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Institut für Paläontologie

Univ.-Prof. Mag. Dr. Martin Zuschin
Althanstraße 14 (UZA II)
A-1090 Wien

T +43-1-4277-53555
F
martin.zuschin@univie.ac.at

Department for Research and PhD study of the Faculty of
Science, Comenius University

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Evaluation of the habilitation thesis of Dr. Matuš Hyžný

Dear Prof. Fedor,
Dear committee members,

The habilitation thesis of Dr. Matuš Hyžný, entitled „Badenian decapods of the Central Paratethys: Diversity and Palaeobiogeography“ is based on 23 scientific papers, almost all with the applicant as first author and published in respected peer-reviewed journals.

In his thesis Dr. Hyžný explains in several chapters the decapod morphology and taphonomy, characters that are useful for identification of decapods, the development of the Paratethys Sea through time, and the stratigraphy and environmental conditions of the Badenian stage. Then he provides a detailed overview of Neogene basins of the Paratethys with Badenian decapods. In a final step Dr. Hyžný evaluates the diversity and Palaeobiogeography of Badenian decapods, which is the core of this thesis.

Dr. Hyžný elegantly shows that Badenian faunas are by far the richest of the central Paratethys in terms of number of species and most of them occur either in the Pannonian or in the Vienna basin (or both), where high species richness is strongly related to the presence of reef habitats. Interestingly, early and late Badenian decapod faunas are distinct, but within each time slice homogeneous across the studied basins. This confirms the results of other authors who worked on molluscs and echinoderms. Following the arguments of the applicant, the reefal decapods of the lower Badenian were migrants from the Mediterranean during conditions of an anti-estuarine circulation. In the upper Badenian, however, species from the Paratethys were able to migrate back to the Mediterranean during conditions of an estuarine circulation, where their descendants apparently form the late Miocene reefal decapod assemblages.

In summary, Dr. Hyžný has convincingly demonstrated that he is a leading scientist in the field of fossil decapod research of the Paratethys (and beyond), in a line with the exceptional experts Imre Lörenthey, Martin Glaessner, Friedrich Bachmayer and Pal Müller. I highly recommend to award Dr. Matuš Hyžný the title “Associate Professor” and to give him the *venia legendi* for “Geology”.

Yours sincerely,


Martin Zuschin