ABSTRACT

From the Oligocene onward, there was a large network of inland seas, parallel to the developing Mediterranean Sea and via changing ways, intermittently connected with the Mediterranean and the Indo-Pacific. This vast northern domain, covering a large part of European continent, was called Paratethys and was further differentiated into the Western, Central and Eastern part. Sediments of the Central Paratethys sea are now exposed also in nowadays Hungary. The most widespread are the strata of the Badenian age. The Central Paratethyan regional stage Badenian (approximately 15.2–12.6 million years ago) is equivalent to the Mediterranean and global middle Miocene stages Langhian and early Serravallian. During that time, shallow marine environments hosted a diversity of organisms, including decapod crustaceans, which remains are not infrequently found at exposed localities with Badenian strata. Until now, nearly a hundred decapod species have been identified from the Badenian of Hungary. All of them are treated in detail here, providing detailed descriptions, remarks on occurrences and also graphical representation of each of them, including the type material. Together with the systematic overview of 99 decapod species, a synopsis of all Hungarian localities yielding Badenian decapods is provided. The systematic section, forming a major part of the book, is introduced with an identification key to all discussed taxa. Taxonomic treatment of respective species resulted into recognition of ten new combinations, including *Gilvossius roztoczensis* (Müller, 1996) comb. nov., *Eucalliaxiopsis pseudorakosensis* (Lőrenthey in Lőrenthey, Beurlen, 1929) comb. nov., *Anisopagurus leganyii* (Müller, 1984a) comb. nov., *Anisopagurus corallinus* (Müller, 1996) comb. nov., *Tetralobistes cserhatensis* (Müller, 1984a) comb. nov., *Pugettia oroszyi* (Bachmayer, 1953a) comb. nov., *Parthenopoides tetenyensis* (Müller, 1984a) comb. nov., *Derilambrus szaboi* (Müller, 1974b) comb. nov., *Achelous monspeliensis* (A. Milne-Edwards, 1860) comb. nov., and *Venitus aquensis* (A. Milne-Edwards, Brocchi, 1879) comb. nov. Additionally, several species are considered synonymous with species described earlier. *Pagurus retznensis* Collins, 2014 is considered a junior subjective synonym of *Petrolisthes haydni* Müller, 1984a. *Glabropilumnus nitidus* Collins, 2014 and *Portunus muelleri* Collins, 2014 are both considered junior subjective synonyms of *Rakosia carupoides* Müller, 1984a.

Acknowledgements
Numerous people helped during the preparation of this book. The person to be acknowledged in the first place is late Pál Müller. This book is largely based on the material he collected and discusses the issues he was studying. Pál introduced the first author (MH) to the collections of HNHM and MBFSZ, and provided access to his private collections. Éva Müller, Pál's wife is thanked for her generous support during many research stays in Budapest of the first author (MH). Access to collections of MBFSZ was provided by Klára Palotás and Emese Bodor. Zsuzsa Molnár (HNHM) is acknowledged for an immense effort in cataloguing the collections of Pál Müller and managing the resulted database. Carrie E. Schweitzer helped with some literature items. Photos of comparative material, both fossil and extant, were provided generously by Arthur Anker, Sergey Anosov, Tin-Yam Chan, Sylvain Charbonnier, Peter C. Dworschak, Rodney M. Feldmann, Enrique García Rasso, John Hoover, Hiroaki Karasawa, Fedor Lischenko, Jose Christopher C. Mendoza, Peter K.L. Ng, Cristina Robins, and Vassiliy Spiridonov. The manuscript benefitted from constructive comments of several reviewers who scrutinized various parts of the manuscript: René H.B. Fraaije, Adiël A. Klompmaker and Samuel Rybár. The study of Hungarian Badenian decapods was supported by Hungarian Scientific Research Fund (OTKA/NKFIH K112708) and the Slovak Research and Development Agency under contract no. APVV-16-0121. The publication of this book was supported by Hungarian Scientific Research Fund (OTKA/NKFIH K112708).