

**University of South Bohemia in České Budějovice**  
**Faculty of Science, Department of Botany**

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Review of the thesis „Phylogeography of temperate plant species with the focus on Central Europe“ submitted by Hana Daneck.

The thesis deals with phylogeography of Central European non-tree temperate plant species. It contains three papers and a comprehensive introduction. The introduction presents a former and recent view of glacial and postglacial history of European temperate plant species. It discusses methods used in plant phylogeography and summarizes aims and results of thesis. The main part of thesis contains three papers. Two of them are published in journals with IF and the third is presented as manuscript (without any information about current state of paper – submitted?). Two shrubs (*Lonicera nigra*, *Rosa pendulina*) and one perennial grass (*Hordelymus europaeus*) represent target species of particular papers. An analysis of geographic pattern of genetic variation over the entire recent distribution area of studied plants is a prevailing methodological approach of thesis. Special attention is paid to the Central Europe with regard to a existence of a potential microrefugia in this region and likely course of the suture zones. Sequencing of non-coding cpDNA regions and AFLP analysis were used as standard analyses of phylogeographic studies. This molecular approach is supplemented by analysis of paleoecological data in the *Lonicera nigra* study.

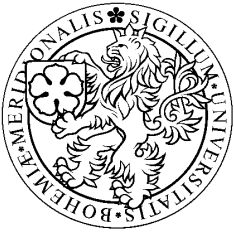
The topic of the thesis is relevant and its results extend our knowledge about distribution history of temperate plants. All papers are based on original datasets. The data were analysed appropriately and interpreted with respect to their limits. A strong point of the thesis is focusing on understudied non-tree temperate species. A weak point is not very robust dataset. In *Hordelymus* and *Lonicera* study only one type of molecular markers provided informative data. Only the paper about *Rosa pendulina* compares a phylogeographical pattern based on AFLP markers with results of previously study based on cpDNA sequencing. However, I believe the submitted Ph.D. thesis fulfills general standard and I recommended it to defend.

### Questions

I find the dataset of paper one (*Hordelymus europaeus*) rather poor. Why only one plant was analysed in the most of populations? What do you think about potential within population variability in studied cpDNA? May be it is an indication of refugial populations?

In the *Lonicera nigra* paper seems to be an occurrence of a plant from Alpine group in the Eastern Carpatians (Mt. Hoverla) very surprising. But some relation between Eastern Carpathian populations and northeasternmost Alpine population were detected in the *Rosa pendulina* study again. How it could explain? What do you mean about potential migration route on the edge of the Pannonian basin? What do you mean about refugium in the northeasternmost Alps with previous contact with Carpathian population but isolated from the other Alpine regions?

Different migration speeds of the pollen and fruits are mentioned as possible reason of discrepancy of border region position between Alpine and Carpathian populations of *Rosa pendulina* suggested by AFLP analysis and cpDNA analysis. Could you explain this



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hypothesis? My opinion is that an occurrence of hybride zone is the simple explanation. If I understand correctly, only one plant per population was analysed in cpDNA study. This is not sufficient to detect a potential intraspecific variation in cpDNA haplotypes.

**Minor comments**

I consider it a mistake to take over figures without explanation of the all symbols. For example in a caption of Fig. 1 of the Introduction lacks an explanation of scaled line and thinner line.

Correct reference is **Bhagwat** et Willis 2008 not **Shonil** et Willis 2008.

ing. Milan Štech, Ph.D,  
Křenovice, June 20, 2012