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

PRESIDENTS PAGE

The state of bryozoan taxonomy; or bryozoan taxonomists 1961 and 2015

Patrick N. Wyse Jackson

The Global Taxonomic Initiative was established as a result of:

> 'Governments, through the Convention on Biological Diversity, ... acknowledged the existence of a "taxonomic impediment" to the sound management of biodiversity.' (https://www.cbd.int/gti/default.shtml; accessed 5.3.2016).

The Global Taxonomic Initiative has set out:

> '... to remove or reduce this taxonomic impediment - in other words, the knowledge gaps in our taxonomic system (including those associated with genetic systems), the shortage of trained taxonomists and curators, and the impact these deficiencies have on our ability to conserve, use and share the benefits of our biological diversity.'
> (https://www.cbd.int/gti/problem.shtml; accessed 5.3.2016)

Clearly there is an identified global problem with a dearth of taxonomists, but is this true in bryozoology? Recently I was given a considerable number of geological and palaeontological books by my former boss, and in this collection was a distinctive turquoise-coloured book entitled *Directory of Zoological Taxonomists of the World.* Published in 1961 by Southern Illinois University Press of Carbondale on behalf of the Society of Systematic Zoology, this 404-page compilation was assembled by Richard E. Blackwelder and Ruth M. Blackwelder over a five-year period from 1956. While the compilers admit that this list was not exhaustive, it offers a glimpse of the interest in Recent and fossil Bryozoa in the late 1950s and provides a benchmark against which one can compare the strength of taxonomy coverage and expertise six decades ago with that in the current membership of the International Bryozoology Association.

The listing of bryozoologists published in 1961 comprised only two partial pages, and contained 81 names (of which several were deceased by the time of publication), categorised in several ways. Two researchers remain active to the present day: Alan Cheetham and John Ryland. Some were unfamiliar to me, and I have been unable to find taxonomic papers published by the authors, but they themselves must have declared their interest in order to be listed.

How many taxonomists are active in the IBA today? This is a rather difficult question to answer with any accuracy, but this could be attempted in two ways. From a recent IBA mailing list distributed by our Secretary in December 2015 I have counted members whom I know have published taxonomic or partially-taxonomic treatments of Bryozoa, although I freely admit that I may have have inadvertently ignored some through my ignorance of the scope of their publications - the figure is therefore a lower estimate. Another estimate can be obtained from viewing either the annual listings for recent years of published papers compiled by Phil Bock and given in the *Recent and Fossil Bryozoa* website (www.bryozoa.net/annual/), or the relevant part of the *Zoological Record*, and assembling a count of author numbers. For this figure I have not counted authors of a multi-authored volume whom I believe only contributed to the non-taxonomic sections of the paper.

Phil Bock's pages also allows for comparison of numbers of new genera and species/subspecies published over the five-year period 2011-2015 with the numbers published in a the five-year period 1955-1959. While this measure has its limitations and results could be markedly different dependent on the numbers of monographs published as against short taxonomic papers, it does at least demonstrate taxonomic-research activity. Similarly, the proportions of taxonomic versus non-taxonomic papers might be revealing.

	Taxonomists	New Genera	New species/subspecies	Taxonomic papers	Non-taxonomic papers
1961	81*	--	--	--	--
2015	119§	--	--	--	--
1955-1959	18†	56	999	108	19
2011-2015	43†	102	579	197	278

*: source *Directory of Zoological Taxonomists of the World* (1961), pp. 19-20.
§: source IBA mailing list 11(3) December 2015.
†: average number of taxonomists publishing annually over period.
Data for New genera, species/subspecies, Taxonomic and non-taxonomic papers taken from P. Bock (compiler) *Recent and Fossil Bryozoa* (www.bryozoa.net; accessed 5.3.2016)

There is no doubt that the teaching of the principals of nomenclature and taxonomic methods has been in decline within the university sector. From the cursory and rather crude evidence presented above it shows that bryozoologists in the IBA are continuing to publish taxonomic papers, although there is marked increased diversity of non-taxonomic topics, and papers are now more likely to be multi-authored. Monographic studies and thus the erection of many new species are fewer today than sixty years ago, but conversely nearly twice as many genera were erected in the 2000s than 1950s.

Importantly from the perspective of the Global Taxonomic Initiative concerns, there remains a good body of taxonomic expertise within the IBA. However, as a group we need to ensure that these skills and interestsare transmitted to the next generation.

A link to an online version of the 1961 compilation can be found at:
http://www.biodiversitylibrary.org/bibliography/6004#/summary

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Shortly the IBA will be assembling in Melbourne for the 17th International Conference, and I am delighted to hear that many of you will be attending. Having seen the draft programme I can vouch that it promises to be highly stimulating. The organisers, led by Rolf Schmidt, have been working very hard to produce what looks like will be a first-class meeting in wonderful surroundings. I look forward to seeing you there.

Patrick

FROM THE TREASURER

Donations to fund the work of the IBA are always welcome!

As you know, we have no required membership fees, so we rely on donations to support the council's work and especially to provide student travel awards to our conferences. Because of the outstanding generosity of our members, this year we have been able to support travel for five students to the conference in Melbourne, totalling over $11,000 AUD.

The IBA Treasurer will be standing by with her bag open to collect any donations you wish to make, in any currency and any form (including credit card). This is a great way to get rid of Australian dollars at the end of the conference! And receipts will be issued. If you are not going to be in Melbourne you can download the form at http://bryozoa.net/iba/membership.html and send money by credit card.

In Sicily we had a "sales table" where items of bryozoan relevance were donated by members and then purchased by other members, with the proceeds going to the IBA funds. Items ranged from books to bryozoan-themed pillow covers — use your imagination and bring them along! When you arrive, you can hand them to Abby Smith (Treasurer) who will preside.

Abby

NEW MEMBERS

Mohammed Naufal - I am Mohammed Naufal from India and I have joined for PhD at Pondicherry University Andaman Islands. Studies on bryozoa is almost null on Andaman Island so I wish to carry on my work on intertidal bryozoan. But unfortunately I am lacking a good reference for intertidal bryozoa sampling methodologies and their identification. Any references or advice would be humbly received

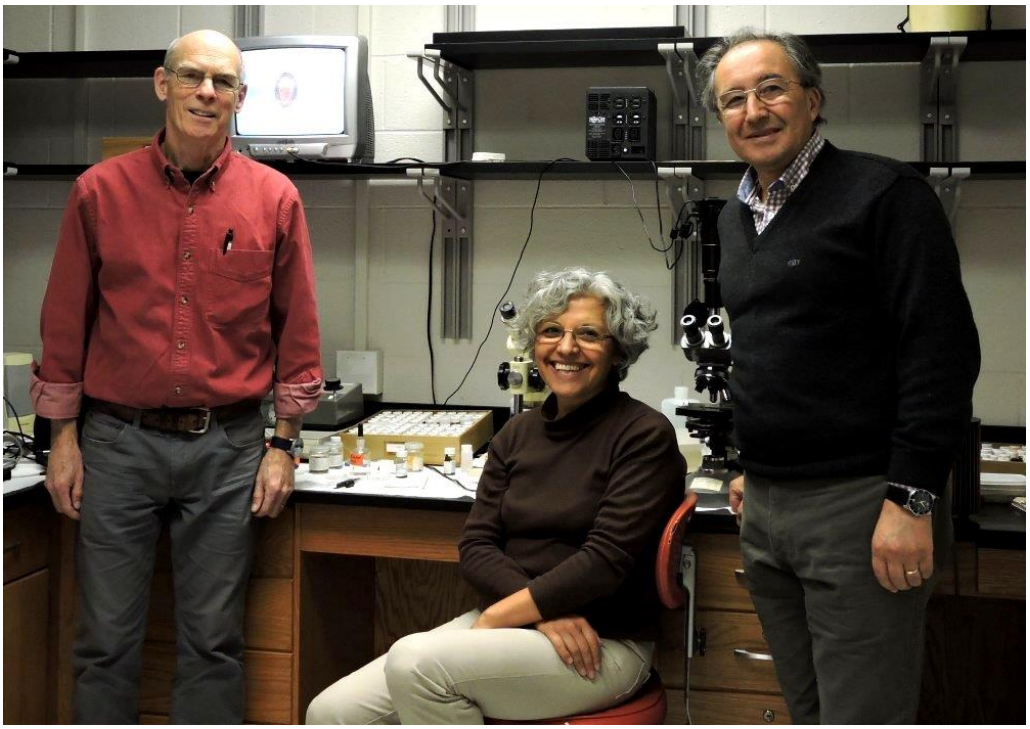
NEWS FROM THE MEMBERSHIP

Judith E. Winston—One new publication this past month: Bryozoa of the Floridan *Oculina* Reefs. Zootaxa 4071 (1): 001–081. If you don't have access to Zootaxa, but want a copy, please e-mail me, and I can share it via Dropbox, as it is too big to e-mail.

Abstract. The deep-water *Oculina* coral reefs on the continental shelf off the east central coast of Florida are a unique protected marine habitat. A complete inventory of the *Oculina*-associated fauna is important to support its conservation. This paper provides an inventory of the bryozoans of the *Oculina* reef area. Unusually, the bryozoan fauna is dominated by encrusting cribrilinid bryozoans. These include two new species of *Puellina* and three other Floridan-Atlantic shelf *Puellina* only recently described. Additional cribrilinid species belong to the genera *Klugerella* and *Rosulapelta*. Other bryozoans found in the habitat include 38 encrusting cheilostome species, six of them new to science, belonging to the genera *Callopora, Parasmittina, Parasmittina, Smittina, Microporella* and *Stephanollona*. Cyclostomes were only sparsely represented, comprising three encrusting taxa.

Ernest H. Gilmour - After teaching courses and conducting research on bryozoans at Eastern Washington University since 1967, I have officially retired and have received "Emeritus" status. Mike Toma, my devoted assistant, and I have permission to use the paleontological laboratory to continue our bryozoan research on Late Paleozoic faunas. We continue to work on the *Productus* limestones of southern New Zealand; the Kaibab Limestone of southern Nevada; and the late Permian of the Salt Range, Pakistan. Recently, the Departments of Geology and Biology, had me reinstated to the Eastern Washington University graduate faculty. This allows me to serve as the advisor to a graduate student, Amy Joy Hess, who is conducting a Masters' thesis study on the non-fenestrates of the Permian Toroweap Formation of southern Nevada. Amy Joy is a former student of Ed Snyder at Shepherd University in West Virginia. Please continue to use my e-mail and mail addresses at EWU.

Tim Wood -Maria Cristina Orellana Liebbe and Juan Cancino, from the Universidad Católica de la Santisima in Coincepción, Chile visited Tim Wood's lab at Wright State University, Dayton, Ohio for two weeks in February. Tim and Maria Cristina are collaborating on a freshwater bryozoan chapter to be published in Thorp and Covich's Freshwater Invertebrates, Fourth Edition, Volume IV: Keys to Neotropical and Antarctic Fauna. It is challenging work. Several species are known from statoblasts only; other species have almost certainly been reported in error. SEM examination of new material collected by Maria Cristina reveals previously unknown range extensions. And finally, freshwater bryozoans collected recently by Beth Okamura in Brazil include some exciting new species that must be described and published before the neotropical key is finalized. In the end the co-authors hope this new illustrated key will be useful for many years. Publication is expected by the end of 2017.



Tim Wood, María Cristína Orellana Liebe, and Juan Cancino)

Juan Suárez - successfully defended his PhD at the University of Léon (Spain) on 5th February. His PhD thesis, entitled 'Estudio sistemático, paleobiológico y paleobiogeográfico de los fenestrados devónicos' (Systematic, palaeobiological and palaeobiogeographical study of Devonian fenestrate bryozoans), showed a deep knowledge of this group and its literature. He made a very clear and comprehensive presentation that was liked by the panel, providing precise answers to their questions and demonstrating his understanding and passion for bryozoans. His presentation lasted for more than one hour and the panel members questioned him for almost two hours. Our colleague Andrea Jimenez Sanchez was the Panel Secretary. Two other bryozoologists involved in his PhD as coadvisors were Patrick Wyse Jackson (Trinity College, Dublin) and Consuelo Sendino (Natural History Museum, London). Among the attendees were lecturers and professors from Juan's previous institution, the University of Oviedo.

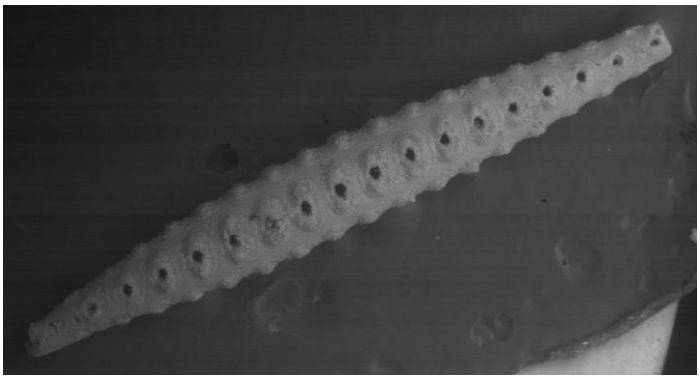
Submitted by Consuelo Sendino

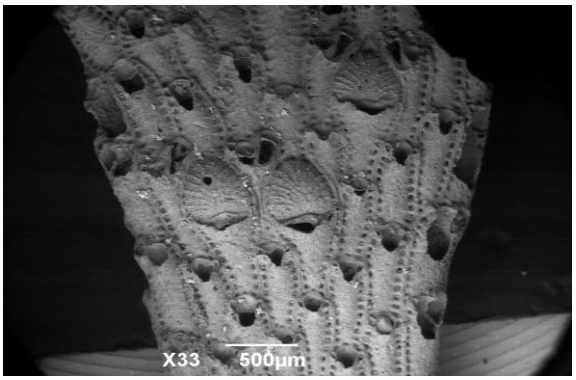
Andrey Ostrovsky - Uliana Nekliudova arrived to the Department of Palaeontology, University of Vienna, for 3 years as a project collaborator to study bryozoan sexual reproduction in the frame of the project "Evolution of viviparity and polyembryony in Cyclostomata" supported by the Austrian Science Fund. This year Uliana will also apply for the PhD position in Vienna. Scientific supervisor will be Andrew Ostrovsky.

Javier Souto. During one intensive week on the month of February had place the first course dedicated to the identification of bryozoans in Portugal, titled "Briozoários não indígenas da costa portuguesa" (Non-indigenous bryozoans from the Portugal coast). This course was realized in the framework of the Portuguese project BioMarPt (http://biomarpt.ipma.pt/). This project offers courses in scientific and technological marine areas, and always related with the sustainable use of the sea. This course was included in a group of courses orientated to the detection of marine invasive species.

During the intensive week, 14 students learned about general topics in taxonomy, ecology, evolution and biogeography of bryozoans. Although we were unlucky with the weather; we could visit the marina of Cascais and collect samples. During two days on the lab we could study and identify the samples collected in the marina during the field work and specimens collected previously, as well as specimens from settlement panels collected by Dr Gonçalo Calado on his project in the Ocean Revival (http://www.oceanrevival.org/en/). A very fruitful course thanks to the good ambience and the active participation of all students.

Laís V. Ramalho: I am in the middle of my post-doctoral in the Instituto Español de Oceanografia (Dr. José Rueda) & Universidad de Málaga (Dr. Francisco Serrano), Spain, and collaborations with Dr. Paul Taylor (NHM), Kamil Zagorsek and Vladimir Távora (UFPA, Brazil). During this time several species from Brazilian Miocene fauna were identified and papers are being written to share these new knowledges.

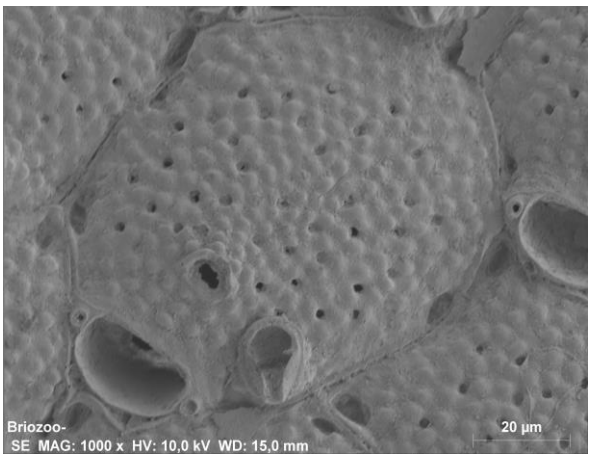


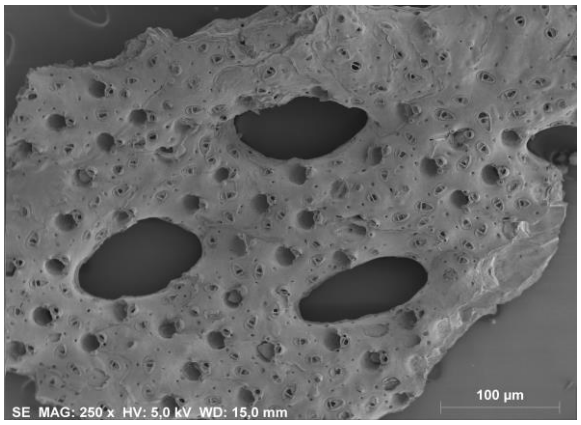


Left -A species from *Skylonia* genus. Right - *Metrarabdotos* sp. one of the genus with higher diversity in these Brazilian outcrops.

Besides that, bryozoans from Gulf of Cádiz (continental shelf and mud vulcanoes) are being studied. A visit to Universidad de Sevilha (Faculdade de Biologia - Zoologia) were made to study this fauna with Dr. Carlos de la Quadra López-Fé. Other spanish bryozoologist who are participating: Dr. Oscar Reverter-Gil and Dr. Javier Souto Derungs.

I and Carlos after an exhaustive and funny time looking the bryozoans from mud vulcanoes.





Species of *Microporella* and *Reteporella* from mud vulcanoes.

Sequencing *Cristatella*

There is a real chance to sequence a genome of *Cristatella*. A group of molecular biologists from Russia are searching for the perspective model organism. They have money to do this job and established a project called Genotek. Together with Arina Maltseva we submitted an application concerning *Cristatella mucedo* there.

Next step is a public voting, and we need your voices. The electronic voting started yesterday with a deadline on the 15th of March. Those of you who have accounts in the social network (Facebook, Instagram, Linkedin, Google+ etc.) could visit http://genomes.genotek.ru/

Everything is in cirillic on this web-site, but I will explain what to do. There is a button ВОЙТИ (means ENTER) in the right upper corner. Clicking it you should choose your social network, login to your account and then import your name (in Latin) in a window that will appear.

The system should let you in under this name and will show you the list of biological species. Choose Cristatella in this list clicking a botton ПОДРОБНЕЕ (means Details). The window with description of the bryozoan will appear having a botton ГОЛОСОВАТЬ (mean Vote). Press it. That is it.

Please, help us - it would be a great chance for the future studies!! If you will have questions, please, ask Arina (multicornis@gmail.com)

Thanks,

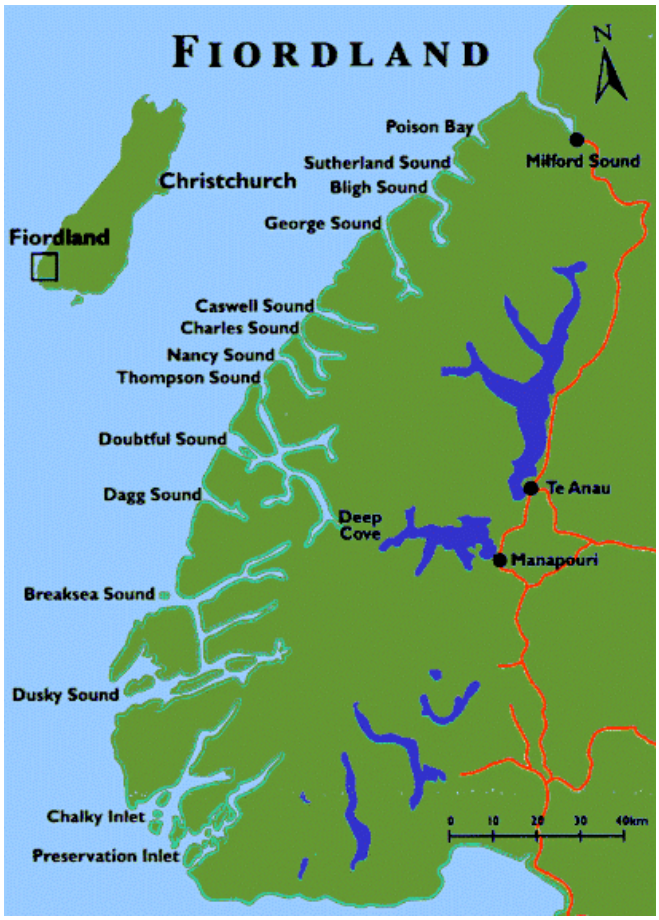
Andrew Ostrovsky and Arina Maltseva

ARTICLE

NEW ZEALAND FIORDLAND CRUISE YIELDS BRYOZOAN BOUNTY

by Dennis Gordon,
National Institute of Water & Atmospheric Research (NIWA), Wellington

The opportunity to visit the remote South Island fiords, a part of the country most New Zealanders never get to see beyond much-visited Milford Sound, was too good to miss. NIWA colleague and ascidian taxonomist Mike Page was part of a contract team to help the Department of Conservation (DoC) do fish counts at standard localities throughout many of the fiords, especially in marine reserves. He invited me along on a cruise to identify the bryozoans encountered at these localities, meanwhile giving an irresistible sales pitch about how the food was great and I would be eating lots of rock lobster and venison. How could I say no? So, for two weeks, from 4 through 17 February, I joined 11 others, mostly all divers, on board the 22 m *Southern Winds*. Starting from Deep Cove in Doubtful Sound, we motored directly to Long Sound in Preservation Inlet, the southernmost fiord. Divers brought me bryozoan samples, which I could examine microscopically and preserve for gene sequencing. This protocol was then repeated in Dusky Sound (where we saw places visited and named by explorer James Cook in 1773 when he and his crew rested there and did ship repairs), followed sequentially by dives at Doubtful, Bligh, George, Caswell and Charles Sounds.



Doubtful Sound, Gaer Arm.

In all, 91 species were identified in the diver samples, including a new *Chaperia* and two new species of *Alcyonidium*, plus some other probable new species (which I have encountered previously) in the genera *Bugula* and *Catenicella*. At least 80 of the species were preserved for sequencing and four divers took photographs of specimens while underwater, enabling me to match images and specimens for a forthcoming online NIWA guide to coastal bryozoans. The guide will start off with about 30 species, and be added to incrementally. One of the species photographed and collected was the rare Australasian taxon *Rhabdozoum wilsoni* Hincks, 1882, sole member of the remarkable family Rhabdozoidae, in which some of the long spines borne frontally on zooids elongate and produce subcolonies.

Top left – *Fenestrulina thyreophora*. Top right - *Idmidronea* n. sp. Charles Sound, photo MP Francis. Bottom left- *Rhabdozoum wilsoni*, Charles Sound, photo MP Francis. Bottom right- *Eurystomella biperforata*.

Many of the species were in breeding condition, so the opportunity was taken to photograph them to capture embryo colour. This was achieved simply by holding the camera over the microscope eyepiece, which, while the vessel's engine was running and the boat sometimes rocking didn't yield great results, but the photos are indicative. A couple of examples are illustrated here. Other interesting biological finds on the cruise were the rare staurozoan jellyfish *Lipkea* and the 'living-fossil' hydroid *Protulophila*, a serpulid-tube symbiont.

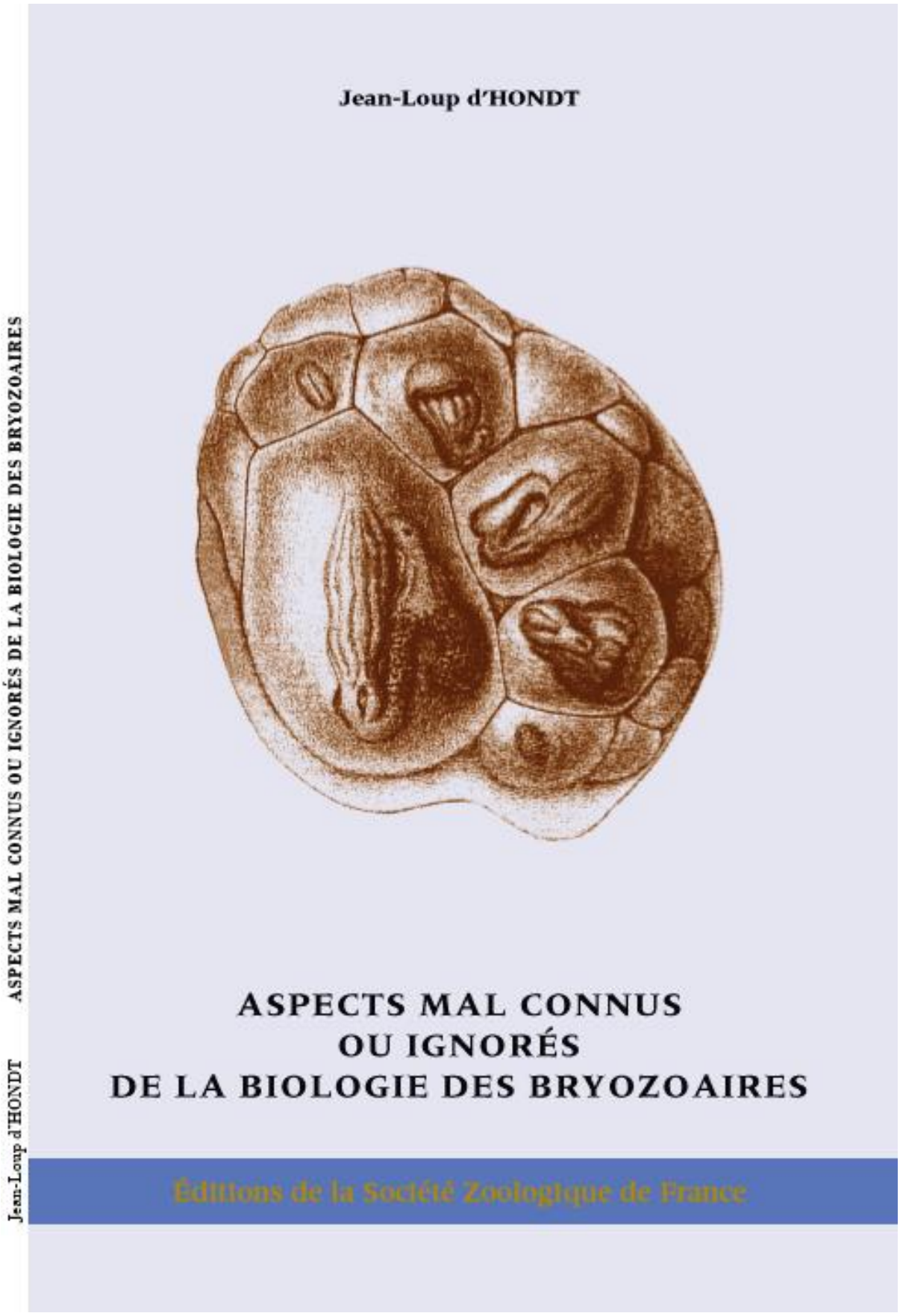
Dusky Sound

My colleague Mike Page didn't exaggerate. We indeed ate lots of rock lobster (naturally collected outside of marine reserves), plus black-foot paua (abalone), scallops, blue cod and venison. Sadly, there are still plenty of red deer in Fiordland (and the NZ Deerstalkers Association is resistant to having them eradicated for their own and tourist-hunting purposes), but, with several rifles on board, at least four were shot. Hanging the meat for several days while we cruised around tenderised it beautifully and I came home with at least 3 kg for my home freezer. Oh, and the weather was superb for the first 10 days before it started raining heavily, turning tiny rivulets down fiord walls into spectacular raging torrents. What a treat it was to see these stunning fiords in all their various moods. It was an awesome trip and I felt truly privileged.

Head of Charles Sound

Dennis Gordon

BOOK COVER



D'Hondt, J-L., 2015. ASPECTS MAL CONNUS OU IGNORES DE LA BIOLOGIE DES BRYOZOAIRES. Mémoires de la Société zoologique de France, tome 45. ISBN : 978-2-9544534-1-5. (151 p., in French)

MEETINGS AND CONFERENCES

17th Conference of the
International Bryozoology Association

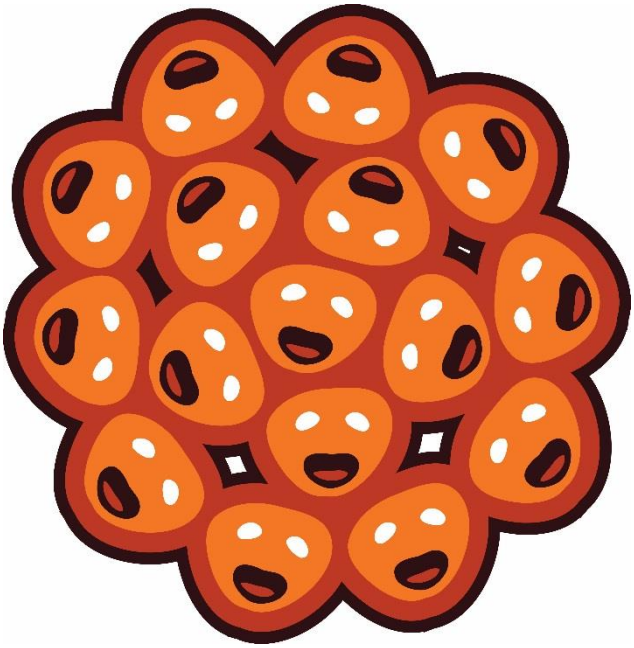
Melbourne Museum
Melbourne 2016
Sunday 10th – Friday 15th April

ONE MONTH TO GO BEFORE WE MEET IN MELBOURNE

PLEASE SEE THE WEBSITE 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.

Admondis, S., Hara U. and Concheyro A. 2015. Late Cenozoic Bryozoa from diamictites of Cape Lamb, Vega Island, Antarctic Peninsula. Polish Polar Research, vol. 36, no. 4, pp. 325-341.

Denisenko N.V. 2015. New species of the genus *Parasmittina* (Bryozoa: Cheilostomata: Smittinidae) from the Chukchi Sea. ZOOSYSTEMATICA ROSSICA 24(2):300-306.

Denisenko N.V. 2016. Two new species of the genus *Turbicellepora* Ryland, 1963 (Bryozoa: Celleporidae) found on *Lophelia* coral from the Greenland slope. Zootaxa 4066 (2): 177–182

Hara, U. 2015. Bryozoan internal moulds from the La Meseta Formation (Eocene) of Seymour Island, Antarctic Peninsula. Polish Polar Research, vol. 36, 25-49. (doi: 10.1515/popore-2015-0003).

van Hardenbroek M, Leuenberger M, Hartikainen H, Okamura B, Heiri O (2016) Stable carbon and hydrogen isotopes in freshwater bryozoans and their statoblasts – experimental and field data. Hydrobiologia 765: 209–223 DOI 10.1007/s10750-015-2414-y

d'Hondt, J-L., 2015. ASPECTS MAL CONNUS OU IGNORES DE LA BIOLOGIE DES BRYOZOAIRES. Mémoires de la Société zoologique de France, tome 45. ISBN : 978-2-9544534-1-5. (151 p., in French)

Nielsen, C. 2016. Phylum Entoprocta: The entoprocts (revised). – In Brusca, R.C., W. Moore & S.M. Schuster: Invertebrates, third edition, pp. 603-609. Sinauer, Sunderland, MA.

Nielsen, C. 2016. Phylum Bryozoa: The moss animals (revised). – In Brusca, R.C., W. Moore & S.M. Schuster: Invertebrates, third edition, pp. 645-657. Sinauer, Sunderland, MA.