



## PREFACE: 14th International Symposium on Aquatic Oligochaeta

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This volume is the proceedings for the 14th International Symposium on Aquatic Oligochaeta (ISAO), held in Hirosaki, Aomori Prefecture, Honshu, Japan, from 9 through 14 September 2018, organized by the Department of Natural Science, Faculty of Education, Hirosaki University, Hirosaki. The symposium was attended by 43 participants from 16 countries who presented 30 oral and 6 poster contributions. The scientific sessions were convened at the Iwaki Conference Hall in the 50th Anniversary Auditorium, Hirosaki University. In addition to the scientific sessions, there was a one-day excursion to visit a traditional playhouse Kouraku-Kan, lunch along the edge of Lake Towada – an oligotrophic caldera lake, and hiking along the lake's outlet stream, Oirase-Keiryu, flowing through a cool temperate forest typical of northern Honshu. The symposium organizing committee consisted of Akifumi Ohtaka, Kimio Hirabayashi, Katsutoshi Ito, Mana Ito, Takaaki Torii, Naoya Kimura, Stuart R. Gelder, and Mark J. Wetzel, with invaluable support from students from Hirosaki University.

This symposium was dedicated to the memory of Dr. Rut Collado de la Peña (1967–2015), and to participants of our previous ISAO symposia who have passed away. A memoriam honoring Rut is presented elsewhere in this volume.

The symposium was opened with a welcoming presentation by Dr. Manabu Totsuka, the Dean of the Faculty of Education, Hirosaki University, and a performance by the Hirosaki University Tsugaru Shamisen Circle playing classic regional music on Tsugaru Shamisen, traditional Japanese 3-stringed instruments. The program consisted of the following eight sessions, which covered a wide range of branches of knowledge dealing with the biology of aquatic oligochaetes and branchiobdellidans: taxonomy, phylogeny, community ecology, environmental studies, biogeography, morphology, branchiobdellidan biology and other topics on aquatic oligochaetes and other groups within the Annelida. Seven experts from different fields of oligochaetology presented keynote lectures: Dr. Steven Fend: New Japanese taxa associated with the microdrile families Lumbriculidae and Haplotaxidae; Dr. Christer Erséus: Reconstruction of the evolutionary history of Clitellata using transcriptome genetic data; Dr. Göran Milbrink: Composition and abundance of aquatic oligochaetes in Scandinavian lakes well correlated with the "morpho-edaphic index" – Do these relationships still hold 40 years later?; Dr. Pilar Rodriguez: Metal tissue residues in aquatic oligochaetes and environmental risk assessment in a Zn-Pb mining affected river catchment; Dr. Patrick Martin: DNA barcoding and diversity of groundwater oligochaetes in the Ouémé basin, Benin, West Africa; Dr. Stuart Gelder: Endemic branchiobdellidans (Annelida: Clitellata) on commercial North American crayfish: Potential and actual translocated associations, including the ectosymbiont's adoption of exotic host species; and Dr. Tarmo Timm: Observations on the life cycles of Oligochaeta in aquaria.

A half-day special microscopy session was attended by many symposium participants, with discussions about morphological characters and variable kinds of taxonomic and systematic issues. Social events during this scientific meeting began with an afternoon city walk through Hirosaki – with visits to the Hirosaki Castle, experiencing a simplified Japanese tea ceremony in the Fujita Memorial Garden, visiting the Hirosaki Municipal Tourist Center, and dinner at a Japanese style pub in the evening. One of the many highlights of this symposium was the participation by the founder of our ISAO group, Dr. Ralph O. Brinkhurst – who hosted the first of our 14 triennial meetings in Sidney, British Columbia, Canada in 1979. Since that first gathering of oligochaetologists, Dr. Brinkhurst has maintained a critical role in oligochaete research at the global level, serving unselfishly and enthusiastically as mentor for and as a collaborator with so many of our past and contemporary oligochaetologists.

The symposium sessions concluded with a business meeting to discuss issues affecting our global community of aquatic oligochaetologists:

1) Position of General Secretary, ISAO: After a short introduction of duties associated with this position, Mark Wetzel, who has held this position since 2007, nominated Adrian Pinder to serve as the next General Secretary; Adrian accepted the nomination, and was elected by unanimous voice vote. Along with Mark and past ISAO hosts and planning committee members, Adrian has participated in and played a key role in the organization and conduct of past triennial symposia and served as host for our 12<sup>th</sup> ISAO meeting in Fremantle, Western Australia in 2012. Adrian will be assisting Mark and other ISAO members between now and the opening ceremony of our next, ISAO15 meeting in 2021, when he will be inducted as the new General Secretary.

2) Publication of the ISAO14 proceedings: During the year preceding the ISAO14 meeting in Japan, the ISAO International Scientific Advisory Committee discussed possible journals in which to publish the ISAO14 proceedings via several email communications. *Zoosymposia* was tentatively chosen, and after some discussion, affirmed by members during this business meeting.

After the editorial policies of *Zoosymposia* were summarized, the ISAO14 editorial committee issued the official call for submission of manuscripts to be considered for publication in the official proceedings of this symposium. Of the 36 scientific presentations during this symposium, 10 contributions were prepared as manuscripts for publication in *Zoosymposia*. All papers in this ISAO14 proceedings volume were reviewed by two or more referees, followed by revisions by members of the ISAO14 editorial committee.

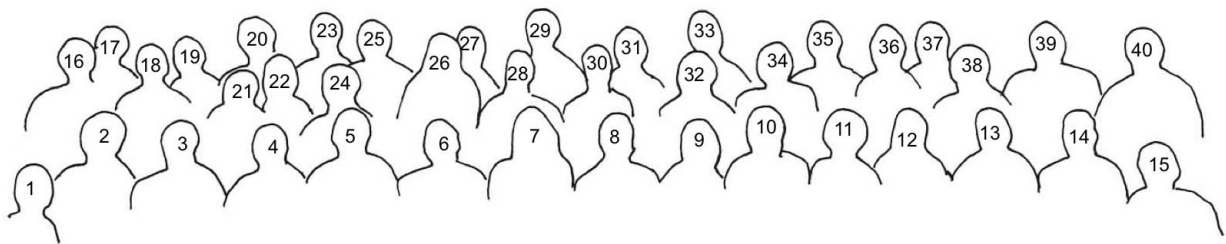
3) Venue for the next, ISAO15 meeting: Invitations to host the next triennial symposium were presented by Dr. Irina Kaygorodova (Limnological Institute, Irkutsk, Russia), and Dr. Patrick Martin (Royal Belgian Institute of Natural Sciences, Brussels, Belgium). After discussion of these two exceptional invitations, a written ballot vote by ISAO members present during this business meeting resulted in the decision to convene the next, ISAO15 symposium in Brussels, Belgium in September 2021.

The Closing Banquet of the ISAO14 symposium was held in the Amethyst Hall of the Art Hotel Hirosaki. During the banquet, ISAO Founder Dr. Ralph O. Brinkhurst shared some retrospect on his career, entitled “Some Personal Reminiscences” – touching each of us both personally and professionally by bringing forth positive memories of our individual as well as collaborative experiences and discoveries to date, and encouraging our continued focus towards the future of our group and our science.

During the banquet an entertainment was provided by the student Ohayashi (Japanese musical band) members to play traditional local music accompanied by Fue (Japanese flute) and Taiko (Japanese drums). Many oligochaetologists enjoyed playing the Fue and Taiko.

As in each of the 13 previous symposia, this 14<sup>th</sup> triennial meeting in Hirosaki provided numerous unique opportunities for aquatic oligochaetologists to renew and expand our knowledge, exchange ideas, discuss continuing projects, establish new as well as continuing friendships and collaborations, and embrace the unique culture of Aomori Prefecture in northern Honshu, Japan.

We would like to thank to all who attended the ISAO14 symposium in Hirosaki, thus contributing to the success of whole symposium. Our sincere thanks go to all authors of presentations during the symposium, and for their diligence in preparing their contributions for publication. We also extend our appreciation to the referees of the papers published in this volume, and for their constructive comments and recommendations to improve the scientific and linguistic components of those submissions. Finally, we wish continued success, safe travels, and good health for all ISAO members. We look forward to our next symposium in Belgium.



**FIGURE 1.** Group photo of ISAO14 participants, taken in front of Kouraku-Kan, Japan's oldest traditional wooden playhouse, during our one-day excursion through Akita and Aomori Prefectures on Wednesday 12 September 2018.

1–Keiko Ohtaka; 2–Irina Kaygorodova; 3–Haifa Jawad Jabir Jaweir; 4–Lynette Pitman; 5–Adrian Pinder; 6–Tarmo Timm; 7–Naime Arslan; 8–Steve Fend; 9–Pilar Rodriguez; 10–Ralph Brinkhurst; 11–Seray Yildiz; 12–Deniz Mercan; 13–Patrick Martin; 14–Takaaki Torii; 15–Naoya Kimura; 16–Chiharu Goto; 17–Katsutoshi Ito; 18–Maria Baturina; 19–Ege Arslan; 20–Rüdiger Schmelz; 21–Marta Schmelz Collado; 22–Anna Schmelz Collado; 23–Mark Wetzel; 24–Mana Ito; 25–Christer Erséus; 26–Jana Schenková; 27–Michal Schenk; 28–Hanna Świątek; 29–Piotr Świątek; 30–Anna Urbisz; 31–Lukasz Urbisz; 32–Saelon Renkes; 33–Jean-François Parpet; 34–Stuart Gelder; 35–Hongzhu Wang; 36–Göran Milbrink; 37–Yongde Cui; 38–Akifumi Ohtaka; 39–Kimio Hirabayashi; 40–Mohammed Ibrahim Naveed Rasheed.