

Editorial

Amgueddfa Cymru – National Museum Wales was honoured to host the 12th International Polychaete Conference (IPC12) from Monday 1 August to Friday 5 August, 2016 at National Museum Cardiff. The event was preceded by a 5-day *Philosophy of Biological Systematics* course given by Kirk Fitzhugh (Natural History Museum of Los Angeles County, USA). The seven participants were an enthusiastic group of early-career, established and senior scientists.

The IPC12 organizing committee comprised Andrew Mackie (Chair), Teresa Darbyshire, Kate Mortimer, James Turner, Anna Holmes, Harriet Wood and Jennifer Gallichan (National Museum Wales). Gordon Paterson and Adrian Glover (Natural History Museum, London), Susan Chambers (National Museums Scotland), John Hartley (Hartley Anderson Ltd) and Peter Garwood (Identichaet) attended several committee meetings in Cardiff and London, and provided much advice concerning the conference preparations. In total, 198 people attended from 27 countries: 123 researchers, 42 students, six helpers, and 27 accompanying wives, partners and children. There were 79 talks in 14 themed sessions, and 137 posters on all aspects of polychaete annelids, and of wider relationships within Annelida.

Conference delegates were warmly welcomed to the Reardon Smith Theatre (Figure 1H) by Dr Richard Bevins, Keeper of Natural Sciences and Acting Director of the Collections & Research Division. Andy Mackie, President – International Polychaetology Association (IPA), paid tribute to the 11 polychaetologists who had died since IPC11 at the Australian Museum in 2013 (see Obituaries). In addition, each delegate received a copy of *A Life in Polychaetes: A Tribute to Kristian Fauchald 1935–2015* (Figure 1A) in their conference bag. This 120-page publication prepared specially for IPC12 included essays, reminiscences, anecdotes and photographs contributed by Kristian's family, friends, collaborators and fellow scientists. Kristian played a major part in helping Pat Hutchings launch the Polychaete Conference series with the inaugural conference at the Australian Museum in 1983 and he had attended all 11 conferences, serving as IPA President 1995–1998.

Fredrik Pleijel launched the conference with a beautifully illustrated talk on 'Polychaetes & Aesthetics' (Figure 1B). This was followed by a varied Deep Sea session concerning bone-eating *Osedax*, symbiont-evolution of Siboglinidae, onuphids, and diversity revealed by DNA barcoding. The next three Systematics sessions included 'A solution to going down the rabbit hole of systematics' (Kirk Fitzhugh) and two talks that resonated with those of IPC1: on cosmopolitan species (Pat Hutchings) and 'In the Footsteps of Meredith Jones' (Kate Mortimer). However, in contrast to 1983, many IPC12 presentations were based on or incorporated molecular techniques (<https://museum.wales/ipc2016/Programme/>).

The Tuesday Phylogeny sessions were launched by twin presentations on annelid and clitellate phylogeny by Ken Halanych (Figure 1C) and Frank (Andy) Anderson, both representing the transcriptomic work of the Wormnet II

consortium. In juxtaposition, Luke Parry gave an intriguing talk on annelid phylogeny inferred from fossil data. Subsequent presentations focused on molecular and morphological studies of different polychaete families. The afternoon was no less interesting with a diverse series of Ecology lectures on invasive species, species distribution and dispersal and feeding behaviour. In addition, Yusof Shuaib Ibrahim gave a topical talk on microplastic ingestion by Malaysian polychaetes. The last session on Methodology detailed DNA barcoding, databases, Micro-CT, and next-generation histology (Figure 1G), finishing with entertaining advice from Adrian Glover on 'How to get funding to do Polychaete Taxonomy'.

Thursday's Biodiversity and Ecology sessions included studies of habitats the world over – from large-scale macro-benthic surveys to localized cave faunas and microhabitat commensal relationships, from intertidal to oceanic ridge, from Antarctic to North America, and from Mediterranean to South China Sea. The afternoon Morphology session was no less diverse with talks on annelid nervous systems, dinophilid brain structure, parental nourishment in a gutless polychaete, maldanid tube structure, tomopterid swimming mechanics (Figure 1J), sabellariid functional morphology and chrysopetalid jaws. The day ended with the official poster session.

Friday began with Reproduction and Larval Ecology, a session featuring talks on nereidids, syllids, onuphids, dorvilleids, sabellids (Figure 1F) and serpulids. The next Development session started with a colourfully illustrated lecture on coelomic cavities (Figure 1D), followed by an extensive study of larval development from northern California (Jim Blake), and a fascinating talk 'Enigmatic freshwater freaks: larval development of *Caobangia billeti*' (Glaflra Kolbasova). The remaining presentations in this interesting session were on syllid gene expression, oweniid and magelonid larval neuroanatomy, and echiuran development with insight into the evolution of trochophore larvae. Polychaete Studies, the last session of the day, was no less eclectic; featuring talks on South African bait collecting, glycerid and amphinomid venoms, and spirorbin tubes. 'Tigers into the Blue' by Daniel Martin included spectacular video from his latest research on territorial attacks of the chaetopterid associated scaleworm *Ophthalmonoe pettiboneae* and provided a suitably entertaining end to the conference.

The IPA Advisory Council met at Friday lunchtime to discuss membership (<https://museum.wales/ipc2016/IPC2019/>), election of officials, and the location of the next conference in 2019. The IPA general meeting took place following the last conference session. Dan Dauer was elected President (2016–2019) and Leslie Harris elected Secretary. The following were elected for unfilled positions: Eulogio Soto (Chile), Nicolas Lavesque (France) and Liron Goren (Israel). Jerry Kudenov replaced Dan Dauer (USA) and Paulo Paiva replaced Paulo Lana (Brazil). In addition, it was a pleasure to welcome new representatives Raj Kiran Lakra (India) and Izwandy Idris (Malaysia). The student prize winners (Figure 1I) were Patricia Álvarez-Campos (lecture) for 'A transcriptomic approach to syllid (Annelida) reproduction' and



Fig. 1. The 12th International Polychaete Conference: (A) Cover of special tribute publication for Kristian Fauchald; (B) invited opening lecture, Fredrik Pleijel on Polychaetes & Aesthetics; (C) Ken Halanych on Annelid Phylogeny; (D) Thomas Bartolomaeus on annelid coelomic cavities; (E) Icebreaker function, the poet Philip Gross reciting 'Whalefall and Boneflower and the Deep Sea Snow' *Osedax mucofloris*; (F) Aria Lee on reproduction in the invasive fanworm *Sabella spallanzanii*; (G) Ekin Tilic on next-generation histology; (H) delegates in the Reardon Smith Theatre, National Museum Wales; (I) Andy Mackie, Conference Chair and President – International Polychaetology Association, with student poster and oral prize-winners Larisse Faroni-Perez and Patricia Álvarez-Campos; (J) Karen Osborn on tomopterid swimming; (K) mid-conference photo opportunity at Caerphilly Castle; (L) mid-conference lunch at Llanerch Vineyard; (M) conference organisers, Teresa Darbyshire, Anna Holmes, James Turner, Kate Mortimer, Harriet Wood and Jen Gallichan; (N) conference banquet at Cardiff City Hall; (O) dancing to the Rough Edge Ceilidh Band. Image credits: (A, O) Teresa Darbyshire; (M) Carol Simon; (B-H, J-L, N), Andy Mackie; (I) James Turner.

Larisse Faroni-Perez (poster) for 'Climate and environmental changes driving biogeographic shifts in sabellariid reefs'. Kirk Fitzhugh, Leslie Harris and Larry Lovell made an attractive, entertaining and successful bid to host IPC13 in Long Beach, California, USA in 2019.

Polychaete Conferences are not just about attending lectures and viewing posters. Meeting new and old friends, forming new contacts and perhaps collaborations, and just talking about polychaetes and other interests are a vital part of the IPC chemistry that Pat Hutchings, Kristian Fauchald and others created. Hence the welcoming icebreaker, mid-conference excursion and final night banquet – not to mention the multitude of smaller social gatherings at lunchtimes and evenings in cafés, bars and restaurants – are essential components. Many shared their conference experiences on social media.

The Icebreaker was held in the Museum Main Hall on the Monday evening. Delegates socialized with canapés and a beer or two from local brewer Tiny Rebel. Renowned Welsh Poet Philip Gross, Professor of Creative Writing at the University of South Wales and winner of the TS Eliot Prize, gave a passionate reading of his poem for *Osedax mucofloris*, 'Whalefall and Boneflower and the Deep Sea Snow' (Figure 1E). In addition, the Museum Choir entertained with several beautiful Welsh songs, and the Museum's popular new exhibition, *Wriggle! The Wonderful World of Worms* (2016–2018) was open to view. The mid-conference excursion to Caerphilly Castle and Llanerch Vineyard was enjoyed by all, and provided many networking and photo opportunities (Figure 1K, L). The excellent conference banquet took place in Cardiff City Hall. Delegates were received into the Marble Hall, before being seated in the magnificent Assembly Room (Figure 1M, N).



Fig. 2. Delegates of the 12th International Polychaete Conference on the front steps of National Museum Wales, Cardiff. Photo: Robin Maggs (National Museum Wales).

Andy Mackie gave thanks to all involved and presented the student prize-winners and fellow conference organizers with IPC12-themed pendant necklaces. Finally, Pat Hutchings was honoured on the eve of her retirement with the presentation of an original IPC12 logo print signed by conference delegates and an IPC12 pendant in recognition of her initiation of the IPC series in 1983, her second hosting of IPC11 in 2013, and her research contributions. Delegates then enthusiastically took to the dance floor to the sound of the Rough Edge Ceilidh Band (Figure 1O).

The conference aim to make IPC12 one that honoured Kristian Fauchald's spirit, character and inspiration was well and truly fulfilled. Thank you. We hope to see you all again in Long Beach in 2019 (<https://nhm.org/site/research-collections/polychaetous-annelids/ipc>).

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Correspondence should be addressed to:

Teresa Darbyshire
Invertebrate Biodiversity,
Department of Natural Sciences
National Museum of Wales, Cathays Park,
Cardiff CF10 3NP, UK
email: teresa.darbyshire@museumwales.ac.uk

Anna Holmes, Teresa Darbyshire, Kate Mortimer
and Andrew Mackie
Invertebrate Biodiversity, Department of Natural Sciences
National Museum Wales, Cathays Park, Cardiff CF10 3NP,
UK