Ruderal Vegetation of the Broumov Basin, NE. Bohemia

Abstract

In the Broumov basin, NE. Bohemia, in all thirteen ruderal plant associations and several not fully identified communities were observed. The following associations: Chamaephtetum officinalis (Sisyrabrion), Urtico-Artemisietum vulgaris, Artemisio-Melilotetum albae (both Arcton lappae), Aegopodio-Geranietum pratensis, Agropyro-Urticetum dioicae (both Aegopodiom podagrariae), and Sambuco-Salicetum capreae are described as new. The syntaxonomy of the communities with dominating Petasites hybridus is more thoroughly discussed.

INTRODUCTION

The Broumov basin (cca 127 km²) is situated between the ridges of Broumovské stěny and Javoří hory mountains. Its altitude is 354—521 m. It is open towards SE. There is one small river StSnava and several brooks. Its rocks are formed mainly by permian sandstones with some few limestone horizonts. Mean annual temperature is 7.3 °C, mean annual rainfall is 685 mm. In this basin live about 15 000 inhabitants; that means that there are 120 inhabitants per square km.

Under the term ruderal vegetation we understand spontaneous vegetation of vaste places, mainly in settlements. Sometimes also the vegetation of the drained floor of village ponds (Bidention tripartitae NORDH. 1940) is included into ruderal communities, but these are discussed simultaneously with the vegetation of ponds (Kovář 1976). On the other hand, we include in this study also communities of forest clearings and house ruins, which are sometimes discussed in connection with forest communities. We shall thus discuss here the following classes of plant communities: Chenopodieta, Galio-Urticeta, Plantagineta majoris and Epilobietea angustifolii. Most of our material was collected in the years 1974—1975, but some relevés were taken in some previous years.

On some excursions I was accompanied by T. Sýkora and P. Kovář; I am indebted to these colleagues for their help.
METHODS

For assessment of abundance and dominance of vegetation cover the 11-grade scale of Domíñ-Hadač (cf. Hadač 1969) was used. In some soil samples, taken in the rhizosphere of dominant species, some few chemical characteristics were acquired by usual methods. Soil reaction (pH) was measured potentiometrically. Humus contents were found by water dissolution (according to Springer and Klee). Contents on Ca, K and Mg were found with flame spectrometer in the citrate extract from a soil sample dried at 105 °C. My thanks are due to Dr. Dana Fiserová for the soil analyses.

I tried to get as homogeneous material as possible for association tables. As a control of homogeneity resp. homotoneity the form of the constancy curve was used. In most cases, the curve had a "normal" course showing maxima in the fifth and first class and one minimum in the fourth (or exceptionally in the third) constancy class.

Names of plants were taken from Ehrendorfer et al. (1973).

PLANT COMMUNITIES

CHENOPODIETEA (Br.-Bl. 1951) Lohm., J. et R. Tx. 1961

Two orders, represented in the Broumov basin: Sisymbrietalia and Onopordetalia belong to this class of ruderal communities sensu stricto. It is a group of holarctic, mostly therophytic ruderal communities, on loose soils.


In the area investigated two alliances belong to this order: Sisymbriion and Chenopodion glauci.

Sisymbriion R. Tx., Lohm. et Preising in R. Tx. 1950

The following species are characteristic for this alliance: Atriplex patula, Chenopodium viride, Ch. album, Chamaeplium officinale, Euphorbia helioscopia, Sonchus oleraceus and Urtica urens.

In the Broumov basin we have found several communities belonging to this alliance: Chamaeplietum officinalis, Chenopodietum viridis, comm. of Atriplex patula, comm. of Lepidium ruderale and comm. of Urtica urens and Stellaria media.

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Fig. 1. Constancy curve of Chamaeplietum officinalis