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Bulletin

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Further information at http://www.bryozoa.net/iba/index.html

PRESIDENTS PAGE

Heat, bryozoans, and anticipations

This is an exciting Bulletin given it contains details of the forthcoming IBA conference in Melbourne in April 2016 and information about the research activities of some of the Association's younger and newer members.

As I write I am in the middle of a holiday in the US where I feel like a baked clam – it's 94 degrees F outside. The only escape is to move indoors and do one of two things: eat ice cream or colonize a colleague's office. I have done the latter and as an adjunct holiday activity I am doing some research with Marcus Key. You will hear the results of our deliberations next year. Scientists, and in particular field scientists often find it difficult not to allow research encroach into holiday time. Undertaking research is a pleasure, and so during my sojourn in the US I shall be meeting up with various bryozoological friends in Pennsylvania, Ohio, Missouri and North Carolina. This said, I shall also take in my fair share of visits to Presidential houses, quilt shops, and frozen yogurt emporia.

Rolf Schmidt together with his colleagues in Australia and New Zealand have put together a comprehensive circular that outlines the exciting plans for the 17th IBA International Conference. These conferences held every three years are the most important meetings in our calendar. I strongly encourage you to travel to Australia and participate on the field trips and the meeting in Melbourne and make this a wonderful gathering.

Please check out the IBA webpage (http://bryozoa.net/iba/) for details of the IBA Travel Awards scheme, and do apply if you think the scheme applies to you.

I would also be grateful for any nominations for the inaugural Ellis Medal - see *IBA Bulletin* 11(1) (http://bryozoa.net/iba/files/IBA_Bull_11(1).pdf)

Best wishes
Patrick

FROM THE COUNCIL

2016 International Bryozoology Association Awards

The IBA Council is delighted to announce the upcoming International Bryozoology Association Awards. The Awards are supported by the IBA funds and by donations.
The overall aim of the IBA Awards is to support bryozoan research.
In particular, support is usually in the form of a travel grant towards attendance at an IBA conference. We will give priority to supporting students (and others who have limited access to funding sources) who are IBA members and who wish to present their research at an IBA meeting.
Application Guidelines:

a. Applications must be made to the IBA Secretary by email.

b. Each email application must contain

- a brief CV and short abstract of the research to be presented (1 page)
- a description of the project/travel including a budget and information as to whether they have obtained or may obtain support towards the costs from other sources (along with amounts) (1 page)
- a letter of support (from employers, supervisor, or associate) (1 page)

Docuuments should be presented in that order, as a single .pdf document if possible, sent by email to the IBA Secretary.

c. Applications will be accepted up until 6 months prior to the IBA meeting (i.e., the next deadline is 1 October 2015).

d. Applicants will be notified within a month of applications closing (by 1 November 2015).

e. Amounts awarded and number of awards are at discretion of the committee and dependent on availability of funds. Awards may not be made if there are no suitable applicants.

f. Anyone receiving an IBA Award for attendance at an IBA meeting must present a paper at that IBA meeting during which they must mention support from IBA Award, and further acknowledge support of the IBA in any related presentation or publication.

Please send applications by email before 1 October 2015 to Catherine Reid (catherine.reid@canterbury.ac.nz)

NEWS FROM THE MEMBERSHIP

Antonietta Rosso - In April, 25-26, 2015 the meeting on **Cave environments: present and past,** organised by Rossana Sanfilippo and me in Custonaci (Trapani, Sicily), in conjunction with the event **On and inside the mountain**: **Study and dissemination days on Geology, Karst & Palaeontology** was successfully held with the participation of Italian and European researchers from France, Greece, Croatia, United Kingdome, Poland and Spain.

On April 25th we had the introduction lecture by Jean-George Harmelin focused on submarine caves and their meaning as ecological refuges and very special biodiversity hotspots. Short seminars followed focusing on fossil submarine caves as well as on present-day subaerial cryptic environments targeted for extending knowledge to non-academic people. Some posters, mostly on the colonisation of subaerial caves by animals and fungi were discussed.

On April 26th we visited the Rumena Cave, a flank cave, presently located at about 100 metres above the sea level and hosting spectacular speleothems and encrustations, with prevailing corals, bryozoans and serpulids, pointing to its submersion and colonisation in subsequent phases during the early Pleistocene. We attended the ceremony of apposition of a plate at the entrance of the cave, just declared "geosite of world interest" for its beauty and scientific interest.

The scientific meeting kept on with 14 oral presentations focused on biota from present-day submarine caves (mostly sponges, corals, brachiopods, planarians) as well as on submarine invertebrates and fossil continental vertebrates accumulate in caves and sometimes pointing to human exploitation of the caves.

Bryozoans were well represented during the meeting in the presentation by Jean-George Harmelin and, at different degree, in the following talks:

Di Martino E., Rosso A., Sanfilippo R., Di Martino V. - Bryozoans from shallow-water submarine caves of Capo Caccia Marine Protected Area (Sardinia, Italy)

Gerovasileiou V., Voultsiadou E. - Evaluating marine cave biodiversity in the eastern Mediterranean Sea

Guido A., Rosso A., Sanfilippo R., Mastandrea A., Russo F. - Autochthonous *vs* detrital micrite in the biotic crusts of the Rumena Cave (Custonaci, Sicily)

Petricioli D., Buzzacott P., Radolović M., Bakran-Petricioli T., Gerovasileiou V. - Visitation and conservation of marine caves

Rosso A.[1], Sanfilippo R., Vertino A., Zibrowius H. - Pleistocene cave communities from the Capo Milazzo Peninsula (north-eastern Sicily)

Steinthorsdottir M., Håkansson E. - Endo- and epilithic faunal succession in a Pliocene-Pleistocene cave on Rhodes, Greece - record of a transgression

Jean-George Harmelin speech (left) and a moment of the closing meeting dinner at the entrance of the Mangiapane Cave (right) with Jo and his wife, Mireille, Emanuela and me.

Errata corrige - Thanks to Dr Sabine Stöhr, Senior Curator at the Swedish Museum of Natural History (SMNH), we noticed to errors in the paper - *Di Martino, E. & Rosso, A. 2015. Revision of the bryozoan genus* Gephyrotes *Norman, 1903 (Cheilostomata, Cribrilinidae) with the description of two new taxa. Zootaxa, 3941, 261–283* - that we would like to amend here. The type number of *Gephyrotes nitidopunctatus* (Smitt, 1868) is actually SMNH-Type-1770, not SMNH1770. The paper also says it is a holotype, while it is registered as syntype in the SMNH Catalogue. The same corrections need to be applied to the captions of the Figures 2–8 (p. 264) and Table 1 (p. 265).

Emanuela Di Martino & Antonietta Rosso

Andrew Ostrovsky has managed to obtain a grant of the Austrian Science Fund to study reproduction of the cyclostome bryozoans. The battle for money lasted almost 2 years. The requirements for the PhD position will be announced soon. Title "Evolution of viviparity and polyembryony in Cyclostomata"
I deeply thank all the colleagues who kindly helped me to draft and improve an application and generously spent their time and efforts in writing reviews and letters of recommendation: Alan Cheetham, Roger Huges, Patrick Wyse Jackson, Andrea Waeschenbach, Matthias Obst, Dennis Gordon, Abby Smith, Matthew Dick, Paul Taylor, Claus Nielsen, Alex Gruhl, Bjorn Berning, Grigory Genikhovitch and John Bishop.

Thanks so much, my friends! This worked finally!!!

(3) The result of 3-years long work has been recently published:
Ostrovsky A.N., Lidgard S., Gordon D.P., Schwaha T., Genikhovich G., Ereskovsky A.V. 2015. Matrotrophy and placentation in invertebrates: a new paradigm. *Biological Reviews*. DOI: 10.1111/brv.12189 (on-line).

News from Kamil Zágoršek and Huilian LIU
I am happy to inform you, that thanks of great help of dr. Huilian LIU, I am able to continue a Bryozoa research in Institute of Oceanonology, Chinese Academy of Sciences (CAS) in Qingdao for one year. The CAS President's International Fellowship Initiative is highly acknowledged to support my study of diversity and ecology of Qingdao Bay bryozoans. I will study the old collections and also the freshly collected samples, describe the newly discovered taxa and study the ecology of the bryozoans in the Yellow Sea.

The first task is the study on the interaction between *Cryptosula* and *Watersipora* on a boat, which has been moored in the harbour for six years as a landing stage, this work carried out under the help of the team of Prof. ShiDe MA.

Discussion about the interaction between *Watersipora* and *Cryptosula* on the boat and the students were taking the bottom samples.

Dennis Gordon - Editor needed for Zootaxa marine Bryozoa papers. Dennis Gordon has been receiving, processing and copy-editing manuscripts for Zootaxa since 2005 and would like a break from the job. If anyone would like to take over this role, please let Dennis know by emailing him at: Dennis.Gordon@niwa.co.nz. Note that Tim Wood is now the editor for freshwater Bryozoa.

Andrea Waeschenbach - visits the Museum of Tropical Queensland. After spending two weeks getting my hands dirty dissecting fish guts for parasites on Lizard Island, Queensland, Australia, I took the opportunity to visit the bryozoan collection at the Museum of Tropical Queensland (MTQ) in Townsville, where I was being kindly hosted by Collection Manager and Bryozoa Researcher Robyn Cumming and Senior Curator and isopod expert Niel Bruce. MTQ has a large bryozoan collection (approx. 25,000 lots), most of it originating from sites across tropical Australia, including the Great Barrier Reef, the Gulf of Carpentaria, the Kimberley and Ningaloo Reef in Western Australia. Kevin Tilbrook spent three years (2010 – 13) enhancing, curating and identifying the vast collection, but much work remains to be done.

The main aim of my visit was to explore an extensive frozen collection collected during the Great Barrier Reef Seabed Biodiversity Project, which sampled 1,450 inter-reef sites on the Great Barrier Reef. As it turned out, much of the inter-reef fauna is composed of bryozoans, providing a fantastic opportunity to assess "bryodiversity" all the way from Cape York to Gladstone, a transect that covers ~2,000km. As any such assessment would benefit greatly from putting those taxa into a phylogenetic context, I subsampled 86 colonies from the frozen collection, as well as 42 ethanol-preserved samples collected by Kevin Tilbrook and Andrej Ostrovsky in 2012, to test whether good quality DNA can be obtained from them.

Furthermore, as Robyn has a particular interest in the taxonomy of the Lanceoporidae and the genus *Calyptotheca*, in particular, we are planning on producing a molecular phylogeny of the genus, which will form a complement to the project of MSc student Pascal Sebastian (see Students' section).

Post-lunch photo outside the Museum of Tropical Queensland. From left: Paul Muir, Robyn Cumming, Niel Bruce, Andrea Waeschenbach & Pascal Sebastian

Björn Berning has just given the first Expert-in-training course on bryozoans via the Distributed European School of Taxonomy (DEST; http://taxonomytraining.eu/) at the end of May / beginning of June. The two highly motivated participants and new members of the IBA (see below), **Katerina Achilleos** and **Tena Šarčević**, came to Linz for two weeks to become more familiar with Mediterranean bryozoans. Although I quickly found out that it was very, very ambitious to convey everything about bryozoan taxonomy, systematics, physiology, evolution, ecology and biogeography in just two weeks, we all have learnt a lot AND managed to have a splendid time throughout the course!

As a good sign, the 50th anniversary of the IBA fell within the first week of the course, and although we were not as well equipped as Patrick Wyse Jackson concerning the appropriate drink, we decided to open a bottle of champagne on May 27 and to salute the IBA and all its members for keeping up the good spirit!

Here's to the IBA! Tena, Björn and Katerina

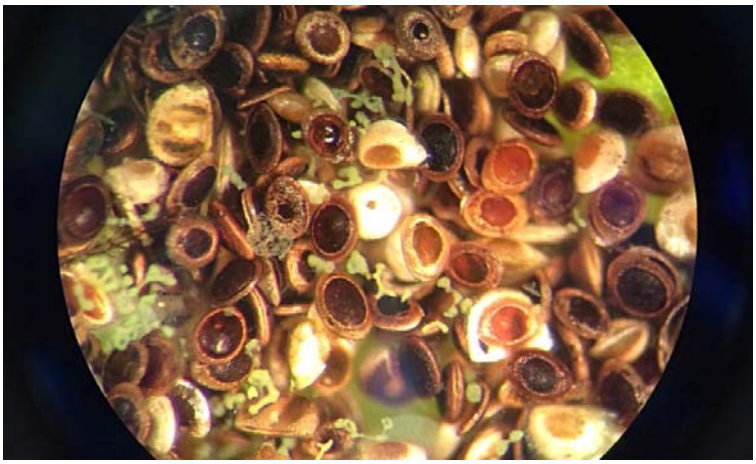
Laís V. Ramalho. I am starting a new post-doctoral about "Systematics and Paleobiology of Bryozoans from the Pirabas Formation (Lower Miocene), Pará State, Brazil" (June 2015 to May 2016). This study is supported by the Post-Doctoral Fellowship CNPq-Brazil (Science without Borders) and will be made at the Universidad de Málaga (Dr. Francisco Serrano, and collaborated: Dr. Serge Coifas and Dra. Carmen Sallas) and Instituto Español de Oceanografia (Dr. José Rueda), located at Málaga/Fuengirola-Spain, and with direct collaboration of Dr. Paul Taylor from Natural History Museum-London, Dr. Vladimir Távora from Universidade Federal do Pará, Brazil, and Dr. Kamil Zagorsek from Technical University of Liberec, Czech Republic.
Thus, I will be living in Spain during the next year, or maybe more….

My 5th IBA - Catania, Sicily, Italy (2013). Conference inner with Paul and Somayeh.

STUDENT AND NEW MEMBER NEWS

Nikola Koletić - I graduated at Department of Biology at the University of Zagreb on the subject of genetic diversity of freshwater bryozoan species of Croatia and I have a master in ecology and nature protection. Currently, I am employed as research assistant at the Institute for Research and Development of Sustainable Ecosystems and as teaching assistant at the Faculty of Science at the University of Zagreb. My research interests include analysis of phylogenetic relationships of freshwater and brackish bryozoan species and connections carried by their ecology and genetic relations. With the bioinformatics analysis I associate the data of the species compound, environmental conditions and genetic information of population from specific location into proposed measures for environmental protection.
I am very pleased to be part od the IBA for the purpose of mutual benefits so feel free to contact me at nikola.koletic@ires.hr

Hannah Mello - It's field season here in La Crosse, Wisconsin, which means I've been collecting statoblasts for my master's research. My thesis focuses on distribution and habitat requirements of freshwater bryozoans in the Upper Mississippi. I have already seen some interesting differences in bryozoan communities between habitat types in the Upper Mississippi River Watershed, as well as some fantastic species diversity in the main channel and backwaters of the river. In August, I plan head down the Mississippi and do some additional sampling in Alton, Illinois and Savannah, Illinois and compare that data to the data collected near La Crosse.



Honing my statoblast ID skills has been both exciting and back-breaking, as microscope work can be. I am encouraged by my results so far and look forward to sharing them with the bryozoan community, both online and at IBA 2016!

Katerina Achilleos - I studied Biological Sciences at the University of Cyprus and my thesis focused on investigating the role of the Mazotos shipwreck (4th century BC, Cyprus) as an artificial reef based on the calcareous community as collected from the sediments and the amphorae. I further expanded my knowledge in this field during my M.Sc studies on Biodiversity and Ecology, also at the University of Cyprus. My M.Sc thesis comprised an extensive study of the biodiversity of calcareous organisms (Bryozoa, scleractinian corals) along the southern coast of Cyprus. In parallel, I am trying to expand my research experience by studying various coralligenous ecosystems and submerged caves. Recently, I have successfully completed my training course on 'Taxonomy and systematics of Cenozoic and Recent marine Bryozoa' provided by Dr. Björn Berning, who suggested to become a member of the IBA family.
Looking forward to meet you all, feel free to contact me via email: achilleos.katerina@ucy.ac.cy

Sergio González Mora (Master student, UNAM, Mexico): Last June I had the opportunity to visit Patrick Wyse Jackson at Trinity College Dublin. For a full week I was able to check his incredible collection of fossil bryozoans and related literature. He showed me interesting aspects of the bryozoan study; sampling techniques, how describe the spp., important taxonomic features, among other things. I am extremely grateful to Patrick for all the attention he gave me and for all the rich discussions we had. I would also like to thank Consuelo Sendino and Paul Taylor for allowing me to visit the bryozoan collection at NHM at London. Both experiences did not only enriched my knowledge but also increased my motivation to keep lurking at some of the mysteries that bryozoans keep.
Thanks for all.

Anna Lene Claussen - I am a PhD student at the Christian-Albrechts-University in Kiel, Germany, where I got my bachelor's and master's degree in geology. During my work as a student assistant for Dr. Andrej Ernst I decided to perform my research on Paleozoic bryozoans.
My supervisors are Prof. Dr. Priska Schäfer from Christian-Albrechts-University in Kiel and Dr. Andrej Ernst from the University of Hamburg. My work is based on the diversity and taxonomy of Silurian bryozoans. Therefore I studied some samples from Gotland (Sweden), Saaremaa (Estonia) and Waldron Shale (Rochester Shale Formation of Indiana). After the preliminary analysis of the samples, I noticed that they differ markedly from those described in the literature up to now. Hence, I decided to focus on this topic to gather additional information on diversity patterns, palaeoenvironment and provincialism. Currently I don't have any funding, but when I am funded I will collect more samples in Gotland, Estonia, Great Britain and, hopefully, other regions to get a more comprehensive database.
I really enjoy my work with bryozoans and would be happy to get more experience. So if you have any Silurian samples with bryozoans which you desire to be described and identified, I would be happy to process them. I would be also grateful for any suggestions which could help me in my work. Please contact me via email (lene.claussen@gmx.de).

Tena Šarčević, Hi to all! Let me introduce myself. I gained a M.Sc. in Marine Ecology and Nature Preservation, and a B.Sc. in Biology, from the University of Zagreb, Croatia. Since 2013 I've been working as a freelancer on various, mainly marine ecology related projects.
My first serious encounter with bryozoans was during the sample analysis in a project on the affinities of fouling organisms for different artificial substrates in the Adriatic Sea, which I started with a colleague in 2013.
Although I haven't been involved in any other research project with a focus on bryozoans, my interest hasn't faded. On the contrary, participation in the DEST (Distributed European School of Taxonomy) Expert-in-training program "Taxonomy and Systematics of Cenozoic and Recent marine Bryozoa ", led by Dr. Björn Berning, held in June this year in Linz, motivated me even more to keep the bryozoans in the focus of my future research.

I would like to continue the research on the artificial substrates in the marine environment and the impact on marine fauna they potentially have. I am hoping to find a working position in the field of my research interest, therefore, if someone needs an assistant, plans to open a position, have a recommendation or an advice please keep me in mind ☺
Feel free to contact me also if you're planning to visit Croatia, I could recommend you some nice diving spots.

Hope to meet you all in some of the upcoming meetings!

Pascal Sebastian - I am an MSc (Marine Biology) student at James Cook University, Townsville, Australia, currently doing a thesis project on 'Discovering new species of Calyptotheca (Cheilostomata: Lanceoporidae) from the Great Barrier Reef'. The project is held at the Biodiversity Laboratory of the Museum of Tropical Queensland (MTQ). Together with Dr Robyn Cumming, bryozoan taxonomist at MTQ, we are discovering new species from specimens collected during the 1980s from the Great Barrier Reef lagoon off Townsville, using a morphological approach. To date, we have found five candidates of new species of *Calyptotheca*; the results will be submitted for publication around July 2015, which is when I will be finishing my Masters. In addition to having learned a lot about bryozoans, I have come to appreciate the importance and potential of museum collections for the discovery of novel diversity and the value of taxonomy as a foundation of biological studies, a discipline which is so frequently neglected nowadays.

Ekaterina Shevchenko, Uliana Nekliudova and **Ksenia Kalinich** started scientific work at the department of invertebrate zoology in 2010 at the Saint-Petersburg State University. And from that moment Bryozoans are the object of our scientific interest. In 2013 we finished our bachelors program. Themes of the diplomas were the following: **Ekaterina Shevchenko** – Life history of cheilostome bryozoan *Callopora craticula* in the Chupa Inlet (Kandalaksha Bay, White Sea); **Uliana Nekliudova** – Dynamics of sexual reproduction in cheilostome bryozoan *Cribrilina annulata* in the Chupa Inlet (Kandalaksha Bay, White Sea); **Ksenia Kalinich** – Comparative mioanatomy of avicularium of five cheilostome bryozoan species. The results of these researches were reported at Larwood Symposium (2014) and at the 49th European Marine Biology Symposium. During masters program **Ekaterina Shevchenko** and **Uliana Nekliudova** started studying ovarian structure and seasonality of sexual reproduction in two Mediterranean cheilostome bryozoans *(Myriapora truncata* & *Adeonella calveti*). The preliminary results of this research were also presented at the 49th European Marine Biology Symposium. Later, both of us were invited to apply our methods of work in a collaborative project on the life history analysis of non-native cheilostome bryozoan *Schizoporella japonica* in Scotland. In 2015 we graduated from Saint-Petersburg State University. Themes of masters diplomas were the following: **Ekaterina Shevchenko** – Comparative study of the life-history and sexual reproduction in bryozoans with contrasting reproductive patterns; **Uliana Nekliudova** – Reproductive biology of *Cribrilina annulata* and *Celleporella hyalina* (Bryozoa: Cheilostomata) from the White Sea; **Ksenia Kalinich** – Comparative anatomical and ultrastructural study of polymorphic zooids in cheilostome bryozoans. At the moment all of us are going to PhD programs to continue our researches.

Uliana Nekliudova

Ekaterine Shevchenko

Ksenia Kalinich

Marwa Mohammed AlGhanem - I am in my first year of PhD research studies at Heriot Watt University in Edinburgh. I completed my Bachelors in environmental studies at Qatar University and joined the Ministry of Environment Qatar in 2010. The aim of my PhD project is to investigate the biodiversity and ecology of encrusting epifauna associated with bivalve molluscs. Currently I am working on British bivalve Modiolus modiolus (Linnaeus, 1758). Later in the project I am planning a field work trip to Qatar in November to collect pearl mussel shells, or coral rubble to investigate the taxonomy, biodiversity and ecology of the encrusting epifauna of Qatar. It will then be possible to compare the encrusting epifaunal communities (Bryozoans, Polychaete and barnacles) on bivalve molluscs from British/Qatar locations. This research will provide an account of size-related epifaunal succession based on epifaunal abundances and community composition, as well as highlighting patterns in the distribution of epifauna. Size-based analyses in my study will explores how horse mussel shell size and shell region is related to the abundance and diversity of epifaunal colonisers. M. modiolus horse mussel shells from a bed at Ramsey Bay in the north of the Isle of Man, have been analysed and further sites to be included in the future are the Karlsruhe historic wreck site in Scapa Flow Orkney, Trondheimfjord in Norway, and the Lleyn Peninsula in North Wales. As part of the analysis the shells are divided into four equal regions and encrusting species are identified and counted within each region for statistical analysis. Primer 6V software is used to calculate dissimilarity between horse mussel shell regions and size classes to give an understanding of the community complexity of horse mussel shell epifauna, and relate the community of epifaunal organisms to the environmental and biogeographic context. Key species from each location are being imaged using the LEO 1455 VP SEM electron microscope in the EMMA Unit of the Natural History Museum London for confirmation of identity as required. This project is supervised by Dr. Joanne Porter, Dr. William Sanderson, and Dr. Dan Harries and is funded by the Ministry of Interior Affairs, state of Qatar.

Working on the LEO 1455 VP SEM electron microscope in the EMMA Unit of the Natural History Museum London

ARTICLE

Irruption of *Membraniporopsis*, Brazil

Lais V. Ramalho.

In this last morning Saturday (July) a massive irruption of *Membraniporopsis tubigera* (Osburn, 1940) occurred on the Cassino beach at Rio Grande do Sul State, Brazil. Pictures below were made by Dr. Lauro Calliari, professor of the Rio Grande Federal University (FURG). He mentioned this irruption covered 15 metres of width of the beach and he accompanied it for 1 km away, and probably occurred along of the all RS coast… This phenomenon had occurred in RS state and part of the Uruguay coast since 2010, always in the summer, different in this case, that is occurring in the winter.

ARTICLE

13th Larwood Symposium– Thurso/Orkney Islands 17th – 20th June 2015

By Andrea Waeschenbach & Mary Spencer Jones

On Wednesday, 17th of June 2015, Thurso, a windswept place in the far northern reaches of Scotland, experienced an invasion of non-native organisms of another kind: the 25 delegates of the 13th Larwood Symposium.

The first half of the meeting was hosted by **Jennifer Loxton** at the *Environmental Research Institute, University of the Highlands and Islands* in Thurso. At this point I would like to thank Jennifer for having been such a fabulous host for both the social and formal events of the meeting! She even ventured all the way down to Inverness to ensure a safe bus transfer to Thurso for the delegates, which included a visit to the Glenmorangie whisky distillery.

The evening reception was held at *Caithness Horizons*, a museum which exhibits artifacts and collections that recount the geological and historical story of Caithness. **Stuart Gibb**, Director of the *Environmental Research Institute*, gave a warm welcome to everyone and highlighted the *University of the Highlands and Islands* as a leading force in the development of renewable energy and sustainable development. His speech was followed by an address from **Phil Gillibrand**, Senior Research Fellow of the Marine Energy Research Innovation and Knowledge Accelerator (MERIKA) initiative, which kindly sponsored the welcome reception.

Welcome reception at Caithness Horizon. From left: Andrea Waeschenbach, Consuelo Sendino, Thomas Schwaha, Caroline Buttler, Antonietta Rosso, Paul Taylor, Mary Spencer Jones, Susan Miller (back), Joanne Porter (front), Helen Jenkins, Rebecca Crawford, Abby Smith, Lais Ramalho, Eva Ježková, Emanuela Di Martino, Lee Hsiang Liow, Sergio Gonzàlez-Mora, Patrick Wyse Jackson, Jennifer Loxton, Stuart Gibb, Phil Gillibrand

In addition to the usual suspects, the list of delegates included a number of new additions to the bryozoology community: **Eva Ježková**, PhD student from the University of South Bohemia, Česke Budéjovice, and **Theresa Madurell** from the Institute of Marine Sciences, Barcelona, while **Lee Hsiang Liow** from the University of Oslo, whom some of you may have met at the Larwood Symposium in Sopot last year, came with Masters students **Jeroen Boeve**, **Emily Enevoldsen** and **Mali Ramsfjell**. Joanne Porter introduced Master student **Rebecca Crawford** and The Conservation Volunteer Natural Talent trainee **Susan Miller**. However, the furthest travelled new addition was palaeontologist **Sergio Gonzàlez-Mora**, who had travelled from Mexico City for this meeting and to spend some time working with Patrick Wyse Jackson in Dublin and with Consuelo Sendino and Paul Taylor in London.

The meeting was kicked off by **Lee Hsiang Liow**, an enthusiatic newcomer to the IBA and leader of the new Bryozoan Lab for Ecology, Evolution and Development (BLEED) at the University of Oslo. She provided an inspirational reminder as to why bryozoans have the potential to make an excellent macroevolutionary model system in which to study the processes that drive phenotypic evolution, speciation and extinction rates, adaptive radiations and convergent evolution. By coopting statistical approaches new to palaeontology such as occupancy modelling, which provides a more robust interpretation of the fossil record, and by integrating molecular phylogenies with evidence from the fossil record, Lee Hsiang and her team aim to answer burning questions in macroevolution. These include the importance of biotic versus abiotic factors in driving global extinction and diversification events. One of the prerequisites for addressing these issues is a well-sampled molecular phylogeny. Masters student **Jeroen Boeve** has taken on the challenge to expand the phylogeny of Waeschenbach et al. (2012) by sequencing nuclear gene 18S rDNA, and mitochondrial genes 16S rDNA, cox1 and cytb for select cheilostome taxa. His taxon sampling is primarily designed to shed light on the evolution of polymorphisms and frontal shield morphologies, and where future work would use comparative phylogenetic approaches to study trait-related speciation events. Excitingly, Jeroen's preliminary results indicate possible non-monophyly of cribrimorphs, which would confirm previous molecular results by Knight et al. (2011) and Dennis Gordon's hypothesis of the paraphyly of cribrimorphs (Gordon 2000). Zooming into the cheilostomes, Masters student **Emily Enevoldsen** is constructing a molecular phylogeny of the species-rich family Microporellidae. In order to provide good resolution, Emily is attemping to sequence complete mitochondrial genomes, which is not only expected to provide a robust age-calibrated species-level framework for studying trait evolution and for reassessing the morphological phylogeny of Taylor & Mawatari (2004), but may also shed light on the processes of mitochondrial genome evolution, specifically those of gene order rearrangements which are particularly rife amongst bryozoans. A crucial attribute which makes bryozoans a good evolutionary model system is the fact that ecological competitions, i.e. overgrowth, are preserved in the fossil record. In order to study how interspecific competition affects morphological evolution and species occupancy and abundance over time, **Emanuela Di Martino**, Lee Hsiang Liow and Masters student **Mali Ramsfjell** are producing an extensive empirical dataset of encrusting species-specific interactions within a community across a 2 million year interval during the Pleistocene (Wanganui Basin, New Zealand). Analysis of one unit, the Nukumau Brownsand, shows that ~60% of interactions were overgrowths, ~30% stand-offs, and ~10% were foulings. ~80% of interactions were between cheilostomes, of which 72% were interspecific rather than between two colonies of the same species. Perhaps unsurprisingly, traits associated with overgrowth success were multilaminarity and large zooid size at the growing edge.

Helen Jenkins & Paul Taylor gave a titillating talk on the search for novel phylogenetically informative morphological characters in cyclostome bryozoans, which remains somewhat of a holy grail in bryozoology, particularly for palaeontologists who are unable to seek refuge in molecular data. However, a recent paper by Taylor et al. (in press) provided hope that characters in early astogeny may carry some phylogenetic signal, which prompted Helen and Paul to raid the cyclostome collection at the Natural History Museum and conduct a survey of protoecial characters. They devised a scoring system based on pseudopore distribution, pseudopore shape, and protoecial surface texture. As a caveat, many of the species they scored are currently not included in the molecular phylogeny. However, an intriguing result they did discover is that protoecium size range changed throughout geological time. Whilst protoecia occupied a narrow size distribution during the Jurassic, protoecia of recent species occupy a much broader distribution. Assuming that protoecium size is a reflection of larval size, increased selection pressure, possibly from competition with cheilostomes, may have caused this size diversification.

Sergio Gonzàlez-Mora & Francisco Sour-Tovar from the Universidad Nacional Autónoma de México, gave a description of the extensive Carboniferous Santiago Ixtaltepec Formation in Oaxaca State. The taxon compositions found in the facies units are indicative of shallow, low- or moderate-energy peri-reef palaeoenvironments and agree with similar reports from equivalent sites in central eastern USA. Patrick Wyse Jackson complimented Sergio on the quality of his work, considering the poor preservation of the material. Paul Taylor, noting that the fauna is very similar to the North American Chesterian, was wondering whether Sergio had found any *Archimedes*, a fenestrate bryozoan that constructs screw-like colonies, but Sergio had never found any.

Antonietta Rosso, Rossana Sanfilippo & Agatino Reitano revisited an Early Pleistocene sampling area in the vicinity of Catania, which had previously been described by Waters (1878). As this outcrop is very limited, she restricted the sampling to two blocks. The community (20 species) was composed of mostly cheilostomes, although the cyclostome *Annectocyma indistincta* was the most abundant species, covering large surface areas. The entire association points

to a shelf environment no shallower than 50-60 m, which agrees with the palaeoecological interpretations by Waters (1878) and suggests that it is part of the "Offshore Rocky Bottom Biocoenosis" of Pérès & Picard (1964).

Caroline Buttler & Mark Wilson, inspired by one of Mark's 'Wooster's Fossil of the Week' blogs, delved into the secret life of Upper Ordovician cave-dwelling bryozoans. She described the different growth forms of the trepostome *Stigmatella personata*, which were found to grow both upwards and downwards from cave substrates. Interestingly, the colonies that grew downwards had distinctly longer zooids than those growing upwards. Caroline also documented layers of sediment that mark areas of successive overgrowth, even in those colonies that grew downwards. Two types of *Trypanites* borings, bioclaustrations and 'ghosts' (casts of boring organism that had died and decomposed and which had later been filled in) were also common.

Mark Wilson and **Consuelo Sendino** both spoke on one of the most famous fossiliferous sites of the USA, the early Late Ordovician Bromide Formation in Oklahoma. The fame is mainly due to the ease of collection (fossils just rolling out of the loose muddy carbonate sediment matrix) and the remarkable specimen preservation. **Consuelo,** Mark Wilson & Juan Suarez described a well-preserved and diverse bryozoan fauna of at least 47 species, including representatives of all Ordovician suborders. The fauna, which was associated with echinoderms, brachiopods and trilobites, included a variety of branching and runner-like species, and showed signs of *Trypanites* infestation and vermiform bioclaustrations. **Mark** & Paul Taylor gave an account of a new runner-like species, fittingly called *Zigzagopora* (see http://woostergeologists.scotblogs.wooster.edu/2015/06/19/woosters-fossil-of-the-week-an-undescribed-cyclostome-bryozoan-from-the-upper-ordovician-of-oklahoma/). The unique budding pattern distinguishes it from other runner-like species, such as *Corynotrypa*. Furthermore, single apparent communication pore are found in the interior walls, which are not present in *Corynotrypa*. The protoecium in *Zigzagopora* is poorly differentiated from the distal ancestrular tube and it lacks pseudopores throughout its exterior skeleton, a clear contrast with the pseudoporous post-Palaeozoic cyclostomes such as the superficially similar *Stomatoporina incurvata*. The encrusting nature distinguishes it from the Ordovician genus *Wolinella*, which, although resembling *Zigzagopora*, has erect colonies. A greater resemblance with *Sagenella primitiva* suggests that *Zigzagopora* possibly belongs to the Sagenellidae.

Fast-forward 140 million years, but still in Oklahoma, and we find ourselves in the Late Carboniferous of the Buckhorn Asphalt Quarry. Early impregnation of the sediment by hydrocarbons prevented aragonite dissolution, which makes this site one of the best-preserved Palaeozoic Lagerstätten for molluscs worldwide. **Paul Taylor,** Barbara Seuss & Andrej Ernst conducted the first detailed study of the bryozoan fauna at this site. Despite the unusual preservation history, the fauna did not reveal any peculiar new taxa. However, it did reveal interesting insights into colony surface detail: i) small (< 1µm) countersunk nanoperforations in the surface of the interior walls (*Streblotrypa*, *Stenophragmidium*, *Rhombocladia*), ii) granule bands in the chambers of *Streblotrypa*, iii) mural spines which may be homologous to those found in recent taxa, iv) spinose hemiphragms in tabuliporid trepostomes, and v) transverse fibrous fabric in a fenestrate, which is similar to skeletal fabrics found in some modern cyclostomes. It remains to be seen to what extent these new characters can inform on the phylogenetic affinities of these Palaeozoic taxa.

Talks by **Eva Ježková, Joanne Porter**, **Susan Miller** and **Rebecca Crawford** formed a session on invasive bryozoan species. **Eva** gave a talk on the freshwater bryozoan *Pectinatella magnifica*, which, although native to North America, has successfully invaded European freshwater bodies. In some instances this species forms mass aggregations of 600kg/10km of shoreline, with the heaviest colonies reaching up to 70kg in weight, causing disruption to recreational use of freshwater bodies and contamination of drinking water supplies. In order to study the reproductive strategy of this species, Eva is optimizing the culturing conditions for this ironically notoriously difficult-to-culture species. Although Eva has managed to germinate statoblasts into clusters of a few zooids, colonies have failed to develop so far, but instead seem to produce statoblasts almost instantly. **Joanne,** Mary Spencer Jones, Piotr Kuklinski & Sally Rouse presented the results from a recently published account of invasive bryozoans off the coast of Norway (Bergen – Trondheim). Their rapid assessment surveys of pontoons and harbour structures resulted in a revised blacklist of non-native species, which now includes *Schizoporella japonica* and *Tricellaria inopinata*. New 'doorknockers' were identified as *Bugulina simplex*, *Bugulina stolonifera* and *Watersipora subatra*, whereas horizon-scanning species include *Fenestrulina delicata*, *Pacificincola perforata* and *Smittoidea prolifica*. **Susan** presented her Natural Talent traineeship project, which she carries out in association with Heriot Watt University and the Scottish Environment Protection Agency. The project focuses on the recording of non-native species around the Orkney

Islands through rapid assessment surveys and DNA-barcoding in view to outline the introduction pattern and origin of *Schizoporella japonica*. In addition to *S. japonica*, her surveys have revealed the presence of *Bugulina simplex*, *Bugula fulva* and *Tricellaria inopinata*, particularly around the main harbours and marinas in Stromness and Kirkwall in Orkney and Scrabster on the mainland. A further key component of her project is to use public engagement and social networking to raise awareness about non-native species and to promote biosecurity. **Rebecca's** project, in addition to using rapid assessment surveys to monitor non-native species and GIS to identify areas that should be monitored for early detection, also investigates how the Shetland Biosecurity Plan, which was introduced last year, could be used as a model for biosecurity planning by the Orkney Island Council. Lee Hsiang Liow commented on the potential use of occupancy modeling to help assess the probability of detecting very small colonies that could easily be overlooked during rapid assessment surveys.

The second day of talks was started by **Malgorzata** (also known as Gorza) **Nowak** & Piotr Kuklinski, who presented the results from a shallow marine water survey of encrusting organisms across environmental and bathymetric gradients in the Ezcurra Inlet, Admiralty Bay (Antarctica). Gorza examined an astonishing 3000 rock specimens and discovered a fauna rich in suspension feeders, which included 42 encrusting and 7 erect bryozoan species. Species richness and composition was strongly influenced by physical factors, such as ice scour, sedimentation rates and salinity. Species richness decreased across the inlet from the outer fjord, which is characterized by strong currents and a rocky substrate, to the inner fjord, whose waters and sediments are characterized by mineral-rich glacial deposits.

The next speaker was **Teresa Madurell**, who works with Mikel Zabala. Mikel is most famously known for having published the only key to Mediterranean bryozoans (Illustrated keys for the classification of Mediterranean Bryozoa; Treballs Del Museu de Zoologica). They are currently seeking funding to update this volume, which, as a result of the SEM revolution, is expected to constitute a major overhaul of the fauna. I imagine this much needed update will find a home on the book shelves of many bryozoologist, As a precursor to this update, they are compiling a reference specimen collection of NW Mediterranean bryozoan (200 species; 350 specimens), much collected during a 2009–10 cruise on the continental shelf off Cap de Creus (see Madurell et al. 2013), and which will be linked to publicly available SEM images (~1000 images). The collection will be housed at the Natural History Museum of Barcelona, and is expected to be fully accessible online by the end of this year.

Lais Ramalho, who, although still associated with the Museu National in Rio de Janeiro, is currently working with colleagues in Andalucia. Her current project with José Rueda, Oscar Reverter-Gil, Javier Souto and Carlos López-Fé examines the bryozoan fauna associated with deep-sea mud volcanoes in the Gulf of Cádiz. Lais presented the results from 25 samples collected from 6 mud volcanoes at different depth (44-1151m) as part of the INDEMARES-CHICA project. She discovered 45 bryozoan species belonging to 31 genera and 26 families, with 82% gymnolaemates. Interestingly, one of the sites (Gazul) turned out to host a substantially more diverse fauna (39 species) than the other sites (2-9 species).

Abby Smith, Marcus Key & Anna Wood revisited some dormant data from culturing experiments conducted in 2005. In order to examine growth rates of cultured colonies of *Cellaria immersa*, *Adeonellopsis* sp., *Celleporina grandis, Cinctipora elegans*, and species of *Diaperoecia* and *Hornera*, they exposed them to a 30 ppm solution of calcein for 24 hours, which incorporates into the calcium carbonate skeleton and can subsequently be visualized using fluorescent light. Although they showed that colony growth in the lab was minimal, at an estimated rate of 1 mm per year, thus, making lab-based growth experiments suspect until culturing methods are refined, they highlighted the potential use of calcein staining to study growth and developmental sequences, breakage repair and overgrowth interactions amongst encrusters.

This part of the meeting was closed with a talk by **Thomas Schwaha**, Masato Hirose & Andreas Wanninger on 'The curious case of *Stephanella hina*'. Despites its key position at the base of the phylactolaemate tree, there is currently only a single morphological study of this species (Mukai, 1990). Thus, Thomas went to Japan to collect fresh material with Masato. Interestingly, *S. hina* grows in the winter months and dies in spring, which is the reverse for most other freshwater bryozoans. Thomas entertained the crowd by showing video footage of colony behavior in response to being disturbed either by a menacing dissecting needle or vigorous shaking of the petri dish. This footage demonstrated an astonishing resilience to these disturbances, which may be the result of it growing during winter when we would expect fewer predators to be present. Interestingly, the zooids react on an individual basis to

disturbances, rather than whole swathes of neighbouring zooids retracting together with the aggravated zooid, which indicates a lack of colonial communication. In fact, zooids are only attached to each other at a single spot, can easily be detached from each other, and are housed in tubes spatially separated from the cystid wall, an arrangement also found in colonial phoronids. This is a particularly interesting study in view of recent molecular evidence that shows a sister-group relationship between Bryozoa + Phoronida (Nesnidal et al. 2013). Thomas' future work on *S. hina* will include sectioning, confocal laser scanning microscopy and study of its reproductive biology; currently there exists no evidence for sexual reproduction.

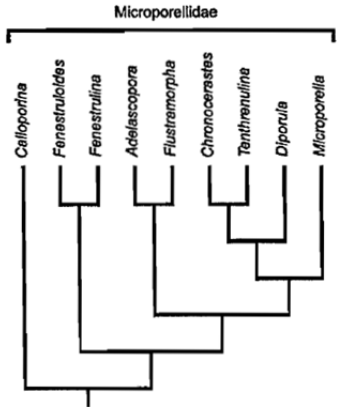
No Larwood Symposium is complete without a friendly get-together over food and drink. Jennifer had arranged for a **conference dinner** that offered a complimentary Rock Rose gin & tonic and a delicious selection of local delicacies, such as 'Trio of haggis, neep & tatties', 'Scrabster smoked haddock', and 'Orkney fudge cheese cake'. I personally enjoyed the Highland Venison, served with fondant potato, spiced red cabbage and red wine jus!

The mainland part of the meeting was rounded off with a scenic **touristic excursion**, which included an al fresco lunch on **Dunnet beach,** a visit to **Mary Anne's cottage**, which until 1990 was a working croft, a tour of the **Rock Rose gin distillery**, a peak at the most north-eastern tip of Scotland at **John O'Groats**, and a visit to **Castle Mey**, the long-time residence of the late Queen Mother.

Additional notes:

- **Paul Taylor** and **Lee Hsiang Liow** are hosting a symposium on ***Biotic interactions and their influence on long-term evolution*** at the **Geological Society of America Annual Meeting** in Baltimore, 1 – 4th November, and are calling for suitable papers.

- There is a call for **molecular-grade, ethanol-preserved tissues samples** for **Emily Enevoldsen's masters project.** She would be grateful for any samples of Microporellidae, in particular ***Fenestrulina*** and ***Microporella*** species, and especially ***Microporella ciliata*** from the Mediterranean. But also any taxa used in the morphological phylogeny by Taylor and Mawatari (2005; see tree figure). If you think you have ethanol-preserved material or are in a position to collect any, please contact Emily at: elenevol@student.ibv.uio.no



- There were two proposals to host the **14th Larwood Symposium** in 2017: Helen Jenkins (Marine Biological Association, Plymouth, UK) and Thomas Schwaha (University of Vienna, Austria). If you wish to put in an offer to host this meeting, please contact Patrick Wyse Jackson (WYSJCKNP@tcd.ie). A suggestion was made to explore the format of **lightning talks** + **workshops** on particular topics. Any thoughts on this are welcome and can be send to me at: a.waeschenbach@nhm.ac.uk

And now over to Mary who will report on the **Historical Session**, **fieldwork** and **sight-seeing** on the **Orkney Islands**.

Historical Session, **fieldwork** and **sight-seeing** on the **Orkney Islands**.

Orkney Island bryozoology posse. From left: Abby Smith, Mary Spencer Jones, Caroline Buttler, Antonietta Rosso, Mark Wilson (front), Patrick Wyse Jackson (back), Emily Enevoldsen, Teresa Madurell, Rebecca Crawford, Thomas Schwaha, Jennifer Loxton (front), Joanne Porter (back), Mali Ramsfjell (front), Emanuela di Martino (back), Jeroen Boeve, Helen Jenkins (back), Lee Hsiang Liow (front), Paul Taylor, Sergio Gonzàlez-Mora, Eva Ježková, Emanuela Di Martino, Consuelo Sendino, Marwa Mohammed Al Ghanem.

After braving the ferry crossing on the M/V Hamnavoe from the mainland to Orkney on the Friday evening, early on the Saturday morning 23 participants met in the John Rae Room at the new Stromness Library. The historical meeting, which was sponsored jointly by the IBA and the Linnean Society of London, started with a brief welcome to the Heriot Watt Orkney campus by acting Head and local organiser, Joanne Porter. Patrick Wyse Jackson then took over to chair the first session, giving a short overview on the history of the historical meetings and the Annals of Bryozoology publications.

First speaker of the day was **Paul Taylor**, who talked about Man of the Year, geologist and cartographer, William Smith and his three cyclostomes. Born in Oxfordshire in 1769 and largely self-taught, Smith worked as a surveyor and civil engineer. He soon realized the valve of fossils in determining strata, travelling extensively across Britain averaging around 10,000 miles per year! In 1815 William Smith published the first edition of his famous map "*A Delineation of the Strata of England and Wales with part of Scotland*", which was followed in 1816 by his work on "*Strata identified by Organized Fossils….*". Experiencing money difficulties in 1817, Smith sold his fossil collection of more than 2,500 specimens to the British Museum for the sum of £700 to try and avoid bankruptcy. Paul described three cyclostomes that have been found in the Smith Collection housed at the Natural History Museum (NHM) in London. One initially figured and labelled as *Millipore* in 1816, has now been identified as *Terebellaria ramossisima*. The other two specimens from the Suffolk Crag were first mentioned as *Zoophita* [Smith, 1817] but have now been identified as *Blumenbachium globosum* and *Meandropora aurantium*.

Some might say it was a little early in the day, but the next presentation by **Jennifer Loxton**, Joanne Porter and Mary Spencer Jones was on "Boozy bryozoans". Jen looked at the history and effects of preservation and cleaning methods from 1700 to the present day. Early collections, such as those assembled by English botanist, Samuel Doody, were often pressed directly as parts of herbaria. After the launch of "spirit" in 1662 by Robert Boyle, both James Petiver (1700) and John Ellis (1755) offered advice on collecting and the preservation of zoophytes. Owning a wet collection at this time, however, was a costly business as both spirit and glass were heavily taxed. Formaldehyde offered a cheaper alternative when it became available during the early part of the 20th century, but has since been relegated to a field fixative due to its health risks and the advent of molecular studies. Information on cleaning bryozoans was introduced early in the 19th century. "The Manual of the Practical Naturalist" in 1831 suggesting that if material was "very dirty" it should be cleaned with a mixture of "soapsuds and pearlash". Norman (1903) detailed the different methods he employed when looking at bryozoans. These included incineration or "calcining", boiling in

potash solution or placing in “Eau de Javille or Bleach”, a liquid which derived its name from the village of Bleach, near the Mill Javelle in Paris.

Breaking away from the historical themes, new IBA member and Heriot Watt PhD student, **Marwa Al Ghanem**, gave an overview of her project which started last year and is being supervised by Joanne Porter, Bill Sanderson and Dan Harries. Her research is investigating epifaunal succession and community composition on two priority bivalves in two vastly different areas, namely horse mussel reefs in the NE Atlantic and oysters beds in Qatar. Marwa explained the techniques she is using to collect and assess her NE Atlantic data and how these would be transferred to work in Qatar. She gave some preliminary results showing that there are significant differences in settlement between anterior and posterior valve regions, and dorsal and ventral zones.

After a brief coffee interval, it was on to the second session of talks chaired by Paul Taylor. Adding a touch of local flavour to the proceedings, **Joanne Porter** and Mary Spencer Jones discussed the bryozoan collection of Orkney naturalist and poet, Robert Rendall (1898-1967). Robert was largely self-educated and, from the aged of 13, worked in the family draper’s business in Kirkwall. His Westray parents had returned to Orkney a few years after Robert’s birth in Glasgow. During WW1, Rendall served with the Royal Navy spending most of his time in Scapa Flow. In 1946 Robert semi-retired and devoted his time to his scientific and cultural studies. These were many and varied; poetry, archaeology, natural history, etc. but they had the Orkney Islands as a common thread. After his death in 1967, his collection was split and is now housed in two different locations. Jo described the bryozoan and hydroid collection, which has recently been uncovered in the Orkney Archives in Kirkwall.

Mary Spencer Jones then discussed the life and brief bryozoological career of Arthur Hill Hassall (1817-1894). Hassall was a British physician, who reported on Irish zoophytes, publishing a series of papers between 1840-1852. Born into a medical family in 1817, Arthur was sent to Dublin as an apprentice to his uncle, Sir James Murray, an eminent physician. It was here under the tutelage of people, such as George Allman and George Johnston, that Hassall developed his interest in the seashore and microscopy. By 1866, Arthur was suffering from severe lung problems and moved to Ventnor on the Isle of Wight, where he founded the National Cottage Hospital for Consumption and Diseases of the Chest. After retiring in 1877, Hassall spent most of his time in Europe, eventually settling in San Remo, Italy where he died. Although Hincks (1880) synonymized many of Hassall’s bryozoan species and only eight taxa are still considered valid, Hassall’s catalogues contain valuable Irish distribution records. At the present time the only extant material collected by Hassall is that residing in the George Johnston collection at the NHM in London.

The final talk “Young^{2}” was given by **Patrick Wyse Jackson** who looked at the lives of two Scottish palaeontologists from vastly different backgrounds. John Young “the elder or the good” (1823-1900) was born in Lennoxtown and is recorded in 1833 as working as a messenger boy for the local print works. A lucky break in 1834 (he actual did break his leg) resulted in John attending the Mechanics Institute where he gained his geological knowledge. In 1859, four years after arranging a fossil collection for a scientific meeting in Glasgow, John was appointed Assistant Keeper at the Hunterian Museum and remained there for the rest of his career. John Young “the younger or the bad” (1835-1902) was born in Edinburgh into a wealthy family. Between 1854-1857, John studied medicine at the University of Edinburgh. After a short period at the Royal Asylum, Young joined the Hunterian in Glasgow in 1861, before being appointed Professor of Natural History and Keeper of the Hunterian in 1866. The two John’s collaborated on a series of papers, between 1874-1877, looking at Carboniferous bryozoans. Patrick highlighted their use of thin sections in looking at minute skeletal morphology and explained how the Youngs curatorial skills and attitudes might have explained “the good” and “the bad” epithets.

After a quick sandwich lunch, participants were loaded into two cars and a minibus, and were taken on a whistle-stop tour of some famous Orkney Neolithic landmarks which make up the UNESCO world heritage site. First we visited the 5,000 year old chambered cairn, Maeshowe, with its added Viking graffiti, which was re-opened in 1861. It was then on to the Scara Brae Settlement, a prehistoric village, which lies near the Bay of Skaill. While Jen Loxton took the Norwegians off to do some collecting, the rest of the party finished with visits to the Ring of Brodgar and the Stones of Stenness, which stand out against the treeless Orkney landscape. Finally it was back to the Ferry Inn in Stromness for the evening meal, offering another chance for Orkney Fudge cheesecake!

At the Stones: From left: Marwa Mohammed Al Ghanem, Consuelo Sendino, Joanne Porter, Mark Wilson (back) Emanuela Di Martino, Paul Taylor, Caroline Buttler, Antonietta Rosso, Eva Ježková, Abby Smith, Sergio Gonzàlez-Mora

The longest day of the year, Sunday 21st June, proved to be the wettest! The remaining participants split into two groups. The first party consisting of Joanne Porter, Jennifer Loxton, Marwa Al Ghanem and Susan Miller went out on a local dive boat to obtain material in Scapa Flow. Jo and Jen did two dives bringing back a couple of buckets for people to sort through and tales of the Orca pod that passed the boat. In the drizzling rain, the second party followed Mary Spencer Jones and Rebecca Crawford down to the pontoons in Stromness harbour to look at the epifauna colonizing various buoys. The invasive bryozoan, *Schizoporella japonica*, appeared to be encrusting most surfaces.

Investigating a tyre

Emily collecting *S. japonica*

Material was taken back up the hill to a laboratory at ICIT for further investigation. The International Centre for Island Technology (ICIT), is part of Heriot-Watt's School of Life Sciences and is located in the Old Academy overlooking Stromness. In the afternoon, the weather deteriorated further, but, a small intrepid party consisting of Mary Spencer Jones, Antonietta Rosso, Emily Enevoldsen, Jeroen Boeve, and Lee Hsiang Liow set off in the rain and mist towards Warebeth Beach, where the Norwegians were hoping to obtain more species for their molecular

studies. The rest of the participants decided to stay in the dry at ICIT looking at specimens, chatting or taking the opportunity to walk around Stromness, before the dive team returned.

I hope everyone enjoyed their time north of the border – I know I did! It was wonderful to see so many new participants this year. Many thanks to Jen Loxton and Jo Porter for organizing this year's Symposium and we look forward to the next meeting in 2017.

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ARTICLE

Joachim Scholz took this photo on the occasion of the 11th IBA Panamá City, January 26 - 31, 1998, showing former IBA presidents at that time. Dorothy placed somewhat against the rules right in the centre. She was not president of the IBA (but everyone asking her to take the chair of the tribal eldest). From left to right: Frank Maturo, Claus Nielsen, June Ross, John Soule, Dorothy Soule, Peter Hayward, Gero Hillmer, Nils Spjeldnaes, John Ryland.

Dorothy Soule (LA, USC) and Shunsuke F. Mawatari (Hokkaido University Sapporo) at the 13th IBA at Concepción Chile, in January 2004. Both of them were specialist on Recent Indopacific Taxa Dorothy passed away 10 years ago, on March 5, 2005; Shorty before she died, she wrote to me (Joachim) "I'm certainly glad to reach 100 because very few people die after that". Shunsuke has been retired since 2009 and completely retreated from bryozoology:
Lets not forget them.
(Joachim Scholz)

Stockholm, May 1975 Piero Braga

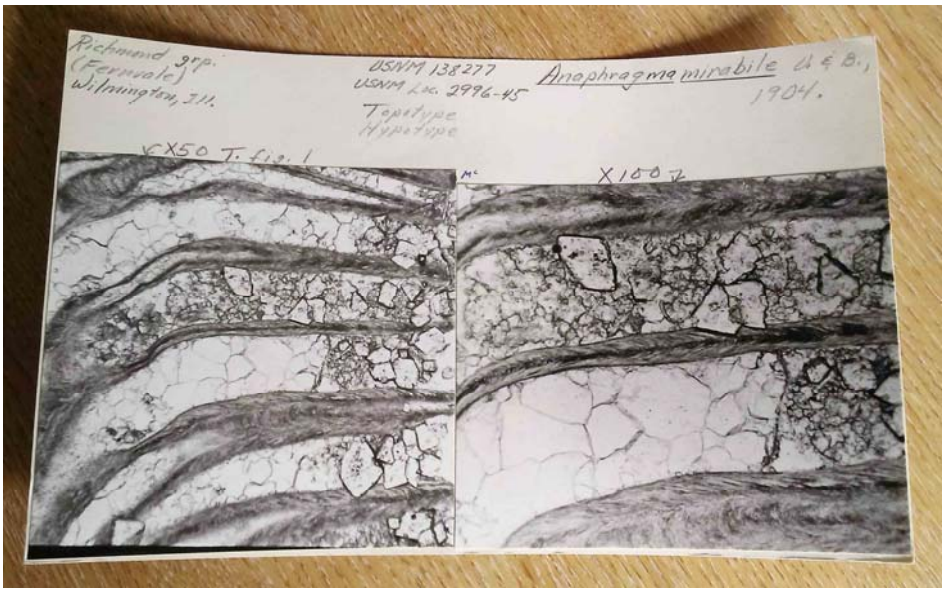
ARTICLE

Richard Boardman's thin section bryozoan images

Caroline Buttler - National Museum Wales

During his career at the Smithsonian Richard Boardman assembled a large collection of thin section bryozoan images. The photographs were all taken by Don Dean who made many of the thin sections. After Rich's death JoAnn Sanner passed them all over to me and I have both the photographs and the study cards that he produced. The images are predominantly of trepostomes but there are some others. I have sorted out all the Palaeozoic ones but the Mesozoic are still in boxes! Unfortunately the material is not digitised and there is no catalogue, I have just filed them in genus order.

If anyone is interested in using any of the images please get in contact. JoAnn says that there are no restrictions for non-commercial use but they should be acknowledged as from the National Museum of Natural History, Smithsonian Institution collections.



SYNTHESYS

Mary Spencer Jones

SYNTHESYS is back - funding available for short research visits

New Call Deadline: 15th October, 2015 (17:00 UK time).

The SYNTHESYS Office is pleased to announce the third call for applications of the SYNTHESYS3 project under the current European Commission's FPVII European-funded Integrating Activities funding scheme. SYNTHESYS Access funding is available to provide scientists (Users) based in European Member, Associate and Candidate States to undertake short visits to utilise the infrastructure (comprising the collections, staff expertise and analytical facilities) at one of the 18 partner institutions (see full list below) for the purposes of their research. This is the third of four annual calls for applications during the project's four-year duration. Access Call 3 will officially open for applications on 16th July 2015. The Call 3 deadline will be 17:00 (UK time) Thursday 15th October, 2015 and awarded visits must take place within 2016 (calendar year).

Taxonomic Access Facilities (TAFs)

The 18 partner institutions are organised into 11 national TAFs. TAF Users will be hosted by a TAF staff member (Host). The 11 TAFs represent an unparalleled resource for taxonomic research offering:

- Collections amounting to over 390 million natural history specimens, including 3.3 million type specimens
- Internationally renowned taxonomic and systematic skill base
- Facilities including: molecular, imaging and chemical analysis
- New - Senckenberg Gesellschaft für Naturforschung and State Museum of Natural History Stuttgart are now offering Access as part of DE-TAF

Proposals for funding are welcomed from high-calibre scientists in any technical discipline seeking access for short-term research visits (average duration 15 days). SYNTHESYS is able to meet the Users' costs for:

- Research costs (bench fees and laboratory consumables)
- International travel & local accommodation while based at the TAF
- A per diem contribution towards living costs

See www.synthesys.info for more information or contact synthesys@nhm.ac.uk

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SYNTHESYS TAFs:

AT-TAF Naturhistorisches Museum, Wien;
BE-TAF Royal Belgian Institute of Natural Sciences;
Royal Museum of Central Africa;
CZ-TAF Národní Muzeum, Praha;
DE-TAF Museum für Naturkunde;
Botanischer Garten und Botanisches Museum;
Senckenberg Gesellschaft für Naturforschung **NEW**
State Museum of Natural History Stuttgart **NEW**
ES-TAF Museo Nacional de Ciencias Naturales &
Real Jardín Botánico Naturales (CSIC);
DK-TAF The Natural History Museum of Denmark;
FR-TAF Museum National d'Histoire Naturelle;
GB-TAF Natural History Museum, London;
Royal Botanic Gardens, Kew;
Royal Botanic Garden, Edinburgh;
HU-TAF Hungarian Natural History Museum;
NL-TAF Naturalis Biodiversity Center; *major collections closure for 2 years from August 2016 – Call 3 is last chance to apply for access under SYNTHESYS – see www.synthesys.info/access for details
SE-TAF Naturhistoriska Riksmuseet.

EU Countries - Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark (including Greenland), Estonia, Finland, France (including Guadeloupe, Martinique, Guyane, La Réunion), Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.
Plus the Associated Countries of the EU: Albania, Bosnia & Herzegovina, Faroe Islands, FYR Macedonia, Iceland, Israel, Liechtenstein, Montenegro, Norway, Republic of Moldova Republic of Serbia, Switzerland and Turkey.

EDITOR REQUEST

How would you like to be a part of science publishing history?

by Dennis Gordon

As of 19 August 2015, *Zootaxa* has published 4000 papers. The first issue was published on 28 May 2001, and *Zootaxa* qualifies as a mega-journal. In fact, it was already such by 2006 on the basis of the following criteria: (1) A mega-journal must be a magnitude larger than an average journal in a particular field; (2) A megajournal should represent and involve the majority of scientists working in the discipline; and (3) A mega-journal should publish a significant number of the most important works in the subject area. *Zootaxa* will publish monographs exceeding 1000 pages.

The managing editor of *Zootaxa*, Dr Zhi-Qiang Zhang of Landcare Research in Auckland, New Zealand, notes: "One major benefit of *Zootaxa* is the concentration of a vast body of papers in a single easy-access journal that otherwise would be scattered in hundreds of small journals, many of which are expensive, difficult to access, and/or are only available in large research libraries in developed countries. The new model presented by *Zootaxa* is nothing short of revolutionary." Another commentator, Vincent Smith, has commented: "*Zootaxa* has helped defragment the publishing landscape for zoological taxonomy, making taxonomy findable, and enabling the disciple to benefit from the network effects of increased collaboration."

Zhang has written a short paper to mark the occasion of *Zootaxa* publication number 4000, summarising the history and major achievements of Zootaxa since May 2001:

http://mapress.com/zootaxa/2015/f/zt04000p600.pdf

He also presented an analysis of editors' contributions in 2014. In 2014, eleven bryozoan papers were published and one on Entoprocta. Seven bryozoan papers have been published so far in 2015. But, would someone else like this job?

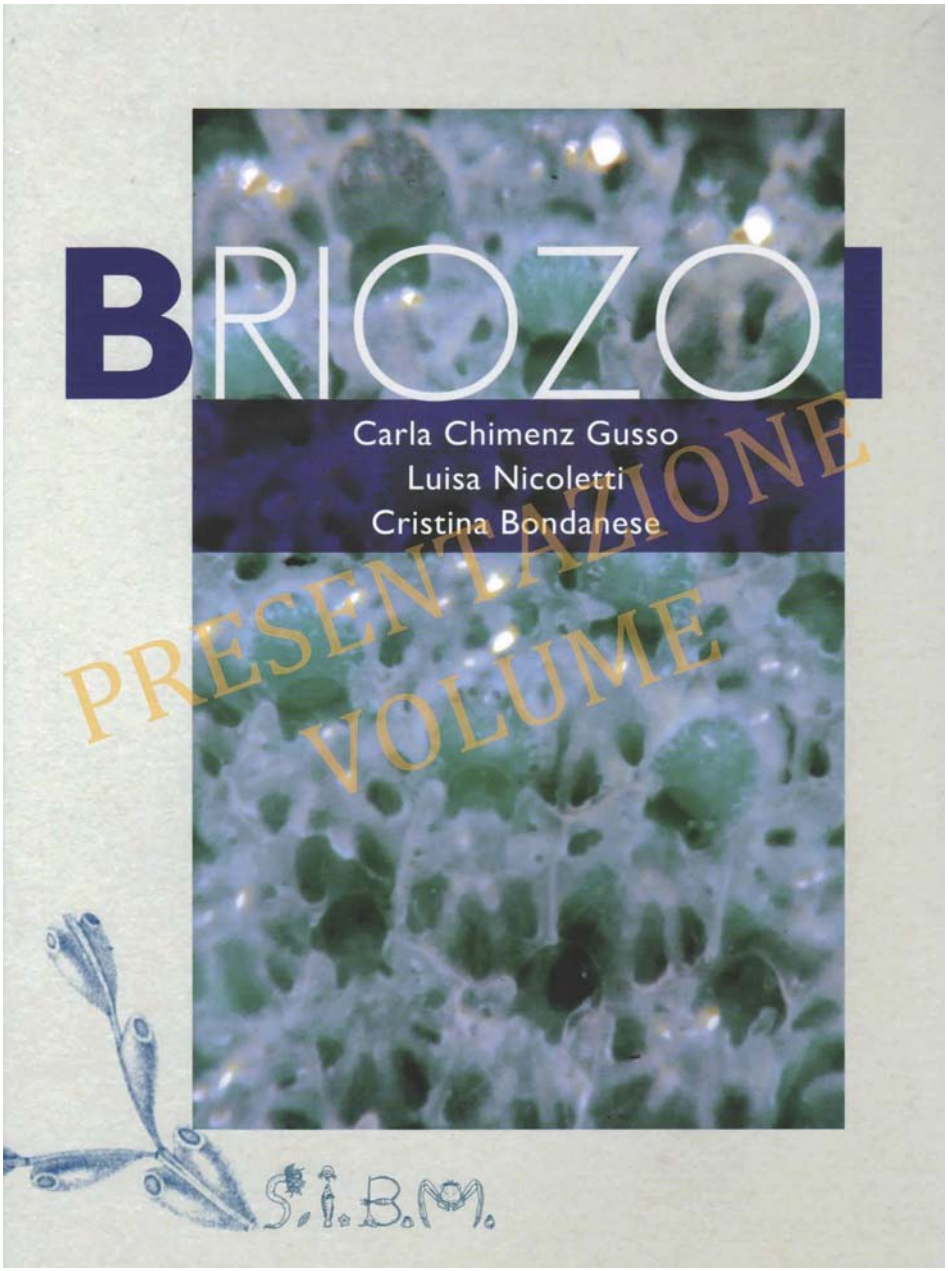
Replacement *Zootaxa* editor invited for marine Bryozoa and Entoprocta

Dennis Gordon has been receiving, processing and copy-editing manuscripts for *Zootaxa* since 2005. If anyone would like to take over this role, please let Dennis know by emailing him at: Dennis.Gordon@niwa.co.nz. Note that Tim Wood is now the editor for freshwater Bryozoa.

BOOKS

BRYOZOA

The book "Briozoi", written by Carla Chimenz Gusso, Luisa Nicoletti and Cristina Bondanese, was published in Italy on December 2014. The book illustrates Chimenz's Cheilostomata collection currently located at the Museum of Zoology in Rome. A total of 174 Mediterranean species or subspecies, representing approximately 66% of the Italian bryozoofauna, are described. The book includes the following chapters: introduction, general morphological description of Cheilostomata (with drawings), glossary, study area with sampling sites, species list, bibliography and species fact sheets. Species fact sheets, one for each of the illustrated species, are organized as follows: species description, observations on the differences from similar species, ecology, distribution and sampling sites. Species fact sheets contain micro-photographs obtained through scanning electron microscope (SEM) and optical microscope, and macro-photographs, some of which are color photos and are grouped into 9 tables. Species fact sheets report only major synonymies, giving precedence to Authors who studied the Mediterranean bryozoofauna. The book aims to update the knowledge on Mediterranean Bryozoa and can prove to be a useful tool for researchers, technicians and students.



Biologia Marina Mediterranea, Vol. 21 (suppl. 1): 336 pp.

MEETINGS AND CONFERENCES

17th Conference of the International Bryozoology Association

Melbourne Museum
Melbourne 2016
Sunday 10th – Friday 15th April

IMPORTANT DATES

2015

14 September Online Registrations Open (www.iba2016.org)
1 October Deadline for applications for International Bryozoology Association Awards, see details on page 1 of this newsletter. Applications to be made to Catherine Reid

2016 DEADLINES

1 February End of Early-Bird Registration Payment
1 February Deadline for Final submission of abstracts

CONFERENCE EVENTS

2–9 April Pre-Conference Excursion (Tasmania)
10 April Workshops & Evening Welcome Function
11–15 April Main Conference
16 April Free day
17–24 April Post-Conference Excursion (Great Ocean Road & South Australia)

PROCEEDINGS MANUSCRIPTS

11 April submission of hard copies of manuscripts at conference
1 July Final deadline for revised manuscript submission to proceedings volume

PLEASE SEE THE FINAL CIRCULAR (emailed out along with this newsletter) AND WEBSITE FOR MORE DETAILS!!

See you all Down-Under in April 2016.

Recent Publications

The following list includes works either published since the previous issue of the *IBA Bulletin* or else missed by previous issues, or sometimes repeated due to inattention by the Editor. As always, members are encouraged to support future compilations by continuing to send complete citations to the IBA secretary at any time. Reprints will be gratefully received by the IBA archivist, Mary Spencer Jones.

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Ernst, A. & Nakrem, H.A. (2015): Bryozoans from the Lower Silurian (Wenlockian) Steinsfjorden Formation of Ringerike, southern Norway. – Bulletin of Geosciences, **90** (1): 65-87.

Gontar V.I. 2015. Role of Bryozoa in the bottom biocenoses of the Laptev Sea. Proceedings of the conference "Man and the North". Anthropology, archaeology, ecology, 2015. Issue 3, Tyumen p. 315-318 [In Russian]

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