (Canada balsam). Five critically endangered species (CR) were caught in 2010: *Trichomyia urbica* Curtis, 1839 - Růžák NNR; *Oomormia andrenipes* (Strobl, 1910) – Zadní Jetřichovice (Křinice stream); *Saraiella rotunda* (Krek, 1970) – Hadí pramen spring, Janov and Brtníky (Vlčí potok brook); *Szaboiella hibernica* (Tonnoir, 1940) – Hadí pramen spring; *Ulomyia undulata* (Tonnoir, 1919) – Hadí pramen spring, Růžák NNR.

Three endangered species (EN) were ascertained: *Telmatoscopus labeculosus* (Eaton, 1893) – Zadní Doubice (Křinice stream); *Pericoma (Pericoma) rivularis* Berdén, 1954 – Zadní Jetřichovice (Křinice stream); *Pneumia cubitospinosa* (Jung, 1954) – Hadí pramen spring. *Berdeniella chvojikai* Ježek, 1999 – Zadní Doubice and Zadní Jetřichovice (Křinice stream) is considered as vulnerable species (VU). Additionally, 10 apparently important species were indicated for the nature conservation, suitable for a monitoring, where conservation statutes could not be assessed recently (NS): *Katamormia bezzii* (Salamanna, 1983) – Zadní Jetřichovice (Křinice stream); *Lepiseodina rothschildi* (Eaton, 1912) – Růžák NNR; *Psychoda crassipennis* Tonnoir, 1940 – Růžák NNR, Zadní Doubice and Zadní Jetřichovice (Křinice stream); *Psychodocha itoco* (Tokunaga & Komyo, 1955) – Růžák NNR, Zadní Doubice and Zadní Jetřichovice (Křinice stream); *Berdeniella granulosa* Vaillant, 1976 – Prýskyřičný důl gorge, Zadní Doubice and Zadní Jetřichovice (Křinice stream); *B. illiesi* Wagner, 1973 – Prýskyřičný důl gorge; *B. longispinosa* (Vaillant, 1958) – Prýskyřičný důl gorge and Zadní Doubice (Křinice stream); *B. pyrenaica* Vaillant, 1976 – Zadní Jetřichovice (Křinice stream); *Clytocerus (Boreoclytocerus) longicorniculatus* Krek, 1987 – Růžák NNR, Zadní Doubice and Zadní Jetřichovice (Křinice stream); *Pericoma (Pachypericoma) formosa* Nielsen, 1964 – Prýskyřičný důl gorge. *Katamormia bezzii* (Salam.) and *Berdeniella granulosa* Vaill. are new for the fauna of the Czech Republic, *Berdeniella longispinosa* (Vaill.) is new for Bohemia. The larvae of the species majority, mentioned in the list below, are found mostly in a litoral of silting ponds, swampy meadows, wet banks of winding brooks, hygropetric substrates, rotting organic material and manure. The nomenclature used corresponds with the new check-list of moth flies (Ježek 2009a) and geographical distribution of included species is actualized mainly sensu Wagner (2007).

List of species recorded in 2010:

(M – male, F – female, MT – Malaise trap, ET – emergent trap, CZ – Czech Republic, CR – critically endangered species, EN – endangered species, VU – vulnerable species, NS – nationally scarce species, considered recently as threatened, INS – number of slide deposited in NMPC)

Trichomyia urbica Curtis, 1839 - CR

Registered in 16 European countries, not known from Pyrenaean Peninsula and Apennines, not common, xylophagous larvae are found in rotting wood of fallen trees. Critically endangered in CZ (CR).

Material: 2M, Růžák NNR, 30.6.2010, MT, INS 19278 a 19464;

***Katamormia bezzii* (Salamanna, 1983) – new for CZ, NS**

A very rare species, known only from a single locality so far, described and well illustrated by Salamanna, who revised 2 males and 2 females (Italy, Sondrio, 11.5.1903, M. Bezzi leg., deposited in MSNM) incorrectly determined by Tonnoir as *Pericoma palposa* Tonn. New for the fauna of the Czech Republic (generally northeast known locality), nationally scarce (NS).

Material: M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19437;

***Oomormia andrenipes* (Strobl, 1910) - CR**

Rather rare species registered from Great Britain, Czech Republic, Slovakia, Austria, Slovenia and Bosnia. Critically endangered in CZ (CR).

Material: M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19427;

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

Geographical distribution: Poland, Czech Republic, Austria, Switzerland and countries of Balkan Peninsula. Sporadically common, lowlands and hills.

Material: M, Pryskeřičný důl gorge, 30.6.2010, MT, INS 19360; M, Křinice river - Zadní Doubice, 30.6. 2010, MT, INS 19415;

***Lepiseodina rothschildi* (Eaton, 1912) - NS**

Rather rare European species, known from British Islands, countries along the Northern Sea, Czech Republic and Italy. Not recorded from Pyrenaean Peninsula, boreal ecoregion (Scandinavia) and Balkan. Apparently important species for the nature conservation, a monitoring is needed (NS).

Material: M, Růžák NNR, 30.6.2010, MT, INS 19469;

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

European and West-Siberian not very rare species, ranging from lowlands to mountains (Germany, Czech Republic, Poland, Austria, Bosnia and Russia – Novosibirsk region); the species has been taken as well in Abkhazia (Caucasus).

Material: M, Křinice river - Zadní Doubice, 10.6.2010, MT, INS 19287;

***Peripsychoda auriculata* (Curtis, 1839)**

European and Transcaucasian species, very common, known throughout Europe, ranging from lowlands to hilly regions, penetrating to Abkhazia and Georgia. The species has not yet been recorded from Pyrenaean Peninsula, eastwards from Poland and in southern parts of Balkan. Occasionally numerous in Malaise- and yellow pan traps.

Material: M, Pryskeřičný důl gorge, 30.6.2010, MT, INS 19357; M, Růžák NNR, 30.6.2010, MT, INS 19465;

***Telmatoscopus gressicus* (Vaillant, 1972)**

European species, sporadically common, ranging from lowlands to mountains, known from France, Czech Republic, Poland and Austria.

Material: 2M, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19386 and 19477; M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19446;

***Telmatoscopus labeculosus* (Eaton, 1893) - EN**

Species known only from British Islands, France, Belgium, Denmark and Czech Republic, endangered in CZ (EN), occurring mostly in the Hercynicum. Habitats: winding flows, spring areas and swamps.

Material: M, Křinice river - Zadní Doubice, 30.6.2010, MT, INS 19419;

***Feuerborniella obscura* (Tonnoir, 1919)**

Common European species, known from a wide spectrum of altitudes, from Central Europe penetrates along the Atlantic coast to England. Southern border of its distribution is limited by Apennines and Balkan. Larvae occur in spring areas on wet surfaces of boulders and in wet moss.

Material: F, Hadí pramen spring, 30.6.2010, ET, INS 19284; F, Pryskyřičný důl gorge, 30.6.2010, MT, INS 19363;

***Threticus lucifugus* (Walker, 1856)**

Common European species, from Central Europe penetrates along the Atlantic coast to England. Southern border of its distribution is limited by Apennines. Larvae occur in slow flows on boulders with wet moss.

Material: M, Křinice river - Zadní Doubice, 30.6.2010, MT, INS 19408; M, Křinice river - Zadní Jetřichovice, 30.6.2010, MT, INS 19320;

***Trichopsychoda hirtella* (Tonnoir, 1919)**

European species, common, from Central Europe penetrates along the Atlantic coast to England. Southern border of its distribution is limited by Apennines and Balkan. Larvae occur in rotting plants and fruits. Adults are occasionally numerous in Malaise- and yellow pan traps.

Material: F, Pryskyřičný důl gorge, 30.6.2010, MT, INS 19367; F, Křinice river - Zadní Doubice, 30.6.2010, MT, INS 19405; 2M, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19428 and 19313;

***Chodopsycha lobata* (Tonnoir, 1940)**

Common European and Transcaucasian species, known from many countries (lowlands, hills and mountains), larvae are mycobiont. Adults are occasionally numerous in Malaise- and yellow pan traps.

Material: 2F, Pryskyřičný důl gorge, 10. and 30.6.2010, MT, INS 19456 and 19372; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19296 and 19418; M, F, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19322 and 19444;

***Logima albipennis* (Zetterstedt, 1850)**

Cosmopolitan species, eurybiont, very common. Adults are occasionally numerous in Malaise- and yellow pan traps, in light traps are attracted besides as well by blue shine. Larvae are saprophagous.

Material: F, Pryskyřičný důl gorge, 30.6.2010, MT, INS 19368; F, Růžák NNR, 17.5.2010, MT, INS 19392; F, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19342; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19298 and 19413; F, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19439;

***Logima erminea* (Eaton, 1893)**

Palaeartic species, common, included frequently in samples from Malaise traps (installed in different altitudes), however, always only in a small number; registered as well in caves, but bionomy is generally a little known.

Material: F, Pryskyřičný důl gorge, 30.6.2010, MT, INS 19361; M, Křinice river - Zadní Doubice, 30.6.2010, MT, INS 19426;

Logima satchelli (Quate, 1955)

Holarctic species, common, eurybiont, collected in all suitable altitudes (rotate, emergent and light traps – inclusive of blue shine), sometimes conspicuously numerous in Malaise- and yellow pan traps (with salt solution).

Material: M, F, Pyskýřický důl gorge, 10. and 30.6.2010, MT, INS 19369 and 19455; M, F, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19394 and 19475; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19345; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19297 and 19425;

Logima zetterstedti Ježek, 1983

European and West-Siberian species, very common in places, known from wide range of altitudes. Adults are sometimes closed in sheaths of *Arum maculatum* and cause pollination. Occasionally numerous in Malaise- and yellow pan traps. Larvae are saprobiont.

Material: F, Křinice river - Zadní Doubice, 30.6.2010, MT, INS 19421;

Psycha grisescens (Tonnoir, 1922)

European species, very common, inhabiting zone from British Isles to Lithuania and Central Anatolia, the northern border lies in boreal ecoregion (Scandinavia) and southern areas occur in North Africa. Adults are occasionally numerous in Malaise- and yellow pan traps. Larvae are saprobiont.

Material: 2F, Pyskýřický důl gorge, 10. and 30.6.2010, MT, INS 19365 and 19451; M, F, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19387 and 19474; F, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19341; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19290 and 19416; M, F, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19317 and 19438;

Psychoda crassipennis Tonnoir, 1940 - NS

European species, not common, from British Islands penetrates along the Atlantic coast to Scandinavia, registered as well in Czech Republic. Larvae occur in litoral zone of polluted water reservoirs and in swampy areas. Females were recorded in sheaths of *Arum* sp. as pollinators.

Material: F, Růžák NNR, 17.5.2010, MT, INS 19393; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19292 and 19424; F, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19435;

Psychoda phalaenoides (Linnaeus, 1758)

Holarctic polyvoltine species (several generations annually), very common, known from all suitable altitudes, adults are sometimes closed in sheaths of *Arum maculatum* and cause pollination. Occasionally numerous in Malaise- and yellow pan traps. Larvae are saprobiont.

Material: M, F, Pyskýřický důl gorge, 10. and 30.6.2010, MT, INS 19359 and 19449; M, F, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19377 and 19472; F, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19331; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19291 and 19407; 2M, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19310 and 19432;

Psychodocha cinerea (Banks, 1894)

Cosmopolitan species, very common, occurring in a wide range of altitudes. Occasionally numerous in Malaise- and yellow pan traps. Larvae are saprophagous and often found in polluted WC.

Material: F, Hadí pramen spring, 17.5.2010, ET, INS 19398; F, Janov, 17.5.2010, ET, INS 19396; F, Pryskyřičný důl gorge, 30.6.2010, MT, INS 19371; F, Růžák NNR, 17.5.2010, MT, INS 19381; F, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19328; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19294 and 19409; 2F, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19323 and 19441;

Psychodocha gemina (Eaton, 1904)

European species, common, known from many countries, ranging from lowlands to mountains. Occasionally numerous in Malaise- and yellow pan traps. Larvae are saprophagous, their development is often adapted to nests of water birds.

Material: 2F, Hadí pramen spring, 10. and 30.6.2010, ET, INS 19283 and 19347; M, Janov, 30.6.2010, ET, INS 19354; 2F, Pryskyřičný důl gorge, 10. and 30.6.2010, MT, INS 19362 and 19457; M, F, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19383 and 19471; F, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19329; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19289 and 19414; 2F, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19314 and 19430;

Psychodocha itoco (Tokunaga & Komyo, 1955) – NS

Probably widely distributed species, however, so far known only from Japan, Czech Republic and Finland. Apparently important species for the nature conservation, a monitoring will be badly needed (NS).

Material: M, Růžák NNR, 17.5.2010, MT, INS 19390; 2M, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19299 and 19410; M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19445;

Psychodula minuta (Banks, 1894)

Holarctic species, very common, registered in many countries, ranging from lowlands to mountains. Occasionally numerous in Malaise- and yellow pan traps. Larvae are saprobiont, known as well from caves (bat's guano).

Material: M, Janov, 30.6.2010, ET, INS 19353; 2F, Pryskyřičný důl gorge, 10. and 30.6.2010, MT, INS 19370 and 19450; M, F, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19388 and 19473; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19338; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19295 and 19412; M, F, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19316 and 19429;

Psychomora trinodulosa (Tonnoir, 1922)

Holarctic species, very common, known from different altitudes. Occasionally numerous in Malaise-, light and yellow pan traps. This species transfers larval stadiums of *Rhabditis* Duj. (Anguillulidae) and Gamasidae mites.

Material: 2F, Pryskyřičný důl gorge, 10. and 30.6.2010, MT, INS 19366 and 19452; M, Růžák NNR, 17.5.2010, MT, INS 19389; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19332; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19288 and 19403; 2F, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19312 and 19442;

Tinearia alternata (Say, 1824)

Cosmopolitan species, very common. Occasionally numerous in Malaise- and yellow pan traps. Larvae develop not only in rotten organic substrates and excrements, but live as well in madicolous habitats. In the case of mass occurrence the larvae block the function of oldfashioned biological filters of gravel sewage works.

Material: F, Křinice river - Zadní Doubice, 30.6.2010, MT, INS 19404;

***Tinearia lativentris* (Berdén, 1952)**

Holarctic species, common in places. Occasionally numerous in light-, Malaise- and yellow pan traps. Larvae are saprophagous.

Material: F, Křinice river - Zadní Doubice, 30.6.2010, MT, INS 19406; F, Křinice river - Zadní Jetřichovice, 30.6.2010, MT, INS 19324;

***Ypsydocha setigera* (Tonnoir, 1922)**

Holarctic species, very common in places. Occasionally numerous in Malaise- and yellow pan traps. This species transfers larval stadiums of *Rhabditis* Duj. (Anguillulidae) and Gamasidae mites. Larvae are saprobiont and develop besides in manure and liquid manure – often in remarkable altitudes (pastures, slope spring areas, avalanche scars).

Material: F, Růžák NNR, 17.5.2010, MT, INS 19375; F, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19340; 2F, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19293 and 19411; F, Křinice river - Zadní Jetřichovice, 30.6.2010, MT, INS 19321;

***Berdeniella chvojikai* Ježek, 1999 - VU**

Probably Central European species, rare (Ježek 2003, 2005), vulnerable (VU) in CZ, collected only along streams in the area of Sokolov and Jeseníky PLA so far.

Material: M, Křinice river - Zadní Doubice, 10.6.2010, MT, INS 19304; M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19443;

***Berdeniella granulosa* Vaillant, 1976 – new for CZ, NS**

Species known only from the type material so far (Zentralmassiv, 800 m a.s.l., Ardèche river, SE France). Nationally scarce (NS). New species for the Czech Republic (unpublished statement).

Material: M, Pyskyřičný důl gorge, 10.6.2010, MT, INS 19460; 3M, Křinice river - Zadní Doubice, 10.6.2010, MT, INS 19302, 19305 and 19306; M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19434;

***Berdeniella illiesi* Wagner, 1973 - NS**

Rather rare European species known from Germany, Bulgaria (Wagner 2007), France, Slovakia and Czech Republic (Ježek 2009b). A nationally scarce species in CZ.

Material: M, Pyskyřičný důl gorge, 10.6.2010, MT, INS 19458;

***Berdeniella longispinosa* (Vaillant, 1958) – NS, new for Bohemia**

A rare European species collected in Spain, Austria, former Yugoslavia (Serbia and Montenegro) and Czech Republic (Jeseníky PLA), nationally scarce species in CZ, new for Bohemia.

Material: M, Pyskyřičný důl gorge, 10.6.2010, MT, INS 19453; 2M, Křinice river - Zadní Doubice, 10.6.2010, MT, INS 19303 and 19307;

***Berdeniella manicata* (Tonnoir, 1920)**

European species. Distribution: Spain, Belgium, Germany, Czech Republic, Slovakia, Italy and Balkan. Common in places, known in the Czech Republic from low altitudes (brooks in a vicinity of Prague) to high elevation (slope spring areas of Jeseníky Mts.).

Material: M, Pyskyřičný důl gorge, 10.6.2010, MT, INS 19459; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19344;

***Berdeniella matthesi* (Jung, 1954)**

Known distribution: Austria, Germany, Italy, Czech Republic and Slovakia (Ježek 2006 b). Not common species, ranging from hilly areas to mountains, inhabiting wet extreme biotopes of open-cast coal mines and dumps (Sokolov basin) with flocculated Fe.

Material: M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19335;

***Berdeniella pyrenaica* Vaillant, 1976 - NS**

European species, rare, recorded only from Spain, France and Czech Republic so far (Ježek 2006a, Ježek et al. 2008), nationally scarce, suitable for a next monitoring.

Material: M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19433;

***Berdeniella stavniensis* (Krek, 1969)**

European species, common sporadically, occurrence in Bosnia and Herzegovina, Serbia, Austria, France, Germany, Slovakia and Czech Republic. Habitats: wet deep forest ravines, slope springs and dump seepages of open-cast coal mines (Sokolov coal basin).

Material: M, Pyskýřický důl gorge, 10.6.2010, MT, INS 19463; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19343;

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

European species, rather rare, known from Belgium, Czech Republic, Denmark, Great Britain, Hungary, Ireland, Slovakia and Slovenia. Habitats: outflows of mountainous peat-bogs, forest spring areas and inundated meadows. Bionomy unknown.

Material: M, Růžák NNR, 17.5.2010, MT, INS 19380;

***Clytocerus (Boreoclytocerus) longicorniculatus* Krek, 1987 – NS**

A species hitherto known only from Bosnia and Herzegovina. This species has been probably overlooked generally in alcohol samples in the past and mistaken during an superficial identification for *C. ocellaris*. Collected at the same time from the southern Bohemia and Poland. Apparently important species for the nature conservation, a monitoring will be badly needed (NS).

Material: M, Růžák NNR, 17.5.2010, MT, INS 19379; 2M, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19309 and 19422; 2M, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19319 and 19440;

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

Geographical distribution: Central and West Europe (incl. British Isles), the northern frontier of the area of distribution lies in Finland, the southern border is limited by Apennines and Balkan, the species penetrates eastwards to Lithuania. Occasionally numerous in Malaise- and yellow pan traps. Very common species inhabiting banks of water flows and reservoirs, spring areas and swampy meadows.

Material: M, Růžák NNR, 17.5.2010, MT, INS 19374; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19334; 2M, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19301 and 19420; 2M, Křinice river - Zadní Jetřichovice, 10. and 30.6.2010, MT, INS 19311 and 19431;

***Parabazarella subneglecta* (Tonnoir, 1922)**

A species of Eurasiatic distribution, not common, known in Central European zone (from Belgium to Poland, eastwards to Lithuania). The northern border of its occurrence in Europe lies in the boreal ecoregion (Finland), the southern frontier is limited by Balkan and Anatolia.

Material: M, Růžák NNR, 17.5.2010, MT, INS 19385; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19339;

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

P. blandula Eat. is very widely distributed in Europe (well known from 30 countries), common. Recorded in Transcaucasia, Tunisia and Morocco, inhabiting quite different altitudes.

Material: 2M, Pyskyřičný důl gorge, 10. and 30.6.2010, MT, INS 19364 and 19462; M, Růžák NNR, 30.6.2010, MT, INS 19468; 2M, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19308 and 19423; M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19447;

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

European and West-Siberian species, common and abundant, recorded in more than 18 countries, known from Caucasus (Abkhazia).

Material: M, Pyskyřičný důl gorge, 10.6.2010, MT, INS 19454; 2M, Křinice river - Zadní Doubice, 10. and 30.6.2010, MT, INS 19300 and 19417;

***Pericoma (Pachypericoma) formosa* Nielsen, 1964 – NS**

European species, taxonomically underestimated, rather rare, recognized as valid at first recently, overlooked in the past. Distribution: France, Czech Republic, Slovakia, Denmark, Norway, Finland. Nationally scarce (NS).

Material: M, Pyskyřičný důl gorge, 10.6.2010, MT, INS 19461;

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

European species known from 20 countries (West Europe including British Isles, Central Europe, Apennines and Balkan), details see Ježek (2004b).

Material: 2M, Hadí pramen spring, 10. and 30.6.2010, ET, INS 19285 and 19346;

***Pericoma (Pericoma) rivularis* Berdén, 1954 - EN**

A Palaearctic species ranging from British Isles through boreal ecoregion (Scandinavia) to Far East, southern frontier is limited by Germany and Czech Republic (only Sokolov area and Železné hory Mts. – Ježek 2003), where is recognized as endangered.

Material: M, Křinice river - Zadní Jetřichovice, 30.6.2010, MT, INS 19318;

***Pneumia cubitospinosa* (Jung, 1954) - EN**

European species with following geographical distribution: Bosnia, Denmark, France, Germany, Italy, Poland, Czech Republic, Slovakia, Switzerland. Biotopes: rills of forest slopes. Endangered in CZ.

Material: 2M, Hadí pramen spring, 17.5. and 10.6.2010, ET, INS 19348 and 19402;

***Pneumia mutua* (Eaton, 1893)**

European species, abundant. Known from countries along the Northern Sea and British Islands, eastwards penetrates to Poland and Lithuania. The north border of distribution lies in Scandinavia (Finland), the south border is limited by Apennines and Balkan. In the Czech Republic common mostly in the Hercynicum (Orlické hory Mts. and Jeseníky Mts.).

Material: 2M, Hadí pramen spring, 10. and 30.6.2010, ET, INS 19279 and 19351; 3M, Janov, 17.5., 10.6. and 30.6.2010, ET, INS 19325, 19355 and 19395; 2M, NPR Růžák, 17.5. and 30.6.2010, MT, INS 19384 and 19476;

Pneumia nubila (Meigen, 1818)

Common European species, one of the most abundant members of moth flies in the Czech Republic. Registered from Spain and British Isles throughout Scandinavia, Poland and Lithuania. The south border of distribution is limited by Apennines, Balkan and Transcaucasia (Abkhazia). Recorded also from Sardinia and Canary Islands.

Material: M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19326;

Pneumia palustris (Meigen, 1804)

Mainly European species with the following geographical distribution: Austria, Belgium, Canary Islands, Czech Republic, Slovakia, Denmark, Finland, France (incl. Corsica), Germany, Great Britain, Greece, Hungary, Ireland, Lithuania, Macedonia, the Netherlands, Poland, Romania, Serbia, Sweden, and Turkey.

Material: M, Růžák NNR, 17.5.2010, MT, INS 19391;

Pneumia pilularia (Tonnoir, 1940)

A species known almost throughout Europe, abundant sporadically. Registered in a zone from Spain and British Isles to Lithuania and covering as well boreal ecoregion (Scandinavia). It has been collected also from Algeria, Morocco and Tajikistan.

Material: M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19330;

Pneumia trivialis (Eaton, 1893)

An ubiquitous European species with a large area of distribution, abundant, being among the most common species of the family, covering zone from Pyrenean Peninsula and British Islands to Poland (not recorded in Russia), penetrates to the boreal ecoregion (Scandinavia), the southern border is limited by Balkan. Occasionally numerous in Malaise- and yellow pan traps. In the Czech Republic is known a detailed occurrence from the Hercynicum (Orlické hory Mts., Jeseníky Mts., etc.).

Material: 2M, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19376 and 19470; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19327; M, Křinice river - Zadní Jetřichovice, 30.6.2010, MT, INS 19315;

Saraiella rotunda (Krek, 1970) - CR

Probably Submediterranean mountainous species, sporadically abundant, critically endangered in CZ (CR). Geographical distribution: Czech Republic, Slovakia, Poland, Italy, Serbia, Bosnia and Herzegovina.

Material: M, Hadí pramen spring, 17.5.2010, ET, INS 19400; M, Janov, 17.5.2010, ET, INS 19397; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19337;

Szaboiella hibernica (Tonnoir, 1940) - CR

European species with a zone of distribution covering Pyrenean Peninsula, British Isles, countries along Northern Sea and Central European regions, Apennines, Balkan and Transcaucasia (Abkhazia). Rather mountainous species (400 - 1470 m a.s.l., on Caucasus to 2350 m a.s.l.). Critically endangered in CZ (CR).

Material: 3M, Hadí pramen spring, 17.5., 10.6. and 30.6.2010, ET, INS 19282, 19350 and 19401;

Ulomyia cognata (Eaton, 1893)

European species, abundant in places, known from different altitudes, recorded from France, Germany, Great Britain, Austria, Slovenia, Italy, Czech Republic, Slovakia, Poland and Lithuania.

Material: M, Hadí pramen spring, 17.5.2010, ET, INS 19399; M, Pryskyřičný důl gorge, 10.6.2010, MT, INS 19448; M, Růžák NNR, 17.5.2010, MT, INS 19378; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19336; M, Křinice river - Zadní Doubice, 10.6.2010, MT, INS 19286; M, Křinice river - Zadní Jetřichovice, 10.6.2010, MT, INS 19436;

***Ulomyia fuliginosa* (Meigen, 1804)**

Generally one of the most abundant species, widely distributed, known throughout nearly all of Europe, ranging from lowlands to mountains. Data from eastern Europe are limited (only Lithuania). Occasionally numerous in Malaise- and yellow pan traps.

Material: 2M, Hadí pramen spring, 10. and 30.6.2010, ET, INS 19281 and 19349; M, Janov, 30.6.2010, ET, INS 19356; M, Pryskyřičný důl gorge, 30.6.2010, MT, INS 19358; 2M, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19373 and 19466; M, Vlčí potok brook env. Brtníky, 17.5.2010, MT, INS 19333;

***Ulomyia undulata* (Tonnoir, 1919) – CR**

European species, very rare, known from Spain, France, Belgium, Germany, Austria and recently as well from Czech Republic. Habitats: wet rocky walls (fauna hygropetrica). Critically endangered in CZ (CR).

Material: 2M, Hadí pramen spring, 10. and 30.6.2010, ET, INS 19280 and 19352; 2M, Růžák NNR, 17.5. and 30.6.2010, MT, INS 19382 and 19467.

Diptera (Psychodidae) – summary of results:

This account recorded 56 species of moth flies (Psychodidae, Diptera) from 28 genera (Psychodinae - 27, Trichomyinae – 1), i.e. 33.7 % of the psychodid fauna of CZ and 40.3 % of Bohemia (Ježek 2009a), and is documented by 200 slides (Canada balsam). Five critically endangered species (CR) were ascertained: *Trichomyia urbica* Curtis, 1839 - Růžák NNR; *Oomormia andrenipes* (Strobl, 1910) – Zadní Jetřichovice (Křinice river); *Saraiella rotunda* (Krek, 1970) – Hadí pramen spring, Janov – Edmund's gorge and Brtníky (Vlčí potok brook); *Szaboiella hibernica* (Tonnoir, 1940) – Hadí pramen spring; *Ulomyia undulata* (Tonnoir, 1919) – Hadí pramen spring and Růžák NNR. The group of endangered species (EN) is trimerous: *Telmatoscopus labeculosus* (Eaton, 1893) – Zadní Doubice (Křinice river); *Pericoma (Pericoma) rivularis* Berdén, 1954 – Zadní Jetřichovice (Křinice river); *Pneumia cubitospinosa* (Jung, 1954) – Hadí pramen spring. The Malaise traps installed in the bottom land of the Křinice stream (Zadní Doubice and Zadní Jetřichovice) fortified our results by one vulnerable species (VU) - *Berdeniella chvojikai* Ježek, 1999. The group of nationally scarce species (NS) is rich - 10 apparently important species indicated for the nature conservation:

Additionally, 10 apparently important species were indicated for the nature conservation, suitable for a monitoring, where conservation statutes could not be assessed recently (NS): *Katamormia bezzii* (Salamanna, 1983) and *Berdeniella pyrenaica* Vaillant, 1976 – Křinice river (Zadní Jetřichovice); *Lepiseodina rothschildi* (Eaton, 1912) – Růžák NNR; *Psychoda crassipennis* Tonnoir, 1940, *Psychodocha itoco* (Tokunaga & Komyo, 1955) and *Clytocerus (Boreoclytocerus) longicorniculatus* Krek, 1987 – Růžák NNR, Křinice river (Zadní Doubice and Zadní Jetřichovice); *Berdeniella granulosa* Vaillant, 1976 and *B. longispinosa* (Vaillant, 1958) – Pryskyřičný důl gorge, Křinice river (Zadní Doubice), *B. granulosa* as well in Zadní Jetřichovice; *B. illiesi* Wagner, 1973 and *Pericoma (Pachypericoma) formosa* Nielsen, 1964 – Pryskyřičný důl gorge. Some of recorded species (more than one half) are generally European in distribution (36), although some are known

only from Central Europe (1). They are followed by six Holarctic species, three European – West-Siberian species, three cosmopolitan species, three European – Transcaucasian species, three Palearctic species, one Eurasian species and one Sub-Mediterranean species. The assignment of some species with extreme distribution to well known zoogeographical elements is not single-valued: e.g. classical European species occurring in Atlantic (Canary I.) and Mediterranean (Sardinia, Corsica), N. Africa (Algeria, Tunisia, Morocco) and Asia (south of the main ridge of the Caucasus, Tajikistan) etc. Some of the collected species (6) are known generally from a very limited number of unique specimens and additional zoogeographical data still missing: *Katamormia bezzii* (Salamanna, 1983); *Psychodocha itoco* (Tokunaga & Komyo, 1955); *Berdeniella chvojkaei* Ježek, 1999; *B. granulosa* Vaillant, 1976; *B. pyrenaica* Vaillant, 1976; *Clytocerus longicorniculatus* Krek, 1987. The emergent trap installed extremely on the rocky wall of Hadí pramen spring caught i.a. 8 hygropetric species of the tribe Pericomini: *Pericoma* (*Pericoma*) *pseudoexquisita* Tonnoir, 1940; *Pneumia cubitospinosa* (Jung, 1954); *P. mutua* (Eaton, 1893); *Saraiella rotunda* (Krek, 1970); *Szaboiella hibernica* (Tonnoir, 1940); *Ulomyia cognata* (Eaton, 1893); *U. fuliginosa* (Meigen, 1804) a *U. undulata* (Tonnoir, 1919). The emergent trap in the Edmund's gorge (Janov) recorded only three hygropetric species: *Pneumia mutua* (Eat.), *Saraiella rotunda* (Krek) a *Ulomyia fuliginosa* (Meigen, 1804). Prýskyřičný důl gorge showed 23 species of moth flies in 2010 (41 species in 2008 and 20 spp. in 2009) with three rare species from the genus *Berdeniella* Vaillant, 1976: *B. granulosa* Vaillant, 1976; *B. illiesi* Wagner, 1973; *B. longispinosa* (Vaillant, 1958). The bottom land of Vlčí potok brook recorded 20 species (15/2008, 25/2009) with critically endangered species *Saraiella rotunda* (Krek, 1970). The Malaise trap in the flood plain of the Křinice stream caught 35 species – Zadní Doubice 29 and Zadní Jetřichovice 26 (16/2008 and 32/2009) with several important species: *Katamormia bezzii* (Salamanna, 1983) – Zadní Jetřichovice; *Oomormia andrenipes* (Strobl, 1910) – Zadní Jetřichovice; *Telmatoscopus labeculosus* (Eaton, 1893) – Zadní Doubice; *Psychoda crassipennis* Tonnoir, 1940 – Zadní Doubice and Zadní Jetřichovice; *Psychodocha itoco* (Tokunaga & Komyo, 1955) - Zadní Doubice and Zadní Jetřichovice; *Berdeniella chvojkaei* Ježek, 1999 - Zadní Doubice and Zadní Jetřichovice; *B. granulosa* Vaillant, 1976 - Zadní Doubice and Zadní Jetřichovice; *B. longispinosa* (Vaillant, 1958) - Zadní Doubice; *B. pyrenaica* Vaillant, 1976 - Zadní Jetřichovice; *Clytocerus longicorniculatus* Krek, 1987 - Zadní Doubice and Zadní Jetřichovice; *Pericoma rivularis* Berdén, 1954 - Zadní Jetřichovice. The inventory of moth flies carried out in the Růžák NNR recorded 26 species with some critically endangered or nationally scarce taxa: *Trichomyia urbana* Curtis, 1839; *Lepiseodina rothschildi* (Eaton, 1912); *Psychoda crassipennis* Tonnoir, 1940; *Psychodocha itoco* (Tokunaga & Komyo, 1955); *Clytocerus longicorniculatus* Krek, 1987; *Ulomyia undulata* (Tonnoir, 1919). Most interesting and important findings (2010): *Katamormia bezzii* (Salamanna, 1983) and *Berdeniella granulosa* Vaillant, 1976 are new for the fauna of the Czech Republic, *B. longispinosa* (Vaillant, 1958) is new to Bohemia. The mentioned three species were caught near Křinice river, both *Berdeniella* species also in Prýskyřičný důl gorge. Recent new faunistic records from České Švýcarsko NP were published by Ježek (2009b): *Jungiella septentrionalis* Krek, 1979 (Růžák NNR) and *Berdeniella illiesi* Wagner, 1973 (Brtnický potok brook) – new species for CZ; *Jungiella hassiaca* Wagner, 1993 (Křinice river) new to Bohemia. New localities of nationally scarce species *Berdeniella pyrenaica* Vaillant, 1976 (Brtnický potok brook) and *Pericoma formosa* Nielsen, 1964 (Brtnický most bridge, Dolský mlýn mill, Doubický potok brook and Prýskyřičný důl gorge) were in the mentioned paper added.

Trichoptera – caddisflies

The order Trichoptera (caddisflies) is the largest order of semiaquatic insects, more than 12,000 species is known worldwide. A total of 255 species of Trichoptera is known from the Czech Republic (Chvojka & Komzák 2008, Chvojka, Komzák & Špaček 2009), of them 114 species (i.e. 45 % of Czech Trichoptera fauna) have been recorded during investigation on the territory of the Bohemian Switzerland National Park so far.

Caddisflies are semiaquatic insects with immature stages (larvae and pupae) generally developing in freshwater habitats (springs and springs areas, springfed brooks, streams, rivers, lakes, peatbogs, temporary pools etc.), while adults are terrestrial, moth-like insects. Larvae and pupae constitute great deal of benthic biomass, they dominate aquatic insect community above all in running waters and have important role in food web in aquatic ecosystems; detritivores participate significantly in decomposition of dead and decaying organic matter.

Caddisflies are integral element of aquatic ecosystems, diversity and structure of caddisfly taxocoenoses reflects quality of aquatic ecosystem. Many species have close relation to water quality and/or are sensitive to water pollution, which characteristics are used in biomonitoring and water quality assessments.

List of species recorded in 2010:

Rhyacophilidae

Rhyacophila fasciata Hagen, 1859

Rhyacophila fasciata s.s. has a wide European distribution (excl. Apennine and Iberian Peninsula), other subspecies occur in Iberian Peninsula, Asia Minor, Lebanon, the Caucasus, and northern Iran. Czech Republic: common species in montane and submontane streams and brooks; common also in Bohemian Switzerland NP.

Localities in NP: Pyskýřičný důl, Vlčí potok, Bílý potok.

Rhyacophila nubila (Zetterstedt, 1840)

Distributed in eastern part of Europe, across Asia Minor to Israel and northern Iran. Czech Republic: common species in streams and rivers at lower altitude; common also in Křínice stream in Bohemian Switzerland NP.

Localities in NP: Křínice - Zadní Doubice, Křínice - Zadní Jetřichovice.

Rhyacophila obliterated McLachlan, 1863

Widely distributed in Europe and eastwards to western Siberia. Common species in mountain and submountain streams.

Localities in NP: Křínice - Zadní Doubice, Vlčí potok.

Rhyacophila polonica McLachlan, 1879

Known from central and southeastern Europe. Czech Republic: common species in montane and submontane streams and brooks; in Bohemian Switzerland NP only in northern part, these sites are situated on western border of species range.

Localities in NP: Vlčí potok, levostranný přítok Bílého potoka.

***Rhyacophila tristis* Pictet, 1834**

Known from central and southern Europe and western Anatolia. Czech Republic: common species in montane and submontane brooks; in Bohemian Switzerland NP only in northern part.

Localities in NP: Vlčí potok, Bílý potok.

Glossosomatidae

***Glossosoma boltoni* Curtis, 1834**

A European species; in the Czech Republic only locally in streams with stony bottom. For the first time recorded from the territory of Bohemian Switzerland NP.

Localities in NP: Křinice - Zadní Doubice.

***Glossosoma conformis* Neboiss, 1963**

A European species (excl. Iberian Peninsula and Iceland). Czech Republic: common species in montane and submontane brooks and streams; in Bohemian Switzerland NP only in northern part.

Localities in NP: Pryskyřičný důl, Vlčí potok, Křinice - Zadní Jetřichovice, Bílý potok.

***Agapetus fuscipes* Curtis, 1834**

Distributed in Europe, excluding Balkans and northern Scandinavia. Czech Republic: widespread but local in springs and springfed brooks.

Localities in NP: Vlčí potok, Růžovský vrch - spring area, Bílý potok.

***Agapetus ochripes* Curtis, 1834**

A European species. Czech Republic: common species in submontane streams with stony bottom.

Localities in NP: Pryskyřičný důl, Křinice - Zadní Doubice, Křinice - Zadní Jetřichovice, Bílý potok.

***Synagapetus iridipennis* McLachlan, 1879**

Distributed in central Europe and the Balkans. Czech Republic: local distribution, in some springs and springfed brooks rather abundant.

Localities in NP: levostranný přítok Bílého potoka.

***Synagapetus moselyi* (Ulmer, 1938) - zranitelný druh**

Known from central Europe, the Carpathians, and Bulgaria. Czech Republic: rare species in springs and brooks (Bohemian Switzerland NP, the environs of Prague, Železné hory Mts., Moravian Karst, Bílé Karpaty Mts.).

Localities in NP: Pryskyřičný důl, Vlčí potok, Růžovský vrch - spring area.

Ptilocolepidae

***Ptilocolepus granulatus* (Pictet, 1834)**

Widely distributed in central Europe, the Pyrenees and Apennine Peninsula. Czech Republic: local occurrence in epirhithral with *Fontinalis* and liverworts.

Localities in NP: Vlčí potok, spring area Janov.

Hydroptilidae

Hydroptila forcipata (Eaton, 1873)

Distributed in Europe, Asia Minor and the Caucasus. Czech Republic: common species in submontane streams.

Localities in NP: Křínice - Zadní Doubice, Prskyřičný důl.

Hydroptila simulans Curtis, 1834

Widely distributed in Europe, recorded also from Anatolia. In the Czech Republic, it is known only from the upper Ohře river catchment in western Bohemia. For the first time recorded from the territory of Bohemian Switzerland NP.

Localities in NP: Křínice - Zadní Jetřichovice.

Philopotamidae

Wormaldia occipitalis (Pictet, 1834)

Widely distributed in Europe. Czech Republic: very common species in springs and brooks; common also on suitable habitats in Bohemian Switzerland NP.

Localities in NP: Vlčí potok, Růžovský vrch - spring area, Mlýny - spring area.

Philopotamus ludificatus McLachlan, 1878

Known from central Europe and Italy. Czech Republic: very common species in montane streams and brooks.

Localities in NP: levostranný přítok Bílého potoka.

Philopotamus montanus (Donovan, 1813)

A European species. Czech Republic: common species in montane and submontane streams and brooks.

Localities in NP: Vlčí potok.

Philopotamus variegatus (Scopoli, 1763)

Known from Europe with exception of northernmost parts, also in Asia Minor. Czech Republic: common species in montane and submontane streams and brooks; in Bohemian Switzerland NP only occasionally in right tributaries of Křínice stream (Bílý, Brtnický and Vlčí potok brook).

Localities in NP: Vlčí potok nad ústím do Křínice.

Polycentropodidae

Holocentropus dubius (Rambur, 1842)

Distributed in Europe (excl. Iberian, Apennine and Balkan Peninsula) and Siberia. Czech Republic: common species in lentic waters with macrophytes.

Localities in NP: Křínice - Zadní Doubice.

Cyrnus trimaculatus (Curtis, 1834)

Distributed in Europe, Asia Minor and northern Iran. Czech Republic: common in flowing and standing waters.

Localities in NP: Vlčí potok.

Polycentropus flavomaculatus (Pictet, 1834)

A Palaearctic species. Czech Republic: very common species in flowing and standing waters. Localities in NP: Prýskýřičný důl, Křinice - Zadní Doubice, Křinice - Zadní Jetřichovice.

Polycentropus irroratus (Curtis, 1835) -

A European species, it occurs rarely in Bohemia in streams and rivers, or in standing waters with stony bottom; vulnerable species (Chvojka, Novák & Sedlák 2005). For the first time recorded from the territory of Bohemian Switzerland NP.

Localities in NP: Křinice - Zadní Jetřichovice.

Plectrocnemia conspersa (Curtis, 1834)

A European species. Czech Republic: very common above all in springs and brooks.

Localities in NP: Vlčí potok, Růžovský vrch - spring area, spring area Janov.

Plectrocnemia geniculata McLachlan, 1871 - vulnerable species

Known from western and central Europe and Greece. Rare species in the Czech Republic (vulnerable species - Chvojka, Novák & Sedlák 2005), there are only single records from the Šumava Mts., Krušné hory Mts., Bohemian Switzerland NP, Jizerské hory Mts., Orlické hory Mts., Mt. Králický Sněžník, Železné hory Mts.

Localities in NP: Růžovský vrch - spring area, spring area Janov.

Psychomyiidae

Lype phaeopa (Stephens, 1836)

Widely distributed in Europe, known also from Turkey and northern Iran. Czech Republic: generally common species in lotic as well as lenitic habitats.

Localities in NP: Křinice - Zadní Doubice.

Lype reducta (Hagen, 1868)

A western Palaearctic species. Czech Republic: common species, above all in brooks.

Localities in NP: Vlčí potok, Bílý potok.

Psychomyia pusilla (Fabricius, 1781)

A western Palaearctic species. Czech Republic: common species in rivers and streams in colline zone.

Localities in NP: Křinice - Zadní Doubice, Křinice - Zadní Jetřichovice.

Tinodes kimminsi Sýkora, 1962 - critically endangered species

Species is distributed from central Europe to western Asia Minor, widespread and common in southeastern Europe. It occurs on hygropetric habitats in springs and brooks. Czech Republic: This species was known only from the type locality in central Bohemia in the past; Mlýny - spring area in Bohemian Switzerland NP is only locality in the Czech Republic at present.

Localities in NP: Mlýny - spring area.

Tinodes rostocki McLachlan, 1878

Distributed in Europe (excl. Iceland, northern parts, Iberian and Apennine Peninsula). Czech Republic: very common in rhithral at medium altitude; common also in Bohemian Switzerland NP.

Localities in NP: Prýskýřičný důl, Křinice - Zadní Doubice, Vlčí potok, Křinice - Zadní Jetřichovice, Hadí pramen, Bílý potok, levostranný přítok Bílého potoka.

***Tinodes waeneri* (Linnaeus, 1758)**

A western Palaearctic species. Czech Republic: widespread in lotic and lentic habitats.

Localities in NP: Křínice - Zadní Doubice.

Hydropsychidae

***Hydropsyche instabilis* (Curtis, 1834)**

Distributed in Europe (excl. Iceland and Scandinavia), Asia Minor and northern Iran. Czech Republic: common species in submontane brooks and streams.

Localities in NP: Křínice - Zadní Doubice, Křínice - Zadní Jetřichovice, Bílý potok.

***Hydropsyche pellucidula* (Curtis, 1834)**

Known in Europe from the British Isles to Bulgaria. Czech Republic: widely distributed in running waters at medium and lower altitude.

Localities in NP: Křínice - Zadní Doubice, Bílý potok.

***Hydropsyche saxonica* McLachlan, 1884**

A European species. Czech Republic: common species in brooks and streams.

Localities in NP: Vlčí potok, Bílý potok.

***Hydropsyche siltalai* Döhler, 1963**

Known from Europe (excl. Balkan Peninsula) and southern Anatolia. Czech Republic: common species in streams and rivers.

Localities in NP: Růžovský vrch - spring area.

Phryganeidae

***Oligotricha striata* (Linnaeus, 1758)**

Distributed in central and northern Europe from the British Isles to Russia. Czech Republic: common species in stagnant waters, including dystrophic ones.

Localities in NP: Pyskyřičný důl, Křínice - Zadní Doubice, Zadní Jetřichovice - rybníček.

Brachycentridae

***Micrasema longulum* McLachlan, 1876**

Known from southwestern and central Europe. Czech Republic: common species in submontane streams.

Localities in NP: Křínice - Zadní Doubice, Křínice - Zadní Jetřichovice.

***Micrasema minimum* McLachlan, 1876**

A European species (missing in the north). Czech Republic: common species in submontane streams.

Localities in NP: Pyskyřičný důl, Křínice - Zadní Doubice, Křínice - Zadní Jetřichovice.

Goeridae

***Lithax niger* (Hagen, 1859)**

A central European species. Czech Republic: common species in montane brooks, rarely also in cold submontane springs and brooks including Bohemian Switzerland NP.

Localities in NP: Vlčí potok, Hadí pramen.

Silo pallipes (Fabricius, 1781)

Distributed in Europe (excl. Iceland and Iberian Peninsula) and western Turkey. Czech Republic: common species in brooks and streams.

Localities in NP: Křínice - Zadní Doubice, Vlčí potok, Bílý potok.

Silo piceus (Brauer, 1857)

Known from most of Europe (excl. Iceland, the British Isles, Scandinavia, and Iberian Peninsula). Czech Republic: locally distributed in upland streams.

Localities in NP: Křínice - Zadní Doubice, Křínice - Zadní Jetřichovice.

Lepidostomatidae

Lepidostoma basale (Kolenati, 1848)

A European species (excl. Iceland, Scandinavia, and Portugal). Czech Republic: common species in streams at lower altitude.

Localities in NP: Pryskyřičný důl, Křínice - Zadní Doubice, Křínice - Zadní Jetřichovice.

Lepidostoma hirtum (Fabricius, 1775)

Distributed from Europe, Asia Minor, Iran, Turkmenistan, Russia, Mongolia to Far East, Korea, and Japan. Czech Republic: common species in streams and rivers in colline and submontane zone. For the first time recorded from the territory of Bohemian Switzerland NP.

Localities in NP: Křínice - Zadní Jetřichovice.

Crunoecia irrorata (Curtis, 1834)

A European species (excl. southern Balkans). Czech Republic: very common species in springs and source areas.

Localities in NP: Růžovský vrch - spring area, spring area Janov, Hadí pramen spring.

Limnephilidae

Drusus annulatus (Stephens, 1837)

Known from Central and western Europe, including British Isles. Czech Republic: very common species in montane and cold submontane streams; in Bohemian Switzerland NP only occasionally in Vlčí and Brtnický potok brook.

Localities in NP: Vlčí potok nad ústím do Křínice.

Ecclisopteryx dalecarlica Kolenati, 1848

Distributed from Scandinavia across central Europe to the Balkans and western Anatolia. Czech Republic: common above all in submontane streams.

Localities in NP: Křínice - Zadní Doubice.

Glyptotaelius pellucidus (Retzius, 1783)

Known from Europe, western Siberia and also from Turkey. Czech Republic: common species in standing waters and also from slow flowing waters.

Localities in NP: Vlčí potok.

Limnephilus centralis Curtis, 1834

A European species. Czech Republic: very common species of montane wetlands.

Localities in NP: Pryskyřičný důl, Vlčí potok, Růžovský vrch - spring area.

***Limnephilus coenosus* Curtis, 1834**

Known from most of Europe and western Siberia. Czech Republic: common species in dystrophic waters.

Localities in NP: Pyskýřičný důl.

***Limnephilus decipiens* (Kolenati, 1848)**

Distributed in Europe (excl. Iberian and Apennine Peninsula and northernmost parts) and western Siberia. Czech Republic: common species in standing and slowly flowing waters with macrophytes; in Bohemian Switzerland NP recorded only occasionally.

Localities in NP: Křínice - Zadní Doubice.

***Limnephilus sparsus* Curtis, 1834**

A Palaearctic species. Czech Republic: generally very common species of wetlands.

Localities in NP: Vlčí potok, Růžovský vrch - spring area.

***Limnephilus stigma* Curtis, 1834**

Widely distributed in Europe and from Siberia across Far East to Alaska. Czech Republic: common species preferring standing water with dense vegetation. For the first time recorded from the territory of Bohemian Switzerland NP.

Localities in NP: Vlčí potok.

***Rhadicoleptus alpestris* (Kolenati, 1848)**

Distributed in Europe (excl. Iceland, Ireland, and Portugal) in several subspecies, nominotypical subspecies in central Europe. Czech Republic: locally, but common in peatbogs.

Localities in NP: Pyskýřičný důl, Křínice - Zadní Jetřichovice.

***Annitella obscurata* (McLachlan, 1876)**

Known from central and northern Europe, across Siberia and Mongolia to Russian Far East. Czech Republic: common species in submountain streams.

Localities in NP: Křínice - Zadní Doubice.

***Chaetopteryx major* McLachlan, 1876**

A Centraleuropean species, in Czech Republic in brooks on whole territory. For the first time recorded from the territory of Bohemian Switzerland NP.

Localities in NP: Vlčí potok.

***Chaetopteryx villosa* (Fabricius, 1798)**

Distributed in Europe from the Pyrenees to Scandinavia, in the Czech Republic (except eastern Moravia) very common species in running waters.

Localities in NP: Křínice - Zadní Doubice, Vlčí potok.

***Halesus radiatus* (Curtis, 1834)**

Known from Europe with exception of southeastern Balkans. Czech Republic: widely distributed in running waters.

Localities in NP: Křínice - Zadní Doubice.

***Hydatophylax infumatus* (McLachlan, 1865)**

Known from central and northern Europe. Czech Republic: widespread, but uncommon in brooks.

Localities in NP: Pryskeřičný důl, Bílý potok.

Micropterna lateralis (Stephens, 1837)

Distributed from the British Isles across central and northern Europe, European Russia to Siberia. Czech Republic: common species in wetlands.

Localities in NP: Vlčí potok.

Micropterna nycterobia McLachlan, 1875

Distributed in Europe (excl. northern and northwestern part), Asia Minor and Central Asia. Czech Republic: widespread, but uncommon species of wetlands; in Bohemian Switzerland NP recorded only occasionally.

Localities in NP: spring area Janov.

Micropterna sequax McLachlan, 1875

Known from Europe and Asia Minor. Czech Republic: widespread, but uncommon in wetlands.

Localities in NP: Vlčí potok, Růžovský vrch - spring area.

Parachiona picicornis (Pictet, 1834)

Distributed from northern Europe across central Europe to the northern Balkans. Czech Republic: very common species in source areas.

Localities in NP: Vlčí potok, Růžovský vrch - spring area, spring area Janov.

Potamophylax latipennis (Curtis, 1834)

Known from most of Europe (except Iceland, Portugal, Apennine Peninsula), Turkey and Siberia. Czech Republic: widely distributed in running waters.

Localities in NP: Křínice - Zadní Doubice, Křínice - Zadní Jetřichovice.

Potamophylax luctuosus (Piller et Mitterpacher, 1783)

Distributed in central and southeastern Europe and Asia Minor. Czech Republic: common species in submontane brooks and streams.

Localities in NP: Křínice - Zadní Doubice, Vlčí potok, Křínice - Zadní Jetřichovice, Bílý potok.

Potamophylax nigricornis (Pictet, 1834)

Distributed in Europe (excl. Iceland, the British Isles, and Iberian Peninsula) and western Anatolia. Czech Republic: common species in springs and springfed brooks.

Localities in NP: Růžovský vrch - spring area, Hadí pramen.

Stenophylax permistus McLachlan, 1895

Known from Europe, Asia Minor, Cyprus, and Lebanon. Czech Republic: widespread on suitable wetlands.

Localities in NP: Vlčí potok, Růžovský vrch - spring area.

Sericostomatidae

Oecismus monedula (Hagen, 1859)

Distributed from the Balkans across the Carpathians and central Europe to Belgium. Czech Republic: widespread but local in upland brooks and streams.

Localities in NP: Pryskeřičný důl, Vlčí potok, Bílý potok, levostranný přítok Bílého potoka.

Sericostoma personatum (Spence, 1826)

A European species (absent only in the Balkans and Iceland). Czech Republic: common species in springs and brooks.

Localities in NP: Vlčí potok, Růžovský vrch - spring area.

Sericostoma schneiderii (Kolenati, 1848)

The range of the species is unsufficiently known, reported from western and central Europe and the Balkans (sometimes as *S. flavicorne* auct. nec Schneider). Czech Republic: common species, above all in streams.

Localities in NP: Pyskyřičný důl, Křinice - Zadní Doubice, Křinice - Zadní Jetřichovice, Bílý potok.

Odontoceridae

Odontocerum albicorne (Scopoli, 1763)

Known from many parts of Europe, excluding northern and northeastern areas and southeastern Balkan Peninsula. Czech Republic: common species in submontane brooks and streams.

Localities in NP: Pyskyřičný důl, Vlčí potok, Křinice - Zadní Jetřichovice.

Beraeidae

Beraea maurus (Curtis, 1834)

A European species. Czech Republic: common species in springs and spring areas; common also in Bohemian Switzerland NP.

Localities in NP: Vlčí potok, Růžovský vrch - spring area, Hadí pramen, Mlýny - spring area, levostranný přítok Bílého potoka.

Beraea pullata (Curtis, 1834)

A European species (missing in Iberian Peninsula). Czech Republic: very common species in wetlands, above all in spring areas; common also in Bohemian Switzerland NP.

Localities in NP: Pyskyřičný důl, Křinice - Zadní Doubice, Vlčí potok, Křinice - Zadní Jetřichovice, Růžovský vrch - spring area, spring area Janov.

Ernodes articularis (Pictet, 1834)

Known from Europe and Asia Minor. Czech Republic: it inhabits crenal; local occurrence in Bohemia, however abundant in suitable spring areas; more common in the Moravian Carpathians.

Localities in NP: Hadí pramen, Mlýny - spring area.

Leptoceridae

Adicella filicornis (Pictet, 1834)

V Evropě (mimo Islandu, Irska, Skandinávie a Pyrenejského poloostrova) a v severní Anatolii. V ČR běžný druh pramenišť a pramenných stružek.

Localities in NP: Růžovský vrch - spring area, spring area Janov.

Adicella reducta (McLachlan, 1865)

V Evropě (mimo Islandu) a v západní Anatolii. V Čechách běžný druh potoků a říček, na Moravě lokálně.

Localities in NP: Křinice - Zadní Doubice, Vlčí potok, Křinice - Zadní Jetřichovice.

***Mystacides azurea* (Linnaeus, 1761)**

Palearktický druh, široce rozšířený ve stojatých i tekoucích vodách na celém území ČR.

Localities in NP: Křinice - Zadní Doubice.

***Athripsodes bilineatus* (Linnaeus, 1758)**

Druh obecně rozšířený v Evropě a zasahující až do Střední Asie. V ČR hojný obyvatel potoků a říček.

Localities in NP: Křinice - Zadní Doubice, Bílý potok.

Trichoptera - summary:

Altogether 1,720 specimens of 76 Trichoptera species were collected from the monitoring sites in Bohemian Switzerland NP during season 2010. Six species, namely *Glossosoma boltoni* Curtis, 1834 (Křinice stream - Zadní Doubice), *Hydroptila simulans* Curtis, 1834 (Křinice stream - Zadní Jetřichovice), *Polycentropus irroratus* (Curtis, 1835) (Křinice stream - Zadní Jetřichovice), *Lepidostoma hirtum* (Fabricius, 1775) (Křinice stream - Zadní Jetřichovice), *Limnephilus stigma* Curtis, 1834 (Vlčí potok brook), *Chaetopteryx major* McLachlan, 1876 (Vlčí potok brook), were recorded from the territory of NP for the first time. Altogether 114 species of caddisflies (i.e. 45 % of Czech fauna) is known from the territory of NP. Four species, collected in 2010, are listed in Redlist of invertebrates of the Czech Republic (Trichoptera - Chvojka, Novák & Sedlák 2005): *Tinodes kimminsi* Sýkora, 1962, critically endangered species (Mlýny - spring area), *Synagapetus moselyi* (Ulmer, 1938), vulnerable species (Pryskyřičný důl gorge, Vlčí potok brook, Růžovský vrch Hill - spring area), *Polycentropus irroratus* (Curtis, 1835), vulnerable species (Křinice stream - Zadní Jetřichovice), and *Plectrocnemia geniculata* McLachlan, 1871, vulnerable species (Růžovský vrch - spring area, Janov spring area). Other rare species are *Glossosoma boltoni* Curtis, 1834, *Micropterna nycterobia* McLachlan, 1875, *Oecismus monedula* (Hagen, 1859), and *Ernodes articularis* (Pictet, 1834).

The most diverse caddisfly taxocenose (34 species) was found at the Vlčí potok monitoring site, followed by the site Křinice stream flood plain near Zadní Doubice with 31 species. Twenty and twenty two species were collected at the sites Pryskyřičný důl gorge and Křinice stream flood plain in Zadní Jetřichovice, respectively. Eighteen, nine and six species were recorded from spring areas on the Růžovský vrch Hill, near Janov and Hadí pramen spring, respectively.

Monitoring of threatened, rare or bioindicatory species
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Hymenoptera (Symphyta)

Endangered species (EN)

Allantus coryli (Stritt, 1937)

Very rare species recorded from a few localities in Europe (Austria, Switzerland, Germany, Hungary, Slovakia, Great Britain); larvae feed on *Betula*, occasionally on *Corylus*; the first recorded in Pyskyřičný důl (Macek, 2008).

In 2010 not found in any of monitoring sites.

Athalia scutellariae Cameron, 1880

Very local and rare hygrophilous species; larvae feed on *Scutellaria*.

Localities in 2010: Vlčí potok.

Dolerus genucinctus Zaddach, 1859

Very local and rare silvicolous species; larvae feed on *Equisetum*.

In 2010 not found in any of monitoring sites.

Empria alector Benson, 1938

Very local and rare species; larvae feed on *Filipendula ulmaria*.

In 2010 not found in any of monitoring sites.

Strongylogaster filicis (Klug, 1817)

Very local and very rare species; in Central Europe known only from Germany; in the Czech Republic recorded only from northern Bohemia (Bělá u Děčína) (Macek 2006); the second find comes from Bohemian Switzerland NP (23.V.2006, Vlčí potok); larvae feed on *Pteridium aquilinum*.

In 2010 not found in any of monitoring sites.

Strongylogaster macula (Klug, 1817)

Very local and rare species; in the Czech Republic formerly known from Moravia (Beneš 1989), recently recorded also from Bohemia (Macek 2006) from various collecting sites including Bohemian Switzerland NP; larvae feed on ferns (*Dryopteris*, *Athyrium*, *Aspidium*).

In 2010 not found in any of monitoring sites.

Vulnerable species (VU)

Aglaostigma lichtwardti (Konow, 1892)

Very local and rare species; in the Czech Republic formerly known from Moravia (Beneš 1989), recently recorded also from Bohemia (Macek 2006) from various collecting sites including Bohemian Switzerland NP (Brtnický potok); larvae feed on *Petasites*.

In 2010 not found in any of monitoring sites.

Aglaostigma nebulosum (André, 1881)

Very local and rare species; in the Czech Republic formerly known from Moravia (Beneš 1989), recently recorded also from Bohemia (Macek 2006) from various collecting sites including Bohemian Switzerland NP (Brtnický potok); larvae feed on *Impatiens noli-tangere*.

In 2010 not found in any of monitoring sites.

Aneugmenus coronatus (Klug, 1818)

Very local and uncommon species; larvae feed on *Athyrium*.

In 2010 collected in Růžovský vrch, counterchecked record.

Aneugmenus temporalis (Thomson, 1871)

Very local and rare species; larvae feed on ferns (*Athyrium*, *Dryopteris*, *Aspidium*).

In 2010 not found in any of monitoring sites.

Arge metallica (Klug, 1834)

Very local and rare species; larvae feed on *Betula*.

In 2010 recorded in Vlčí potok.

Dolerus uliginosus (Klug, 1818)

Very local and rare species; larvae feed on *Juncus*.

In 2010 not found in any of monitoring sites.

Macrophya recognata Zombori, 1979

Very local and rare species; foodplant of larvae unknown.

In 2010 collected larvae on *Knautia arvensis* in Růžák NNR.

Sciapteryx consobrina Klug, 1814

Very local and rare species; larvae feed on *Ranunculus*.

In 2010 not found in any of monitoring sites.

Tenthredo moniliata Klug, 1817

Very local and rare boreomontane species; larvae feed on various herbs.

In 2010 not found in any of monitoring sites.

Diptera (Psychodidae)

Critically endangered species (CR)

Trichomyia urbica Curtis, 1839

Critically endangered species known from Bosnia, Bulgaria, Germany, Czech Republic, Slovakia and Slovenia. Xylphagous larvae are found in rotting wood of fallen trees. Locality 2010: Růžák NNR.

Oomormia andrenipes (Strobl, 1910)

Rare species (CR), known from Great Britain, Czech Republic, Slovakia, Austria, Slovenia and Bosnia. Habitats: forest spring areas. Locality 2010: Zadní Jetřichovice (Křínice river).

Saraiella rotunda (Krek, 1970)

Probably Submediterranean mountainous species (fauna hygropetrica), sporadically abundant, critically endangered (CR) in CZ. Geographical distribution: Czech Republic, Slovakia,

Poland, Italy, Serbia, Bosnia and Herzegovina. Localities 2010: Hadí pramen spring, Janov (rocky spring area near Edmund's gorge), Vlčí potok brook env. Brtníky.

Szaboarella hibernica (Tonnoir, 1940)

European hygropetric species with a zone of distribution covering Iberian Peninsula, British Isles, countries along Northern Sea and Central European areas, Apennines, Balkan and Transcaucasia (Abkhazia). Rather mountaineous species (400 - 1470 m a.s.l., in Caucasus region to 2350 m a.s.l.). Critically endangered (CR) in CZ. Locality 2010: Hadí pramen spring.

Ulomyia undulata (Tonnoir, 1919)

European species, very rare, known from Spain, France, Belgium, Germany, Austria and recently as well from Czech Republic. Habitats: wet rocky walls (fauna hygropetrica). Critically endangered (CR) in CZ. Localities 2010: Hadí pramen spring and Růžák NNR.

Endangered species (EN)

Telmatoscopus labeculosus (Eaton, 1893)

Species known only from British Islands, France, Belgium, Denmark and Czech Republic, endangered (EN) in CZ, occurring mostly in the Hercynicum. Habitats: winding flows, spring areas and swamps. Locality 2010: Křinice river - Zadní Doubice.

Pericoma (Pericoma) rivularis Berdén, 1954

A Palaearctic species (EN) ranging from British Isles through boreal ecoregion (Scandinavia) to Far East, southern frontier is limited by Germany and Czech Republic, where is recognized as endangered.

Locality 2010: Křinice river - Zadní Jetřichovice.

Pneumia cubitospinosa (Jung, 1954)

European species (EN) with following geographical distribution: Bosnia, Denmark, France, Germany, Italy, Poland, Czech Republic, Slovakia, Switzerland. Biotopes: rills of forest slopes. Locality 2010: Hadí pramen spring.

Vulnerable species (VU)

Berdeniella chvojikai Ježek, 1999

Probably Central European species, rare, vulnerable (VU) in CZ, collected only along mountainy streams. Localities 2010: Zadní Doubice and Zadní Jetřichovice (Křinice river).

Nationally scarce species (NS)

There is a complex of apparently important species indicated for the nature conservation, suitable for a monitoring, where conservation statutes could not be assessed recently (NS):

Katamormia bezzii (Salamanna, 1983)

A very rare species (NS), known only from a single locality so far (Italy, Sondro), new for the fauna of the Czech Republic (generally northest known locality): Křinice river - Zadní Jetřichovice (2010).

***Lepiseodina rothschildi* (Eaton, 1912)**

Rather rare European species (NS), known from British Islands, countries along the Northern Sea, Czech Republic and Italy. Not recorded from Iberian Peninsula, Scandinavia and Balkan. Apparently important species for the nature conservation, a monitoring is needed. Locality 2010: Růžák NNR.

***Psychoda crassipennis* Tonnoir, 1940**

European species, not common, from British Islands penetrates along the Atlantic coast to Scandinavia, registered as well in Czech Republic. Larvae occur in litoral zone of polluted water reservoirs and in swampy areas. Females were recorded in sheads of *Arum* sp. as pollinators. Localities 2010: Růžák NNR, Zadní Doubice and Zadní Jetřichovice (Křinice river).

***Psychodocha itoco* (Tokunaga & Komyo, 1955)**

Probably widely distributed species, however, so far known only from Japan, Czech Republic and Finland. Apparently important species for the nature conservation, a monitoring will be badly needed (NS). Localities 2010: Růžák NNR.

***Berdeniella granulosa* Vaillant, 1976**

Species known only from the type material (France), new for the Czech Republic, NS (unpublished statement). Localities 2010: Pyskyřičný důl gorge, Zadní Doubice and Zadní Jetřichovice (Křinice river).

***Berdeniella illiesi* Wagner, 1973**

Rather rare European species, nationally scarce (NS), known from Germany, Bulgaria, France, Slovakia and Czech Republic. Locality 2010: Pyskyřičný důl gorge.

***Berdeniella longispinosa* (Vaillant, 1958)**

A rare European species collected in Spain, Austria, former Yugoslavia (Serbia and Montenegro) and Czech Republic (Jeseníky PLA), nationally scarce in CZ, new for Bohemia. Localities 2010: Pyskyřičný důl gorge, Zadní Doubice (Křinice river).

***Berdeniella pyrenaica* Vaillant, 1976**

European species, rare, recorded only from Spain, France and Czech Republic so far, nationally scarce, suitable for a next monitoring. Locality 2010: Zadní Jetřichovice (Křinice river).

***Clytocerus (Boreoclytocerus) longicorniculatus* Krek, 1987**

A species hitherto known only from Bosnia and Herzegovina. This species has been probably overlooked and mistaken during an superficial identification for *C. ocellaris* in the past. Collected at the same time from the southern Bohemia and Poland. Apparently important species for the nature conservation, a monitoring will be badly needed (NS). Localities 2010: Růžák NNR, Zadní Doubice and Zadní Jetřichovice (Křinice river).

***Pericoma (Pachypericoma) formosa* Nielsen, 1967**

European species, taxonomically underestimated, rather rare, recognized as valid at first recently, overlooked in the past. Distribution: France, Czech Republic, Slovakia, Denmark, Norway, Finland. Nationally scarce (NS). Locality 2010: Pyskyřičný důl gorge.

Trichoptera

Critically endangered species (CR)

Tinodes kimminsi Sýkora, 1962

Species is distributed from central Europe to western Asia Minor, widespread and common in southeastern Europe. It occurs on hygropetric habitats in springs and brooks. Czech Republic: This species was known only from the type locality in central Bohemia in the past; Mlýny - spring area in Bohemian Switzerland NP is only locality in the Czech Republic at present. Localities in NP in 2010: Mlýny - spring area.

Ohrožené druhy (EN)

Hydropsyche fulvipes (Curtis, 1834)

Known from western, central and southeastern Europe. Czech Republic: rare species in springfed brooks, seldom collected in Bohemian Switzerland NP, Slavkovský les Hills, Jizerské hory Mts., Orlické hory Mts., Železné hory Mts., more frequent locally in the Bílé Karpaty Mts. In Bohemian Switzerland NP it inhabits e.g. the upper reaches of the left tributary of Bílý potok brook.

Occurrence of this species was not proved in 2010.

Hydropsyche tenuis Navás, 1932

The range of species includes central and southwestern Europe. Czech Republic: very rare species, there are only several records (Šumava Mts., Bohemian Switzerland NP, Jizerské hory Mts., Krkonoše Mts., Orlické hory Mts.) Its habitat requirements are insufficiently known, adults were collected near upland streams. In Bohemian Switzerland NP was collected only sporadically along the lowermost reaches of Bílý potok brook.

Occurrence of this species was not proved in 2010.

Zranitelné druhy (VU)

Synagapetus moselyi (Ulmer, 1938)

Known from central Europe, the Carpathians, and Bulgaria. Czech Republic: rare species in springs and brooks (Bohemian Switzerland NP, the environs of Prague, Železné hory Mts., Moravian Karst, Bílé Karpaty Mts.).

Localities in NP in 2010: Prýskyřičný důl, Vlčí potok brook, Růžovský vrch - spring area.

Hydroptila vectis Curtis, 1834

A western Palaearctic species reported from most of Europe, also known from North Africa, the Near East and Pakistan. Czech Republic: rare species in Bohemia, more frequent findings only from southeastern Moravia.

This species was found only in 2010.

Wormaldia pulla (McLachlan, 1878)

Known from central Europe, Apennine and Balkan Peninsula. Czech Republic: rare species, collected individually along submontane brooks and streams in Bohemian Switzerland NP, Jizerské hory Mts., Orlické hory Mts., Mt. Králický Sněžník. In Bohemian Switzerland NP known only from Bílý potok brook and its left tributary below Severák.

Occurrence of this species was not proved in 2010.

***Polycentropus irroratus* (Curtis, 1835)**

A European species, it occurs rarely in Bohemia in streams and rivers, or in standing waters with stony bottom; vulnerable species (Chvojka, Novák & Sedlák 2005). For the first time recorded from the territory of Bohemian Switzerland NP in 2010.

Localities in NP in 2010: Křinice - Zadní Jetřichovice.

***Plectrocnemia geniculata* McLachlan, 1871**

Known from western and central Europe and Greece. Rare species in the Czech Republic (vulnerable species - Chvojka, Novák & Sedlák 2005), there are only single records from the Šumava Mts., Krušné hory Mts., Bohemian Switzerland NP, Jizerské hory Mts., Orlické hory Mts., Mt. Králický Sněžník, Železné hory Mts.

Localities in NP in 2010: Růžovský vrch - spring area, spring area Janov.

Bionomics of the select insect taxa

Food-plant associations of sawfly (Hymenoptera: Symphyta) larvae

The most important source data on foodplants of sawflies are based on collecting and rearing larvae. Of total 114 species collected in 2010 on the territory of Bohemian Switzerland NP the larvae of 10 species were collected on their foodplants and 8 of them were reared to adults.

Fig. 48. The illustrations of the sawfly larvae selected:

		
<i>Anoplonyx lariciphaga</i> Bohemian Switzerland NP Prýskyřičný důl gorge	<i>Arge gracilicornis</i> Bohemian Switzerland NP Vlčí potok brook flood plain	<i>Macrophya recognata</i> Bohemian Switzerland NP Růžovský vrch hill
		
<i>Strongylogaster filicis</i> Bohemian Switzerland NP Vlčí potok brook flood plain	<i>Tenthredo mandibularis</i> NP České Švýcarsko Zadní Doubice	<i>Tenthredo trabeata</i> Bohemian Switzerland NP Zadní Jetřichovice

The review of sawfly species (Hymenoptera: Symphyta) with foodplants associated
(Tab. 1 – 6).

Tab. 1. Zadní Doubice (Křínice stream flood plain) (long-term monitoring site)

Genus	Species	Food plant
Aglaostigma	aucupariae Klug	Galium
Aglaostigma	fulvipes Scopoli	Galium
Anoplonyx	apicalis Brichke	Rosa
Anoplonyx	lariciphagus Zaddach	Larix
Arge	ciliaris Linnaeus	Filipendula
Arge	ustulata Linné	Betula, Salix
Athalia	circularis Klug	various herbs
Athalia	lugens Klug	Brassicaeae
Birka	cinereipes Klug	Myosotis
Caliroa	cerasi Linné	deciduous trees
Dineura	testaceipes Klug	Crataegus, Sorbus
Dolerus	aeneus Hartig	Poaceae
Dolerus	asper Zaddach	Carex
Dolerus	eversmanni Kirby	Equisetum
Dolerus	fumosus Stephens	Poaceae
Dolerus	gonager Fabricius	Poaceae
Dolerus	nigratus Müller	Poaceae
Dolerus	vestigialis Klug	Equisetum
Nesoselandria	morio Fabricius	Mnium
Empria	litrata Gmelin	Geum
Eutomostethus	ephippium Panzer	Poaceae
Eutomostethus	punctatus Konow	Carex
Macrophya	duodecimpunctata Linnaeus	Poaceae
Monophadnoides	rubi Harris	Rubus
Monophadnus	pallens Gmelin	Ranunculus
Monsoma	pulveratum Retzius	Alnus
Nematus	fuscipennis Serville	Alnus
Nematus	steini Blank	Alnus
Nematus	coeruleocarpus Hartig	Salix
Nematus	incompletus Förster	Lathyrus
Nematus	notabilis Konow	unknown
Nematus	pavidus Serville	Salix
Pachynematus	lichtwardti Konow	Poaceae
Pachyprotasis	antennata Klug	various herbs
Pachyprotasis	rapae Linnaeus	various herbs
Phyllocolpa	leucosticta Hartig	Salix
Platycampus	luridiventris Fallén	Alnus
Pristiphora	abietina Christ	Picea
Pristiphora	compressa Hartig	Picea
Pristiphora	conjugata Dahlbom	Salix
Pristiphora	leucopodia Hartig	Picea

Pristiphora	melanocarpa Hartig	Betula
Pristiphora	mollis Hartig	Vaccinium myrtillus
Pristiphora	nigella Förster	Picea
Pristiphora	saxeseni Hartig	Picea
Pristiphora	tenuicornis Lindqvist	Picea
Rhogogaster	chlorosoma Benson	Alnus, Salix
Selandria	serva Fabricius	Poaceae
Taxonus	agrorum Fallén	Rubus
Tenthredo	atra Linnaeus	various herbs
Tenthredo	ferruginea Schrank	polyphagous
Tenthredo	mesomela Linné	various herbs
Tenthredo	rubricoxis Enslin	Senecio

Tab. 2. Vlčí potok brook flood plain (long-term monitoring site)

Genus	Species	Food plant
Amauronematus	leucolenus Brischke	Salix
Anoplonyx	lariciphagus Zaddach	Larix
Arge	gracilicornis Klug	Rubus
Arge	metallica Klug	Betula
Arge	nigripes Retzius	Rosa
Athalia	circularis Klug	various herbs
Athalia	lugens Klug	Brassicaceae
Birka	cinereipes Klug	Myosotis
Caliroa	cinxia Klug	deciduous trees
Cephalcia	alpina Klug	Picea
Cephalcia	arvensis Penzer	Picea
Claremontia	tenuicornis Klug	Filipendula
Craesus	alniastri Schaffenberg	Alnus
Empria	pallimacula Serville	Filipendula
Empria	pumiloides Lindqvist	Filipendula
Eriocampa	ovata Linné	Alnus
Eutomostethus	ephippium Panzer	Poaceae
Eutomostethus	luteiventris Klug	Juncus
Eutomostethus	punctatus Konow	Carex
Euura	atra Jurine	Salix
Euura	mucronata Hartig	Salix
Macrophya	alboannulata Costa	Sambucus nigra
Macrophya	ribis Schrank	Sambucus nigra
Monophadnus	pallescent Gmelin	Ranunculus
Monostegia	abdominalis Fabricius	Lysimachia
Monsoma	pulveratum Retzius	Alnus
Nematus	steini Blank	Alnus
Nematus	incompletus Förster	Lathyrus
Nematus	viridissimus Möller	Alnus

Pachynematus	vagus Fabricius	Poaceae
Pachyprotasis	rapae Linnaeus	various herbs
Perineura	rubi Panzer	unknown
Phyllocolpa	leucapsis Tischbein	Salix
Pikonema	scutellatum Hartig	Picea
Pristiphora	cincta Newman	Betula
Pristiphora	compressa Hartig	Picea
Pristiphora	pallidiventris Fallén	Rubus, Filipendula
Pristiphora	pseudodecipiens Beneš	Picea
Rhogogaster	chlorosoma Benson	Alnus, Salix
Stethomostus	fuliginosus Schrank	Ranunculus
Stromboceros	delicatulus Fallén	Athyrium
Strongylogaster	mixta Klug	Athyrium
Taxonus	agrorum Fallén	Rubus
Tenthredo	rubricoxis Enslin	Senecio
Tenthredo	temula Scopoli	polyphagous
Tenthredo	velox Fabricius	Rubus, Salix

Tab. 3. Pryskyřičný důl gorge (long term monitoring site)

Genus	Species	Food plant
Amauronematus	amplus Konow	Betula
Anoplonyx	apicalis Brischke	Larix
Athalia	liberta Klug	Brassicaceae
Cephalcia	arvensis Panzer	Picea
Cladius	compressicornis Fabricius	Crataegus, Sorbus
Dolerus	aeneus Hartig	Poaceae
Eutomostethus	ephippium Panzer	Poaceae
Metallus	albipes Cameron	Rubus idaeus
Nesoselandria	morio Fabricius	Mnium
Pachynematus	obductus Hartig	Poaceae
Pachynematus	vagus Fabricius	Poaceae
Pachyprotasis	rapae Linné	various herbs
Pikonema	scutellatum Hartig	Picea
Pristiphora	compressa Hartig	Picea
Pristiphora	pseudodecipiens Beneš	Picea
Pristiphora	saxesenii Hartig	Picea
Pristiphora	tenuicornis Lindqvist	Picea
Scolioneura	betuleti Klug	Betula
Tenthredopsis	livida Linné	Poaceae
Tenthredopsis	nassata Linné	Poaceae

Tab. 4. Růžovský vrch hill (seasonal 2010 site)

Genus	Species	Food plant
Aneugmenus	coronatus Klug	Athyrium
Arge	cyanocrocea Förster	Rubus
Arge	gracilicornis Klug	Rubus
Athalia	circularis Klug	various herbs
Athalia	liberta Klug	Brassicaceae
Athalia	lugens Klug	Brassicaceae
Birka	cinereipes Klug	Myosotis
Cephalcia	arvensis Panzer	Picea
Cladius	brullei Dahlbom	Rubus idaeus
Cladius	compressicornis Fabricius	Crataegus, Sorbus
Cladius	rufipes Serville	Ulmus
Dolerus	aeneus Hartig	Poaceae
Dolerus	vestigialis Klug	Equisetum
Eutomostethus	ephippium Panzer	Poaceae
Macrophya	ribis Schrank	Sambucus nigra
Metallus	pumilus Klug	Rubus
Monostegia	abdominalis Fabricius	Lysimachia
Nematus	fuscomaculatus Förster	Salix
Nematus	hypoxanthus Förster	Salix
Nematus	melanaspis Hartig	Salix
Nematus	myosotidis Fabricius	Trifolium
Nesoselandria	morio Fabricius	Mnium
Pachyprotasis	antennata Klug	various herbs
Pachyprotasis	rapae Linné	various herbs
Pristiphora	cincta Newman	Betula
Pristiphora	confusa Lindqvist	Betula
Pristiphora	coniceps Lindqvist	Salix
Pristiphora	leucopodia Hartig	Picea
Pristiphora	pallidiventris Fallén	Rubus
Pristiphora	parva Hartig	Picea
Pristiphora	saxeseni Hartig	Picea
Sterictiphora	longicornis Chevin	Carpinus
Stromboceros	delicatulus Fallén	Athyrium
Taxonus	agrorum Fallén	Rubus
Tenthredo	livida Linné	Poaceae
Tomostethus	nigritus Fabricius	Fraxinus

Tab. 5. Zadní Jetřichovice (Křínice stream flood plain) (seasonal 2010 site)

Genus	Species	Food plant
Abia	aenea Klug	Sambucus, Lonicera
Amauronematus	berolinensis Muche	Salix
Arge	gracilicornis Klug	Rubus
Athalia	circularis Klug	various herbs
Athalia	lugens Klug	Brassicaceae
Birka	cinereipes Klug	Myosotis
Dolerus	asper Zaddach	Carex
Dolerus	fumosus Stephens	Poaceae
Eutomostethus	ephippium Panzer	Poaceae
Macrophya	duodecimpunctata Linné	Poaceae
Monsoma	pulveratum Retzius	Alnus
Nematinus	fuscipennis Serville	Alnus
Nematinus	luteus Panzer	Alnus
Nematinus	steini Blank	Alnus
Nesoselandria	morio Fabricius	Mnium
Pachynematus	obductus Hartig	Poaceae
Pachyprotasis	antennata Klug	various herbs
Pachyprotasis	rapae Linnaeus	various herbs
Pamphilius	vafer Linné	Alnus
Platycampus	luridiventris Fallén	Alnus
Pristiphora	abietina Christ	Picea
Rhogogaster	chlorosoma Benson	Alnus, Salix
Selandria	serva Fabricius	Poaceae
Tenthredo	livida Linné	polyphagous
Tenthredopsis	nassata Linné	Poaceae

Tab. 6. Hadí pramen spring (emergent trap, seasonal 2010 site)

Genus	Species	Food plant
Ametastegia	pallipes Spinola	Viola
Athalia	lugens Klug	Brassicaceae
Pachyprotasis	rapae Linné	various herbs
Tenthredo	colon Klug	Epilobium

Localities important in perspective of nature conservation

Pryskyřičný důl gorge

Characteristics: the deep inversion gorge with bog spruce community on the ground (Figs. 4, 9) with herb layer of *Avenella flexuosa*, *Calamagrostis villosa*, *Carex brizoides*, *Carex canescens*, *Oxalis acetosella*, *Pteridium aquilinum*, *Trientalis europaea*, *Vaccinium myrtillus* and sparse *Digitalis purpurea*, in moss layer occur *Bazzania trilobata*, *Polytrichum commune*, *Sphagnum girgensohnii*, in bed of brook occur *Sphagnum riparium* and *S. fallax*.

GPS: 50°53'54"N 14°24'12"E; 290 m a.s.l.; map field code: 5152-1-2.

Hymenoptera (Symphyta)

In total 20 species found with dominance of hygrophilous and silvicolous species associated with coniferous (spruce) and deciduous trees (birch).

Review of the significant species: *Pristiphora tenuicornis* Lindqvist, 1955, boreomontane species known from Scandinavia, in Central Europe recently recorded in Poland; foodplant: spruce (*Picea*). The first record for the Czech Republic.

Diptera (Psychodidae)

A small brook in a deep ravine is shaded by a growth of a spruce monoculture. The muddy and sandy soil bottom land with *Carex*, *Juncus* and *Sphagnum* bring in 2010 only 23 species (in contrast to 41 species in 2008 and 20 spp. in 2009) including three apparently important taxa for the nature conservation, suitable for a monitoring, where conservation statutes could not be assessed recently, nationally scarce (NS): *Berdeniella granulosa* Vaillant, 1976; *B. illiesi* Wagner, 1973; *B. longispinosa* (Vaillant, 1958).

Trichoptera

Altogether 20 species were recorded. This lower number in comparison with previous years could result from unfavourable weather in the season 2010 and also from succession of spruce self-seeding. The most abundant are tyrphophilous species *Oligotricha striata* (Linnaeus, 1758), *Limnephilus coenosus* Curtis, 1834, and *Rhadicoleptus alpestris* (Kolenati, 1848).

Similarly as in 2008 and 2009, allochthonous species from streams and springs in the vicinity of Prykyřičný důl gorge were frequently collected, eg. rheophilous species from the Křínice stream or vulnerable species *Synagapetus moselyi* (Ulmer, 1938) from springs and brooks.

Křínice stream flood plain near Zadní Doubice

Characteristics: In Křínice flood plain (Figs. 18-23) there are scattered ash-alder alluvial communities and alder carrs with dominance of *Alnus glutinosa*, and uncommon willows (*Salix fragilis*) scattered through shore-line, but with lack of shrubs. The dominant herb species include here *Urtica dioica*, *Chaerophyllum hirsutum*, *Festuca gigantea*, *Cirsium oleraceum*, *Aegopodium podagraria*, *Lamium maculatum*, *Impatiens noli-tangere*. The shores of Křínice stream are lined with dense formations of *Phalaris arundinacea*. On drier sites in longer distance from stream there occurs *Carex brizoides*, with inclusion of *Stachys sylvatica* and *Impatiens parviflora*.

GPS: 50°55'23"N 14°23'55"E; 285 m a.s.l.; map field code: 5052-3-4.

Hymenoptera (Symphyta)

In total 53 species found with dominance of hygrophilous and silvicolous species associated with deciduous and coniferous trees, shrubs, grasses and hygrophilous herbs.

Review of the significant species: *Anoplonyx lariciphagus* (Zaddach, 1883), boreomontane species, food plant: larch (*Larix*). Hitherto known from Moravia (Beneš, 1989). The first record for Bohemia. *Pristiphora tenuicornis* Lindqvist, 1955, boreomontane species known from Scandinavia, in Central Europe recently recorded in Poland; foodplan: spruce (*Picea*). The first record for the Czech Republic.

Diptera (Psychodidae)

Banks of the Křinice river (Zadní Doubice) with 29 species, incl. 7 important taxa: *Telmatoscopus labeculosus* (Eaton, 1893) - EN; *Psychoda crassipennis* Tonnoir, 1940 - NS; *Psychodocha itoco* (Tokunaga & Komyo, 1955) - NS; *Berdeniella chvojikai* Ježek, 1999 - VU; *B. granulosa* Vaillant, 1976 - NS; *B. longispinosa* (Vaillant, 1958) - NS; *Clytocerus longicorniculatus* Krek, 1987 – NS.

Trichoptera

A total of 39 species was collected from the monitoring area, of them 31 from the Křinice stream and 16 species from the Bílý potok brook. Species *Glossosoma boltoni* Curtis, 1834 was recorded from the Bohemian Switzerland NP for the first time. This site is distinguished by species richness and stable caddisfly taxocenosis with predominating species of rhithral zone.

Vlčí potok brook flood plain

Characteristics: Vlčí potok flood plain covers ash-alder alluvial community (Figs. 26-29) with dominance of alder *Alnus glutinosa*, with admixtures of *Alnus incana*, *Acer pseudoplatanus* and *A. platanoides*, shrub layer consists of *Sambucus nigra* and *S. racemosa* also including the young shrubby deciduous trees. On humid situations there occur various hygrophilous herbs as *Athyrium filix-femina*, *Caltha palustris*, *Chaerophyllum hirsutum*, *Chrysosplenium oppositifolium*, *Crepis paludosa*, *Filipendula ulmaria*, *Geum rivale*, *Impatiens noli-tangere*, *Stachys sylvatica*, *Stellaria nemorum*, *Urtica dioica*, in drier parts *Carex brizoides* with *Equisetum sylvatica*.

GPS: 50°56'30"N 14°26'56"E; 390 m a.s.l; map field code: 5052-4-1.

Hymenoptera (Symphyta)

In total 46 species found including one species vulnerable (VU) with dominance of hygrophilous and silvicolous species associated with coniferous and deciduous trees, shrubs ferns, grasses and hygrophilous herbs.

Review of the significant species: *Amauronematus leucolenus* (Zaddach, 1883), very local and rare species; foodplants: willows (*Salix* spp.). Hitherto known only from Moravia (Beneš, 1989), the first record for Bohemia; *Anoplonyx lariciphagus* (Zaddach, 1883), boreomontane species, food plant: larch (*Larix*). Hitherto known from Moravia (Beneš, 1989). The first record for Bohemia.

Diptera (Psychodidae)

The locality reached a number of 20 species (15/2008, 25/2009). A remarkable occurrence: critically endangered *Saraiella rotunda* (Krek, 1970).

Trichoptera

Altogether 34 species were collected from wetlands in the Vlčí potok brook flood plain. Species *Limnephilus stigma* Curtis, 1834 and *Chaetopteryx major* McLachlan, 1876 were found in the Bohemian Switzerland NP for the first time. The occurrence of vulnerable species *Synagapetus moselyi* (Ulmer, 1938) was confirmed; other significant species are *Philopotamus montanus* (Donovan, 1813) (single locality in the Bohemian Switzerland NP) and *Rhyacophila polonica* McLachlan, 1879 (known only from the Vlčí potok brook and Bílý potok brook catchment). This monitoring site is important due to species-rich caddisfly taxocoenosis.

Křínice stream flood plain in Zadní Jetřichovice

Characteristics: The flood plain of Křínice stream is a non-man-managed alluvial grassland with growths of *Carex brizoides*. The banks of the flow are covered with communities of *Phalaris arundinacea*, *Urtica dioica*, *Festuca gigantea* and with admixtures of *Chaerophyllum hirsutum*, *Cirsium oleraceum* as well as *Stellaria nemorum*. The occurrence of old alder-trees (*Alnus glutinosa*) is frequent (Fig. 34-37).

GPS: 50°53'54"N 14°21'17"E; 240 m a.s.l.; map field code: 5152-1-1.

Hymenoptera (Symphyta)

In total 25 species found including with dominance of mesophilous and hygrophilous fringe vegetation of waterstreams in floodplains.

No significant species found.

Diptera (Psychodidae)

Banks of the Křínice river (Zadní Jetřichovice) with 26 species, incl. 9 important taxa: *Katamormia bezzii* (Salamanna, 1983) – NS; *Oomormia andrenipes* (Strobl, 1910) – CR; *Psychoda crassipennis* Tonnoir, 1940 – NS; *Psychodocha itoco* (Tokunaga & Komyo, 1955) – NS; *Berdeniella chvojkaei* Ježek, 1999 – VU; *B. granulosa* Vaillant, 1976 – NS; *B. pyrenaica* Vaillant, 1976 – NS; *Clytocerus longicorniculatus* Krek, 1987 – NS; *Pericoma rivularis* Berdén, 1954 – EN.

Trichoptera

Twenty two species, including *Hydroptila simulans* Curtis, 1834, *Polycentropus irroratus* (Curtis, 1835) (vulnerable species), and *Lepidostoma hirtum* (Fabricius, 1775) recorded from the territory of national park for the first time, were discovered from the Křínice stream in Zadní Jetřichovice. Species composition is similar to those of the Křínice stream near Zadní Doubice, rhithrophilous species predominate.

Růžovský vrch hill

Characteristics: The spring area and the wattercourse drainage incision on the east slope of the hill in ravine forest and herb-rich beech forest (Figs. 45). The rough terrain has a flat dip and sporadically stony surface. The tree layer is rather sparse with a canopy closure about 60%, with a dominance of *Acer pseudoplatanus* and *Fraxinus excelsior*, shrub layer consists of *Fagus sylvatica* and *Carpinus betulus*. The locality is covered with a herb layer (60 %) of *Carex brizoides*, *Rubus pedemontanus* and *Mercurialis perennis*, with admixtures of

Dryopteris filix-mas, *Urtica dioica*, *Pulmonaria obscura*, *Melica uniflora* and *Galium odoratum*. Some saplings are as well included: *Acer platanoides* and *Fraxinus excelsior*. The unshaded spring area extends to full-grown beech forest and woody glade with saplings of *Acer pseudoplatanus*, *Fagus sylvatica* and *Picea abies* (Figs. 42-44). This rather illuminated part with accrued nutritive substances has an overgrowth of the herb layer (40%) in contrast to the spring. Some species of Macrophyta recorded here are as follows: *Mercurialis perennis*, *Urtica dioica*, *Rubus pedemontanus*, *Circea intermedia*, *Stachys sylvatica*, *Dryopteris filix-mas*, *Festuca gigantea*, *Geum urbanum*, *Rubus idaeus*, *Pulmonaria obscura*, *Stellaria nemorum*, *Veronica montana*, *Cardamine amara* and *Galium odoratum*.

GPS: 50°49'52"N 14°20'27"E; 300-350 m a.s.l.; map field code: 5152-3-1.

Hymenoptera (Symphyta)

In total 36 species found including one species vulnerable (VU) with dominance of mesophilous and hygrophilous species associated with conifers and deciduous trees, shrubs, ferns, grasses and hygrophilous herbs.

Review of significant species: *Pristiphora confusa* Lindqvist, 1955 - in the Czech Republic widely distributed and common, but neglected species due to its similarity to the closely related species of species aggregate *Pristiphora melanocarpa*, besides NP České Švýcarsko also recorded from the various additional localities in the Czech Republic; foodplants: willows (*Salix* spp.). The first record for the Czech Republic; *Pristiphora coniceps* Lindqvist, 1955 - in the Czech Republic widely distributed and common, but neglected species due to its similarity to the closely related species of species aggregate *Pristiphora melanocarpa*, besides NP České Švýcarsko also recorded from the various additional localities in the Czech Republic; foodplants: willows (*Salix* spp.). The first record for the Czech Republic;

Pristiphora parva (Hartig, 1837) – in the Czech republic widely distributed, but rare species associated with spruce stands; besides NPČS also recorded from additional parts of the Czech republic; food plant: spruce (*Picea*). The first record for Bohemia.

Diptera (Psychodidae)

The locality reached a number of 26 species of moth flies with some important taxa: *Trichomyia urbica* Curtis, 1839 - CR; *Lepiseodina rothschildi* (Eaton, 1912) - NS; *Psychoda crassipennis* Tonnoir, 1940 - NS; *Psychodocha itoco* (Tokunaga & Komyo, 1955) - NS; *Clytocerus longicorniculatus* Krek, 1987 - NS; *Ulomyia undulata* (Tonnoir, 1919) - CR.

Trichoptera

Spring habitats on the eastern slope of the Růžovský vrch hill are inhabited by 18 species, including two vulnerable species (*Synagapetus moselyi* (Ulmer, 1938) and *Plectrocnemia geniculata* McLachlan, 1871).

Nad Edmundovou soutěskou gorge (above Edmundova soutěska gorge)

Characteristics: The slope crest below the mark of sandstone krans in the area of a forest glade with the swampy ledges, spring crevices and unnamed small brook above the Edmund's gorge (Tichá soutěska gorge). The spring area is surrounded by dense spruce and beech copses (Figs. 5, 6). The locality is covered with a herb layer (60 %) with dominance of *Chrysosplenium oppositifolium*, further *Carex remota*, *Cardamine amara*, *Juncus effusus*, *Molinia coerulea*, *Dryopteris dilatata*, *Poa palustris* and in a peripheral part *Gymnocarpium dryopteris*. The moss layer is conspicuously developed (30%), mainly with *Sphagnum fallax*, *S. squarrosum* and *S. russowii*, sporadically (dampest places) *S. denticulatum*, and *S.*

fimbriatum (borders of swamps). The liverworts are represented by *Scapania undulata*, *Pellia epiphylla*, mosses by *Mnium hornum*, *Polytrichum commune* and rare, endangered *Hookeria lucens* (single locality in the Labské pískovce).

GPS: 50°52'06"N 14°15'49"E; 235 m a.s.l.; map field code: 5151-2-3.

Diptera (Psychodidae)

The emergent trap in the Edmund's gorge (Janov) recorded only three hygropetric species: *Saraiella rotunda* (Krek, 1970) – CR, *Pneumia mutua* (Eaton, 1893) a *Ulomyia fuliginosa* (Meigen, 1804).

Trichoptera

Nine species were found on spring area near Janov; *Plectrocnemia geniculata* McLachlan, 1871, a vulnerables species, occurs there.

Hadí pramen spring

Characteristics: the spring with the wattery sandstone cliff (Figs. 8, 47) in inversion gorge with the slope spruce monoculture, 50 m bellow Hadí pramen spring. Nonshaded habitats, tree and shrub layer missing. The locality is covered with a rich herb layer (80 %) with dominance of *Chaerophyllum hirsutum* and *Chrysosplenium oppositifolium*, further admixed with not so frequent *Stachys sylvatica*, *Urtica dioica*, *Deschampsia cespitosa*, *Carex brizoides*, *Athyrium filix-femina*, *Cirsium palustre*, *Equisetum palustre*, *Veronica beccabunga*, *Calamagrostis arundinacea*, *Viola palustris* and *Epilobium hirsutum*. The moss layer is conspicuously developed (25%) with dominance of *Brachythecium rivulare*, *Plagio-mnium undulatum* and *Mnium hornum*. Not rare *Conocephallum conicum*, *Pellia endiviifolia* and *Rhizomnium punctatum* have been observed here recently. The community of the calcareous liverwort *Pellia endiviifolia* and the swampy moss *Cratoneuron filicinum* in the spring rill above the monitoring site represent a proof of rich nutritive mineral substances of the Hadí pramen spring.

GPS: 50°54'33"N 14°23'38"E; 320 m a.s.l.; map field code: 5052-3-4.

Diptera (Psychodidae)

The emergent trap installed extremely on the rocky cliff of Hadí pramen spring caught i.a. 8 hygropetric species of the tribe Pericomini, which hatched evidently therere: *Pericoma* (*Pericoma*) *pseudoexquisita* Tonnoir, 1940; *Pneumia cubitospinosa* (Jung, 1954) - EN; *P. mutua* (Eaton, 1893); *Saraiella rotunda* (Krek, 1970) - CR; *Szaboiella hibernica* (Tonnoir, 1940) - CR; *Ulomyia cognata* (Eaton, 1893); *U. fuliginosa* (Meigen, 1804) a *U. undulata* (Tonnoir, 1919) - CR.

Trichoptera

Six species were identified in samples from emergent trap on wetland below Hadí pramen spring. *Ernodes articularis* (Pictet, 1834), rare species on the territory of national park, is abundant there.

Mlýny – spring area

Characteristics: spring and rill (Fig. 49), waterfall, watery sandstone cliff in the mature mixed forest on the north-eastern slope of the Mlýny hill NE of Vysoká Lípa.

GPS: 50°52'41,4"N 14°22'19,5"E; 352 m a.s.l.; map field code: 5152-1-1.



Fig. 49. A spring rill near the Mlýny hill

Trichoptera

Rare locality not only in Bohemian Switzerland NP but in the whole the Czech Republic due to the occurrence of critically endangered species *Tinodes kimminsi* Sýkora, 1962. Hygropetric habitats near Mlýny (Fig. 49) are the unique locality of this species in the Czech Republic at present.

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