SOIL ORGANISMS 87 (3) · December 2015 p. i–iii

Editorial

The 9th International Seminar on Apterygota – which took place in Görlitz, Germany in September 2014 – highly successfully provided new and exciting insights on this (paraphyletic) group of primary wingless Hexapoda. Presentations were at a high scientific level and ranged from deep phylogeny (using information from phenomics, ultrastructure, embryology and molecular biology) through taxonomy (including population-level studies) and basic biology and life history studies to the ecology of these animals. Thereby, many aspects of zoogeography, community ecology, adaptations to specific habitat types and reactions to environmental influences (including temporal changes, climate change and eco-toxicology) as well the role of these animals in ecosystem function were presented and discussed. Although often tremendously underrepresented in zoology, research in this group of Hexapoda is indeed global, very diverse and deals with almost all areas of biological sciences to a degree often not found in the research of other animal groups. The presentation of these diverse aspects of 'apterygotan' science (and the meeting of the scientific community involved) was once again found to be highly fruitful, with the different viewpoints of the varied aspects of biological science expanding and augmenting individual studies with new insights. This could be seen in the discussions, which often went beyond the individual studies to discuss higher order ideas and theories. Thinking 'outside the box' became commonplace.

Nonetheless, one major disappointment remains. Last year's Seminar aimed at highlighting the Microcoryphia and Zygentoma (= 'Ectognatha'), which too often play a marginal role in such conferences. Despite this attempt

Participants of the 9th International Seminar on Apterygota in Görlitz, Germany; September 2014

ISSN 1864-6417

and the specific invitation of some of the world's best researchers in this group, only three presentations (albeit at a high scientific level) were given. This unfortunately reflects not a lack of interest in the conference, but truly the lack of scientists actively researching these groups of phylogenetically and ecologically important animals. The situation for other basal hexapod classes is even more disconcerting. For instance, only two researchers on Protura were present (both without positions allowing them continuous research), and none on Diplura. To our knowledge, this is a genuine reflection on the state of research in these groups. For some superfamilies of Diplura (Campodoidea), there are no longer any active taxonomists worldwide. As more and more institutional science follows mainstream themes (dictated by the politics of financial science promotion), we have been watching a steady decline in researchers, taxonomists and ecologists dealing with these important animal groups. Not only is the earth losing biodiversity before mankind knows which species exist (as often lamented), existing knowledge on the taxonomy and biology of many species which was hard gained over many decades is also becoming lost at an alarmingly increasing rate.

The decline of taxonomy in favor of economics dictating the direction of fundamental science (and its main stream funding) has been bemoaned for many decades now. It is naïve to expect changes in the politics of (inter-)national science promotion, despite the Rio Convention of 1992 and the following international agreements and conventions (IPBES, CEP etc.). In addition to the necessity of political and financial promotion of biodiversity research, the strengthening of extramural research, the return flow of taxonomic knowledge to academic education, etc., changes must take place at the level of the individual institutions under the conditions that exist now, if this negative trend in the public (= political) awareness of the high level of Apterygota research is to be stopped and the importance of research on these animal groups increased. This may occur through the increased cooperation and networking of the individual institutions. One trend in the structure of biological and ecological scientific research during the last years has been the creation of large interdisciplinary research institutions with many scientists and support employees. While this is very commendable in creating synergies to explore and discover emergent properties and phenomena that can only be obtained through an inter- or even transdisciplinary approach, this concentrates science (and the available resources) in a few institutions that thus dictate the directions that national research programs take. The diversity of high-level scientific research becomes lost through the decline of the multitude of 'smaller' research institutes. We propose an additional structure: that these institutes (research museums, universities, academies of science, etc.) network at an international level to provide continuously and at a high level the support and synergies observable, i.e., at the International Seminars on Apterygota.

The participants of the 9th International Seminar on Apterygota have taken a major step in proposing and agreeing upon different possibilities of such a research network. The proposals presented herewith admittedly have a European focus. This is partly due to the fact that, while the International Apterygota Colloquia take place throughout the globe, the International Seminars on Apterygota generally occur in Europe. Nonetheless, these proposals can be global, or can take place multiply on different continents. One major problem in most institutes is the lack of post-doctoral positions. These can only be made possible through external research funding (= project positions). It is necessary to develop common European projects, where in the worst case one post-doc position is available for more than one project partner. To guarantee scientific exchange, it is further necessary for students (including PhD students) and post-docs to spend some of their research time gaining further know-how and experience in other institutes, preferably abroad. European funding is available for such exchange through programs such as Erasmus, the German DAAD, the Humboldt foundation, Madame Curie, Synthesys etc. It is necessary and fruitful for students and researchers, i.e., from genetic laboratories to spend time in institutes concentrating on taxonomy, or field study oriented researchers to visit institutes concentrating on laboratory studies, and vice versa. Professors and workgroup leaders should make their students and employees aware of these opportunities and to provide support as the applications and proposals are written. It is also imperative for systematics and taxonomy to be specifically promoted. This can be additionally achieved, i.e., by being aware of and selectively influencing institute policies or by applying for six-year post-doc positions instead of two PhD positions in research funding proposals.

A platform should be developed for a more efficient exchange of information between individual institutes. This can take place via e-mail lists or, preferably, an independent communication platform within, i.e., the GSBI or Edaphobase homepages or other publically available internet resources. Besides coordinating personnel exchanges as mentioned above, further information can be presented and discussed on such platforms, for instance on statistics geared towards specific soil-biological questions, sampling-design methodologies for laboratory and field studies, standardization and much more. Very helpful in such a platform would also be the presentation and discussion of experiments that have

failed (a ‘waste basket section’), which can offer much more than just publishing negative results. This would grant not only the possibility of not repeating (publically unknown) mistakes of other workgroups, but can provide important insights for better designing experiments or field studies to test hypotheses and ecological or similar theories. The participants in last year’s Seminar also expressed the desire for workshops and sessions on these subjects in future meetings, which can be organized via such communication platforms. The development of such more intensive research-information exchange platforms – beyond the traditional format of conferences or, i.e., status seminars of large collaborative research projects – is possible and can help drive the evolution of scientific research organization away from the (declining) individual institutes and bilateral exchange to more effective and powerful research networks, which will also strengthen the individual institutes. It can thereby be possible, within the existing situation, to promote and bring forward the multifaceted research on ‘Apterygota’.

The present volume of Soil Organisms represents only a small segment of the Seminar presentations. This volume is devoted less to scientific hypothesis testing, high-level systematics and taxonomy of various organismal aspects of soil biology, as is usually the case. It rather gives voice, exceptionally, more to surveys of various aspects of ‘apterygotan’ distribution in unknown or understudied ecosystems or habitat types, unique methods, novel influences on soil biocoenoses as well as highlighting some aspects of ‘Ectognatha’ research despite or in defiance of the difficulties with these taxa mentioned above.

David J. Russell,
Willi E. R. Xylander,
and the participants of the
9th International Seminar on Apterygota