

Supervisor's report on the PhD study and thesis entitled "Molecular ecology of cryptic species of the fen moss *Hamatocaulis vernicosus*", submitted by Alžběta Manukjanová

Alžběta 'Bety' Manukjanová started her PhD studies in 2011, having graduated at our faculty with a master thesis on ecology of *Hamatocaulis vernicosus*, the species she was already studying in course of her bachelor studies since 2005. Having finished her thesis now, she may thus have completed the longest uninterrupted graduate and post-graduate studies targeted on one moss species, running for 15 years. During this time period, Bety has undoubtedly made enormous progress in her knowledge and professional skills. She learned and started to use actively molecular techniques in course of her post-graduate studies, which she utilised to enhance the knowledge of ecology of the studied species, as the molecular techniques are nowadays indispensable for any attempt at disentangling the population genetic structure, communication between populations and other aspects of the biology of rare species. Moreover, the target species has been known to consist of two cryptic species, which were found to be sympatrically distributed even at individual localities in our region, and as any attempts at morphological recognition of these lineages failed to these days, she had to devise an easy and cost-effective way of barcoding the plants for the detailed screening of populations.

Ph.D. studies of Bety went very smoothly with respect to reading the courses, participating at a fruitful research stay at DUKE University in Jon Shaw's lab, learning the molecular techniques and gathering the data. The troubles began when the results should have started to be summarised into written text in form of manuscripts ready for submission. I found Bety remarkably resistant to all allowed kinds of pressure which meant that the first manuscript from the dissertation went to press after the long 7 years. Fortunately, then the barrier has at least partly been overcome and other three manuscripts have been submitted (and two of them published) in course of another year. In the meantime, Bety has also published two other papers in journals with IF and over 20 contributions in other journals, mostly as a collaborator. In addition to publication activity, Bety has also taken very active part in teaching activities at courses of our department, well over her duties from the PhD programme. In last 4 years or so, she has also become an indispensable power in the molecular laboratory, capable not only of routine lab work but also of improving and looking for new protocols. I should also mention her regular participation in regional floristic surveys, particularly of fen biotopes, and surveillance of endangered moss species.

Bety has never dreamed of pursuing a scientific career but at the same she always wanted to stay in the middle of the research team and associated people, which was obviously the undeclared goal of her post-graduate studies. Although I have not liked this idea since the very beginning and on many occasions was driven half-mad by the showy total disregard of interest in bringing her results to completion, I must admit that Bety has found a way to be a highly valued member of the bryological team at our University and hope she will stay with us.

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doc. Mgr. Jan Kučera, Ph.D.

