International Bryozoology Association Bulletin

Volume 10 Number 3 November 2014

President's Page 1
News from the Membership 2
New Members 5
Report on the Australarwood meeting in Perth 6
IBA Funding 8
ARTICLES
Bryozoan Panic in Korea 9
Bryozoan reef, an unknown Mediterranean habitat? 10
IBA roots and continuity 12
IN MEMORIUM
Hugo Ivan Moyano 14
Eugenio Fernandez-Pulpeiro 17
MEETINGS AND CONFERENCES
IBA 2016 Downunder 18
WA Fieldtrip 20
Larwood Meeting 2015 20
BOOKS 21
Bryozoan Cover 24
Recent Publications 25

ISSN 1941-7918

Comments regarding this Bulletin should be addressed to the IBA Secretary: catherine.reid@canterbury.ac.nz

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

PRESIDENT'S PAGE

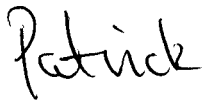
As we approach the end of 2014 the IBA membership can reflect back on a productive year. The Larwood meeting was enjoyed by all who attended the large gathering at Sopot in Poland in June and the AustraLarwood met in Perth—judging by the report in the *Bulletin*, it was a fun and successful meeting. Every year the number of papers published on bryozoans seems to increase, and it is exciting to read of the range of research topics and of cutting-edge science. Amongst other topics, the advances in isotopic analyses, studies of invasive species, and the reassessment of taxonomic schemes through standard studies and by the utilisation of genetic data, provide bryozoologists with plenty to whet their appetite.

At the same time, as we reflect back on the last year, late October brought the very sad news of the passing of Hugo Moyano. I first met Hugo at the IBA meeting in Paris, although it was really only on the Swansea pre-conference excursion around Ireland in 1992 that I got to know him. He was a lovely man with a great sense of humour, and as I have only just recently learned, a great love of music. He was immensely proud to co-host the 2004 IBA meeting in Concepción. His research was of the highest quality, as some of his colleagues testify elsewhere in this *Bulletin*. He will be sadly missed.

Clearly the plans for the 2016 meeting in Melbourne are gathering pace, and Rolf Schmidt has put together an attractive and enticing outline for us. The fieldtrips being organised by Catherine Reid and Rolf look equally exciting, as does Eckart's unofficial post-post-conference trip. While April 2016 sounds like a long time off, please do apply early for any travel funds available from your institution and stress the importance of your participations (this really goes without saying). The meeting in Australia deserves as large a participation as possible, and I look forward to celebrating my birthday there with as many of you as possible! Please also try to support the appeal for funds for the IBA travel grants which will be used to aid a number of members to participate in the 2016 meeting.

We also heard this year of Kamil Zagorsek's change of employment, and this will naturally affect the scheme for the 2019 meeting which was scheduled to take place in the Národní Muzeum in Prague. Obviously now without an IBA member on the staff, it would be impossible to meet there. Following discussions with Kamil, the Council has agreed to his offer that he examines other potential venues in the Czech Republic, and I shall lend him my assistance in doing so. We will be able to report on the viability of any such arrangements before the Melbourne meeting, and should it prove impossible to meet in the Czech Republic, your Council will seek alternative offers from potential hosts.

Wishing you all a happy holiday period, and a productive 2015.
Best wishes,

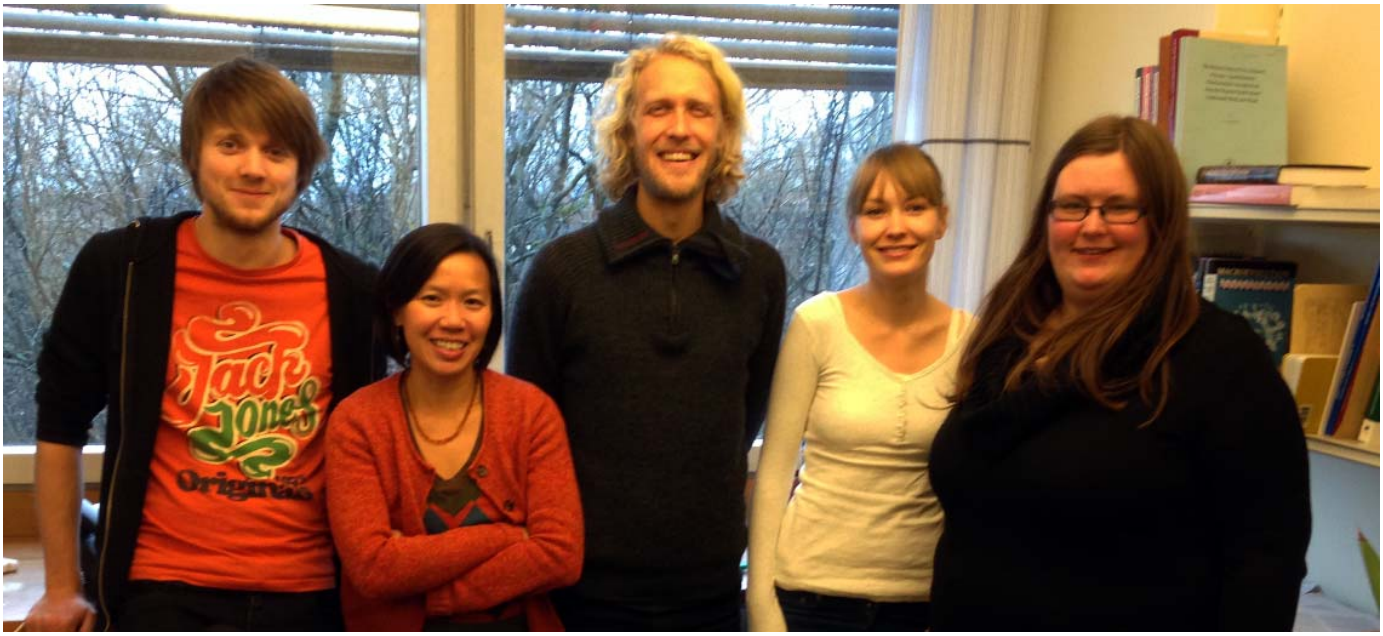


NEWS FROM THE MEMBERSHIP

Lee Hsiang Liow - Bryozoan fever has arrived at the University of Oslo in Norway! In January 2014, Lee Hsiang Liow, Paul D. Taylor, Seabourne Rust and Kjetil Voje went on a field trip to the Plio-Pleistocene of the North Island of New Zealand to collect shell-encrusting bryozoan fossils (read Seabourne's account of the WABO expedition in IBA Bulletin 10(1)). What began as an 'innocent' collecting trip to study the evolution of competitive overgrowth in cheilostomes has now exploded into an unprecedented interest in bryozoans at the Department of BioSciences at the University of Oslo. Lee Hsiang and Kjetil now have three enthusiastic Masters students who just began on their two-year programmes. Mali Ramsfjell will study the effects of zooid size on competitive overgrowth in the Nukumaru Limestone Formation, with Paul and Emanuela di Martino assisting; Emily Enevoldsen will use mitochrondrial genomes to study the phylogenetic relationships among microporellid cheilostomes, especially those from New Zealand (thank you Dennis Gordon and Abby Smith for supplying material!), while Jeroen Boeve will increase the taxon coverage of the cheilostome part of the Waeschenbach *et al.* 2012 (*Molecular Phylogenetics and Evolution* **62**: 718-735) bryozoan phylogeny. Russell Orr and Kamran Shalchian-Tabrizi are on the local supervising team while Andrea Waeschenbach and Paul are external supervisors for these projects, and, as always, Dennis will be our consultant.

Emily and Jeroen would be thrilled if anyone could supply microporellids from any location or any cheilostome species of special phylogenetic interest, in alcohol. Please get in touch with Lee Hsiang (l.h.liow@ibv.uio.no) if you feel generous or know of someone who might be feeling generous!

Please also check out our lab webpage at http://folk.uio.no/leehl/bleed.html



be "BLEED lab members 20140: (Left to right) Jeroen, Lee Hsiang, Kjetil, Emily and Mali

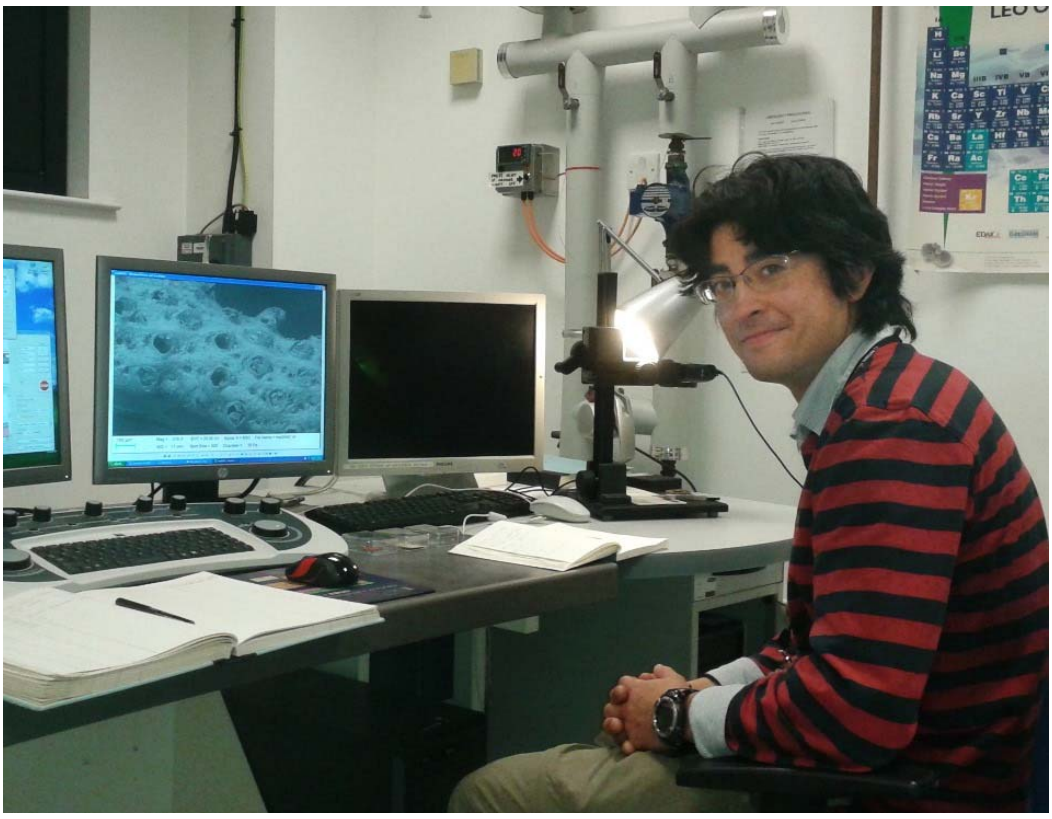
Andrew Ostrovsky spent a month in Marseille with Drs Alexander Ereskovsky, Jean-George Harmelin and Anne Chenuil, Station Marine d'Endoume. Last year we began with Dr Ereskovsky the monthly collecting of *Myriapora truncata* and *Adeonella calveti* having in mind the comparative study of the phenology and reproductive ecology. Uliana Nekljudova and Ekaterina Shevchenko – two Master students from the St Petersburg State University, made sections of these samples, and the first results of this comparison were presented in Sopot last June. Also last year the working group of Dr A. Chenuil was able to show three distinct haplotypes of *Myriapora* in the area around Marseille, strongly suggesting cryptic speciation. Publication is currently in preparation. Our intention now is to compare reproduction of the colonies with these haplotypes, that is why we recently submitted an application for the bilateral grant between the French National Research Council and the Russian Foundation for Basic Research. Bjorn Berning will be a member of this working group too because of his long-term passion to *Myriapora*.

Blanca Figuerola - I have been awarded a Shackleton Scholarship (http://www.shackletonfund.com/). I plan to spend one month (November 2014) at the Falkland Islands, studying spatial patterns and bryozoan biodiversity from Falkland and South Georgia Islands. I will work in collaboration with benthic experts and experienced divers, such as Dr. Brewin, Dr. Brickle and Dr. Barnes. The bryozoan list produced during this visit will help to establish a regional biodiversity database of bryozoans. Moreover, the results will serve to design patterns of distribution and to compare these data with rest of the neighbouring regions. To carry this out, diverse sites will be selected around East Falkland and West Falkland to fill in gaps, to ensure coverage around the coast-line and depending of accessibility. Collections of samples will be made at each site in the intertidal zone and sublittoral samples will be collected by diving. The project will also be supported by funding from the SMSG, the SAERI, the Falkland Island Government fisheries department and the British Antarctic Survey. Let me know, if you are interested on some species of this region.

For anyone interested, I found on the internet an artist, Jessica Rosenkrantz, graduated in Architecture and Biology. She is attracted to complex and unconventional geometries and her inspirations are grounded in the natural forms (e.g. bryozoans) to create innovative products and environments. Follow her on twitter to enjoy samples like this: https://twitter.com/nervous_jessica/status/484352834310123520/photo/1

Kei Matsuyama - In October I have been working at the NHM in London for two weeks, financed by the Bremen International Graduate School for Marine Sciences - GLOMAR. This was my first time to visit the NHM and I hope it was not the last.

With the hospitality and help of Mary Spencer Jones (Deparment of Life Sciences) I was able to study material from the Cape Verde Islands, mainly collected by the Challenger expedition. Additionally, I had taken the opportunity to take a look at some bryozoa from the various West African collections. The results will be part of my PhD thesis and we also intend to provide redescriptions of some of these species. During my stay in London I also enjoyed having a chat with Paul Taylor, Consuelo Sendino and Andrea Waeschenbach.



Kamil Zagorsek - As you already know, I have had to leave the National Museum. From October, I received a two year contract in Technical University Liberec as teacher of Physical Geography in the Department of Geography. So at least for three days a week I have a job closely related to the Earth. Unfortunately, leaving the National Museum, the access to my bryozoan collection, literature and SEM became very limited. I will do my best to complete unfinished work and continue bryozoan research, but more or less as amateur (in the free time left and without any financial support…). However, I am still looking for any opportunity all over the world to continue to study Bryozoa, but I

understand that the possibilities are very limited, worldwide. Therefore, I would be glad for any information about the occasions where my skills might be useful, and, if you find my previous results interesting, to be included in any ongoing and/or future project(s) related to paleoecology, bryozoan research and/or any field of palaeontology.

Further, there is a problem of organizing the 18th IBA general meeting in 2019, which I promised to arrange in Prague. I do my best to fulfil this promise, but according to my recent situation I am unable to guarantee it now. However, I have a student form South Bohemia University (her introduction is also in this Newsletter), which might be a possibility to organize the general IBA conference in České Budějovice (usually known as Budweiser☺). I would like to ask you for leniency for a while. I hope to be able to announce my final decision before the next IBA conference in Melbourne.

Anyway, allow me to express my sincerely thanks to all of you, who helped me, worked with me and discussed with me any topics during my "bryozoan period of life". I wish you a nice and fruitful future and hope to have chance to see you ever again…

Please use my home address for any correspondence:

Rumunska 1486
250 88 Celakovice
Czech Republic
phone 00420 723 181 662
E-mail: kamil.zagorsek@gmail.com

Antonietta Rosso - Bryozoan permanent exhibition at the "Museo di Scienze della Terra" of the University of Catania. These last weeks have been very important and hectic for the palaeontological section of the Museum of Earth Science in Catania. The last two weeks have seen two major events, namely the "Week of the Earth Planet" and the "Week of the Scientific Culture".

In coincidence with these events, a new exhibition room entirely devoted to marine invertebrates has been opened to the public. The exhibition has been financially supported by an action of diffusion of marine sciences within schools I lead within the RITMARE Project (The Italian Research for the Sea), coordinated by the National Research Council (CNR) and the National Interuniversitary Consortium for Marine Sciences (CoNISMa).

The exhibition has been ideated by Rossana Sanfilippo and myself, and realised with the collaboration of Emanuela Di Martino and some other colleagues. Aiming to illustrate the present-day biodiversity, as well as the evolution of the biodiversity in the geological past, the new space hosts shells and skeletons of marine organisms, from the Mediterranean Sea and from all over the world (SE Asia, S America and the Antarctic), as well as fossils from Sicily and South Italy.

Obviously, a section has been specifically devoted to bryozoans, with a view to increase public awareness of this taxonomic group and of the special morphologies and architectures of its species.

Emanuela positioning bryozoans in their board (left) and the final effect of the exhibition (right).

NEW MEMBERS

Ing. Eva Ježková

I am a PhD student at the University of South Bohemia in České Budějovice (the town of true Budweiser) in the Czech Republic. I finished my Master studies in Biology and protecting "hobby" organisms in June 2014. The topic of my thesis was the appraisal of Great Crested Grebe (*Podiceps cristatus*) nesting biology aspects in relation to environmental conditions. I realized my research on the fishpond system in south Bohemia for 2 years and I really enjoyed it. During study of these fishponds, I found many *Pectinatella magnifica* colonies, so I start to be attracting by this creature. Therefore, I became a member of the project team studying this invasive species in the Czech Republic for two summer seasons (2013 and 2014). The *Pectinatella magnifica* really fascinated me, so I decided this year to start my PhD studies focusing on the reproductive strategies and spreading of *Pectinatella magnifica* in Czech Republic under supervision of doc. Josef Rajchard and Dr. Kamil Zágoršek.

Kamil recommended me to become a member of the IBA and to turn to all of you with kind request. I would be very thankful for all your comments, suggestions and recommendation, how to enlarge, focus and thus improve my study of *Pectinatella magnifica.* Many thanks for all your kind help in advance. Please contact me via email: hedgehog.eve@centrum.cz.

Best wishes to all and looking to meet you in some meeting.

Report on AustraLarwood 2014

Catherine Reid

In October Eckart Håkansson finally succeeded in gathering southern hemisphere bryozoologists for an Australarwood meeting in Perth, hosted at the University of Western Australia. The meeting was small and convivial and timed to coincide with the reknowned WA wildflower season, and thus the field trip became a mix of modern and fossil bryozoology, and a sampling of the incredible botanical diversity of WA.

Talks were held on Monday the 13th and were extremely diverse, from modern New Zealand deep-water bryozoans, to Palaeozoic Gondwanan forms, and many things in between. The talks were also attended by staff of the University (from Geological Sciences and the UWA Oceans Institute), and the Geological Survey of Western Australia, and local petroleum industry.

TALKS:

- Dennis Gordon – New Zealand Deep-sea Bryozoa redux – grappling with the taxonomic challenge.
- Catherine Reid – Order level trophic structuring in warm-water Palaeozoic bryozoans and niche compensation in cold-water biotas.
- Abby Smith – Bryozoans and acidification: the role of syrface area.
- Rolf Schmidt – Ammonium chloride coated bryozoans under a digital staging microscope: a decent alternative to SEM for large specimens?
- Abby Smith and Peter Batson – Hornera: a progress report.
- Eckart Håkansson – Remarkable bryozoan growth forms – a possible key to depositional environments in the Early Permian Callytharra Formation, Western Australia.
- Phil Bock – Digital data sharing – potential in bryozoan research.

The field trip ran over the 14th to 16th of October, and covered modern to Palaeozoic bryozoans, Pleistocene geology (carbonate) of northern Perth, thrombolites and stromatolites and of course wildflowers. On Tuesday we left Perth at the civilised hour of 8.30am and head north along the coast, stopping to examine Pleistocene dune deposits in a road cut, and then their modern equivalents in a location further north where the dunes were starting to encroach on the highway. The dunes are composed almost entirely of carbonate sourced from the algal reefs just offshore. We then visited the Thetis Lake thromobolites, a very happy stop for me, finally seeing these structures in the "flesh" rather than as geological components. After a lunch in Cervantes of locally caught crayfish (lobster) and a beach walk for bryozoans interspersed with large benthic forams we visited the infamous Pinnacles, Pleistocene carbonates, and proceeded to try and figure out how they formed. A bit more time than a short afternoon might be required for a convincing argument, but a spectacular spot none the less. We then left bryozoology behind and went on a wildflower jaunt through the Lesueur National Park. In two hours and less than 30 kilometres we saw several very distinct botanical assemblages and very beautiful and diverse flowers, most very small but adding up to a spectacular patchwork botanical landscape. Most of the group quickly learned to keep a mental note of where Dennis was last seen, he was having a fabulous time finding and photographing specimens he'd never seen and was never the first back to the van.

The second day started with beach walks looking for modern seagrass bryozoans (see photopage) and a quick inspection of an insitu Pleistocene coral reef, before we head inland to the Palaeozoic. The weather this far had been very pleasant and sunny, but we got out of the van at Coalseem Conservation Park to discover someone had turned the heat up to 39^{oC} and invited all the flies along. Eckart was quick with the fly nets, at which point the dry heat and riverbed (also dry) surroundings became quite liveable. We walked up the riverbed a short distance to collect Early Permian bryozoans, which were numerous but generally quite small. Rolf scored the find of the day with the first cystoporate known from these beds. More wildflowers followed before dinner in the local pub.

The third and final day started with a quick trip to look for Palaeozoic bryozoans only recently known from the Permian glaciomarine stratigraphy. I'd been looking at these the week before in thin section with David Haig and was pretty keen to collect more material. Fortunately Arthur Mory of the WA Survey gave very detailed location maps, as the three rocks by the side of the road did not exactly standout in the otherwise flat regolith. Success was

had in that we found boulders with fossil material in – sectioning over the summer will show if they are of any use. From there we headed back to Perth via national park land for more wild flower spotting and general landscape photography.

Australarwood 2014 attendees - Arthur Mory (GSWA), Phil Bock, Abby Smith, Catherine Reid, Lena Madsen, Dennis Gordon, Rolf Schmidt, David Haig (UWA), Eckart Hakansson.

Beachcombing for bryozoans and other goodies at Port Denison

The Pinnacles - Cervantes

Wildflowers and cycads in Lesueur National Park

Wildflower landscape in Lesueur National Park

Fly-free and ready to look for Permian bryos.

IBA FUNDING

Dear fellow bryozoologist: 29 October 2014

I am writing to you on behalf of the Council of the International Bryozoology Association (IBA) to raise funds for our next round of travel grants for the 2016 IBA meeting in Melbourne, Australia. As you have come to know, we are unique in the fact that we are one of the few associations with no dues or fees and no paid staff. How do we do it? It is the support we receive from individuals like you that makes this feasible. Several promising young bryozoologists spoke at our last meeting in Sicily, Italy. They were funded by grants from the IBA made possible by your generous past contributions. We have all either personally benefitted from this support or know how important having these young scientists at our meetings is to the success of bryozoology. You also can be assured that your gift to the IBA will be put to good use as from 2010 to 2014, >85% of our expenditures were on travel awards.

We currently only have enough funds for one or two travel grants, especially for students who may be coming from the Northern Hemisphere to Melbourne. We would like to encourage IBA members who are employed to contribute more in the upcoming year, so we can be more generous and help more people to attend our meeting. As a veteran of ten conferences and a long term committed member of this organization, let me share with you why I believe the IBA deserves your support:

- no dues/fees
- exceptional professional service and contacts
- a quarterly newsletter with useful research updates and references
- an amazing international conference held every three years and annual meetings in Europe and Australasia
- pre- and post-conference field trips
- proceedings publication for conference participants

And the last reason and the one that brings me the most satisfaction is how my relationship with the IBA has established long lasting friendships with my fellow bryozoologists. You are like a second family to me. I only get to see you every three years, but when we get together, it is a joy to re-establish old friendships, even despite the cross-cultural blunders that come quite naturally to me. I give to the IBA because of all of you and my desire for this organization to flourish and grow so it will continue to do the good work of bryozoology!

I hope you can make a generous contribution to the IBA, but be assured we will be happy with any size gift! As our accounts are currently held in New Zealand, please make your donation in New Zealand dollars using a credit card (Visa or MasterCard only). We use the exchange rate at time of deposit which is currently equivalent to approx. 0.6 Euros or 0.8 USD. If you need to use another method, please contact the Treasurer.

Name	
Email Address	
Card Type	Visa ____ MasterCard ____
Card Number	
Expiry Date	
Donation Amount	_____ New Zealand Dollars
Cardholder's Name	
Cardholder's Signature	
What type of tax receipt would you like?	fee ____ donation ____

Please email your completed form to the IBA Treasurer at abby.smith@otago.ac.nz. Or you can post it to Dr. Abigail Smith, Department of Marine Science, University of Otago, P.O. Box 56, Dunedin, New Zealand. Or fax to +64-3-479-8336. All of these methods are secure. An electronic receipt will be sent by email. Thank you.

Sincerely,

Marcus Key

Marcus M. Key, Jr., Ph.D., P.G.
Joseph Priestley Professor of Natural Philosophy
Department of Earth Sciences
Dickinson College
Carlisle, PA 17013-2896, U.S.A.

ARTICLE

Bryozoan Panic in Korea

Tim Wood

South Korea may be the only country in the world where freshwater bryozoans have made national headlines. Events of this past summer were chaotic enough to bring together IBA members **Ji-Eun Seo, Masato Hirose**, and myself at a conference in Seoul hastily arranged by the Korean Society of Limnology. Our role was essentially to bring some calm to an explosive issue that was spinning out of control.

At the heart of the matter was the Four Rivers Restoration Project, a massive engineering program spearheaded in 2011 by former President Lee Myung-bak (nicknamed "Bulldozer"). The primary aim was to increase the water storage capacity of Korea's four major rivers. In just two years the project built 16 dams and dredged 700 km of river sediment to achieve an average depth of 4-6 meters. There was massive public opposition to this project bolstered by the destruction of wetland habitat, failing embankments, unexpected flooding, and other disasters. There was also genuine concern about increased eutrophication, including toxic blooms of cyanobacteria.

What apparently no one saw coming was *Pectinatella*. This invasive freshwater bryozoan from North America (via Japan) has been known in Korea since the 1970's but was never a major concern. This past summer, when tons of *Pectinatella* suddenly began bobbing to the surface along vast stretches of newly created, sluggish river habitat, people took notice. It was an unexpected gift to opponents of the Four Rivers Project. There were claims that rotting *Pectinatella* colonies would release toxic ammonia, kill fish and wildlife, and create vast underwater dead zones. One academic went on TV to demonstrate that fish would die when placed in a tub of water where chopped up *Pectinatella* colonies had been stagnating. (Chopped up watermelons would probably have had the same effect).

To the general public these claims were very credible. Even the most healthy *Pectinatella* colony is a slimy mass with an unmistakable odor. On the other hand, large colonies are more than 95% water. There is relatively little biomass. They do not release much ammonia, nor do they consume much oxygen. Dying colonies normally float at the water surface where the effects of decay are easily accommodated. There are no known toxins associated with this species.

That was the essential message we IBAers were asked to convey at the conference in Seoul. Later there was a boat trip on the Han River where government officials had the opportunity to experience actual *Pectinatella* colonies, many for the first time. In one awkward moment I was positioned with *Pectinatella* statoblasts on my hand and various dignitaries were lined up to examine them with a magnifying lens.

To help further calm the situation the Ministry of the Environment is pledging funds for the further study of *Pectinatella* and other bryozoans in Korea in 2015. The national bryozoan crisis seems to be over, at least for now, or it may only be temporarily suspended. Stay tuned.

ARTICLE

Bryozoan reef, an unknown Mediterranean habitat?

Holon Florian - Andromède Océanologie, Carnon / France. florian.holon@andromede-ocean.com
Harmelin Jean-Georges - jean-georges.harmelin@mio.osupytheas.fr

An amazing "bryozoan reef" formed by a huge aggregation of large erect bryozoans lying on a coastal detrital bottom was discovered in May 2014 off the French Mediterranean coast, in the National Park of Port-Cros (PNPC). This discover was made during a diving survey on deep-water bottoms undertaken in the framework of the 2014 program « Coralligenous habitats: inventory and mapping » funded by the French Water Agency and the PNPC. For practical and safety reasons (great depths), divers used rebreathers. Gas recycling reduces the volume of breathing gas used, making longer dives possible with a lighter and more compact system than an open-circuit breathing set.

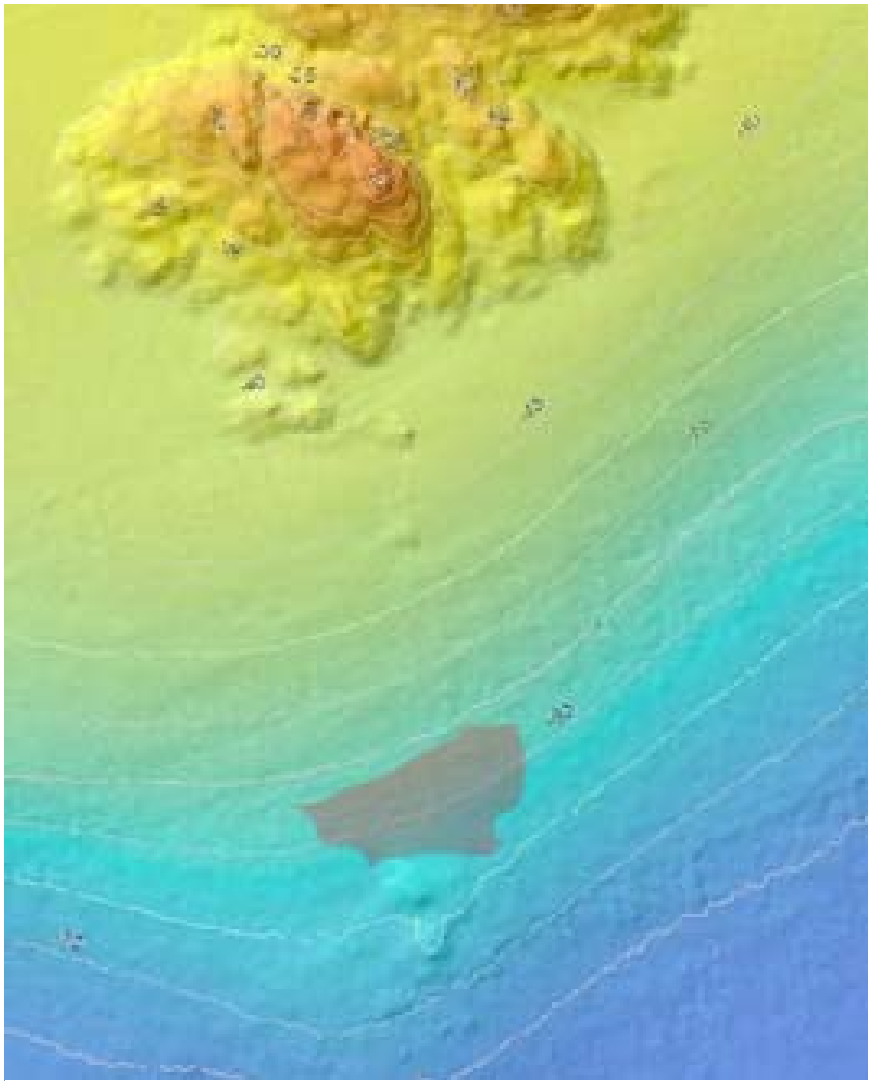


Fig. 1. Bathymetric map showing the location of the bryozoan reef (red patch) south of Gabinière islet (relief in yellow and orange)

This "bryozoan reef" was observed between 75 and 65 m depth south of Gabinière islet (satellite of Port-Cros island, GPS /42 58.976 - 006 23.729) (Fig. 1), stretching continuously over a 50 m x 100 m area (Fig. 2). Thickness of the bryozoan cover was around 30 cm and most colonies, at least their distal parts, were alive, as indicated by bright colors (Fig. 3). The most visible (tallest) species were *Pentapora fascialis* (Pallas) and *Smittina cervicornis* (Pallas) (Fig. 3). These erect species normally live attached on rocky walls or large 3D substrates, such as sea-fan axes. They can also colonize soft bottoms after larval settlement on a small substrate in areas swept by currents. This type of association, described by Marion (1883)[1] as "*graviers coralligènes à grands bryozoaires*" (coralligenous gravel with large bryozoans), has disappeared from fishing areas exploited by trawling.

The extraordinary development of bryozoan branched colonies on soft bottom reported here likely results from both particular environmental conditions (e.g. strong flow supplying planktonic food and limiting sedimentation, abundant larval supply from nearby rocks) and the ban of trawling (forbidden in the Park since 1963).

This structure attests of the biodiversity and importance of the coastal detrital bottoms, which are poorly considered in environmental projects while they are severely impacted by human actiivities, such as trawling.

[1] - Marion A.F., 1883. Esquisse d'une topographie zoologique du Golfe de Marseille. Annales du Musée d'histoire naturelle de Marseille, 1, 1-108.

Fig. 2. Thick cover of large bryozoans on coastal detrital bottom observed between 75 and 65 m depth in the National Park of Port-Cros (France, Mediterranean)

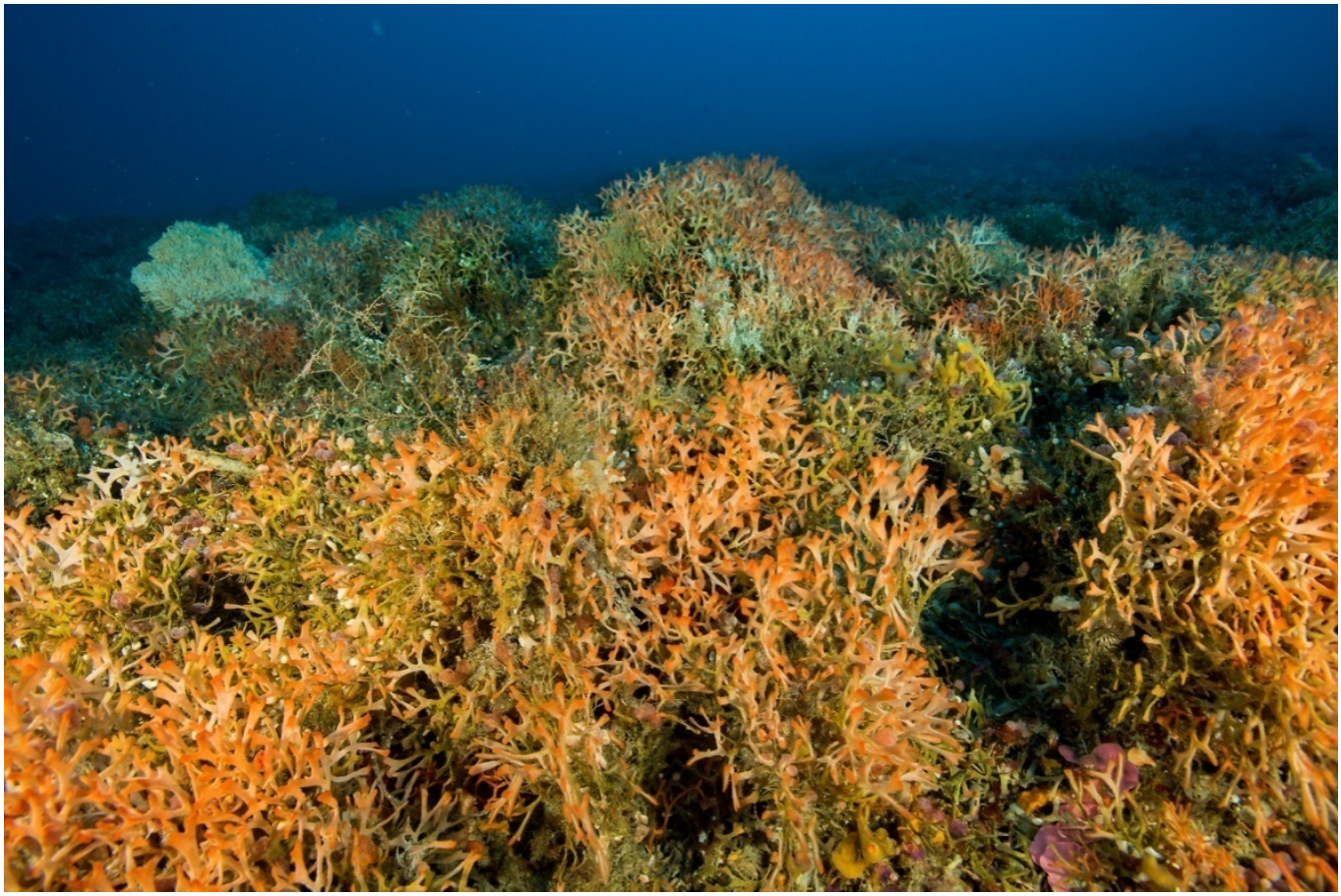


Fig. 3. Thick assemblage of bryozoans and other taxa, mainly composed of colonies of Pentapora fascialis.

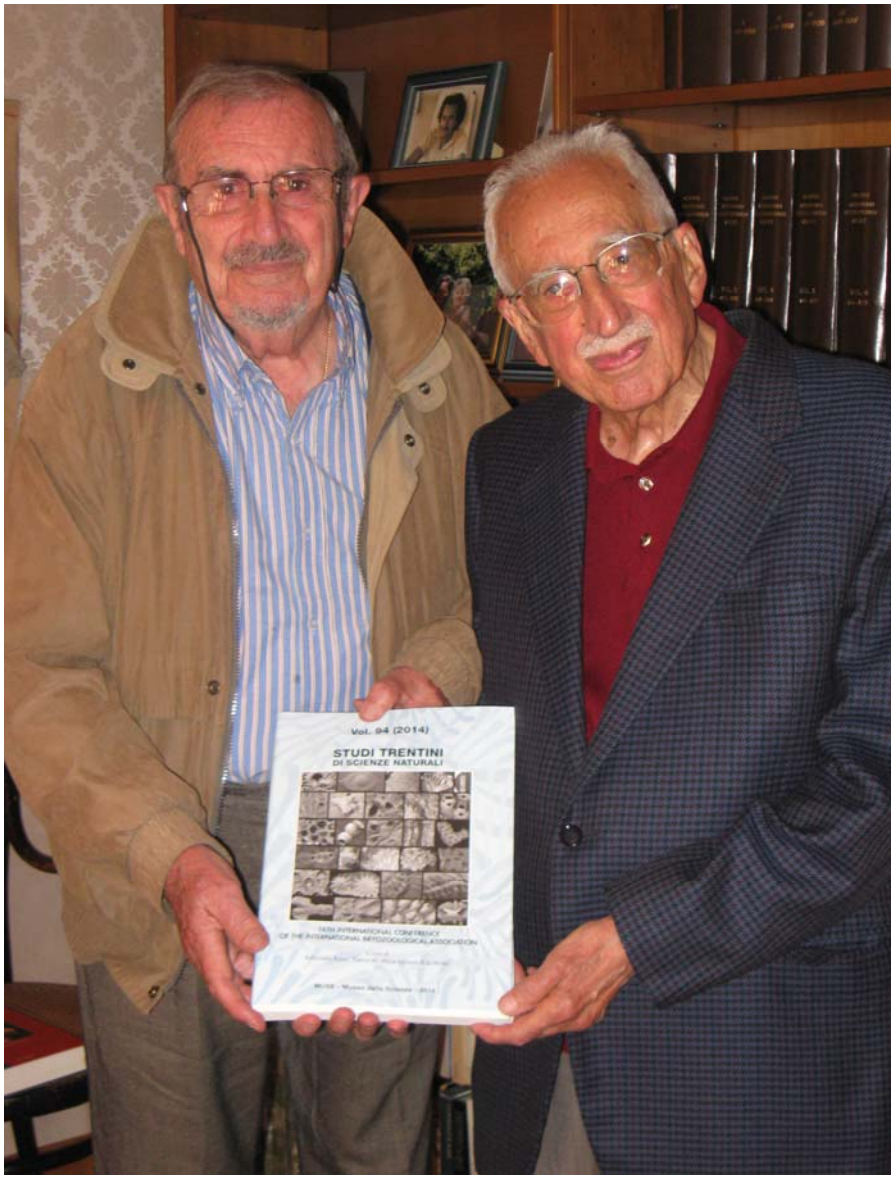
ARTICLE

IBA roots and continuity

Antonietta Rosso

The IBA meeting held in Catania last year also aimed at rediscovering the roots of the IBA itself, and at praising those who participated in its constitution. We did this by dedicating the Volume of the Proceedings to Enrico Annoscia, one of the IBA founding members and the organiser of the first IBA meeting in San Donato Milanese nearly fifty years ago.

Some days ago Piero Braga went to meet him in Milano and presented him with a copy of the volume.



Pietro Braga consigns a copy of the Proceedings of the 16th IBA Conference to Enrico Annoscia. The picture was taken in Annoscia's studio.

For those of you who do not have the volume (it can be requested by sending an email to claudia.marcolini@muse.it, see August 2014 IBA Bulletin) the dedication is reported below.

DEDICATION

This volume is dedicated to Enrico Annoscia, one of the founding members of the International Bryozoology Association in Stockholm in 1965, who devoted part of his time to bryozoan research and to promoting the use of bryozoans within applied research.

Enrico Annoscia was born in Bari on 8 April 1927. He devoted himself to the natural sciences, particularly to botany and paleontology. He graduated in 1955 with a thesis on the fossils from the Venosa area, in southern Italy. He began to work as a geologist (and subsequently as a paleontologist) for the Italian petroleum company AGIP, and he was employed in San Donato Milanese until 1987. He acted as an "economic palaeontologist" focusing on energy resources in the North Sea, and worked in London and Oslo. This work gave him the opportunity to deal with fossils, particularly with corals, molluscs, graptolites, stromatoporids and with bryozoans. He taught Applied Palaeontology at the University of Milano as well as in Oslo, where he was appointed Guest Professor.

He was one of the first members of the IBA Council. In 1968, he organised the first congress of the International Bryozoology Association in San Donato Milanese (12^{th}-16^{th} August). The congress was sponsored by the AGIP Paleontological Laboratory. He also edited the Proceedings of that meeting, which appeared in volume 108 of the *Atti della Società Italiana di Scienze Naturali e del Museo Civico di Storia Naturale di Milano*.

Although the number of his published papers on bryozoans is not high, Enrico Annoscia worked diligently and continuously in order to bring together researchers dealing with bryozoans. He argued for the need for a common approach, as well as for the necessity of standardizing the descriptions of new species. He even suggested that the use of Latin (already common to indicate some bryozoans body parts) should be expanded to diagnoses and headings relating to features and distribution of taxa. He also suggested to standardize methods, at least for geobiological and strictly palaeontological research. With a view to attracting Italian researchers to the study of bryozoans, he published a huge volume ("I Briozoi" in *Paleontographya Italica*, 1968) which included an impressive multilingual glossary. He repeatedly summarized the state of art of bryozoan studies in Italy, often complaining about both the scant number of people working on this group and the poor conditions of collections within museums.

His contributions are also to be found in his attempt to apply bryozoans for commercial, and particularly, hydrocarbon geology. Thanks to his long experience with AGIP, he was able to demonstrate connections between the bryozoan content in rocks and their porosity, a positive feature for evaluating potential productivity of reservoir rocks. His papers on bryozoans deal particularly with Cenozoic (Eocene, Miocene, Plio-Pleistocene) terrains, although he also wrote on earlier time intervals (Devonian) from Italy and north Africa, and on Recent Mediterranean sediments containing bryozoan assemblages.

IN MEMORIAM:

In memory of Hugo Iván Moyano

Hugo Iván Moyano González was born in Temuco, southern Chile, however he is a scholar from Concepción University, (UdeC) the third oldest in Chile. In 1957 he began his studies to become a Biology and Chemistry School Teacher, graduating in 1962. From April 1st, 1963 he became a staff member at the same University, from which he retired in April 1st, 2014, after exactly 51 years of service. Udec is nowadays celebrating 95 years of existence; Hugo was there for 2/3rds of that time!

He was eager for knowledge, not only for scientific investigation, he studied music for over 20 years, several languages, and as IBA members know quite well, he had a passion for travelling all over the world [1]. Back home, after each travel he used to give conferences, open to everyone that wanted to know about the faraway places he had just visited.

Professor Moyano granted us with an example of a life committed to the highly specialised knowledge of bryozoology, for which he gained international recognition and respect, but at the same time, he was an example of a life open to the wider fields that allows us to value people and all creatures in their surrounding and their own times.

In 51 years of university teaching many, many generations of biologists, zoologist, marine biologists, and school teachers, were formed by Hugo. At his funeral I was surprised to meet two mothers of former students of him, that were asked to be there in representation of them, since they were unable to attend because they were in the UK and in Spain, respectively. Just to show the hallmark he left in them!

To science he left more than 100 publications; 105 new bryozoan species, 21 new bryozoan genus and 1 new family. We, the bryozoologists of the dawn of the 21th century, should be proud to have had the privilege of sharing the same footpath with Hugo. Rest in peace dear friend!

Juan M. Cancino
Universidad Católica de la Santísima Concepción, Chile
Concepción 25th November, 2014

Hugo and the Darwin´s Fox at Nahuelbuta National Park, Chile. Circa December 2003, preparing the Mid Conference Trip for the 2004 Bryozoan Conference held in Chile.

[1] I had the pleasure of sharing, among many others, 2 trips to Antarctica with him, see enclosed pictures.

King George Island, Antarctic, 1999, with Juan M. Cancino

At King George Island, Antarctic, 2003, with Juan M. Cancino and Patricio H. Manríquez.

From Dennis Gordon:
Hugo's death is a sad loss to the IBA. He made a huge contribution to bryozoology, even continuing after he developed Parkinson's disease. I first met him at the 1986 Bellingham IBA conference, though we had corresponded prior to that. I was very pleased to meet him as his taxonomic work was starting to fill an important biogeographic gap and I wanted to get to know him better. For some reason we didn't connect at that meeting, probably not aided by my mispronunciation of his name in Spanish – *Oogo*, not *Hyugo*, he insisted. However, at the 1989 Paris meeting we clicked, became friends, especially during the postconference trip, and developed a high level of mutual respect. He described numerous new taxa, firmly documenting the Chilean and adjacent Antarctic bryofaunas and undertook biogeographical analyses that embraced other austral faunas. Inter alia, he did important work on the Cribrilinidae and made an innovative breakthrough on clarifying relationships within *Celleporella* (Hippothoidae), anticipating the genetic results provided by Roger Hughes that confirmed Hugo's partitioning of the genus. He was pleased to visit New Zealand in 1995, enjoying the similarities in the flora and southern South Island landscapes, and I was really glad that he and the Cancinos were inspired to organise the superb Concepcion meeting and field trips. I think he derived a great deal of pleasure from that. Go Gondwana! His reputation is secure and will live long after him. Descansa en paz mi amigo.
Dennis

From Joachim Scholz:
One more of the great bryozoologists of the 20th century, a gentleman, and devoted and distinguished bryozoologist for many decades, passed away.

This photo shows him during IBA Concepción, when he was possibly imitating the Giant Ground Sloth while standing near the Mylodon Cave, in Patagonia (we made some jokes but I do not remember exactly any more).

Joachim

IN MEMORIAM:

EUGENIO FERNÁNDEZ-PULPEIRO
(1954–2014)

An appreciation by Oscar Reverter-Gil and Javier Souto

Last September 17th 2014, Dr. Eugenio Fernández-Pulpeiro passed away at the age of 60 years old. Even though his health had been fragile in the last years, such sad ending was never anticipated.

He was born on May 18th 1954 in a small village called Ribadeo (Lugo, NW Spain). He moved to Santiago de Compostela to study at the university to which he would be joined forever. He graduated in Sciences (Biology), in 1976 and he soon started teaching Zoology in that same university.

In 1982 he presented his PhD thesis about littoral bryozoan in Vigo and Ribadeo (NW Spain). Due to the lack of funds to go on working on the bryozoan taxonomy, he explored other fields. Therefore, between 1990 and 1994 he directed two projects about biofouling in the harbor of Vigo. However, during these years he also directed his first PhD thesis on bryozoans as well, which was carried out by the eldest of us in 1994 (ORG).

Since 1996, Eugenio had been working on a research line which was distant from taxonomy: the study of marine resources associated to rocky substratum. Thus, he directed several projects about the exploitation of stalked barnacle, sea urchin and mussel. He always treated his projects about marine resources from the conservationism point of view struggling to convince politicians to use exploitation plans according to the generated scientific knowledge. Such struggle always meant huge trouble! He also took part in several projects and conferences related to the *Prestige* catastrophe and its economic and environmental consequences.

Along his career Eugenio published a total of 76 works, including scientific articles, book chapters or official reports of several projects. But the study of bryozoans became the most important part of his curriculum, with 52 papers in total. Eugenio, together with Mikel Zabala, was a pioneer when restarting the study of Spanish bryozoa. His latest research projects were dedicated to "*Fauna Ibérica*", one of the projects which most thrilled him, and that finally, very slowly was materializing. Part of the results obtained in these projects was reflected in the PhD thesis presented by the youngest of us in 2011 (JS).

Eugenio was extremely meticulous in his work. And, of course, he was precise when writing his texts. Anyone who had a manuscript reviewed by Eugenio will remember his extensive marginal comments, usually in red pencil, that left very few pages untouched.

It is also remarkable his activity as Zoology professor of many generations of biologists. After teaching for 37 years, there are hundreds of his students. We all agree in considering him a great professor, always updated, precise in his explanations and drawings and concerned about his students. In our personal case, his teaching activity was more extensive as Eugenio directed both our PhD thesis. We must add that without him we might not have devoted ourselves to investigation, and obviously, it is improbable we had focused on bryozoan.

Eugenio was a highly educated man. He also had a solid scientific education and encyclopedic zoological knowledge. Moreover, he was a real gentleman: upright, fair, righteous and honest. In the last years his health was deteriorating. But he is remembered working in the best state of spirit, whether he was preparing his lessons or the many meetings or e-mails involved in the unrewarding teaching and investigating management. Also while dealing with students, colleagues or in general with anyone who asked him for help. He always had to postpone his favorite activity: Sit and "watch bugs".

He is survived by his wife, Mª Cristina Taboada Montero, professor at the Pharmacy Faculty of the USC, and his son, Juan Fernández Taboada, and engineer currently settled down in Madrid.

17th Conference of the International Bryozoology Association

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

1st Circular

You are warmly invited to attend the 17th IBA Conference, a triennial meeting of bryozoology researchers from around the world. The IBA Conference is a multidisciplinary meeting that covers morphology, phylogeny, geochemistry, taxonomy, ecology and genetics of the phylum Bryozoa and we encourage attendance from a wide range of disciplines.

Conference Venue
The conference will be held in the heart of Melbourne in the well-equipped Melbourne Museum Theatre. The venue is within the CBD and has therefore has the advantage of having a huge variety of restaurants, bars and entertainment options right on your doorstep. We respectfully acknowledge the traditional owners of Melbourne, the Boon Wurrung and Woi Wurrung language groups of the greater Kulin Nation.

Host City
Melbourne is the capital of the state of Victoria, with a population of 4.3 million (second in size after Sydney). Founded in 1835, it has a long history (by Australian standards), including the Royal Exhibition Building, which was built in 1880 for the International Exhibition, and hosted the opening of the first Parliament of Australia in 1901.

Accommodation
There are many accommodation options close to the conference venue, from backpackers to 5 star hotels. Further information will be provided in future circulars, including facilitation of organising accommodation sharing with other delegates.

Conference Activities
The conferences of the IBA are a multidisciplinary feast, with the common thread of Bryozoa. The main conference (11-15 April) will comprise of sessions of papers, including palaeontology, taxonomy, evolution, biology, reproduction, geochemistry, genetics, and other topics. We plan a number of themed symposia in honour of past bryozoans researchers from Australia including: P.H. Macgillivray, C.M. Maplestone, Leo W. Stach, David A. Brown.
The welcome function on the Sunday evening and conference dinner on the Wednesday evening is open to all delegates and accompanying members. Social activities will also be organised for accompanying members in and around Melbourne.

- Worskhop - Sunday 10 April, workshop / roundtable discussion on implementation and future of databases that collate a range of information on bryozoans.

- Pre-Conference Excursion (2-9 April 2016) lead by Dr Catherine Reid, in Tasmania; visiting several exceptional Palaeozoic sites, as well as some Cenozoic and Recent bryozoan occurrences (costs to be confirmed).

- Post-Conference Excursion (17-24 April 2016) led by Dr Rolf Schmidt, will take in significant sites from Melbourne to Adelaide via the Great Ocean road, focussing on Cenozoic sites (costs to be confirmed).

- Mid-conference trip will ensure international visitors a chance to get close to the unique Australian fauna at the Healsville Sanctuary. This single-day trip is included in the main registration cost.

Registration Fee

Exact costs of the registration are still to be finalised, but a preliminary estimate of costs is as follows (all prices in Australian Dollars; cost after 4th December 2015 in brackets):

Full registration: $500 ($600)

Accompanying Member: $300 ($400)

Student/Retired Member: $200 ($250)

Participants cancelling their registration by 1 March, 2016 will be refunded 80% of the registration fee; no money will be refunded if registration is cancelled after 1 March, 2016.

Submission of Abstracts

Authors of papers are invited to submit the abstract of their papers (400-500 words long) in English. The abstracts should reach the Organising Secretary, Abby Smith by 5th February 2016. Authors are also required to indicate their preferred mode of presentation: a) oral, b) poster, c) either. They will be notified in due course about the acceptance and mode of presentation of the paper. Note, oral presentations will likely be limited to one per first author.

Conference Proceedings

Full papers presented at the conference will be peer-reviewed and published in the Proceedings of the 17th IBA Conference as a volume of the AAP Memoirs series. Each first author can submit one paper for inclusion. Each paying delegate will receive one copy of the volume as part of their registration cost.

Important Dates

~~**1 September 2014:**~~ Online expression of interest (helpful but not required for attendance)

1 December 2014: 1st Circular

24 August 2015: 2nd Circular

6 November 2015: Final Registration

4 December 2015: End of Early-Bird Registration Payment

5 February 2016: Final submission of abstracts

3-9 April 2016: Pre-Conference Excursion

10 April: Workshops

11-15 April: Conference

16-23 April: Post Conference Excursion

24 June 2016: Final deadline for revised manuscript submission to proceedings volume

Contact Details

Conference Organiser
Rolf Schmidt
Museum Victoria
GPO Box 666
Melbourne VIC 3001,
Australia

Conference Secretary
Abigail Smith
Department of Marine Science
University of Otago
P. O. Box 56, Dunedin 9054
New Zealand

Conference email info@iba2016.org
Website: www.iba2016.org

WESTERN AUSTRALIA FIELD TRIP

– if these ingredients sounds inviting, you might want to read this!!

During the IBA gathering in Catania I talked to a number of people about the possibility of extending their stay '*down under*' for a period of time before or after the official IBA 2016 activities in the south-eastern part of the Australian continent, thereby including the 'weird & wonderful' state of WESTERN AUSTRALIA.

With the dates fixed for the official pre- & post-conference excursions of IBA 2016 in Melbourne I have now been looking into the options, and as a result I hereby invite serious – but not yet binding – expressions of interest before I start going into any detailed planning.

Cheers, Eckart [eckart.hakansson@uwa.edu.au or eckart@live.com]

Time-frame: Start: April 25th in the evening in Exmouth (allowing a full day of transport from Adelaide/Melbourne via Perth). End: May 3rd in the evening in Perth.
Highlights: **WORLDS LARGEST CARBONATE PLATFORM** – probably!
Active features include **NINGALOO REEF** (bryozoan fauna essentially undescribed, but Phil Bock has collected big time), SEA GRASS MEADOWS (the very rich bryozoan faunas are essentially undescribed), & STROMATOLITES (**SHARK BAY**; Lake Thetis); PLEISTOCENE LIMESTONES (dunes to reefs, bryozoan fauna essentially unknown), with impressive karst development; MIOCENE LIMESTONES (bryozoans so far not known, but I'll find them next year!)
CRETACEOUS – PALEOGENE INNER SHELF DEPOSITS with very interesting, largely undescribed bryozoan faunas
EAST GONDWANA RIFT SYSTEM with Permian bryozoan faunas locally very abundant, known from a series of classic papers; currently the target of a major project.
Estimated cost: Transport and accommodation: **approximately 125 Au$/person/day** (based on 8 participants & current prices; transport in UWA mini-bus (up to 10 passengers); not including transport from Adelaide/Melbourne to Exmouth); Extras: I am currently investigating the possibilities/price-range of boat-trips in the Ningaloo and Shark bay areas; Food: **about 50 Au$/person/day** will probably suffice, since options for excesses will be fairly limited during most of the trip.

Larwood Symposium 2015

Thurso | Highlands | Scotland | 18 – 19 June 2015

Optional Fieldtrip and History Session
Stromness | Orkney | Scotland | 20 – 21 June 2015

The annual Larwood Symposium, provides a forum where bryozoologists from across Europe (and wider) meet to discuss key research topics in the field. This meeting is used to encourage young bryozoologists to present the findings of their research studies in a relaxed yet scientifically rigorous gathering.

More information will be available soon at www.larwood2015.co.uk If you have any questions in the meantime please contact Jen Loxton (Jennifer.loxton@uhi.ac.uk) or Jo Porter (j.s.porter@hw.ac.uk).
We hope to see many of you in Scotland next year.

Kind regards
Jen Loxton and Jo Porter

BOOKS

European bryozoans popularised: how taxonomy is made accessible to the general public

Antonietta Rosso

A new book is now available. Nothing special, you might say! Plenty of books are published every day!
What is new in this case is the type of book, and this is for two reasons. First, the new book is devoted to bryozoans, a group of organisms nearly completely unknown to the large public. Secondly, the new book is devoted to taxonomy but it has been designed for non-specialists, and particularly for scuba-divers having the opportunity to spot bryozoans underwater, and for anyone with a passion for nature and living organisms. These two reasons, together, make this book unique.

But this is by no means all. This handy book is very beautiful at first sight, as it includes a lot of coloured, highly defined photos, mostly taken underwater and illustrating living colonies with zooids often exhibiting expanded lophophores. Additional drawings and images through light microscope and scanning electron microscope illustrate zooidal details. All relevant and distinctive macro- and microscopic characters can be thus appreciated for each species: not only the general colony morphology and its colour - the only features that can be seen underwater - but also the relevant fine morphological characters are figured and described in a quite simple but scientifically correct language. As many as 140 species are introduced in about 250 pages and through nearly 600 images. The reader gets the chance to discover a hidden, unthinkable world, and to appreciate underwater organisms of which he was completely unaware, no matter if they live in marine or freshwater environments. To conclude, the book can be surprisingly interesting also to taxonomists.

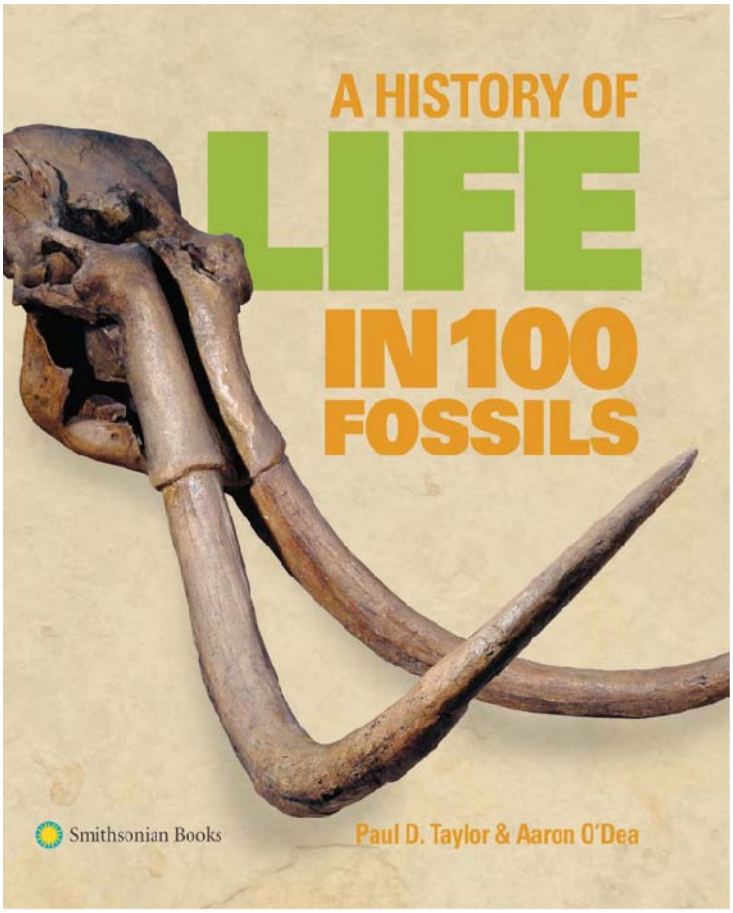
A special appreciation for this effort is due to Frédéric André, Jean-Pierre Corolla, Béatrice Lanza, Gaël Rochefort who coordinated the work, and to the more than fifty people participating with writing and illustrating the book. And to Jean-George Harmelin, for his inspiration and invaluable underlying direction.

The book can be easily purchased as indicated in the leaflet reported below.

BOOKS

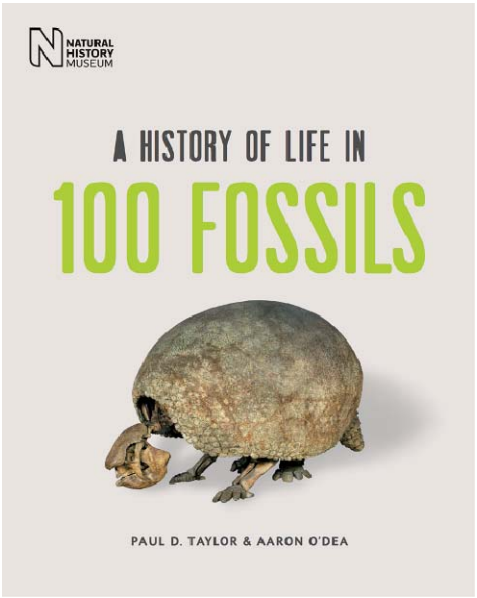
"A History of Life in 100 Fossils"

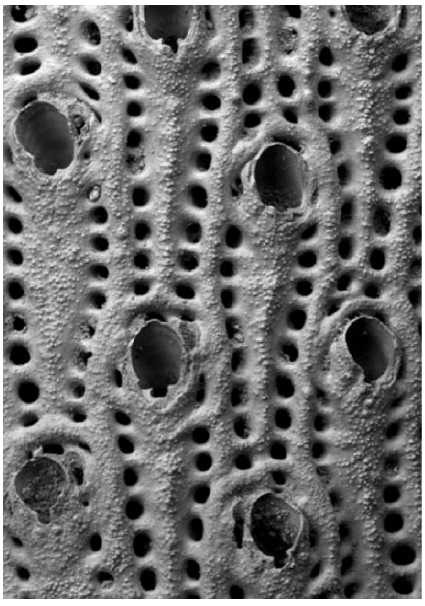
Paul Taylor and Aaron O'Dea



"A History of Life in 100 Fossils showcases 100 key fossils that together illustrate the evolution of life on Earth. Iconic specimens have been selected from the renowned collections of the two premier natural history museums in the world, the Smithsonian Institution, Washington, and the Natural History Museum, London. The fossils have been chosen not only for their importance in the history of life, but also because of the visual story they tell. This stunning book is perfect for all readers because it's clear explanations and beautiful photographs illuminate the significance of these amazing pieces, including 500 million-year-old Burgess Shale fossils that provide a window into early animal life in the sea, insects encapsulated by amber, the first fossil bird Archaeopteryx, and the remains of our own ancestors. Each fossil is beautifully illustrated with full colour photographs."

A History of Life in 100 Fossils can be bought online at your favourite online or bricks and mortar bookshop. Plans for a Chinese version on the way…





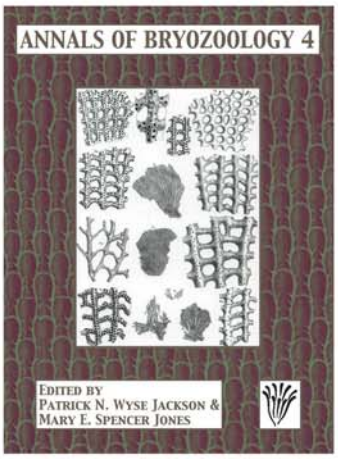
Visit this link for more information: http://www.smithsonianmag.com/smithsonian-institution/history-life-10-fossils-180953042/?no-ist

Get your copy of "A History of Life in 100 Fossils" here www.amzn.com/1588344827
or here www.amazon.co.uk/dp/0565093479

Aaron

NEW FOM THE IBA

Annals of Bryozoology 4
pp. viii+265



Contents

- Historical review of South African Bryozoology: a legacy of European endeavour - *Melissa K. Boonzaaier, Wayne K. Florence & Mary E. Spencer Jones*
- Jeremy Jackson, Bryozoa, and the Punctuated Equilibrium Debate - *Alan H. Cheetham*
- Collections and climate change research: *Flustra foliacea* (L.) (Bryozoa) in the Natural History Museum, London- *Helena Fortunato, Mary E. Spencer Jones & Beth Okamura*
- An unknown archive from German A. Kluge: bryozoan collection in the Museum of Invertebrate Zoology at Perm State National Research University - *Andrei V. Grischenko*
- Albert Russell Nichols (1859-1933) and bryozoan research in Ireland during the late 19th and early 20th centuries - *Antoinette Kelso & Patrick N. Wyse Jackson*
- Things we lost in the fire: the rediscovery of type material from Ehrhard Voigt's early publications (1923–1942) and the bryozoan collection of Hermann Brandes - *Silviu O. Martha*
- The earliest colour image of Bryozoa - *Xenia Ostrovskaya &Andrew Ostrovsky*
- Benjamin Harrison Grave: American marine invertebrate zoologist - *Mary A.B. Sears & Robert M. Woollacott*
- Cleaning and conservation of fossil bryozoan cavity slides of the William Dickson Lang Collection at the Natural History Museum, London - *Consuelo Sendino*
- Bryozoans of the Krusenstern Expedition (1803-1806) - *Abigail M. Smith, Mary E. Spencer Jones & Patrick N. Wyse Jackson*
- Mary Dora Rogick: Mid-Century Nexus of Bryozoology - *Judith E. Winston*
- James Edwin Duerden (1865–1937): zoological polymath - *Patrick N. Wyse Jackson & Paul F.A. Maderson*

Order form (please return by mail or email to wysjcknp@tcd.ie)

Please mail me _____ copies of *Annals of Bryozoology 4* @ €20/£16/$25 per copy.
Payment can be made via electronic money transfer (bank details below) or by bank drafts/money orders which should be made out to the 'International Bryozoology Association' and returned to Patrick Wyse Jackson, Department of Geology, Trinity College, Dublin 2, Ireland.

Name: _____

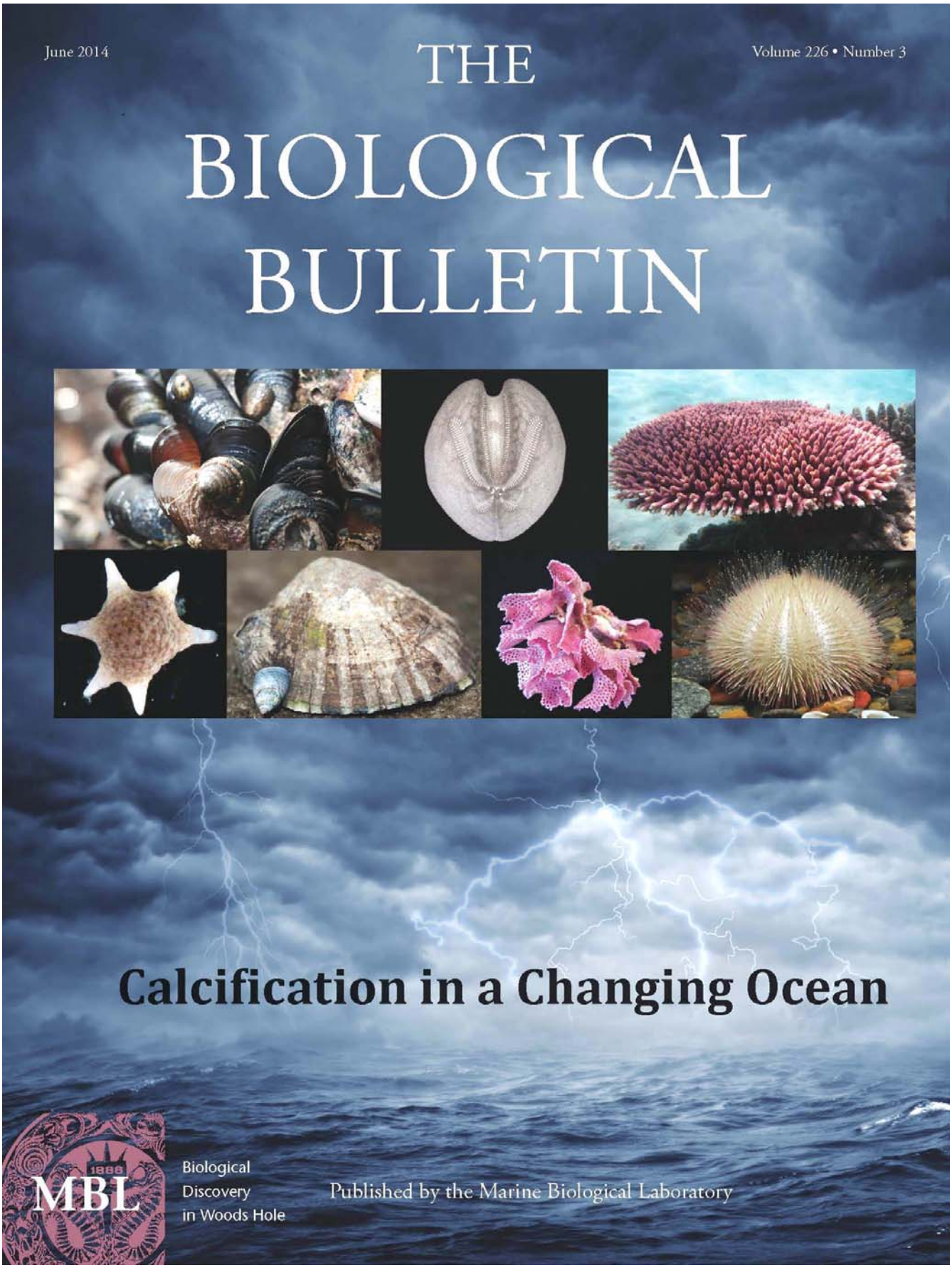
Address: _____

Note that all delegates of the Catania IBA conference will be receiving one copy of *Annals 4* as part of their registration fee, but the co-editors would encourage orders for institutional libraries.

Name of bank: Bank of Ireland, 2 College Green, Dublin 2, Ireland
Account name: International Bryozoology Association (c/o Dr Patrick Wyse Jackson)
Account Number: 20057100
Bank Code: 90-00-17
IBAN: IE42 BOFI 9000 1720 0571 00
BIC: BOFIIE2D

Journal Cover

The Biological Bulletin, with *Iodictyum yaldwyni* front and centre (from Abby Smith)



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.

Berning B., Tilbrook K.J., Ostrovsky A.N. 2014. What, is anything, is a lyrula? In Rosso A., Wyse Jackson P.N.and Porter J. (eds.) Proceedings of the 16th International Conference of the International Bryozoology Association Studi Trentini di Scienze Naturali 94: 21-28. http://www.researchgate.net/publication/264238570_What_if_anything_is_a_lyrula

Виноградов А.В. Мшанки континентальных водоёмов Казахстана. – Наука, образование и воспитание в ВУЗе. Сб. статей Междунар. научной конф., Самара, 2014, 25 апреля, т.1: 288 - 294. [Phylactolaemata and Bryozoa of Kazakhstan]

Dick M.H., Komatsu T., Takashima T., Ostrovsky A.N. 2014. A mid-Cretaceous (Albian–Cenomanian) shell-rubble bryozoan fauna from the Goshoura Group, Kyushu, Japan. Journal of Systematic Palaeontology 12(4): 401-425. DOI: 10.1080/14772019.2013.765926

Figuerola B, Sala-Comorera L, Angulo-Preckler C, Vázquez J, Montes MJ, García-Aljaro C, Mercadé E, Blanch AR, Avila A. 2014. Antimicrobial activity of Antarctic bryozoans: an ecological perspective with potential for clinical applications. Marine Environmental Research 101:52–59. DOI: 10.1016/j.marenvres.2014.09.001

Gordon, D.P., 2014. Apprehending novel biodiversity—fifteen new genera of Zealandian Bryozoa. Journal of the Marine Biological Association of the United Kingdom, 94(8), 1597–1628. doi:10.1017/S0025315414000599

Herrera-Cubilla, A. and Jeremy B. C. Jackson. 2014. Phylogeny of genus Cupuladria (Bryozoa, Cheilostomata) in the Neogene of tropical America. Journal of Paleontology, 88(5): 851-894.

JIMÉNEZ-SÁNCHEZ, A., BERESI, M., MESTRE, A. AND HEREDIA, S. (2014). UPPER ORDOVICIAN CRYPTOSTOMATID BRYOZOANS AND MICROFOSSILS FROM THE DON BRAULIO FORMATION, EASTERN PRECORDILLERA, ARGENTINA. *SERIE CORRELACIÓN GEOLÓGICA*, 30(1): 25-33.

Linneman J, Paulus D, Lim-Fong G, Lopanik NB (2014) Latitudinal Variation of a Defensive Symbiosis in the Bugula neritina (Bryozoa) Sibling Species Complex. PLoS ONE 9(10): e108783. doi:10.1371/journal.pone.0108783

Maltseva A.L., Kotenko O.N., Shabalin K.A., Shavarda A.L., M.K. Winson, Ostrovsky A.N. 2014. Novel brominated fungicidal alcaloid isolated from the marine bryozoan Chartella membranaceotruncata. In Rosso A., Wyse Jackson P.N.and Porter J. (eds.) Proceedings of the 16th International Conference of the International Bryozoology Association Studi Trentini di Scienze Naturali 94: 163-168. http://www.researchgate.net/publication/259294884_Novel_brominated_fungicidal_alkaloid_isolated_from_the_marine_bryozoan_Chartella_membranaceatruncata

Matsuyama, K., Janssen, A., Martínez Arbizu, P., Martha, S.O., Freiwald, A. 2014. Bryozoans from RV Sonne deep-sea cruises SO 167 'Louisville' and SO 205 'Mangan'. Zootaxa, 3856 (1) 100-116.

Popov I.Yu., Ostrovsky A.N. 2014. Survival and extinction of the southern populations of freshwater pearl mussel Margaritifera margaritifera in Russia (Leningradskaya and Novgorodskaya oblast). Hydrobiologia 735: 161-177. http://link.springer.com/article/10.1007%2Fs10750-013-1640-4

Shunkina K.V., Starunov V.V., Zaytseva O.V., Ostrovsky A.N. 2014. Comparative neuromorphology of the lophophore and body wall in three species of freshwater bryozoans (Bryozoa, Phylactolaemata). Russian Journal of Zoology [Zoologicheskiy Zhurnal] 93(3): 497-507 [in Russian with English Summary]. http://www.maikonline.com/maik/showIssueContent.do?puid=VIHNWRCLCW&lang=ru

Shunkina K.V., Starunov V.V., Zaytseva O.V., Ostrovsky A.N. 2014. Sensory elements and innervation in the freshwater bryozoan Cristatella mucedo lophophore. Doklady Academii Nauk, Biological Sciences 455(4): 490-493 [in Russian] [English version] Doklady Biological Sciences 455(1): 125-128. http://link.springer.com/article/10.1134/S0012496614020136#page-1

Smith, A.M. 2014. Growth and calcification of bryozoans in a changing ocean. Biological Bulletin 226: 203-210.

Souto J., Reverter-Gil O., Fernández-Pulpeiro E., Ostrovsky A.N. 2014. New species of Bryozoa from Madeira associated to rhodoliths. Zootaxa 3795(2): 135-151. http://www.mapress.com/zootaxa/2014/f/z03795p151f.pdf

Tolokonnikova Z., Ernst, A. and Wyse Jackson, P.N., 2014. Palaeobiogeography and diversification of Tournaisian–Viséan bryozoans (lower–middle Mississippian, Carboniferous) from Eurasia. Palaeogeography, Palaeoclimatology, Palaeoecology 414: 200–211

Tolokonnikova Z., Ernst A., Herbig H.-G. 2014.Famennian (Upper Devonian) bryozoans from borehole Velbert 4, Rhenish Slate Massif (Germany). Neues Jahrbuch für Geologie und Paläontologie Vol. 273/1, 25-44. http://www.schweizerbart.de/papers/njgpa/detail/273/83087/Famennian_Upper_Devonian_bryozoans_from_borehole_Velbert_4_Rhenish_Massif_Germany]

VIEIRA, Leandro M.; JONES, Mary Spencer; TAYLOR, Paul D. 2014. The identity of the invasive fouling bryozoan Watersipora subtorquata (d'Orbigny) and some other congeneric species. Zootaxa, [S.l.], v. 3857, n. 2, p. 151–182, ISSN 1175-5334. Available at: <http://biotaxa.org/Zootaxa/article/view/zootaxa.3857.2.1/9680>. Date accessed: 01 Dec. 2014. doi:http://dx.doi.org/10.11646/zootaxa.3857.2.1.

Wasson, B. and de Blauwe, H. 2014. Two new records of cheilostome Bryozoa from British waters. Marine Biodiversity Records, v. 7: 1-4. doi:10.1017/S1755267214001213