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ON LICHENS IN SLOVAKIA

Über Flechten in der Slowakei

by

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Key words: Lichens, Slovakia, core areas, threat.
Schlagwörter: Flechten, Slowakei, Kerngebiete.

Summary: A brief survey of the lichenologically most interesting areas of Slovakia is given.

Zusammenfassung: Ein Überblick der Gebiete mit der interessantesten Flechtenflora in der Slowakei wird vorgelegt.

Almost 60% of the territory of Slovakia is composed of mountains, mainly of Western Carpathians, but also Eastern Carpathians, Western-Pannonian and Eastern-Pannonian basin. There are about 2.500 species of autochtonous or spontaneously allochtonous vascular plants, 4-5.000 macrofungi (SABO et al. 1996), about 2510 species of cyanophytes and algae (HINDÁK & HINDÁKOVÁ 1995), 901 bryophytes (KUBINSKÁ & JANOVICOVÁ 1996).

The first records of lichens in Slovakia date back to the end of the 18th century, when the Stephan LUMNITZER´s "Flora posoniensis..." appeared (LUMNITZER 1791), followed by "Travels in Hungary ...in the year 1793" by Robert TOWNSON (1797). Since then more than 783 lichenological papers have been published. Among the authors there were such great lichenologists as Alexander ZAHLBRUCKNER, Fridrich HAZSLINSZKY and Ödön SZATALA, who were born in Slovakia. In the 19th century also Johann Anton SCOPOLI, Göran WAHLENBERG, Karl KALCHBRENNER and Hugo LOJKA worked here. Jindřich SUZA, Josef NÁDVORNÍK, Antonín VĚZDA and Ivan PIŠÚT had the greatest merit on the knowledge of our lichens in the 20th century.

In spite of the fact that Slovakia is small country, the lichen flora is

relatively rich, owing to the variety of substrata and elevation. There are 1.479 lichen species known from the area, 591 of them are threatened (Ex: 100, E: 129, V: 246, R: 98, I: 18) (Pišút et al., in press). The high number of endangered lichens is due to a strong impact of environmental pollution in central Europe.

Nevertheless there still remain some areas of interest from the lichenological point of view. The most valuable of them are mainly the Tatry Mts (Západné, Vysoké and Belianske), Nízke Tatry Mts, Vel'ká Fatra Mts, Bukovské vrchy Mts and Pol'ana Mts.

Based on the relatively high number of lichenological papers as well as on herbarium specimens and present field studies the list of extinct, missing and threatened lichens in Slovakia (Pišút 1985; 1993), red book of lower plants (Kotlaba et al. 1995) and a second checklist and bibliography of Slovak lichens (Pišút et al. 1996) were published. Lichens play also an important role in the projekt National Ecological Network of Slovakia - NECONET (Sabo et al. 1996), which is a part of the European Ecological Network - EECONET.

20 lichens were proposed to be protected even by law: *Alectoria sarmentosa, Bryoria bicolor, B. capillaris, B. fuscescens, B. chalibeiformis, B. implexa, B. lanestris, B. nadvornikiana, B. subcana, Cetraria islandica, Cladonia stellaris, Lobaria amplissima, L. pulmonaria, Ramalina fraxinea, Usnea filipendula, U. barbata, U. faginea, U. florida, U. glauca, U. hirta and U. subfloridana.*

The following areas are most valuable not only from the lichenological point of view, but also concerning the occurence of higher plants, animals, etc. Therefore they have been selected as European core areas (Sabo et al. 1996).

Tatry Mts

The smallest hight mountains in Europe (741,1 km^2) with expressive glacial relief and a cold climate rich with precipitations, built by siliceous rocks mainly of granite type (Západné and Vysoké Tatry Mts) and by calcareous rocks (Belianske Tatry Mts).

This is, lichenologicaly, the richest area in Slovakia with more than 1.000 species recorded. There are e g. *Belonia incarnata* (glacial relict), *Bryonora castanea, B. curvescens, B. rhypariza, Buellia dubyana, Caloplaca anularis, C. isidiigera, Cetraria laureri, Cetrariella delisei, Chromatochlamys vezdae, Cybebe gracilenta, Cyphelium lucidum, Dactylina madreporiformis, Glypholecia scabra* (the only locality in Slovakia), *Lecanora admontensis, L. reuteri, Lobaria pulmonaria, Lopadium pezizoideum, Nephroma arcticum* (glacial relict - Fig. 1), *Normandina pulchella, Pachyphiale fagicola, Parmelia fraudans, P. koflerae, Peltigera scabrosa, Placopyrenium tatrense, Physcia magnussonii* (the only locality in Slovakia), *Ramalina carpatica, Sagiolechia rhexoblephara, Solorina octospora, Squamarina lamarckii, Teloschistes contortuplicatus. Umbilicaria laevis* and *U. microphylla* reach their northern limits here.

On siliceous rocks containing arctic-alpine species e. g. *Belonia russula, Collema glebulentum, Gyalecta erythrozona,* and others can be found.

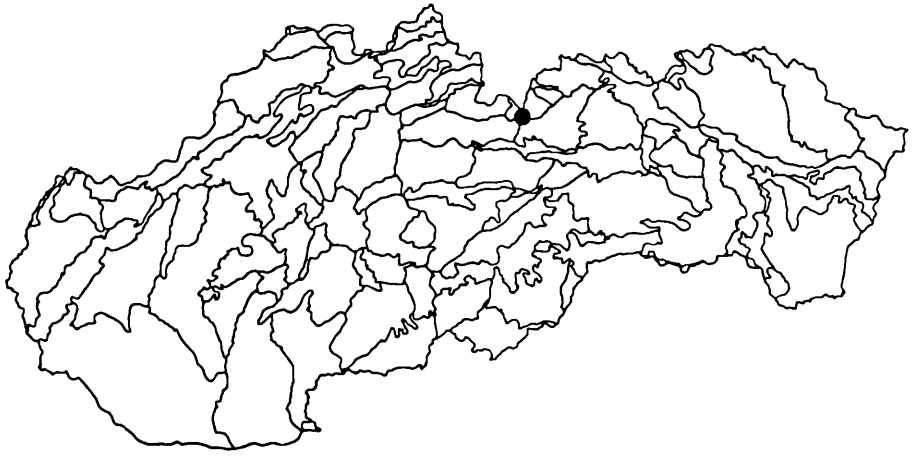


Fig. 1: *Nephroma arcticum* (L.) TORSS. (Vysoké Tatry Mts).

Nízke Tatry Mts

Lichens growing on metal-rich substrata, such as old copper mines slag heaps in Špania dolina valley require special attention and conservation. This is the type locality of *Lecanora chalcophila* VĚZDA. Other interesting lichens of these specific substrata are e. g. *Acarospora sinopica, Lecanora handelii, L. subaurea, Lecidea inops, Rhizocarpon oederi.* Very rare and critically endangered epiphytes of this area are e. g. *Leptogium saturninum* and *Lobaria amplissima* (the only locality in Slovakia - Fig. 2).

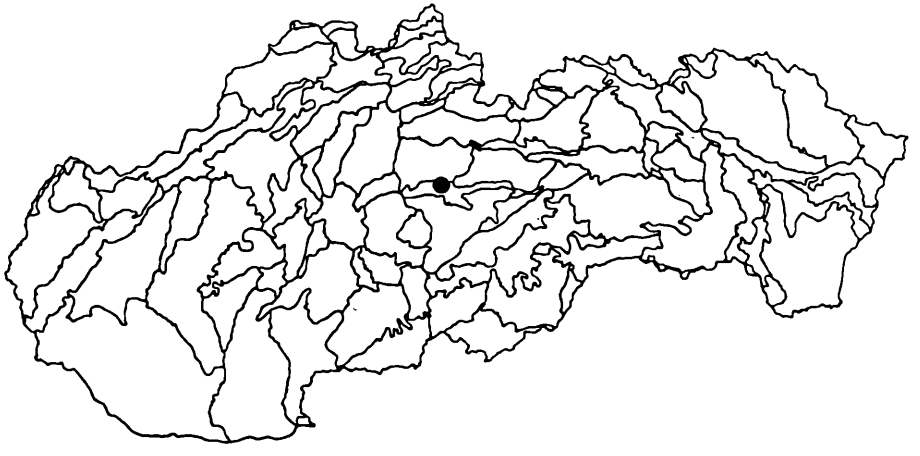


Fig. 2: *Lobaria amplissima* (SCOP.) FORSSELL (Nízke Tatry Mts).

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Vel'ká Fatra Mts

Mountains with a very diverse relief, variety of geological substrata, prevailing suboceanic climate and relatively preserved wide ancient beech and spruce forests. 135 taxa of endangered lichens were recorded there (LISICKÁ 1995), e. g. *Acrocordia cavata, Alectoria sarmentosa, Belonia herculina* (endemic species of the Carpathians), *Fuscidea cyathoides* var. *corticola, Lobaria pulmonaria, Menegazzia terebrata, Normandina pulchella, Parmotrema crinitum* (the only locality in Slovakia - Fig. 3), *Parmelia pastillifera, P. submontana, Solenopsora carpatica* (the only locality in Slovakia), *Teloschistes contortuplicatus.*

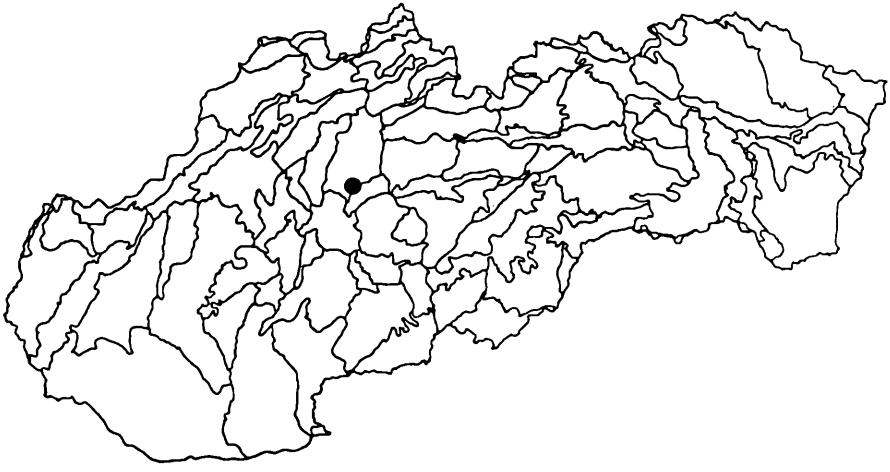


Fig. 3: *Parmotrema crinitum* (ACH.) CHOISY (Vel'ká Fatra Mts).

Bukovské vrchy Mts

The main part of the area is covered with old beech and mixed spruce-beech forests. Compared to other mountains the environmental disturbance is lower. Owing to this it is one of the most valuable areas in respect to epiphytic lichens - 132 species (PIŠÚT, LACKOVIČOVÁ 1995). *Gyalecta flotowii, Lecanora cinereofusca, Pertusaria alpina* and *P. hymenea* do not occur elsewhere in Slovakia. Some other interesting lichens are e. g. *Absconditella lignicola, Belonia herculina* (Fig. 4), *Cetraria laureri, Lobaria pulmonaria, Menegazzia terebrata, Normandina pulchella, Parmelia submontana, Thelotrema lepadinum.*

Pol'ana Mts

The highest volcanic range in the Západné Karpaty Mts with relatively well preserved ancient beech and mixed forests. On the whole, 216 lichen species were recorded from here (PIŠÚT 1994), epiphytic species being the most interesting ones. 27 critically endangered epiphytes are found here, most of

them indicators of ancient woodland, e. g. *Alectoria sarmentosa, Arthonia vinosa, Catinaria laureri, Chaenotheca trichialis, Gyalecta ulmi, Lobaria pulmonaria, Mycoblastus sanguinarius, Thelotrema lepadinum.*

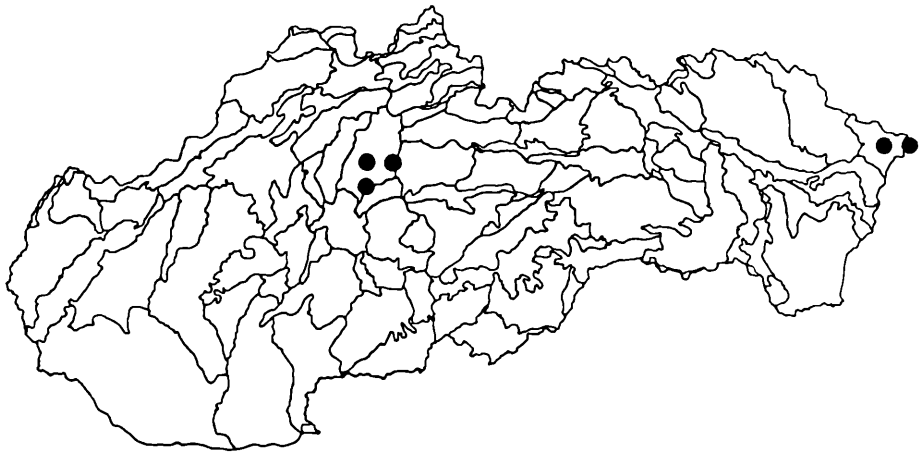


Fig. 4: *Belonia herculina* (REHM. ex LOJKA) HAZSL. (Vel'ká Fatra Mts, Bukovské vrchy Mts).

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