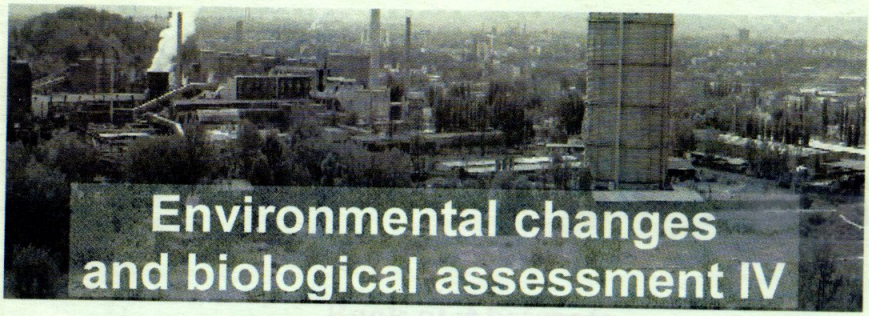

Book of Abstracts

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Distribution patterns of cryptogamous plants richness and diversity in the *Calamagrostio villosae-Piceetum* (R.Tx. 1937) Schlüter in Karkonosze Mts (Sudeten, SW Poland)

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The paper presents results of floristic-ecological studies conducted in upper-belt Norway spruce forests in the Karkonosze National Park. In ten study plots (each of area 10×10 m) a total of 103 species of cryptogamous plants were recorded (41 lichens, 23 liverworts and 39 mosses). They occured on six main habitats types: on terrestrial substrates – forest soil and litter (Ter) – 45 species, at tree bases (Ter-Epf) – 28, on trunks of living trees (Epf) – 7, on decaying wood – logs and stumps (Epx) – 73, on shaded rocks (Epl) – 47 and on tree fall disturbances – tree fall depressions, humocks and root plates (TFD) – 37.

In order to preserve species diversity and richness of particular group of cryptogams most important habitats are as in the following decreasing sequences:

Lichenes – Epx (mean value of Shannon's species diversity index H±SD = 2.71±0.64) > Epl (2.31±0.66) > Ter-Epf (1.92±0.63) > Epf (1.20±0.49) > TFD (0.65±1.10) > Ter (0.58±0.83);

Marchantiophyta – Epx (2.77±0.37) > Ter (2.42±0.63) > Epl (1.54±0.68) > Ter-Epf (0.62±0.83) > TFD (0.58±0.78);

Bryophyta – Epx (2.86±0.39) > Ter (2.48±0.72) > Epl (1.38±0.89) > TFD (0.97±1.29) > Ter-Epf (0.83±0.94) > Epf.

Influence of adventive element on taxonomic structure of steppe and forest-steppe flora of Altai Krai (Russia)

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In 1995-2007, the flora of higher vascular plants in the Barnaulka river basin (BB) situated on Priobskoye plateau in Altai Krai was studied. The BB (5720 km^2) represents an ancient flow gully which was formed most intensively in Pleistocene and was transformed by erosive processes in Holocene. The basin crosses steppe and forest-steppe zones and integrates pine forests of the ancient flow gully bottom with steppe and forest-steppe landscapes of erosive terraces of the gully. Using the detailed route study of the territory within the BB as the basis, 5 floristic microdistricts which correspond geographically to 5 elementary regional florae (ERF) are specified. The native flora of the BB numbers 853 species from 372 genera and 99 families. Due to the anthropogenic transformation of the territory its flora was enriched by adventive plant species. Unlike the cultivated plants

(cultivated flora), only the naturalized species capable for self-maintenance without man's intervention were taken into account. At the moment the adventive element of the BB flora totals 128 species from 92 genera and 36 families. The anthropogenically transformed flora unites 981 species of higher vascular plants from 426 genera and 106 families. Thus, the adventive element makes up 13.0 % of the species composition of flora, 12.7 % of its generic composition and 6.6 % of family composition. In ERF of BB the portion of adventive element in species abundance varies from 4.1 % up to 14.3 % depending on the size of traffic centers (settlements) located within the corresponding floristic microdistricts. When compared to the native flora, the anthropogenically transformed flora shows the disturbance in basic relationships among the indices of taxonomic richness. Hence, the average number of species in a genus remains constant. The average number of species in a family increases drastically from 8.6 in native BB flora up to 9.2 in the anthropogenically transformed one. The average of genera in the family demonstrates less growth: from 3.8 in native BB flora up to 4.0 in the anthropogenically transformed one.

Habitat offer for bryophytes in the natural upland fir forest *Abietetum polonicum* (Roztocze National Park, SE Poland) – preliminary quantitative analysis

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Bryophytes play a significant role in the functioning of forest communities. In Poland, except detailed studies conducted in selected lowland forest phytocenoses (project CRYPTO in Białowieża Primeval Forest), the dynamic aspect of bryophytes in the upland or mountain forest associations is poorly known.

The observations were conducted in the Roztocze National Park (SE Poland) in natural upland mesotrophic fir forest *Abietetum polonicum*. It occurs here in two subassociations *typicum* (APT) and *circeetosum* (APC). In the selected patches of this phytocenosis eight study sites were chosen, each divided into five basic study plots of area 100 m^2. In total 40 plots (0.4 ha) were analysed. For each square the special floristic-ecological relevé was accomplished, and a percentage cover of bryophyte layer on particular terrain microforms and substrate types was estimated.

The cover of terrestrial bryophyte layer in *Abietetum polonicum* varied between 5 % and 85 % on average 35 % per square. It range from 25 % in APT to 48 % in APC.

Of 18 substrate types distinguished in the studied association, 14 were colonized, but only 5 were of significant importance for the maintenance of bryophytes. These relation were expressed by an average cover of particular substrates by bryophytes: mosses (M) and liverworts (L). E.g. for decaying, lying logs it amounts in APT 44% (M) and 17% (L); in APC 53% (M) and 11% (L). The cover degree of a log increase (strong correlation) together with successive change of its stage of decay ($r = 0.86$ in APC and 0.74 in APT), is slightly linked with log length, and not correlated with its diameter.

In two analysed subassociations bryophytes find different habitat conditions. Consequently, the percentage cover by bryophytes in patches of them is variable. It is clearly related to the substrate abundance and richness, as well as to the moisture of habitats.