

Characterization of the Loessflora in the Tolnai-dombság

TELEKI Balázs^{a*} – CSISZÁR Ágnes^a – KORDA Márton^a – SCHMIDT Dávid^a – ŠPORČIĆ
Dean^a – TIBORCZ Viktor^a – ZAGYVAI Gergely^a – BARTHA Dénes^a

^a Department of Botany and Nature Conservation, University of West Hungary, Sopron, Hungary

* Corresponding author: teleki.balazs@gmail.com; H-9400 Sopron, Ady E. út 5.

Abstract – This study presents the loessflora of the Tolnai-dombság in South-East Transdanubia in Hungary. We took a floristic survey of rare species that indicate the primary loess habitats. We investigated the history of some habitats on historical maps made in 18th and 19th centuries, but only the maps of 2nd military survey proved suitable due to its elaborateness. Based on the landscape history and the field experience we found species, which are typical to the primary loess habitats. Some characteristic species of the primary loess habitats are the following: *Thalictrum minus*, *Euphorbia glareosa*, *Tanacetum corymbosum*, *Inula germanica*, *Inula hirta*. The presence of *Veronica austriaca* ssp. *dentata* and *Inula hirta* have been found in Euphorbio pannonici-Brachypodietum pinnati association must be emphasized, as these taxa are very rare in South Transdanubia. We represent some species, which are typical to secondary loess-habitats, such as *Anchusa barrelieri*, *Inula ensifolia* and *Erigeron acer*.

Keywords: loessflora / Tolnai-dombság / primary- and secondary loess habitats

1. INTRODUCTION

The loessflora and vegetation of Tolna county were less investigated with relation to other Hungarian landscapes. KITAIBEL PÁL worked in this area twice during his trip to Baranya and Szlavónia (KITAIBEL 1799, 1805-1817). He found two new plant species for the Tolnai -dombság: *Iris variegata* L. in Bonyhádvarasd and *Anchusa barrelieri* (All.) Wittm. in Majos. KISS (1880) gave new data for Tolnai-hegyhát, near to Sárszentlőrinc, Kiszékely and Varsád. HOLLÓS found further new plant species for the Völgység, Szekszárdi-dombság and Tolnai-hegyhát (HOLLÓS 1911). PILLICH (1927) wrote the flora of Simontornya and its surroundings. BARTAL (1910) served new floristic data from Szekszárdi-dombság and Sárköz. BOROS ÁDÁM (BOROS ined, BOROS 1938) gave also some new data for this landscape. HORVÁT (1942ab) wrote the flora of Mecsek and its surroundings, and the flora of Külső-Somogy. He served data for the Tolnai-hegyhát in his both publication. PRISZTER and BORHIDI (1967) published new data from the higher region of Tolnai-hegyhát (Hőgyész). The works of FARKAS (1990, 1999) showed only the protected species. CSIKY (2006) served new data of Tolnai-hegyhát, its surroundings, Mezőföld and Külső-Somogy.

The aim of this study was to present the less-known loessflora of the Tolnai-dombság (Tolnai-hegyhát and Völgység). We enumerate species which are typical to the primary loess-habitats. We represent some species, which are characteristic to the secondary loess-habitats.

* Corresponding author: teleki.balazs@gmail.com, H-9400, Sopron, Ady E. u. 5.

2. MATERIALS AND METHODS

2.1. Study area

Study area was determined based on geomorphology, the elevation and the base-strata. It is situated in the eastern part of Tolnai-hegyhát and Völgység, in South-Transdanubia, Hungary. The base-strata are loess in the Tolnai-dombság. The geomorphology and base-strata of Tolnai-dombság are very similar to the Mezőföld region. Loess substrate and loess plateaus; lower than 200 m elevation are in the Mezőföld and Tolnai-dombság too. These loess plateaus are almost fully ploughed, because there are good chernozem soils here. Therefore except from some isolated sites, the originally loess-vegetation could have remained as a relict some refuting steep-slope. These sites were impossible ploughed.

We defined as primary loess-habitats those loess-steppes, forest-steppe meadows, shrub lands and steppe oak- forests on loess, which have not been arable land yet. Other sites are secondary loess-habitats.

The border of study area runs along next villages in the west: Tevel, Nagyvejke, Kisvejke, Izmény and Györe up to Mecsek. The border is in the south the foothills of Mecsek and Geresdi-dombság; eastwards is the Szekszárdi-dombság. The border in the north-east is the Sió-valley.

2.2. Methods

Data collection has happened in the field with floristic sampling. We recorded total species-lists from each site, and each site were studied in all seasonal aspects. During the identification and use of scientific name of species identification book of SIMON (2000) was used. We collected information from the former history of study areas based on the maps of military surveys from the 18th and 19th centuries. The maps of 2nd military survey proved suitable due to its elaborateness.

3. RESULTS

3.1. Important species from phytogeographic point of view

These species are often located in area-border. Most of these species are continentally steppe-specific taxa and occur often primary loess-habitats.

***Viola ambigua* W. et K.:** Tevel: Disznólegelő (det.: CSATHÓ A. I.), in slowly grassed, *Chrysopogon gryllus*-dominated loess-steppe; Kisdorog: Lólegelő, in *Euphorbio pannonic-Brachypodietum pinnati* HORVÁTH 2002 type grassland; Bonyhádvarasd: Kút-völgy *Salvia nemorosae-Festucetum rupicolae* ZÓLYOMI ex SOÓ 1964 type loess-grassland; Varsád: Varsádi-dűlő and Kölesdi-domb, in loess- valleys.

***Linaria biebersteinii* BESSER:** Szekszárd: Hidaspetre, in *Aceri tatarici-Quercetum* ZÓLYOMI 1957) New species for the *Praeillyricum*!

***Astragalus austriacus* JACQ.:** Bonyhádszerdahely: Völgységi-patak völgye, Nagytormás and Varsád: loess-grasslands.

***Euphorbia glareosa* Pall.:** Aparhant: Varasdi-úti legelő, varasd-road verge; Bonyhádvarasd: Tsz major by verge, Kút-völgy, grassland with *Robinia pseudoacacia*; Felsőnána: loessvalley; loess-grasslands between Nagytormás and Hidas-patak-völgye; Kisdorog: Tilos, verge by Juhéi út; shrubby slope by Ódánypusztá; Kéty: Hidas-patak völgye, loess-grasslands; loess-grasslands between Zomba and Harc; Varsád: Varsádi-dűlő and Kölesdi-domb in loess-valleys.

***Stipa capillata* L.:** This species are very frequent northwards from the Hidas-patak völgye in dry loess-grasslands, but southwards from this site is very rare. In Baranyai-dombság is already absent.

***Vinca herbacea* Waldst. et Kit.:** Kéty: Hidas-patak- völgye, on the verge of one *Celtis occidentalis* forest.

***Inula hirta* L.:** Felsőnána: Euphorbio-Brachypodietum grassland in loess-slope. This is the only recent data of this taxon in Tolnai- dombság. This is a very rare species in South-Transdanubia.

***Inula germanica* L.:** Varsád, between Varsádi-dűlő and Kölesdi-domb in loess-valleys; between Zomba and Harc in *Solidago gigantea* dominated verge, one polycormon.

***Salvia aethiopis* L.:** Varsád: Kanász-legelő, Varsádi-dűlő.

***Nepeta pannonica* L.:** Varsád: between Varsádi-dűlő and Kölesdi-domb in loesswalleys, some polycormons.

***Veronica austriaca* ssp. *dentata* (F.W. Schmidt) Watzl:** Kisdorog: Tilos, Legelő. In *Euphorbio-Brachypodietum* – grasslands.



Picture 1. *Linaria biebersteinii*

Picture 2. *Inula hirta* (Photo: B. Teleki and V. Tiborcz)

3. 2. Species in secondary loess-habitats

***Anchusa barrelieri* (All) Wittm.:** Kakasd: Zombai úti-dűlő.

***Erigeron acer* L.:** Bonyhádvarasd: Kút-völgy, Nagy-legelő; Bonyhádszerdahely: abandoned vineyard; Tabód: Torda-hegy.

***Echium italicum* L.:** Tevel: Disznólegelő; Kéty: Hidas-patak völgye.

***Inula ensifolia* L.:** Majos: Kőkúti-dűlő, Bonyhádvarasd: Nagy-legelő, Cikó: slope with abandoned field.

***Campanula sibirica* L.:** Kakasd: Zombai úti-dűlő, in abandoned vineyard.

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