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Bulletin

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

PRESIDENTS PAGE

Rapidly the year is drawing to a close, which for me is a good thing, and the vacation will allow for recharging the batteries with Christmas Pudding and Brandy Butter. It has become clear that in these days of rapid communication, social media, and institutional administration that the area of activity that first get eroded is research. This is lamentable, and I do find myself struggling at times to get back to it. I have set myself a goal, and have looked to an Irish saint, St Kevin for inspiration. In the 6th century he cut himself off from his fellow monks in a small glaciated valley in the mountains south of Dublin, and spent time reflecting on theological matters. This coming year I hope to lock myself away for at least one day a week, turn off my email and engage in bryozoological research. If you can, I would hope that many of you will do the same.

Since the publication of the last IBA Newsletter the bryozoan community has lost two long-term, and well-loved members: Pat Cook and Roger Hughes. I first met Pat in London when I was an undergraduate student and delighted in seeing cupuladrids scampering (if that's the right term) around an aquarium in the Natural History Museum. She was generous with her time with me, and her enthusaism and encouragement remains with me. Roger participated in a number of meetings of the IBA and always had time for discussions with students and younger members. I recall that he took great delight in naming in the 2013 conference volume the new species *Celleporella osiani* for his grandson. Both Pat and Roger will be missed. Some of their legacy lies in the current and continued work of the IBA membership.

April 2016 is not far away and I hope to meet with many of you at the IBA conference in Melbourne. If you have not yet indicated that you intend travelling please do so as soon as possible. Rolf and his team have put together a wonderful-looking programme and the whole event should be memorable on many levels.

With best wishes,

Best wishes

Patrick

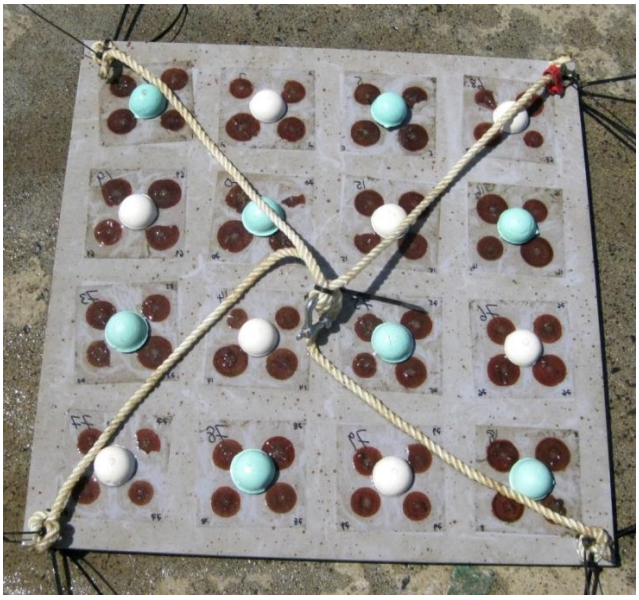
FROM THE COUNCIL

Congratulations to Malgorzata Krzeminska, Karine Nascimento, Paola Flórez, Katerina Achilleos and Hannah Mello who have been awarded travel grants to attend the IBA conference in Melbourne in April 2016. We were able to offer a total of $11,650AUD (~$12,438NZD, $8345USD and $7597Euro) to support travel.

The IBA Treasurer extends her grateful thanks to all those who donated funds to allow so many travel grants to be awarded. We are excited to welcome these scientists to Melbourne, and to hear about their bryozoan research.

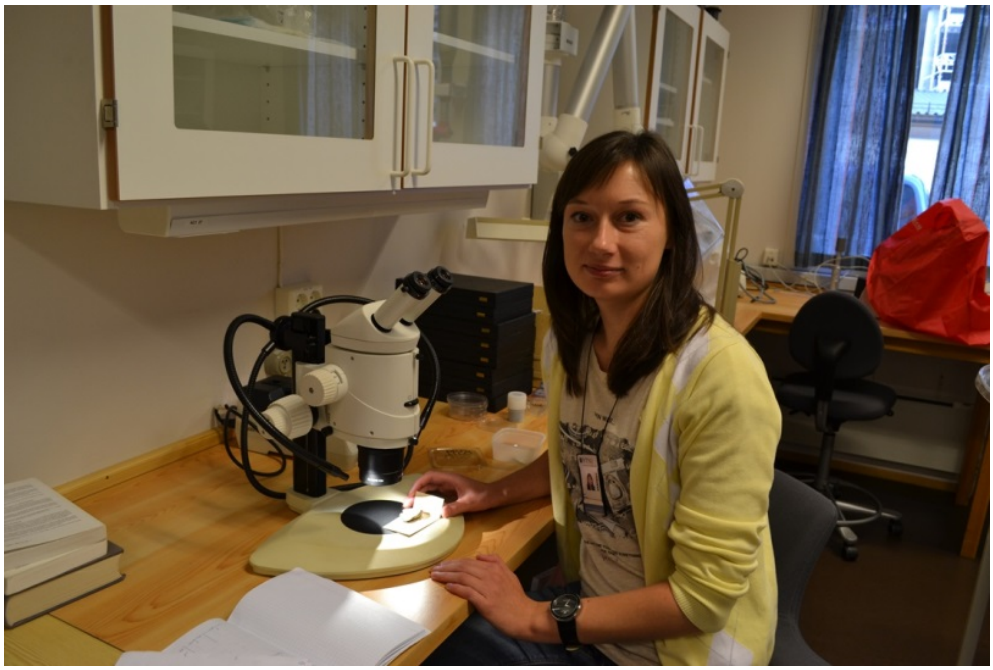
NEW MEMBERS

Rebecca Hull - I am a PhD candidate at the University of Melbourne (supervisor: Prof Mick Keough) studying the phenotypic response of *Watersipora subatria* to stress. Organisms may experience multiple environmental stresses during their life-time and their survival, growth and reproduction are often adversely affected as a result. The specific response of organisms, however, is likely dependent on the nature of the stress and this is the focus of my research. I expose *Watersipora subatria* to stress (copper) that varies in its timing (relative to the individual's stage of life), duration (i.e. the total length of stress) and frequency (i.e. the recurrence of stress) in the field and subsequently assess survival, growth and reproduction. This research is an extension of work conducted during my MSc, also under the supervision of Mick. This summer I will be conducting research at ANSTO where I will investigate the rate at which different concentrations of trace metals are accumulated and depurated (gotten rid of) in arborescent bryozoans using radio-isotope tracers.



Anna Stepien - I am working at the Institute of Oceanology Polish Academy of Science. In the framework of the project DWARF (http://www.iopan.gda.pl/projects/Dwarf/index.html) I concentrate on bryozoan zooid size as a response to climate worming in Arctic fauna. My aim is to describe spatial and temporal variation in bryozoan size along thermal clines and to explore the potential of zooid size as an indicator of environmental changes. I examine the material collected in vicinity of Norwegian coast and Svalbard (Hornsund, Isfiord, Kongsfiord). I was also studying the material gathered during BioIce program stored in Icelandic Institute of Natural History. Examination of the material allowed me to describe the bathymetric pattern in zooid size.

My research interests include ecology of the Bryozoa, especially patterns of species distribution and their preferences to abiotic factors. If you have any suggestion about my work, please contact with me: astepien@iopan.gda.pl



Vanessa Yepes Narváez I am in my first year of PhD in Environmental Biology at The University of Manchester under the supervision of Dr. Richard Preziosi, my project aims to determine the community structure and biogeography of marine bryozoans as well as identifying some ecological features in shallow and deep sea environments in the Atlantic Ocean. As part of my project I am going to make some laboratory culture experiments to evaluate the response of some bryozoans against environmental changes in order to obtain as much information I can about their behaviour against climate change.

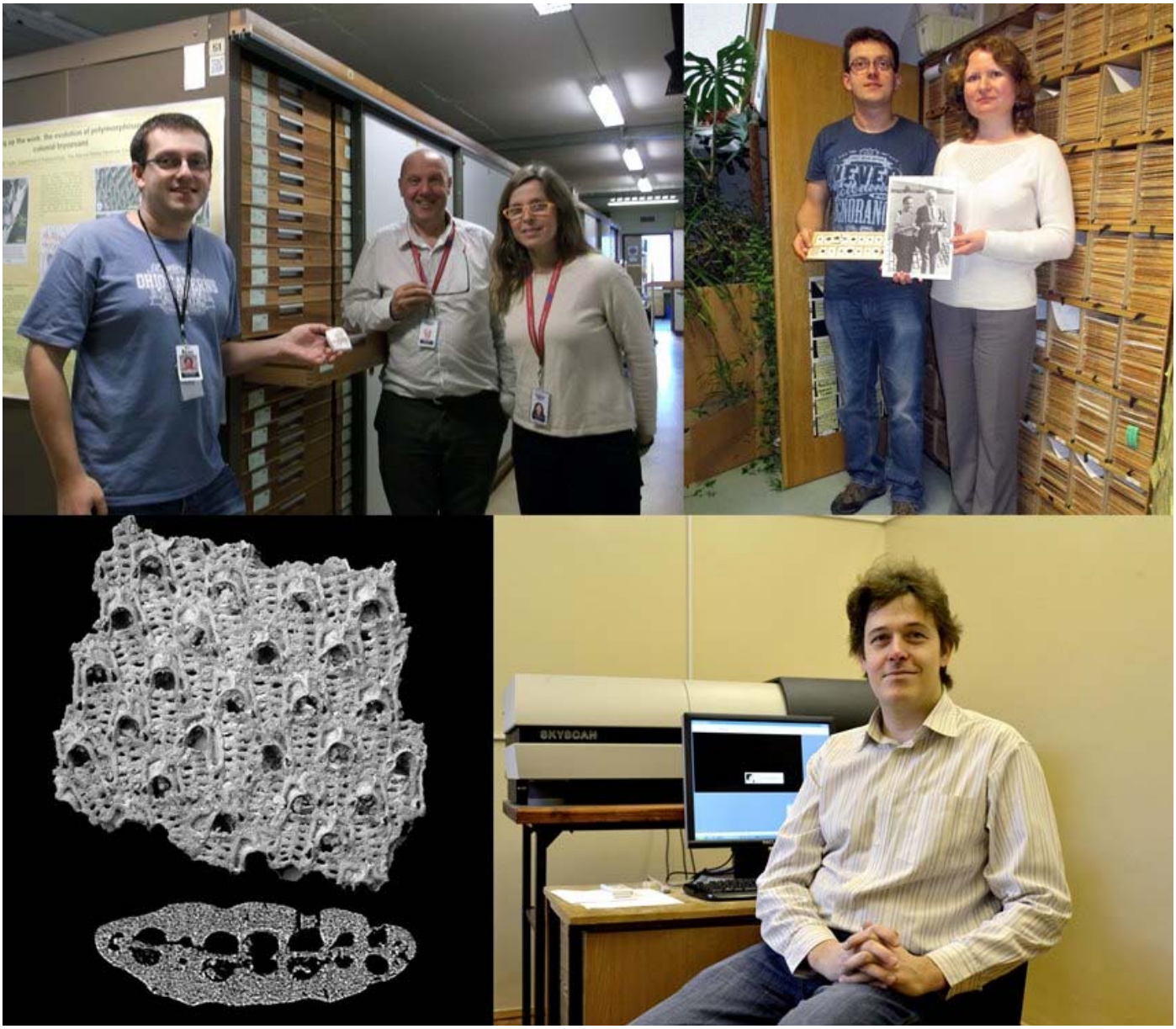
I studied Biology in Colombia and did my thesis called "Composition and Distribution of Bryozoa in the continental shelf of La Guajira (10-50m deep), Colombian Caribbean" under the supervision of Msc Paola Flórez and Erika Montoya-Cadavid in the Marine and Coastal Research Institute (INVEMAR); from that study 100 species where identified and 12 species where registered for first time for the Colombian Caribbean, increasing by 20% the knowledge of bryozoans in the country.

After that, I worked at INVEMAR for almost three years as part of some projects in the Caribbean and Pacific coast of Colombia, one of them called "Recruitment dynamic of sessile biota in the marine ecosystems of Malpelo Island" undertaking a taxonomic review of bryozoans in settlement plates; from that study, 29 species were identified of which 22 are new registers for Colombian Pacific, (nothing of those identifications would be possible without the wonderful taxonomic support of Dr. Judith Winston in the VMNH). Other interesting projects consisted in the taxonomic identification of deep bryozoans (1000-3000 m deep) associated to oil exploration blocks in Colombian Caribbean.

I am deeply in love with bryozoans and really would like to work for them for the lifetime! I enjoy identifying them and everything related to "Brys" it's so interesting for me; right now I am looking for the opportunity to learn more about their taxonomy and the best methodology for their molecular analysis as well as the best way to keep them in aquariums, so If you know something just text me! And I will be so happy to learn! My e-mail is vanbryozoa@gmail.com.

NEWS FROM THE MEMBERSHIP

Silviu-O Martha – This summer I had a long 'bryozoan holiday', with the opportunity to visit the Natural History Museum in London and the Borissiak Palaeontological Institute in Moscow. The first visit was funded by SYNTHESYS (GB-TAF-4407: Investigation of facies-related and palaeogeographical variations in the Early Cenomanian cheilostome bryozoan fauna) and supervised by Paul D. Taylor and co-host Consuelo Sendino. I examined the fossil bryozoan collections at the NHM for cheilostomes from the Early Cenomanian of Western Europe. The aims were to study the Early Cenomanian fauna of cheilostomes and to test their applicability as facies and palaeogeographical indicators. The results were far beyond my expectations and gave amazing insights into the largely unknown fauna of cheilostomes at the base of their radiation. We had long hours of sorting and identifying, long SEM sessions and many enjoyable and interesting discussions. The first paper, in (hopefully) a series of many, was written on a new onychocellid genus that forms large, multilaminar colonies and possesses (for onychocellids) unusual ovicells. There was 'fun time' too. We had delicious ale and fish and chips in the London pubs, Consuelo showed me images from the Thurso Larwood Symposium that I unfortunately missed and I experienced the London sights together with a friend who visited London, while I was there. I also had a nice, fruitful chat with Andrea Waeschenbach and a meeting with Mary Spencer Jones.

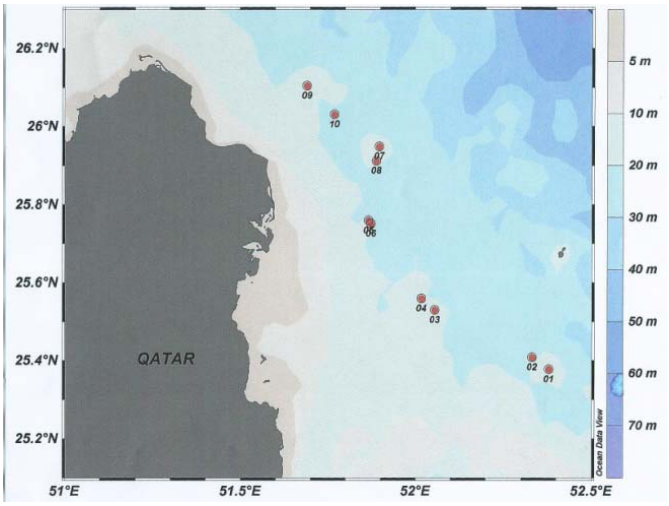


The visit to Moscow started right after returning from London. Anna V. Koromyslova invited me and financed the visit with a grant from the Russian Foundation for Basic Research (grant 14-05-31242 mol_a: MicroCT investigation

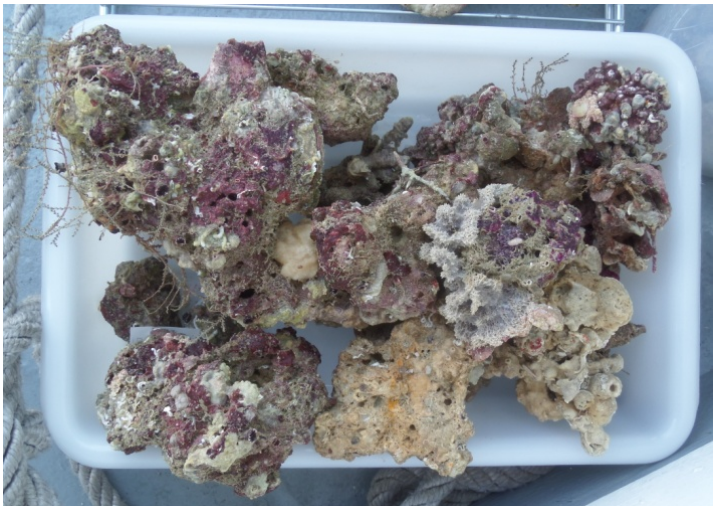
of coscinopleurid cheilostome bryozoans *Acoscinopleura foliacea*, *A. fallax*, and *A. rugica* from the Campanian and Maastrichtian of Europe). The visit to Moscow followed a visit of Anna in March 2014 to the Senckenberg in Frankfurt (the image with Anna is from that visit) and continued our studies on coscinopleurid cheilostomes from the Voigt Collection. As Anna had given birth to a baby just a few weeks before the visit, it was Alexey V. Pakhnevich who supervised my visit. He introduced me to microCT and we did some great scans on the type material of coscinopleurid species as well as on beisselinid species. A joint paper revising Acoscinopleura is currently in preparation. Alexey and I enjoyed much chai (Russian for 'tea') and he introduced me to Russian sweets and showed me the amazing collections in the Palaeontological Museum (I never saw so much information on bryozoans in a museum before) and I had some time to discover lovely Moscow.
I want to take the opportunity to thank Alexey, Anna, Consuelo, Paul, SYNTHESYS, the RFBR and Joachim Scholz for allowing me these great 'bryozoan holidays'.

Björn Berning. I will be offering another Expert-in-training course on Cenozoic and Recent marine bryozoans via the Distributed European School of Taxonomy (DEST) in 2016 (http://taxonomytraining.eu/content/taxonomy-and-systematics-cenozoic-and-recent-marine-bryozoa-0). If you hear of any under- or postgraduate student eager to know a wee bit more about bryozoan systematics, evolution, ecology and biogeography, please forward the news!

Marwa Mohammed AlGhanem- I am in the second year of my PhD research studies at Heriot Watt University in Edinburgh. My project is supervised by Dr. Joanne Porter, Dr. William Sanderson, and Dr. Dan Harries. Since October 2014, I have been studying the biodiversity and ecology of encrusting epifauna associated with British bivalve *Modiolus modiolus* (Linnaeus, 1758) from different locations in the Irish and North Sea, as well as working on the electron microscope in the EMMA Unit of the Natural History Museum London, to confirm the identity of the bryozoan species. Following a literature survey to investigate knowledge of the Qatari Bryozoa it became apparent that there was very little available data. On the basis of this Joanne Porter and I planned a field work trip to Qatar to investigate the diversity of marine Bryozoa in coastal waters of Qatar. On Monday the 2nd of November my supervisors Joanne Porter, William Sanderson, project advisor Mary-Spencer Jones, Professor Hamish Mair, Dr. Alba Lucia Mulford, my sister Mai and I flew to Qatar for two weeks. The next day we met up with the scientific team at the Environmental Studies Centre (ESC) at Qatar University. The team consists of Dr. Ibrahim A. Al Maslamani, Dr. Ibrahim M. Al Ansari, Dr David Mark Smyth, Dr Bruno Welter Giraldes, Dr Mark Edward Chatting and Dr Jeffrey Philip Obbard, and we discussed our field work sampling requirements on board of the research vessel Janan. On Thursday the 5th of November we sailed on board of 'Janan' for four days to survey along the coastline of Qatar from areas close to Doha and then at intervals northwards to Raslaffan.



There were two dives per day one in the morning and one in the afternoon done by Joanne Porter, William Sanderson, and Hamish Mair who collected around 200 samples of marine Bryozoa growing on pearl oyster shells and coral rubble from six stations around the cost of Qatar.



The samples were labelled according to the station and dried. Station one samples were examined under the microscope for bryozoan species using laboratory facilities on board Janan. All the bryozoans from station one were numbered, drawn and described for identification features and photographed using ZEISS microscope in the science environmental studies at Qatar University. The rest of the samples were packed in boxes to be sent back with us to Edinburgh.

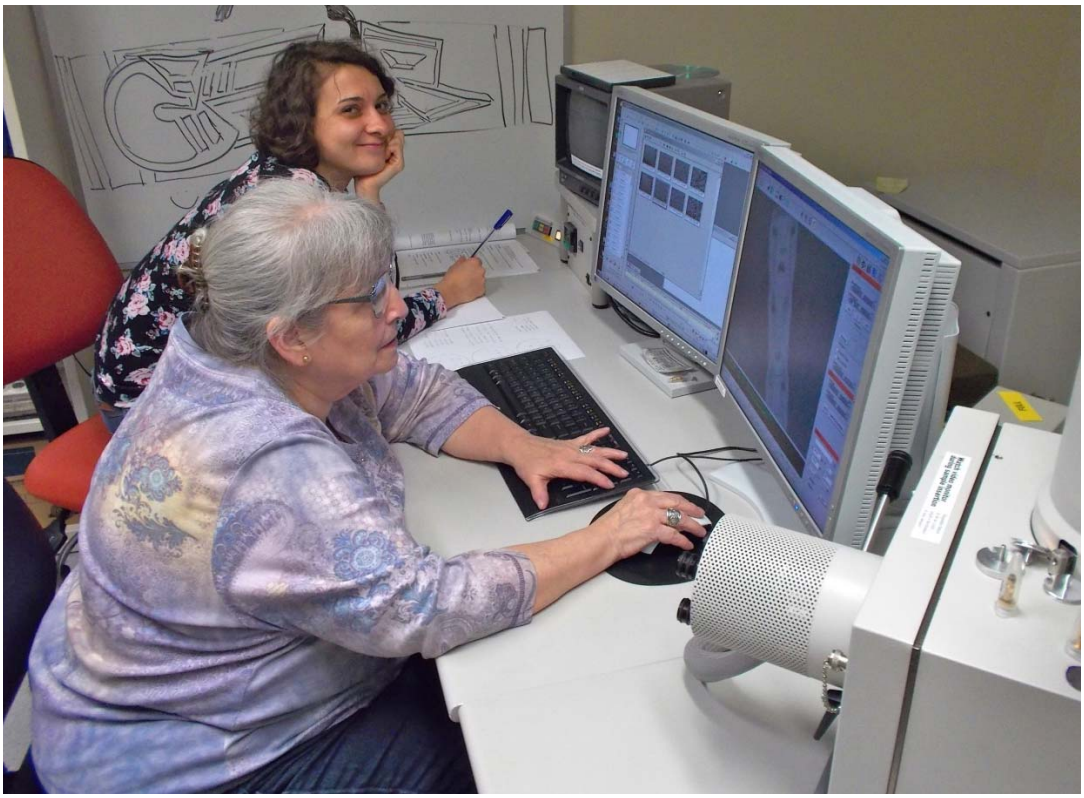
In Edinburgh I will carry on with the same work at Heriot Watt University and in February I am planning to go to London, with Joanne Porter to meet Mary-Spencer Jones at the Natural History Museum and use the electron microscope to scan the new fauna of Qatar bryozoans. I think our survey was very successful and I want to thank everyone who helped to make our work possible in Qatar, my family, the ministry of interior, the ministry of environment, Janan captain and crew, the science environmental studies team and our team, with special thanks to Joanne Porter for her determination, ambition for science and believing in me throughout this project. I think that we made a huge discovery in Qatar to find new marine bryozoans and I hope that this is the start for future research in this region.

From right: David Mark Smyth, Hamish Mair, William Sanderson, Joanne Porter, Mary-Spencer Jones, Alba Lucia Mulford, and Bruno Welter Giraldes

Emanuela Di Martino - On Monday, 2nd of November 2015, Paul Taylor and Lee Hsiang Liow hosted a symposium on "Biotic interactions and their influence on long term evolution" at the Geological Society of America Annual Meeting in Baltimore. The subject attracted the attention of many scientists, with plenty of abstracts submitted. Two of the talks in the morning session saw bryozoans as protagonists and mine, of course, was one of them. I presented, on behalf of the rest of the WABO team (Lee Hsiang, Paul, Kjetil Lysne Voje and Seabourne Rust), the results of our research on overgrowth interactions among bryozoans from the Pleistocene of the Wanganui Basin in New Zealand. Just after me, Carl Simpson proposed a hypothetical mechanism for the evolution of polymorphism termed the "life-history ratchet" and explored its utility in understanding the evolution of cheilostome bryozoan polymorphism. In the afternoon session, Paul, on behalf of his coauthors including, among others, Dennis Gordon and Andrea Waeschenbach, talked about the symbiosis between serpulid polychaetes and the hydroid cnidarian *Protulophila*, which sometimes has been mistaken for a bryozoan. Other very well-known bryo-people attended the meeting. In the poster session, Roger Cuffey presented a poster, co-authored with Paul, on Cretaceous bryozoans from iconic Old West historical sites, while Marcus Key and his student Mackenze Sintay Burkhart proposed the use of fossil bryozoan-bearing chert to determine the source of Aboriginal lithic artifacts from Western Australia. Mark Wilson was an invited speaker for the celebration of the bicentennial anniversary of Smith's geological map of England and he also received the GeoCUR Undergraduate Research Mentor Award. Congratulations Mark! Steve Hageman also attended the conference, but did not present on bryozoans.

I spent the week after the meeting at the Smithsonian National Museum of Natural History in Washington DC. Paul and I were welcomed by JoAnn Sanner and we had the opportunity to explore and work with the amazing bryozoan collection housed in the Paleobiology Department.

Paul and Lee Hsiang organizing the schedule of the symposium



JoAnn and me at the SEM

Back to Europe, I had to say goodbye to CEES and Oslo University, where I had worked since January 2015 with Lee Hsiang Liow as part of the Bryozoan Lab for Ecology, Evolution and Development (BLEED). It has been an amazing year. I had the opportunity to collaborate in a very exciting project with wonderful colleagues and in the meantime live and travel in one of the most beautiful countries in Europe. Our collaboration has just begun and hopefully I will visit them again soon. On the 16th of November I officially started my postdoctoral project in collaboration with Paul Taylor and Jeremy Jackson and funded by the Leverhulme Trust. I will be based at the Natural History Museum in London for the next three years, working on the biodiversity of Miocene–Recent tropical cheilostomes.

Karin Hoch Fehlauer-Ale - replaces Dennis Gordon as the new editor of Marine Bryozoa and Entoprocta for *Zootaxa*. Prospective authors can send manuscripts directly to: fehlauer.ale@gmail.com

Karin's mailing address is:
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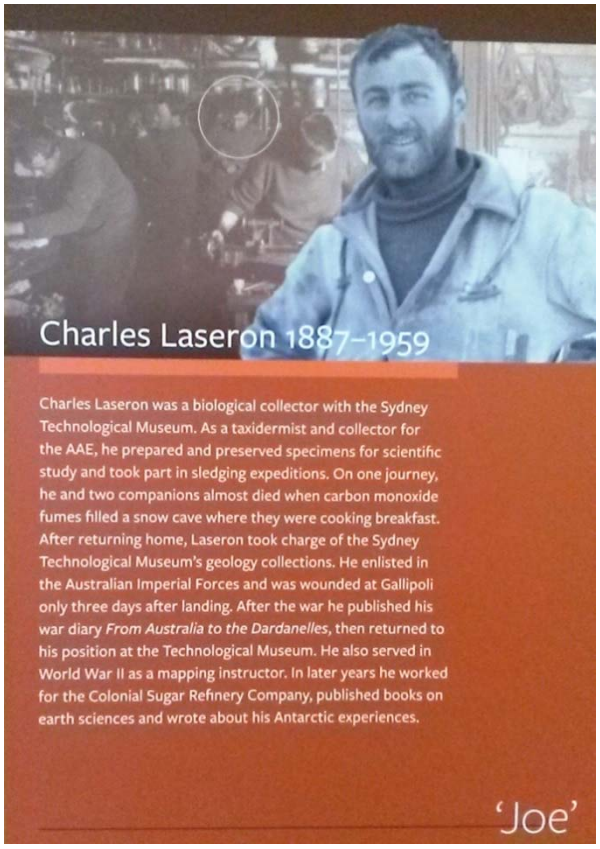
Avenida Beira-Mar, s/n, Caixa Postal 61, Pontal do Sul
Pontal do Paraná, PR, CEP 83255-976
Brazil

Anatoly Vinogradov – (from the newsletter editor) Anatoly has sent in a long poem hymn to bryozoan, however it is in Russian and he does not have an English translation. If you are able to read this in Russian, or translate it for members, please contact Anatoly for a copy. vinanatol@mail.ru

Catherine Reid – I have been on sabbatical leave for the last few months and have taken the chance to spend some time in Australia in NSW and Tasmania. I have been busy visiting outcrops and locations for the IBA preconference field trip in Tasmania and making a few small collections to continue working on some taxonomic projects. By chance in Hobart I visited a reconstruction of Douglas Mawson's Antarctic hut (not a bryozoologist) and discovered that one of the exploration party members on his 1911-1913 Australasian Antarctic Expedition was Charles Laseron. Laseron was a zoologist on the trip and returned to Sydney Technological Museum and wrote one of the few early papers on eastern Australian Permian bryozoans. In it he described several new species, which are maintained.

Laseron, C.F., 1918: Notes on some Permo-Carboniferous Fenestellidae with descriptions of new species. Journal of the Royal Society of New South Wales, 52: 181-202.



ARTICLE

China and the oldest fossil bryozoans

Paul Taylor
Natural History Museum, London

I had the pleasure of spending a few days in China in early October, hosted with great consideration and generosity by Ma Junye of the Nanjing Institute of Geology and Palaeontology (NIGP). The main purposes of the trip were to visit some of the localities in Hubei Province that have yielded the oldest known fossil bryozoans, and to discuss future research collaborations on these and other bryozoan projects.

Ma Junye standing next to a weathered limestone block of the Lower Tremadocian Nantzinkuan Fm containing silicified fragments of the oldest known fossil bryozoan, Prophyllodictya simplex *Ma et al. 2015.*

Our field party comprised Junye, his colleagues Li Yue (carbonate specialist) and Zhang Yong (technician), and two students, Mao Yingyan (crinoids) and Zhang Min (bryozoans). In Hubei the Yangtze Basin hosts an extensive carbonate platform of Cambrian and Ordovician age. Two Lower Ordovician formations were our main targets – the Early Tremadocian Nantzinkuan Fm. and the overlying Late Tremadocian Fenhsiang Fm. – although we also saw the latest Cambrian Sanyoudong Fm. and the stratotype sections marking the bases of the Dapingian and Hirnantian stages of the Middle and Late Ordovician, respectively.

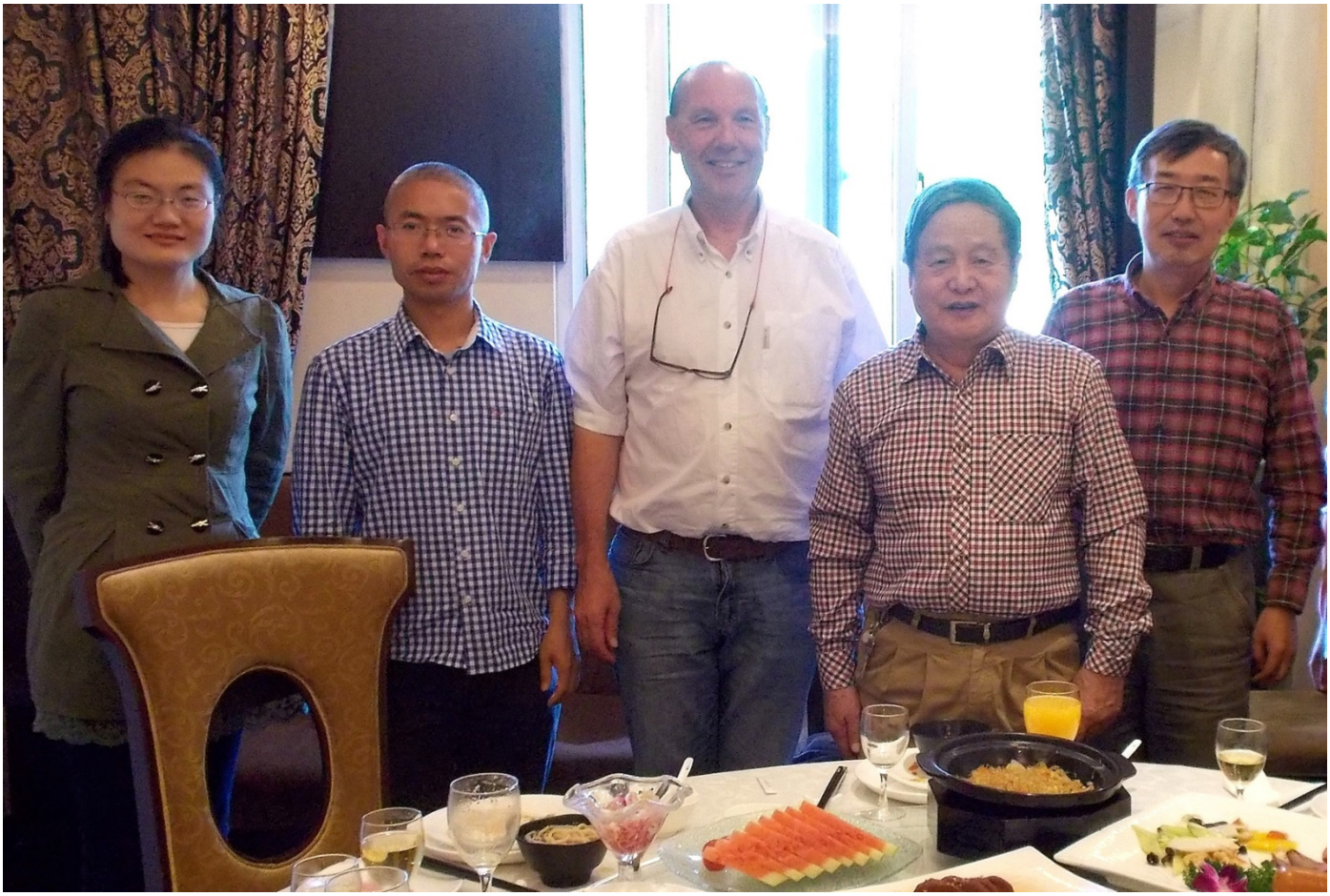
Notwithstanding the claims of Ed Landing and colleagues that the oldest bryozoan is a Mexican Cambrian fossil named *Pywackia baileyi* in honour of Landing's two pet cats, the oldest unequivocal bryozoan so far reported is *Prophyllodictya simplex*, recently described by Ma et al. (2015) from the Nantzinkuan Fm of Liujiachang. We were able to see small fragments of this bifoliate cryptostome standing out from weathered blocks of limestone. Their silicified preservation is a 'two-edged sword': it is doubtful whether *Prophyllodictya* simplex would have been found at all had it not been silicified, but the silicification is coarse and bryozoan microstructure is poorly preserved. One thing that became very clear to me was the huge problem in discovering fossil bryozoans in the hard, strongly lithified – and very often dolomitized – Cambrian and Ordovician limestones of the Yangtze Basin. As this basin represents one of the best opportunities for finding Cambrian and Early Ordovician bryozoans globally, it should come as no surprise that there are big gaps in the fossil record of early bryozoans, particularly the small-sized encrusters that are believed to be primitive.

Large quarry in the Upper Tremadocian Fenhsiang Formation showing a bedding plane (centre) especially rich in Orbiramus*.*

The Fenhsiang Fm. is a well-known source of Early Ordovician bryozoans, studied in the past not only by Chinese palaeontologists (e.g., Xia et al. 2007), but also by Roger Cuffey and Nils Spjeldnaes. A pioneer of Fenhsiang bryozoology has been Xia Fengsheng, now retired but still active in bryozoan research at the NIGP. Two bryozoan genera and an uncertain number of species can be found commonly in the Fenhsiang Fm., which is exposed in several large limestone quarries around Huanghuachang ('yellow flower town'). The esthonioporine genus *Nekhorosheviella* contributes to a series of small reefs, occurring as stacks of dome-shaped colonies or subcolonies among sponges. In contrast, non-reefal sediments tend to contain the branching trepostome *Orbiramus*, which can be quite well preserved in the more muddy layers. Zhang Min's master's thesis will most likely be a detailed morphometric study of within- and between-colony variation in *Orbiramus* with the aim of resolving exactly how many species of this simple trepostome are present. Min is the first bryozoan student of Junye's but I hope she will not be the last as there is still so much research to be done on the fossil bryozoans in the vast country of China.

A  B 

A Fenhsiang Formation colony of Orbiramus *shaped like a tuning fork. B Silicified stacked colonies (or subcolonies) of* Nekhorosheviella *from a reefal facies of the Fenhsiang Formation.*



After the show: some of the banquet guests in Nanjing. Left to right: Zhang Min, Ma Junye, Paul Taylor, Fengsheng Xia and Yang Qun (Director of the Nanjing Institute of Geology and Palaeontology).

References

Ma Junye, Taylor, P. D., Fengsheng Xia & Renbin Zhan. 2015. The oldest known bryozoan: Prophyllodictya (Cryptostomata) from the Lower Tremadocian (Lower Ordovician) of Liujiachang, south-western Hubei, central China. Palaeontology. Doi 10.1111/pala.12189

Xia, F. S., Zhang, S. G. & Wang, Z. Z. 2007. The oldest bryozoans: new evidence from the late Tremadocian (Early Ordovician) of East Yangtze Gorges. Journal of Paleontology, 81: 1308–1326.

ARTICLE

Growth speed of *Biflustra grandicella* (Canu & Bassler, 1919) in Qingdao (China)

Huilian LIU & Kamil ZÁGORŠEK
Department of Marine Organism Taxonomy & Phylogeny, IOCAS, Qingdao. China

Anti-shark nets were installed in Qingdao firth bathing beach on June 15, 2015. Exactly after four month (October 15, 2015), the summer season finished and the nets were withdrawn and exposed on the beach. We found many large colonies of *Biflustra grandicella* (Canu & Bassler, 1919) on the net. The size of the colonies was up to 12 cm in diameter (see figures). We try to measure the true length of the colony branches by using the thrum. We stick the thrum to the ancestrula and following the direction of growth we measured the distalmost tip of the entire branch. The longest branch has 116 mm, the average branch has length 56 mm (we measured 20 branches on biggest 10 colonies). The net was clean before installed in the water on June, so the maximum growth speed of the *Biflustra grandicella* is 0.95 mm daily (from June 15 to October 15 are 122 days). Even the smaller average speed of growth (only 0.46 mm) is considerably higher in comparison with most fouling bryozoan species as *Cryptosula pallasiana* and *Watersipora subtorquata*. For example, Lonhart (2012) reported the linear growth rate of *Watersipora subtorquata* to be 0.33 mm per day in California (Monterey Harbour) and according to our own investigation; the *Watersipora* growth rate is larger than the growth rate of *Cryptosula*. It seems that *Biflustra grandicella* belong to one of the fastest growing bryozoan at all.

Biflustra grandicella *attached on the anti-shark net (the mesh size is 8 cm). Number one bathing beach – Qingdao, China.*

Beside the *Biflustra, Bugula neritina* and *Tricellaria occidentalis* were also common fouling species found on the net.

Tricellaria occidentalis *(left) and* Bugula neritina *(right) attached on the anti-shark nets*

Additional 17 species of bryozoans were found occupied the damaged floating ball (figure) on the beach along with the anti-shark nets: *Electra tenella, Parasmittina, Watersipora subtorquata, Reginella, Smittoidea spinigera, Celleporina, Fenestrulina orientalis, Pacificincola perforata, Schizoporella unicornis, Microporella, Escharoides, Exochella longirostris, Cribrilina annulata, Rhynchozoon, Exidmonea, Disporella* and *Tubulipora.*

Damaged floating ball with all 17 additional species (diameter of the ball is 25 cm)

Reference: Lonhart S I. 2012. Growth and Distribution of the Invasive Bryozoan Watersipora in Monterey Harbor, California. In: Steller D, Lobel L (Eds.) Diving for Science. Proceedings of the American Academy of Underwater Sciences 31st Symposium. Dauphin Island, AL: AAUS. 89–98.

MEETING REPORT

MELBOURNE AUSTRALARWOOD MEETING WHETS APPETITES FOR THE UPCOMING APRIL CONFERENCE

By Dennis Gordon

Eleven attendees at the VI AustraLarwood meeting in Melbourne (9–10 November) had a most pleasant foretaste (literally) of some of the delights that will be in store at the upcoming 17th IBA Conference on 10–15 April 2016. AustraLarwood meetings are a southern (austral) equivalent of the European Larwood meetings and thus far restricted to Australasia. Past meetings have been held in Wellington (2006), Dunedin (2008), Melbourne (2009), Townsville (2012) and Perth (2014). Rolf Schmidt hosted the most recent meeting in the boardroom of the beautiful Melbourne Museum, which will be the 2016 conference venue. The first day featured nine talks, followed after lunch by a meeting of the conference organising committee (most of the attendees) and a tour of the venue.

Dennis Gordon kicked off the talks with "Identification of a new clade of Calloporoidea" (coauthored by Paul Taylor). This clade, based on the type genus *Pyriporoides* Hayward, 1989, is established to accommodate a group of genera characterised by a distinctive apomorphy—acleithral ovicells that are borne on and develop concurrently with heterozooids. There are several correlated characters. The family is mostly austral in distribution with one outlier in the northeast Atlantic, comprises six genera (three of them new), and dates from the Early Oligocene.

Catherine Reid spoke on "Giant Palaeozoic bryozoans" (co-authored by Eckart Håkansson, Marcus Key and Andrej Ernst), presenting preliminary results on research underway to assess the size and distribution of large Palaeozoic bryozoans. Early indications are that high-latitude waters host the largest bryozoans in the Permian, but this may not be true for other Palaeozoic faunas. The aragonite vs calcite seas hypothesis is being investigated as a cause for the size distributions. From the data available so far, trepostomes display colony sizes larger than any other group.

In "Bryozoans and calcein: potential for fluorescent marking", **Abby Smith** (co-authored by Marcus Key and Anna Wood), demonstrated the utility of marking bryozoans with calcein for growth and calcification studies.

Eckart Håkansson spoke on "Biogeographic relations of the Permian bryozoans in Western Australia" (co-authored by Andrei Ernst), showing in an impressive series of paleo-latitude reconstructions the distribution of taxa and evident migratory pathways during taxon evolution.

Mick (Michael) Keough discussed how connectivity between bryozoan populations could be reduced if larvae arrived at a substratum in poor condition and showed data indicating that the competitive ability of *Watersipora* colonies was sometimes compromised by prolonged larval periods. His doctoral student Rebecca Hull showed that the timing of environmental stress, in the form of multiple exposures to copper during the life-cycle of *Watersipora subatra*, influenced colony growth and larval characteristics.

Phil Bock covered the current state of progress of his database of living and fossil bryozoan species. Access to most of the valid names for Recent species is available on WoRMS (marinesspecies.org). The search options available there also allow queries for numbers of various systematic groups. A goal is to add the original names (basionyms) and other later combinations for these species, but this aspect is slower and longer-term. Current work is mainly aimed at improving the status of entries of the fossil species. Currently, the database has a grand total of about 22,700 'accepted' living and fossil bryozoan species. Work on adding all these names to the Bryozoa Home Page is continuing.

Robyn Cumming, Collection Manager at the Museum of Tropical Queensland in Townsville, described their collection and some of the bryozoan research that is taking place there and at the nearby Australian Institute of Marine Science (AIMS). Related to her own work, Robyn is supervising a Masters student, Pascal Sebastian, who is working on the systematics of tropical Australian *Calyptotheca*.

Dennis closed the talk sessions with a multi-authored presentation, “Not ctenostome borings after all—symbiosis between a bioclaustrating hydroid and serpulid polychaetes: 187 My of biotic interactions” (Paul Taylor, Dennis Gordon, Manfred Jäger, Lee Hsiang Liow, Andrea Waeschenbach and Helmut Zibrowius), which Paul gave at the GSA meeting in Baltimore the week before. Putative ctenostome borings in the Italian Pliocene, originally named *Protulophila gestroi* by Rovereto in 1901, and similar Jurassic traces attributed by Bernard Walter to *Immergentia* in 1965, turn out to be bioclaustrations of athecate hydroid colonies. This has been determined by the finding of living material throughout the Indo-Pacific, most notably in New Zealand in 2014, which made possible gene sequencing. *Protulophila* is basal to suborder Filifera (Anthoathecata), where it is closest to Eudendriidae. Colonies are found from the Early Jurassic (Pliensbachian) to the present day, only on serpulid polychaete tubes (a range of genera).

Day two of the AustraLarwood meeting was a dry run of the proposed midconference excursion, taking in a wildlife sanctuary, winery and chocolate factory. Whereas the previous day had temperatures soaring to 34°, on the second day it didn’t get warmer than 17° and there was a little rain. But our spirits were not dampened, as we saw Tasmanian devils, platypus and other wildlife up close, including raptors and parrots who responded amazingly to trainers’ signals during a very impressive show for an audience in an arena. The later wine-tasting and chocolates, followed back in Melbourne by a dinner that featured some wild foods, gave us a genuine foretaste of what conference attendees can look forward to in April. Can’t wait!

Meeting attendees. Back row: Phil Bock, Catherine Reid, Rolf Schmidt, Rebecca Hull, Penny Orbell. Front row: John Orbell, Dennis Gordon, Abby Smith, Eckart Håkansson, Robyn Cumming, Mick Keough. Photo supplied by Abby Smith.

IN MEMORIUM

Patricia Cook

From Piero Braga

After my graduation at the University of Padua discussing a thesis on “The Tertiary Bryozoans from the Veneto Region”, and after completing my military service, in 1960 I went to London, where I remained for about one month, to learn English language.

During my thesis work, I had examined the relevant volumes written by G. Busk and dealing with Cheilostomatous Bryozoans that are stored at the Natural History Museum. Bringing with me a copy of the tables prepared for my thesis I went to the Museum, hoping I was allowed to examine Busk’s collection. When I arrived, I was welcomed by Dr. Patricia Cook, who continuously and very kindly assisted me during all the days I spent at the Museum. We had the opportunity to discuss about my work and she was surprised about the abundance of Conescharellines (and particularly of *Conescherellina perfecta* ACCORDI, 1947) from the Priabonian deposits I had examined.

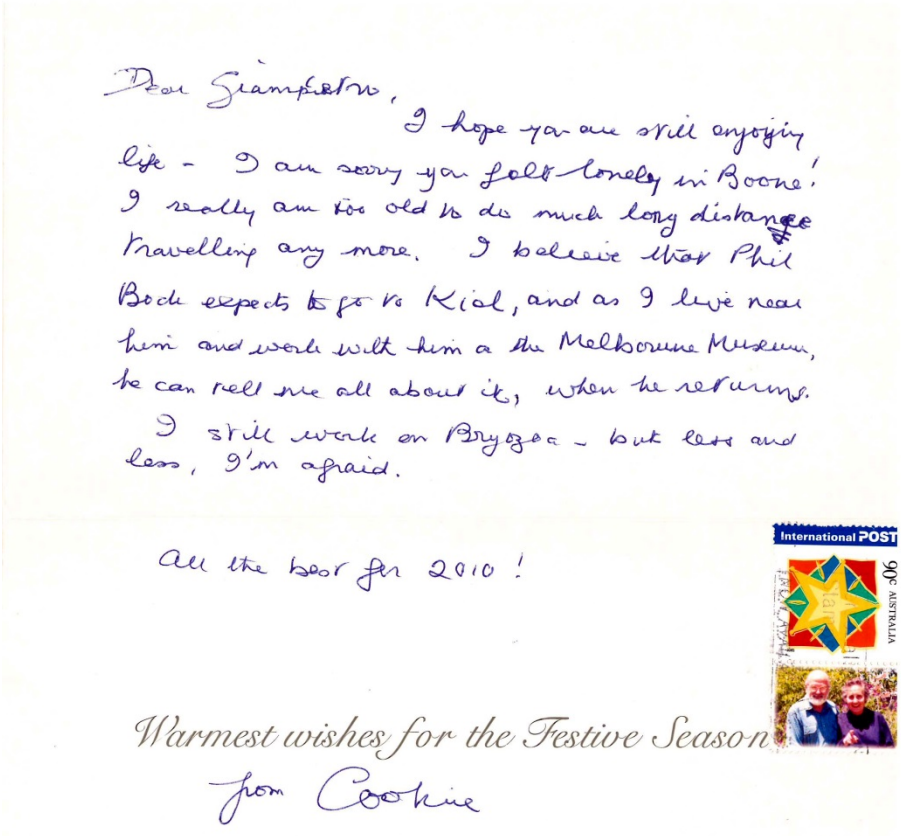
Since then, we began to correspond and subsequently we meet again in Stockholm, together with Enrico Annoscia, all hosted by Lars Silen at the ZoologiskeInsisitutut. It was in that occasion that a small group of “lovers and experts” of bryozoans decided to found the International Bryozoological Association, which later became the large family we presently know.

During her career Pat Cook repeatedly dealt with bryozoans developing rooted zoaria and co-authored several papers, some together with Pantelakis J. Chimonides and Robert Lagaaji. Being aware of my samples especially rich in Conescharellines, she asked me for specimens I sent her in large number. Meanwhile, my *C. perfecta* changed her generic attribution being better allocated within the new taxon *Lacrimula* Cook, 1966, erected by Pat and whose name alludes to the drop morphology of colonies.

I had the opportunity to meet again and several times Pat during subsequent IBA conferences and always I appreciated her work and kindness. Each year, she was used to send me wishes for the Christmas season. In these letters she signed as Cookie, the nickname she introduced in these last years. She was also used to prepare special marks featuring herself, often with other people as in the case of the enclosed letter where she appears with her close friend Phil Bock.

I treasure these letters as a fond memory.

Piero


Dear Giampietro,
I hope you are still enjoying life - I am sorry you felt lonely in Boone! I really am too old to do much long distance travelling any more. I believe that Phil Bock expects to go to Kiel, and as I live near him and work with him at the Melbourne Museum, he can tell me all about it, when he returns.
I still work on Bryozoa - but less and less, I'm afraid.
All the best for 2010!
International POST
90c AUSTRALIA
Warmest wishes for the Festive Season
from Cookie

A copy of one "Festiev season" sent with a portrait-stamp of Cookie and Phil!.

From Norbert Vávra, In memory of Patricia Cook

A few days ago I received the information of the sudden and unexpected death of Patricia Cook. Being really no expert in writing biographical notes or obituaries of any kind, I decided nevertheless to contribute at least a few lines, a few (partly rather unusual) pictures and at least one anecdote in memory of Pat.

I remember precisely when I met her for the very first time: it was during the IBA conference at Lyon in 1974, we had both been just queuing for breakfast. She has been secretary of IBA for many years, the exact time span I have forgotten completely. Another event which my wife and me still remember exactly has been IBA Vienna (1983): after the traditional half-day tourist trip the conference dinner was taking place. For this purpose we had a reservation: the "blue room" in the restaurant of the old monastery of Göttweig, overlooking the scenic valley of the Danube. After a short speech by Pat expressing the gratitude for all we had done for this IBA meeting we received as a present a beautiful antique glass, which is kept in a show case in our living room since this time. Therefore we often and often remember not only IBA but also especially Pat Cook.

The last time I had been participating in a field program together with her had been in Panama (1998). We had both decided to join the trip to the Biological Station on San Blas Islands; we were both neither diving, nor snorkeling – therefore we spent hours together at the station watching living bryozoa under the binocular. It was one of those humid and really very hot afternoons: 'Norbert, you are sleeping!' 'No I am not, but rather close to it…' 'What do you think about a cup of tea?' 'That's an excellent idea!' (In fact I do love this British habit of having teatime at regular intervals). So we went to the kitchen, where Pat tried to light the gas of the cooker. It did not work however. I teased Pat by saying that I complain the sad fate of this nice, wooden building. Obviously this will be its last day. 'Why?' Pat asked. My rather rude answer: 'Because, if you continue like that it will soon burn down completely'. Unnecessary to tell that Pat burst out laughing and that I had suddenly the task to light the gas myself. One of the reasons when remembering the IBA at Panama, I also remember Pat.

The only contact remaining and continuing for many years to come had been Season's Greetings from Victoria year by year……

Photo 1: Patricia making notes during the IBA conference at Lyon (1974; from an 'official photo', photographer unknown). Photo 2: Pat collecting bryozoa very carefully, or 'listening to details of earth history ?' Field trip during IBA 1983 to the Early Miocene of Austria (picture taken by Dr.E.Pisano, Italy). Rhoto3: Patricia and her brother on a 'personalized' ornamental tablet attached to an Australian Christmas stamp in 2003 (For this issue existed the possibility to transform blank fields to such personal ornamental tablets).

Norbert Vávra, Vienna

From Robin Wass

It was the 1967 cruise of the USS Oceanographer through the Great Australian Bight which brought Pat Cook and I together in early 1970. This cruise unearthed a huge carbonate province and literally thousands upon thousands of Recent and Tertiary bryozoan fragments. These specimens were like nothing I had ever encountered and on the advice of D A Brown, I went to the Natural History Museum to learn so much about them from Pat Cook.

From the beginning we got on very well and to put it simply, what I have produced on these and other faunas is due to the teaching of Pat who was always on call, especially when I was in London, to give assistance and try to counsel me as to the path I should follow. I cannot say enough about this aspect of her and it also applied to every scientist who walked through the door to talk to her. We all know the problems she faced in so many different ways but she was always there for someone in need and that also applied to personal issues.

Her breadth of knowledge was known by all who met her but one day in London when I was really into the catenicellids, she whispered to me that this group frightened her. I couldn't believe my ears at first and when I realised she meant it, I had the greatest of pleasure in sitting beside her and explaining the ins and outs of this fascinating group.

It was during my early visits to London that I sang the praises of this Great Southern Land, she eventually travelled here for a small conference in 1982, and it made me very happy that she spent her retirement here, still working on Bryozoa in collaboration with Phil Bock.

Be it science, be it counsel, be it administration especially of the I B A, where would we have been without this wonderful woman. She was one of the very best.

R I P Cookie.

From Paul Taylor

I was saddened to learn of the recent passing of Pat Cook. She was a great influence on my early career in her capacity as the friendly, helpful and 'down-to-earth' bryozoan expert at the 'British Museum'. My doctoral supervisor Gilbert Larwood was particularly anxious that I should meet her in the mid-1970s when I was a new student undertaking research on Jurassic bryozoans. During lunches in 'The Zetland' pub, Pat introduced me to the many delights of living bryozoans, as well as sausage sandwiches.

I came to know Pat better when I joined the staff of the BM(NH) in 1979 as a research palaeontologist, subsequently writing a couple of papers with her on hermit crab symbionts. Visiting Pat's basement room in the museum's south-west corridor was a mixture of pleasure and pain – pleasure from the great insights she freely offered about bryozoans, but pain from the fug of cigarette smoke that had to be endured. But even her heavy smoking had an unexpected advantage: I recall her once telling me that it was only after cigarette ash had been dropped accidentally into the aquarium containing living colonies of *Selenaria* that they began to feed properly and prosper.

Pat was fiercely independent, hated pomp and authority, and waged constant battles with her managers in the Department of Zoology. Therefore, it came as no surprise when she emigrated to Australia immediately after her retirement rather than following the usual pattern of returning to the museum as a scientific associate. That she made the right decision is clear both from the standpoint of her personal happiness, and the renaissance of her bryozoan research in collaboration with Phil Bock.

From Jo Ann Sanner - This photo was taken in 1977 after the Woods Hole IBA Meeting. Pat Cook came back to Washington, DC to visit with Alan Cheetham and Rich Boardman. During that time I got Pat to go the '1876 Exhibit' (restaged for the USA Bicentennial) where there was a souvenir tin type studio. We had our photo taken and this is the result. (Pat on the left, a much skinnier me on the right.)

Joan Crockford-Beattie

From Robin Wass

Having studied the Permian Bryozoa from the Cracow region, some 550km northwest of Brisbane, as part of my Honours in 1961-2, I was introduced to the many papers published by Joan with some of her material kept in the museum at the University of Queensland. At the end of this work, I applied for a tutoring position at the University of Sydney and it was here that most of the Crockford type and other material was housed. How convenient. Offered the complete bryozoan collections from the Bowen Basin by the Bureau of Mineral Resources, now Geoscience Australia, I took the offer and began my doctorate.

It wasn't long before I met Joan and from the start we found we had more than Bryozoa in common. She had spent some time at Cracow, studying both horizons of fossils while her husband was the manager at the Cracow gold mine. She told me of the problems she had with working with Bryozoa in the department during the 40s and I had to agree with her as little had changed. It was her wonderful collections from the 40s which helped me greatly in my studies and then there were her many wonderful papers. She could take me through her type collections and tell stories about almost every specimen as if she had studied it just the day before. Without this wonderful work, I cannot imagine how difficult my doctorate studies would have been.

That is where any similarity stopped as Joan considered her animals to be dead calcification which she described without any thought for the palaeobiology of the organism. She could not understand in any way why I was relating Permian fossils to those from the Recent, characteristics which had been shown to me by Max Banks, a Sydney graduate on the staff of the University of Tasmania, having a short sabbatical with the late Professor Dorothy Hill at the University of Queensland in late 1962.

Be that as it may, those of us who have worked on Late Palaeozoic Bryozoa have to be greatly indebted to Joan for all the work she produced, often under difficult circumstances.
Robin Wass

Editors note – *There was a short paper on Joan Crockford's life and contribution in Annals of Bryozoology 2 by Sue Turner – emailed out to members in September 2015, and available on request from Catherine Reid* catherine.reid@canterbury.ac.nz .

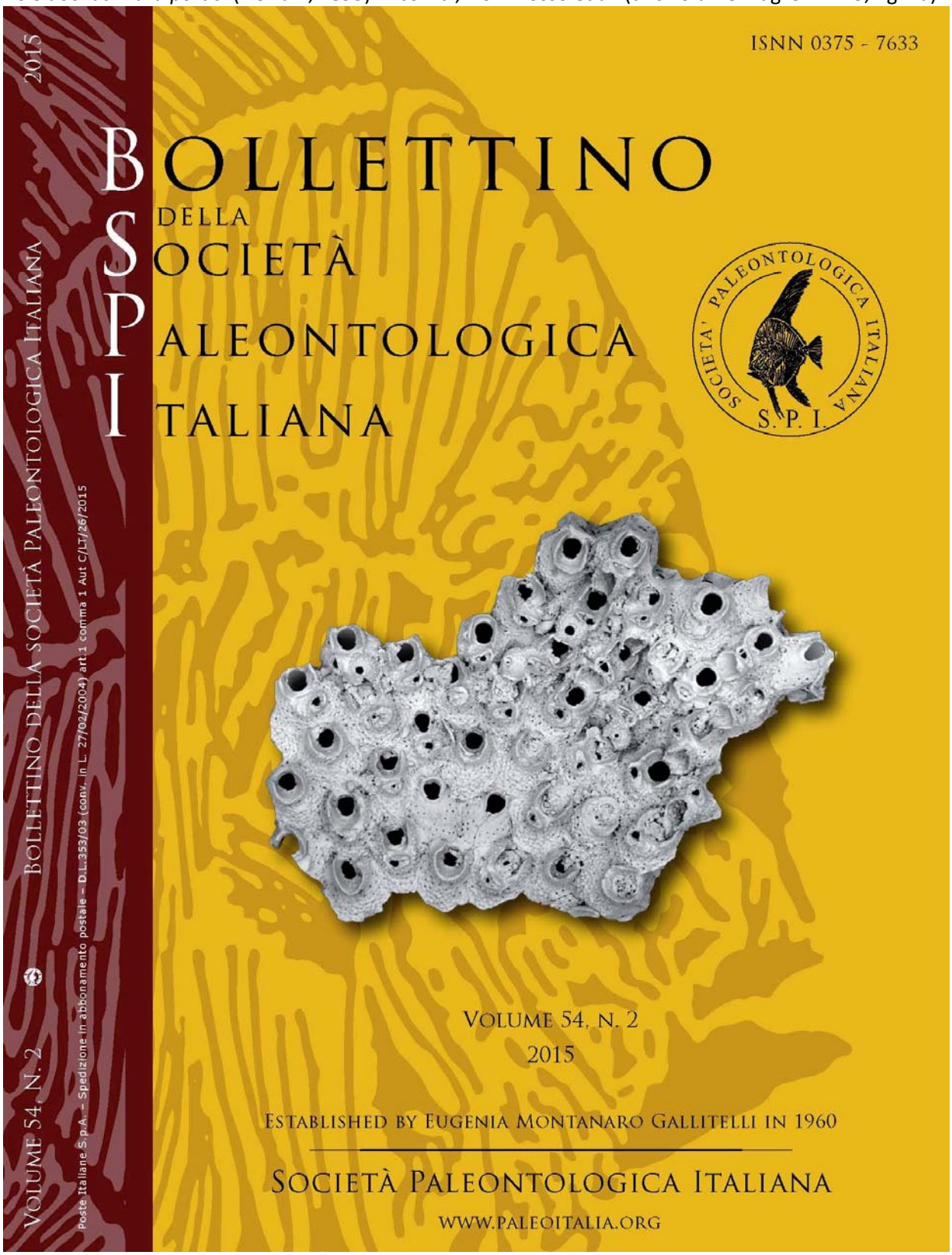
Roger Hughes

Professor Roger Hughes died, peacefully at home, after a long illness on Sunday, August 30th 2015. An article is expected to be prepared in time for the March 2016 edition of the Newsletter.
Newsletter Editor

JOURNAL COVER

Antionetta Rosso sent in this journal cover image from the Bollettino della Societa Paleontologica Italiana chosen from Rosso A., Di Martino E., Sanfilippo R., Sciuto F., Liow L.H. 2015. Resurrection of an old forgotten name: the case of the Pliocene to Recent *Cleidochasmidra portisi* (Neviani, 1895) from the Mediterranean. Bollettino Società Paleontologica Italiana, 54 (2): 91-101.

Cover image:
Cleidochasmidra portisi (Neviani, 1895) n. comb., from Rosso et al. (this volume. Pag. 97: Pl. 3, fig. 4a)



17th Conference of the International Bryozoology Association

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

Registration is now OPEN

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

THE WEBSITE WILL NOW BE THE PRIMARY SOURCE FOR ONGOING UPDATES

http://iba2016.org/

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* as sent in to the editor. As always, members are encouraged to support future compilations by continuing to send complete citations to the IBA secretary at any time. Accuracy of your citation is assured if sent in bibliographic format, if re-drafting is required by the editor accuracy is not guaranteed! Reprints will be gratefully received by the IBA archivist, Mary Spencer Jones.

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