

Proceedings of the  
**8th International Seminar on Apterygota**  
Certosa di Pontignano, Siena, Italy  
12–16 September 2010

This issue is dedicated to the recently deceased  
Dr Nina M. Chernova (Moscow State Pedagogical University, Russia),  
Prof. Romuald J. Pomorski (Wrocław University, Poland) and  
Prof. Andrzej Szeptycki (Polish Academy of Sciences, Krakow, Poland)  
for their substantial lifelong contributions to  
the advancement of knowledge of Apterygota.

**Editors of this issue:**

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## Preface

With over 70 participants from 27 countries of Europe, Asia, America, Africa and Oceania, the 8th International Seminar on Apterygota – held in Siena on September 2010 and to the proceedings of which this special volume is dedicated – was the most successful and most attended meeting ever held of world apterygotologists. As the name suggests, this conference was the eighth of a series of meetings initiated 32 years before in Siena, Italy, under the enthusiastic organisation of Prof. Romano Dallai and his research team at the Department of Evolutionary Biology of the University of Siena.

The eight Seminars held in Siena, Italy (1978, 1986, 1989, 2002, 2010), Bialowieza, Poland (1994), Cordoba, Spain (1998) and Texel, Netherlands (2006) represented the opportunity for a relatively small, yet worldwide widespread and scientifically active community of zoologists, ecologists, embryologists and physiologists to meet, who focus their research on different aspects of the five basal hexapod taxa commonly known as Apterygota. This community of scientists hosts all major contributors to the knowledge of the taxonomy, ecology, morphology, anatomy, physiology and genomics of these sometimes neglected hexapods, which nevertheless play a crucial role in the recycling of the organic matter in various types of soils at different latitudes and altitudes.

Apterygota, traditionally comprising five commonly recognised orders (or subclasses) of basal hexapods (Protura, Collembola, Diplura, Microcoryphia and Zygentoma), share some basic features of their life histories, including a relatively simple post-embryonic development and a strong link with all horizons of the edaphic ecosystem. Yet, they cannot be considered a monophyletic assemblage (the name Apterygota, still present in the formal title of the Seminar, actually represents the historical legacy to a now abandoned taxonomic group), and, at the same time, each of them possesses peculiar features which provide intriguing physiological and evolutionary questions.

Indeed, since the first Seminar, methods of investigation in biology and zoology have dramatically evolved, an evolution reflected in apterygotan research as well. One of the most remarkable features of the 8th Seminar on Apterygota was, in fact, the use of modern methods (including genomics, microscopy, bioinformatics, biochemistry and analytical chemistry) applied to different questions. The diversity of biological questions and methods of investigation was clearly represented in the scientific program of the Seminar, and this special volume collects the most remarkable contributions presented. Scientific topics ranged from taxonomy to phylogeny (through biogeography), from morphology to ultrastructure (with a special emphasis on embryology), and from ecology to physiology (further integrated into ecophysiology).

The 8th Seminar on Apterygota also marked two important celebrations:

One was the centenary of the discovery and first description of Protura, which occurred in 1907 thanks to the great Italian zoologist Filippo Silvestri. The conference organisers dedicated a special symposium to this group of Apterygota, recognizing the need to focus on different, often neglected aspects of their biology. In spite of the limited number of species, their small

body size and their tight link with a specific environment, proturans in fact appear to possess interesting features which bring them to the centre of apterygotan and phylogenetic research. Relevant contributions in this context were those dedicated to their taxonomy, embryology, genomics, evolution and phylogenetic position.

The second celebration was the academic retirement of Prof. Romano Dallai. He was the true father and active supporter of the Seminar on Apterygota, having given a strong impulse to the establishment of a regular meeting of all world apterygotologists since 1978. At the time, Romano Dallai recognised the importance of creating a special opportunity for a periodic update on the scientific achievements on Apterygota. Far from retiring from scientific research, Romano Dallai is still an active investigator as a fellow of the Department of Evolutionary Biology of the University of Siena, where he continues to use the finest electron microscopy approaches to search through the secrets of the anatomy and cellular ultrastructure of Apterygota.

With the solid support of their traditional members and the enthusiasm of the new generations of scientists, the community of apterygotologists confidently looks forward to the next International Seminar on Apterygota, which will be held in Görlitz, Germany, in 2014.

Siena in December, 2011

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