

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

BRANIŠOVSKÁ 31, CZ-370 05 ČESKÉ BUDĚJOVICE, CZECH REPUBLIC



Review of the Ph. D. thesis “Influence of climatic fluctuations in Neogene on evolution and ecologically diverse plant genus: an example of *Hippophae* L. (Elaeagnaceae)” submitted by Dungrui Jia.

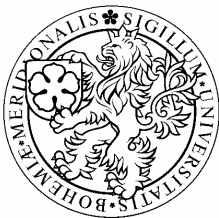
The thesis deals with the genus *Hippophae* as an appropriate model species for a study of hypotheses about plant migrations and distribution area changes in Eurasia during Neogene and Quaternary. Based on different types of molecular data it has answered questions about evolutionary history of *Hippophae rhamnoides* in large Eurasian distribution area. Another part of thesis deals with a reconstruction of phylogeny and a timing of important events in evolution of the genus *Hippophae*. The last part of the thesis studied a pattern of genetic diversity in *H. rhamnoides* subsp. *sinensis* in context of historical changes of climate and of niche suitability.

I think that the Ph.D. thesis contains considerable amount of data, which were treated by many appropriate methods. However, my opinion is that discussion of results and a general discussion especially is shallow with many general statements (despite of many relevant cited papers). Some parts of thesis were hard to understand for me. For example part Systematics of *Hippophae* is, in my opinion, written chaotically. The thesis is not from current perspective written completely standard. I miss some general conclusion and summary of contribution of the thesis to the knowledges about the topic being studied. A specification of Ph.D. student participation on particular parts of the thesis is completely missing. There is no expression about publication status of manuscripts too. The chapter II was published but what about chapters III and IV? I don't understand why the paper dealing with *Hippophae tibetana* from the Biological Journal of the Linnean Society (Jia et al. 2011) was not included in the Ph.D. thesis. Is it too old and was a part of applicant's master thesis?

Despite this criticism I think that reviewed thesis is an important contribution to the knowledge of the history of the Eurasian flora and I recommend acceptance of this thesis for the doctor degree after its successful defence.

Questions for discussion

- 1) Your Ph.D. thesis is titled “Influence of climatic fluctuations in **Neogene** on evolution of ecologically diverse plant genus: an example of *Hippophae* L. (Elaeagnaceae)” What do you mean about influence of climatic fluctuation in **Quaternary**? You have good data showing an impact of these fluctuations on genetic structure and distribution of studied species. Do you mean that these changes were not evolutionary important?
- 2) *Hippophae rhamnoides* is a representative only one of the ecological groups of temperate species. Scenarios of migration and changes of distribution areas over the whole Eurasia were probably different among these ecological groups. Could you discuss these potential differences?
- 3) Could you explain a current delimitation of subspecies in *Hippophae rhamnoides*? Which morphological characters are used? Or only geographic distribution is important? What do you mean about differences among European subspecies. Is their distinguishing meaningful?



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Brief comments (without answers)

There are some mistakes in orthography: e. g. raging × ranging (p. 18), turketanica × turkestanica (20), subspeicies × subspecies (21), analysi × analysis, developed × developed, molecualr × molecular (22), criptic × cryptic (108) etc.

A correct abbreviation of subspecies is currently subsp. not ssp. A plural form of abbreviation is not used, this form with dot (ssps. – as is used often in thesis) is certainly incorrect use.

ing. Milan Štech, Ph.D,
České Budějovice,
December 6, 2013