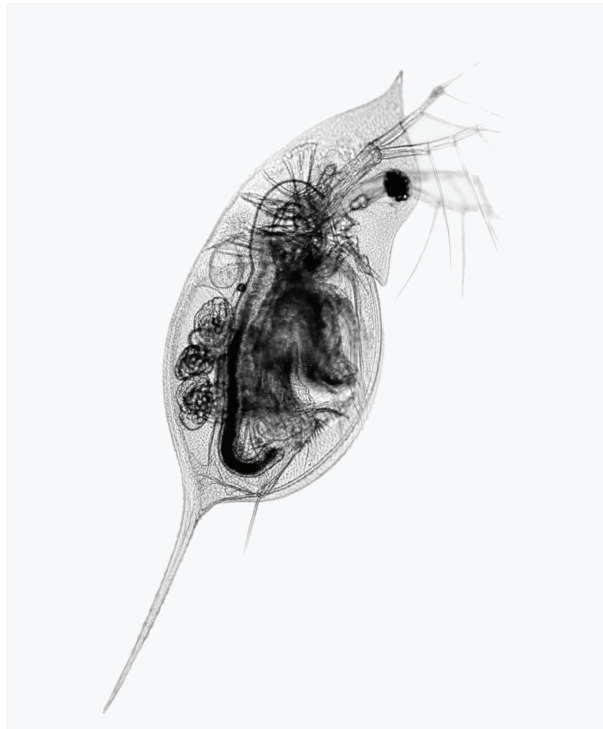


***Daphnia* as a model organism in limnology and aquatic biology:  
some aspects of its reproduction and development**

J. Seda and A. Petrusek (Guest Editors)



## PREFACE

Invertebrates comprise the overwhelming majority of all animal species - around 95% of described species, not including substantial cryptic variation. As it is an extremely diverse and heterogeneous group, research on various invertebrate taxa often follows parallel trajectories, with little interaction among experts on different groups. To promote sharing of knowledge within as well as across taxa, the International Society of Invertebrate Reproduction and Development (ISIRD) was established in 1975 in Calicut, India. Since that time, the ISIRD has organised international conferences at three-year intervals where various aspects of invertebrate biology are presented and discussed, naturally with the focus on reproduction and development. Traditionally, marine invertebrate groups have been well represented at all ISIRD congresses, but freshwater invertebrates have often been relatively overlooked at these meetings.

The 12<sup>th</sup> ISIRD congress took place between August 16 and 20, 2010 in Prague, the Czech Republic. Several different Czech institutions collaborated on the organisation of this meeting. As aquatic invertebrate research has a long tradition in the country, we decided to include a section dedicated to popular model organisms in aquatic ecology and evolutionary biology, the "water fleas", cladocerans of the genus *Daphnia*. The section entitled "*Daphnia* and other cladocerans as model organisms" was open to any aspects of cladoceran biology directly or indirectly related to their reproduction or development.

Unfortunately, the timing of the Prague congress completely overlapped the triennial congress of the International Society of Theoretical and Applied Limnology (SIL) in Cape Town, South Africa. This large meeting in a very attractive setting attracted many cladocerozoologists from all over the world, including Europe. Therefore, the *Daphnia* section of the Prague ISIRD meeting remained moderate in size, attracting 13 contributions (eight talks and five poster presentations). The presenting authors mostly originated from Central European countries (the Czech Republic, Poland, Germany, and Austria) but the conference also attracted a visitor from overseas (Mexico). Although the section was small, some of the presentations evoked considerable interest among conference participants working on marine crustaceans. Information exchange between marine and freshwater biologists was promoted, and will hopefully persist at future ISIRD meetings.

The contributions presented in the session covered a very wide range of topics, such as the interplay of sexual and asexual reproduction and its impact on seasonal population development and its clonal structure, the impact of major environmental disturbances (floods) on the status of *Daphnia* diapausing egg banks, factors promoting male production, the importance of *Daphnia* ageing, the effect of cyanobacteria on *Daphnia* growth, and the formation of antipredator morphological structures under different conditions. In this special insert, we present five papers from authors that attended the ISIRD meeting, from one German, two Czech, and two Polish teams.

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