České Budějovice

10 June, 2019

Doctoral candidate **Alena Bartoňová** – supervisor's evaluation

thesis title: **Factors influencing butterfly diversity of the species-rich Submediterranean region**

Supervising scientific development of Alena Bartonová was a valuable and enriching experience. Our collaboration started when she was still a bachelor's student. At that time, Czech butterfly (and insect) conservation science outgrew its infancy and reached a maturity. It was clear to me that to develop further, it needed to follow two avenues, broader syntheses of the situation in Central Europe, and geographic outreach to more diverse but still under-researched areas, such as the Mediterranean biogeographic region, to which I have a personal attachment. Another necessary condition was molecularization of approaches, with which I was very little familiar.

At that time, I could not predict which of these avenues, if any, will the current candidate follow and develop. As the presented thesis clearly illustrates, she followed all three – and did it brilliantly.

The thesis theme is ecology and „ecological phylogeography" of butterfly species inhabiting (sub)Mediterranean grasslands, with particular focus on Balkan peninsula and more easterly Ponto-Turanian areas. Such species, and their biotopes, are extrazonal, and restricted in distribution, in the Balkans. With a few notable exceptions (e.g., the Hungarian biogeographer Z. Varga) they were for long neglected by European conservationists and biogeographers. This was a bizarre situation, as they apparently represent relics of different conditions prevailing in the biodiversity rich NE Mediterranean in the past, and as the three articles presented in the thesis document, they are counterparts of what we call „glacial relics" in Central Europe – because in Mediterranean region, the glacials were, first of all, more arid than the present situation.

The first article documents the candidate's mastery in organising broad-scale field surveys, and analysing resulting, often heterogeneous, data. I have a personal attachment to this study, as this was conducted closely to home region of my deceased mother. The second and third studies are laboratory oriented, they document the candidate's skills in up-do-date molecular genetics approaches, including range modelling methods, as well as her ability of broad international collaboration. It needs to be emphasised here that these studies would not materialise without my co-supervisor, Dr. Zdeněk Fric, who not only taught the people from our lab modern approaches to past ranges modelling, but also collated huge collections of genetic samples from undersampled regions of the Palaearctic, owing to patient collaboration from entomologists from Eastern Europe and Northern and Central Asia. Sandwiched between brilliant introduction and thoughtful conclusion, the thesis makes a focused and well-presented story.

Not all candidates' achievements are included in the thesis booklet, however. Alena Bartonova is a skilful ecologist, as senior authorships of papers in European Journal of Entomology and Ecography documents, and a great colleague, always ready to help others, which is clear from plentiful co-authorships in papers on broad array of lepidopterology topics. She is also a great teaching assistant and organiser, has been indispensable for success of one of my courses ("Field trip in Alpine zoology"), and got similarly positive references from other colleagues.

I recommend the thesis for successful defence.

Doc. Mgr. Martin Konvička, Ph.D.