Agnieszka Tomaszewska
numer albumu: **83108**
kierunek: **Biologia**
Studia III°, stacjonarne

Summary of PhD thesis entitled: **The role and indicator value of the macromycetes in xerothermic grasslands of the Nida Basin selected sub-regions**

Xerothermic plant communities developing in the area of the Nida Basin are distinguished by an extraordinary richness of plants species from warmer climates of southern and south-eastern Europe. Xerothermic grasslands of the Ponidzie in particular are home to many rare step plants species such as: *Stipa joannis, Inula ensifolia, Thymus marschallianus, Cirsium pannonicum*. The occurrence of a rich flora of xerothermic plants in the study area has contributed to the development of thermophilic steppe species of macrofungi biota whose representatives in terms of systematic belong to two classes: *Ascomycetes* and *Agaricomycetes*.

Field works on the macromycetes in xerothermic grasslands began in October 2010 and they were completed in November 2014. There were designated 30 fixed surfaces, permanently marked. The surfaces were established in the area of the Nadnidziański Landscape Park, the two nature reserves: the reserve Krzyżanowice and Skorocice, as well as in the localities: the Gacki, the Pińczów and the Wola Zagojska. The size of the surface ranged from 80 m^2 to 100 m^2. The surfaces were established in six communities of xerothermic vegetation (five surfaces in each of the six types of communities). The studies included the following plant associations: *Adonido-Brachypodietum pinnati, Inuletum ensifoliae, Seslerio-Scorzoneretum purpureae, Thalictro-Salvietum pratensis* (belonging to the alliance *Cirsio-Brachypodion pinnati) Sisymbrio-Stipetum capillatae* (belonging to the alliance *Festuco-Stipion*) and Festucetum pallentis (from the alliance *Seslerio-Festucion duriusculae*).

In the studied xerothermic associations of the Nida Basin have been found 178 taxa of macrofungi (174 species and 4 varieties). Among the recorded fungi were distinguished 8 new taxa for the Polish mycobiota (5 species and 3 varieties). There were revealed the presence of the following taxa: *Bovista limosa, disciseda verrucosa, Flammulina ononidis, Geastrum kotlabae, Sclerogaster gastrosporioides, Tulostoma brumale var. longipes, T. brumale var. T. pallidum and fimbriatum var. campestre.* The most taxa were recorded in the associations: *Sisymbrio-Stipetum capillatae* (67 taxa) and *Festucetum pallentis* (57 taxa), the least taxa

were found in phytocenosis *Inuletum ensifoliae* (7 species) and *Thalictro-Salvietum pratensis* (8 species).

It has been shown that some of the surveyed xerothermic communities have constant characteristic species composition of mycobiota. On the basis of these species presence it has been found that the gasteroid fungi are characteristic, in terms of mycological phytocoenosis, the associations of *Festuco-Stipion* and *Seslerio-Festucion duriusculae*, whereas the alliance of the *Cirsio-Brachypodion pinnati* is characterized by agaric fungi. There were distinguished species locally indicative of the associations most xerothermofilous i.e. *Festucetum pallentis* and *Sisymbrio-Stipetum capillatae*. The group of these species locally distinctive consist of: *Bovista tomentosa, disciseda candida, D. verrucosa, Gastrosporium simplex, Geastrum campestre, G. minimum, G. schmidelii, T. brumale* var. *brumale, T. brumale* var. *pallidum, T. brumale* var. *longipes, T. kotlabae, T. melanocyclum* and *T. squamosum.* These species play a major role of the bioindicators, indicating the mature and undisturbed nature of the relict status of studied xerothermic associations of *Festucetum pallentis* and *Sisymbrio-Stipetum capillatae.* The studies carried out contributed to a better understanding of mykobiota of the xerothermic habitats in the Niecka Nidziańska, and to identify their resources and threats. At the same time they drew attention to the shortage of studies in other Polish regions, which would allow to know the ecology, resources, distribution, and the biocenosis importance of these fungi, not only at the local level but also on a general level in the area of the grassland communities occurrence and the related associations.