SUMMARY

The lichens of the Wysokie Skałki nature reserve in the Małe Pieniny Range (Western Carpathians)

The Wysokie Skałki nature reserve with an area of 10.91 ha is situated on the mountain of Wysoka (1052 m a.s.l.) which is part of the hillock of the Małe Pieniny Range – in the Western Carpathians, near the state border of Poland and Slovakia. In the reserve there are calcium hills and communities of Carpathian beech trees – *Dentario glandulosae-Fagetum*, as well as imposing spruce trees – *Polysticto-Piceetum* (Michalik 2000).

In the years 2001-2002, 213 lichen species were found in the reserve. Out of that number, 47.8% were epilithic lichens, mainly calcareous species, such as: *Acarospora cervina, Aspicilia calcarea, Bagliettoa parmigera, Caloplaca chalybaea, Collema cristatum, Dermatocarpon miniatum.* On the humus, moss turfs, in the crevices of calcium hills, the thalli of the following species can be found: *Agonimia tristicula, Bacidia bagliettoana, Caloplaca stillicidiorum, Diploschistes muscorum, Fulgensia schistidii, Leptogium plicatile.* On the soil in the forest communities, the following species are rare to appear: *Baeomyces rufus, Cetraria islandica, Cladonia furcata, Peltigera canina* etc.

On the bark of trees and bushes grow 37,6 % epiphytic lichen species, such as: *Arthonia radiata, Bacidia assulata, Caloplaca cerina, Candelariella reflexa, Graphis scripta, Lepraria elobata, Melanelia subargentifera, Mycoblastus fucatus.* Rotting wood is the habitat for the thalli of *Absconditella lignicola, Calicium abietinum, Chaenotheca xyloxena, Placynthiella dasaea, Sarcosagium campestre, Thelocarpon epibolum*, etc.

Altogether 46 (21.6 %) mountain species occurin the reserve. There are few montane and subalpine species. In the actual floristic list there are many apophytic species, such as: *Amandinea punctata, Candelaria concolor, Lecanora expallens, Melanelia exasperatula, Physcia adscendens, Physconia distorta, Placynthiella icmalea, Rinodina pyrina, Trapeliopsis flexuosa, Xanthoria candelaria*, etc. The apophytic lichens occur too, on the rotting, wood, soil and rocks. In the area of the reserve 49 (23 %) species were found, which were given in the Red list of the lichens being in danger of extinction in Poland (Cieśliński et al. 1992) – from categories E, V, R and I. 24 (11,3 %) lichen species found are under strict legal protection.

In 1958 Tobolewski gave the localities of 74 lichen species from the reserve area. Out of that number, the thalli of *Melanelia acetabulum, M. exasperata* and *M. glabra*, which formely grew on single tree trunks on the outskirts of the reserve, were not presently found.

A great biodiversity of lichen species in the Wysokie Skałki reserve is possible to be maintained thanks to the presence of a number of monitoring species. They belong to the 6th, 7th and 8th degrees in the Hawksworth and Rose (1970) biological scale, adapted for Poland by Kiszka (1990). Such monitoring species as *Acrocordia gemmata, Bacidia rubella, Caloplaca cerina, Physconia distorta, Parmelina tiliacea, Pseudevernia furfuracea, Ramalina fastigiata* and *Vulpicida pinastri* prove that the bio-ecological conditions of the site are relatively good. The occurrence of mentioned species indicates that the concentration of SO_2 in the winter months amounts to about 40 $\mu g/m^3$ of air. Higher concentrations of phytotoxic compounds in the air, increasing number of tourists and felling of old trees may lead, in a short time, to the disappearance from the reserve environment of some sensitive monitoring species, as well as of those which are rare, strictly protected, and in danger of extinction.