



Bulletin

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(Use bookmarks to navigate around this document)

News from the Membership

New Members

IBA Awards

News from Concepción

Digital Libraries

ICZN Case 3507

New Bryozoan Website

Conference Honoring David Hughes

Announcement of POGO Opportunities

Planning for the 2016 IBA Conference

Bryozoan Bookstall (Thai Freshwater Bryozoans)

Featured Bryozoan Journal Cover

Upcoming Meetings

Recent publications

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Further information at www.bryozoa.net/iba

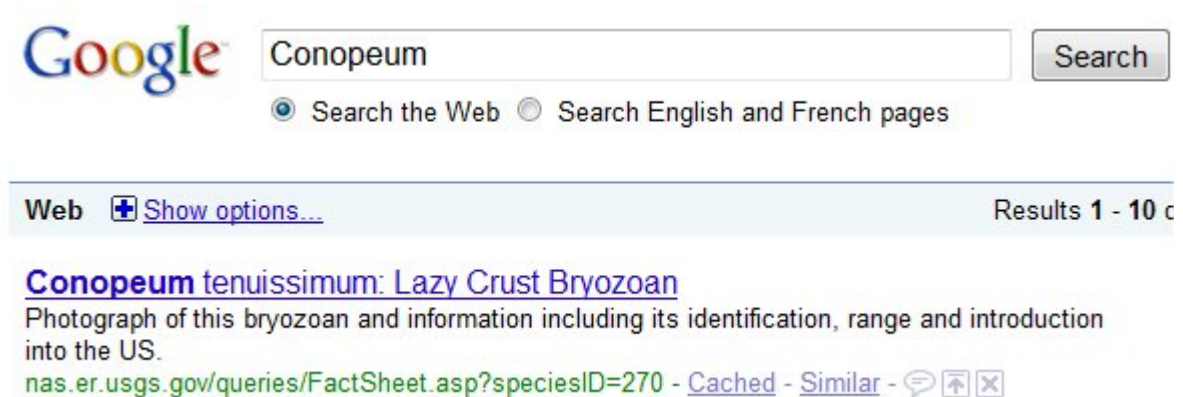
News from the Membership

Andrew Ostrovsky. I've got a personal web-page at the Department of Invertebrate Zoology, St Petersburg State University. It is in Russian, but you will easily find the list of my scientific papers and their pdf-s on the bottom of the page.

http://zoology.bio.pu.ru/People/Staff/r_ostrovsky.html

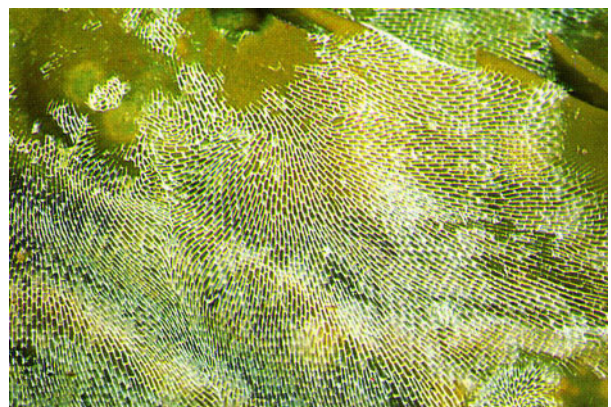
Dra. Laís V. Ramalho My student, Luciana M. Julio, defended the MSc thesis entitled “Taxonomy and Distribution of Bryozoan in harbor areas from Sepetiba Bay (Rio de Janeiro State) with emphasis in the detection of introduced species”. In this study she described 9 new occurrences to this area and a new species to science. These results will be published as soon as possible. Besides, she studied something about ecology and introduced species sampled in this area.

Judy Winston: I was searching Google this morning for *Conopeum* –checking current family placement. This is what I got:



The image shows a Google search interface. The search bar contains the word "Conopeum". Below the search bar are two radio buttons: "Search the Web" (selected) and "Search English and French pages". Below the search bar is a navigation bar with "Web" and a "+ Show options..." link. On the right side of the navigation bar, it says "Results 1 - 10 c". Below the navigation bar is a search result for "Conopeum tenuissimum: Lazy Crust Bryozoan". The result includes a photograph of the bryozoan and a link to a USGS fact sheet: "nas.er.usgs.gov/queries/FactSheet.asp?speciesID=270 - Cached - Similar".

“Lazy Crust Bryozoan?” To add insult to injury when I looked at the site, although it did say “lacy crust bryozoan,” it showed a lovely picture of *Membranipora membranacea* on kelp, not any species of *Conopeum*. It would be nice if they would correct it, but I couldn’t find any way to let them know except a very general query to USGS.



New Members

Julia Cáceres. I'm a marine biologist from Chile. At present I work together with Dr. Andrey Ostrovsky at the University of Vienna, describing the bryozoan collections from the Red Sea, Oman and Maldives, and will stay here for the next three years. In Chile I have worked under Prof. H. Moyano from the Concepción University, doing systematics of the Antarctic Bryozoa and studying ancestrulae and astogenetic patterns of species from the Strait of Magellan. I also have some experience in ecology, since worked together with Dr. J. Cancino, specifically on cycles of larval release in *Bugula neritina*. If you want to contact me or need some information, please, write to Juliacata@gmail.com.

Jennifer Loxton. I am currently studying for an MSc in Marine Biodiversity and Biotechnology at Heriot-Watt University. My MSc dissertation is commencing after Easter and is jointly supervised by Dr Joanne Porter (Heriot-Watt University) and Dr Piotr Kuklinski (The Natural History Museum & Polish Academy of Sciences). I will be comparing Polar bryozoan biodiversity and skeletal mineralogy as indicators of climate change impact. This project aims to quantify the diversity of Arctic and Antarctic bryozoans in order to investigate the effects of climate change and provide a reliable baseline for future work. I am also very excited to have a field trip to Svalbard and Tromso in Norway planned for the Summer of 2010 with Dr Piotr Kuklinski and his PhD students.

Caroline Sogot. I have recently started a NERC funded PhD studentship supervised by Paul Taylor (The Natural History Museum) and Liz Harper (University of Cambridge). I will be studying hard substrate communities across the K-T boundary, which will inevitably involve a lot of bryozoans! Hard substrates may provide a unique insight into the collapse of the food chain during the K-T event and I plan to study a range of localities in order to assess latitudinal variations.

We are currently planning fieldwork in May 2010 to Alabama/Mississippi with Paul Taylor and Mark Wilson (College of Wooster) where we will collect hard substrates from either side of the boundary.

IBA Awards for 2010

Three years ago the Advisory Council voted to organize an Awards Program to provide grants for selected members to attend the IBA Conference in Kiel. A subcommittee was charged with setting up the program guidelines, and in February four bryozoologists were selected to receive the first grants.



Nina Denisenko is a Senior Researcher at the Zoological Institute, Russian Academy of Sciences, St.-Petersburg, Russia. In Kiel she will offer a presentation of the historical development of research and current state of bryozoan diversity in the East Siberian Sea.



Chiara Lombardi is a post-doctoral researcher at the Environmental Research Centre (ENEA) in La Spezia, Italy. She is currently evaluating the effect of pH on the mineralogy, inorganic chemistry and microstructure of the skeletons of two Mediterranean bryozoan species.



Zoya Tolokonnikova is Assistant Professor at Kuzbass State Pedagogical Academy in Novokuznetsk, Russia. She is currently studying Famennian-Mississippian bryozoans, focusing on their survival during the Frasnian/Famennian and Devonian/Carboniferous mass extinctions.



Leandro Manzoni Vieira is a PhD student in Zoology at the Universidade de São Paulo, Brazil. He is currently conducting a systematic review of the genus *Scrupocellaria*. Specifically, he aims to evaluate the morphological characters that have been traditionally used in the taxonomy of the genus and propose new characters to critically define species.

News from Concepción

Many IBA members have inquired about our Chilean colleagues, Hugo Moyano, Juan Cancino and Maria Orellano following the recent devastating earthquake. So far we are still unable to contact them. However, the following message forwarded by Dennis Gordon offers some details about the damage to the university and its facilities. This message was originally sent by Robert B. Gagosian, President and CEO of the Consortium for Ocean Leadership.

As you are aware, an 8.8-magnitude earthquake struck just off the coast of Chile on Saturday, February 27 and caused catastrophic damage to the country. The University of Concepción, currently Chile's leading institution in oceanography, was hit extremely hard by the earthquake and is trying to re-build their oceanographic research and academic operations affected by this event.

The School of Natural Sciences and Oceanography facilities on the main campus will need significant help. The field station in Dichato was destroyed with the Kai-Kai, the school's coastal vessel, stranded on land. Laboratory and field equipment and instruments are lost or have been destroyed both at the Marine Station at Dichato and the main campus in Concepción. The pictures of Dichato are heart wrenching. The University of Concepción is still trying to take a detailed inventory of their equipment, but needless to say, a lot of work and money is needed to recover from this disaster.

The faculty and students of the University of Concepción are known to many of us as colleagues and friends. They need our help. Many of you have expressed interest on donating money to help provide an opportunity for them to rebuild their research and education infrastructure. The Consortium for Ocean Leadership has set up the Concepción Oceanographic Relief Fund with our bank, SunTrust, so that we can all make a difference.

Deposits to this fund can be made in three different ways. IRS Tax receipts will be issued for all donations. By check. Make check out to Concepcion Oceanographic Relief Fund and forward to Ocean Leadership. Tammy Hancock (<mailto:thancock@oceanleadership.org>) will be handling the deposits of these funds and is the contact for any questions about the account.

1201New York Avenue, NW Fourth Floor
Washington, DC 20005

2. By credit card. A link on the Ocean Leadership web site has set up for this purpose, <http://www.oceanleadership.org/donate>.
By wire transfer.

Domestic wires:

ACH routing number: 061000104

Account number: 1000109780469.

Name of account: Concepción Oceanographic Relief Fund

Bank Name: SunTrust

Bank Address: 1445 New York Avenue, NW

Washington, DC 20005

Foreign wires:
SWIFT Code: SNTRUS3A
Account number: 1000109780469.
Name of account: Concepción Oceanographic Relief Fund.
Bank Name: SunTrust
Bank Address: 1445 New York Avenue, NW
Washington, DC 20005

Digital Libraries

Mary Spencer Jones, NHM

Over the years, I have helped many IBA members with literature requests, especially for older and rarer texts, from the NHM Harmer Library. Recently, however, members will find that they are able to start downloading some of these unique resources as PDF files for their own use.

Although the BHL project members had been working together since 2005, the Biodiversity Heritage Library (BHL) <http://www.biodiversitylibrary.org>, which is the digitization part of the Encyclopedia of Life for only officially started in 2007. BHL is a consortium of 12 major natural history museum libraries (including the NHM), botanical libraries, and research institutions which are digitizing the legacy literature of biodiversity.

Prior to this project, the literature housed within these institutions was only available to a small minority – visitors or staff. These collections are of immense value because systematics depends upon the use of historic literature and the relative isolation of these holdings has been a particular problem for developing countries which hold the majority of the world's biodiversity.

The BHL user can search under author, name, subject and title and the system also uses a taxonomic intelligence tool called TaxonFinder which allows for the location and identification of scientific names within the text of digitized books.

Currently there are some 70,000 volumes online at BHL and this total is growing day by day. So, make a point of viewing what's available at the website. You might save some grant money by not requiring that inter-library loan!

Here are some examples of bryozoan texts that can already be downloaded as PDFs directly from the BHL website.

Allman, 1856

<http://www.biodiversitylibrary.org/bibliography/9143>

Busk, 1852 (Rattlesnake)

<http://www.biodiversitylibrary.org/bibliography/4847>

Busk, 1852,1854,1875 (British Museum Catalogue)
<http://www.biodiversitylibrary.org/bibliography/20859>

Busk, 1859 (Crag)
<http://www.biodiversitylibrary.org/bibliography/2037>

Ellis, 1755
<http://www.biodiversitylibrary.org/bibliography/10146>

Ellis and Solander, 1798
<http://www.biodiversitylibrary.org/bibliography/2145>

Fleming, 1828
<http://www.biodiversitylibrary.org/bibliography/12859>

Gosse, 1853
<http://www.biodiversitylibrary.org/bibliography/4984>

Hincks, 1880
<http://www.biodiversitylibrary.org/bibliography/3978>

Hincks, 1884 (Queen Charlotte Islands)
<http://www.biodiversitylibrary.org/bibliography/3951>

Johnston, 1838
<http://www.biodiversitylibrary.org/bibliography/4834>

Johnston, 1847
<http://www.biodiversitylibrary.org/bibliography/4736>

Linnaeus, 1758
<http://www.biodiversitylibrary.org/bibliography/542>

Pallas, 1766
<http://www.biodiversitylibrary.org/bibliography/6595>

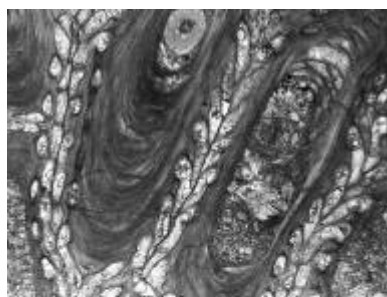
Internet Archive <http://www.archive.org/index.php> is another great site for researchers, historians and scholars. It is a digital library of Internet sites and other cultural artifacts in digital form.

ICZN Case 3507 (type species of *Phylloporina*) Comment Period Open

Ken McKinney

Patrick Wyse Jackson and I have petitioned the International Commission on Zoological Nomenclature to make a determination on the type species of *Phylloporina* (McKinney & Wyse Jackson, 2010b). Comments on the merits or lack thereof of our proposal are requested by the ICZN.

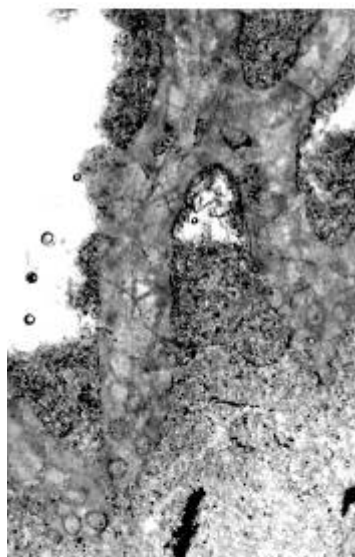
There are four species pertinent to the cast, the type species of earlier-named genus *Chasmatopora*, *Retepora angulata* Hall, 1852, *Retepora trentonensis* Nicholson, 1875, and *Chasmatopora foerstei* McKinney and Wyse Jackson, 2010 (see the accompanying illustration of tangential sections). We have summarized the history and described the pertinent species in a recent paper in *Palaeontology* (McKinney & Wyse Jackson, 2010a).



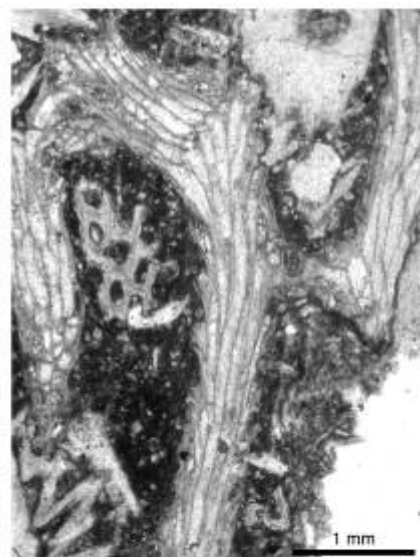
Reteporella tenella Eichwald, 1840
Neotype, PIN 3535/76
[type species, *Chasmatopora* Eichwald, 1840]



Chasmatopora foerstei McK & W-J, 2010
Paratype, USNM 328949
[species described by Foerste, 1887
as *Phylloporina angulata* (Hall)]



Retepora angulata Hall, 1852
Paralectotype, AMNH 30712
[nominal type species of *Phylloporina*
by monotypy, Foerste, 1887]



Retepora trentonensis Nicholson, 1875
Ulrich fig'd specimen, USNM 528947
[Ulrich's intended type species of
Phylloporina Ulrich in Foerste, 1887]

PDF files of both the *Palaeontology* paper and ICZN Case 3507 in the *Bulletin of Zoological Nomenclature* are available either from Patrick or me. Anyone interested in commenting on the case can find instructions in the BZN paper on how to do it.

McKinney, F. K & Wyse Jackson, P. N. 2010a. The tangled core at the heart of the bryozoan suborder *Phylloporinina*. *Palaeontology* 53 (2):441-456.

McKinney, F. K & Wyse Jackson, P. N. 2010b. Case 3507, *Phylloporina* Ulrich in Foerste, 1887 (Bryozoa, Fenestrata, PHYLLOPORININA): proposed designation of *Retepora trentonensis* Nicholson, 1875 as the type species. *Bulletin of Zoological Nomenclature* 67(1):

New Bryozoan Website

Bryozoan collection from the Safaga Bay (North Red Sea)



Cheilostomata

Station / Species List

Cyclostomata

Authors: A. Ostrovsky, N. Vávra, J. Cáceres

Working together, Andrew Ostrovsky, Norbert Vavra and Julia Cáceres, have started making a bryozoan internet page based on their collections and the server of the Department of Paleontology, University of Vienna. Its URL:

http://palse2.pal.univie.ac.at/Bryozoa/Safaga_Bay.html#

Andrew writes: After three years of research on the Red Sea, Oman and Maldivian bryozoans we accumulated several thousands of high-resolution SEM-images that should be accessible for the scientific community. Our system administrator adds images to the list of taxa (step by step). Identification is often dubious, and we hope to get suggestions and comments from everyone who is interested in the tropical bryozoans.

Julia now is finishing the list of stations and species found.

The first step is the collection from the Safaga Bay, Red Sea. Next step will be Oman and Maldivian islands. step), and we hope to complete this work in 2-3 months. At the moment images on the net include:

Aeteidae
Antroporidae
Arachnopusiidae
Beaniidae
Bitectiporidae
Bugulidae
Calloporidae
Candidae

Catenicellidae
Cellariidae
Celleporidae
Chaperiidae
Chorizoporidae
Cleidochasmatidae
Crepidacanthidae
Cribrilinidae

Conference Honoring Roger Hughes

During the weekend of 27-28 March a special conference was held to honor retiring IBA member, Roger Hughes. The breadth of presentations reflected Roger's wide-ranging interests, and they were a fitting tribute to the profound impact he has made on students and colleagues throughout his career. Not surprisingly, several presentations dealt with bryozoans. Reprinted below are selected abstracts as received through the vast underworld network of the IBA Bulletin.

Andrew Pemberton Lars Hansson and John Bishop. *Is sperm supply limiting in a polyembryonous bryozoan?*

Polyembryony, the splitting of a single sexually produced embryo into many clonal copies, seems to involve a disadvantageous combination of sexual and asexual reproduction, yet it persists in a diverse range of organisms. With the probable exception of one family, all members of the bryozoan order Cyclostomata are thought to reproduce by polyembryony. It has been suggested that embryonic cloning in cyclostomes may be a response to sperm limitation during mating by the release, dispersal and uptake of water-borne sperm. The cyclostome *Crisia denticulata* inhabits subtidal rock overhangs. Cloned larvae are produced by a colony in a series of independent brood chambers, and offspring from different chambers are the outcome of separate fertilizations. We investigated the influence of local colony density, as a proxy for sperm supply, on female reproductive activity. In colonies with broods, only 17% of the variation in the number of brood chambers per colony could be explained jointly by colony weight and local population density, with density being a non-significant predictor in the model. This suggests that sperm supply does not limit the number of broods produced and is not important for the maintenance of polyembryony in this species.

Beth Okamura. *Modular growth in bryozoans and the inference of environmental regimes.*

Patterns of growth in plants and animals have long been used to gain insights into past environments. For instance, seasonally-influenced growth in trees and in bivalve shells is used to infer annual patterns of rainfall and temperature regimes experienced during the lifetime of these organisms. Organismal attributes that favour such analyses include a continuous record of growth and the sequential development of discrete and measurable features that remain fixed, thereby permitting the retrieval of environmental conditions relevant to particular time periods. Benthic colonial invertebrates should provide an especially appropriate system for investigations of environmental conditions over time since they comprise discrete, individual modules (zooids) that are produced iteratively throughout the lifetime of the colony. Surprisingly, however, the value of colonial invertebrates for deducing environmental variation has not been widely recognised. Here I describe how preliminary work in the Menai Straits led to the exploitation of variation in the modular growth of cheilostome bryozoans to infer mean annual ranges in temperature through the development of the MART technique - a novel proxy for robust estimates of seasonal temperature regimes in present-day and ancient environments. Inferences of temperature variation based on analyses of modular growth in bryozoans can provide insights on both intra- and interannual environmental variation, information that is not directly available from standard analyses of short-lived, unitary organisms that are commonly used as proxies, such as foraminifers and ostracodes. Variation in polymorphism may provide another unique

means that bryozoans offer for gaining broad insights on environmental regimes, an attribute which has so far been almost entirely ignored.

John S. Ryland, Hans De Blauwe, Dan Minchin, John D.D. Bishop, Aliya El Nagar, Anna E.L. Yunnie and Christine A. Wood. *Arrival, spread and survival of alien species of Bryozoa along Atlantic coasts of Europe.*

Three alien bryozoan species (*Bugula neritina*, *Tricellaria inopinata*, *Watersipora subtorquata*) have recently arrived and are spreading along Atlantic coasts of Europe. Two others (*B. simplex*, *B. stolonifera*) have been here for some decades but their current status is unclear. *B. neritina* was present in southern Britain and Brittany during the 20th century but became extinct. Now re-introduced (wherefrom is unknown) it is present in Portugal, the Azores, NW Spain, northern France, and in sites from the southern North Sea to NE Ireland and SW Scotland. Live *B. neritina* (including that formerly present in Britain) generally has zooid walls of a distinctive translucent brown, while the polypide contains a purple pigment. Recently collected material, on the contrary, exists in purple and golden-brown colour forms and some has uncoloured walls and even unpigmented polypides. Other infra-specific differences (nucleotide sequences) within the *B. neritina* complex are recognized: only one is invasive. *T. inopinata*, of uncertain origin but first recognized in the Lagoon of Venice, is spreading in a similar way. *W. subtorquata* is present in two colour morphs, a largely orange one occurring in a few English Channel marinas, and a blackish one associated with Pacific oyster culture in western France. Both morphs are indistinguishable using SEM and have the same COI haplotype as invasive *W. subtorquata* elsewhere in the world. The black form is distinguishable from the similar and formerly invasive *W. subovoidea* by haplotype, by morphology visible under the SEM, and by careful morphometrics. Though well-known in the Mediterranean, *W. subovoidea* was not known from Atlantic Europe (occurrences being based on misidentifications) but we report it from Cadiz and Cascais (near Lisbon).

Joanne Porter *Association of bacteria with larvae of marine Bryozoa in coastal waters of Wales.*

A number of studies have provided qualitative or quantitative information on the bacterial species present on the surface of adult bryozoans (Pukall *et al* 2001, Kittelmann & Harder 2005, Sharp *et al* 2008) or their larvae (Haygood & Davidson, 1997). Microbiological analysis of a number of bryozoan species has suggested that biofilm coverage on different parts of the adult may be affected by antimicrobial compounds produced by the bryozoan (Walls *et al* 1991, Pukall *et al* 2001). There is also evidence that potentially endosymbiotic bacterial cells associated with bryozoans can be responsible for the production of deterrent compounds which help the host to protect against predators. In the case of the bryozoan *Bugula neritina*, the uncultured *Endobugula sertula* bacterial species produces bryostatins that render spawned larvae unpalatable to fish predators (Lim-Fong *et al* 2008). Identification of symbiotic associations in other species of Bryozoa may therefore lead to the discovery of novel bioactive compounds with ecological roles.

In this study we investigated the bacterial community associated specifically with the larvae of a bryozoan using culture-based and molecular approaches. A method was developed to remove loosely-associated bacterial cells from the larval surface whilst retaining closely-associated cells. We anticipated that this would increase the likelihood of isolating potentially endosymbiotic bacterial cells producing deterrents from a background of non-symbiotic surface fouling bacterial cells and cells in the surrounding seawater.

Bryozoan samples were collected from intertidal sites on the coast of Wales and larvae were isolated from gravid colonies. To isolate the bacterial cells specifically associated with larvae, unassociated or loosely-associated bacterial cells were removed by extensive washing and the larvae were plated on a marine nutrient agar or subjected to a DNA extraction. Bacterial colonies derived from larvae and washes were subcultured and their phenotypic characteristics recorded. 16SrDNA sequences were PCR-amplified from total DNA extracts of the washed larvae and cloned using an Invitrogen TOPO TA cloning kit. PCR-amplified 16SrDNA from cultured bacteria was sequenced directly from the product.

Nucleotide sequence analysis of ~500 bp of the 16SrDNA region of 40 cultured bacterial isolates and 25 cloned sequences from washed larvae of the ctenostome bryozoan *Alcyonidium hirsutum* revealed distinct bacterial populations as judged from sequence identity comparisons. The first 25 nucleotide sequences cloned from the PCR-amplified 16SrDNA derived from individual washed larvae consisted of 16 discrete sequences. The cultured bacterial species were investigated for phenotypic traits and sequence characteristics and 20 different nucleotide sequences were identified. A BLASTn search of the Genbank database with 16SrDNA nucleotide sequences from both groups revealed that these could be tentatively assigned to 23 different bacterial genera. A number of these had been reported to exhibit agarolytic activity in common with the results from the phenotypic analysis of the cultured strains; antibacterial activity against Gram negative and Gram positive bacteria was also detected during microbiological characterisation of a number of isolates. There were no identical 16SrDNA sequences common to both groups, indicating that there is likely to be significantly higher bacterial species diversity present on *A. hirsutum* larvae than observed from community analysis of the cultured bacterial isolates.

Other presentations at the conference included these:

Dave Raffaelli 'Embracing uncertainty: the application of Bayesian Belief Network'

Simeon Hill 'Learning from uncertainty about marine foodwebs.'

Paul J B Hart & Emma Pearson 'Are seamounts like oceanic islands for fish diversity and speciation?'

Morley, Simon A., Martin, S.M., Bates, A., Ericson, J., Lamare, M., Peck, L.S. 'Thermal sensitivity and thermal environment: A latitudinal comparison of two common Southern Ocean species'

John Field 'Assessing the effects of otter trawling on benthic communities'

Michel J. Kaiser 'Integrating fishers' knowledge and behaviour to achieve better outcomes'

Crowe, T.P., Frost, N. J. and Hawkins, S. J. 'Interactive effects of losing key grazers and ecosystem engineers vary with environmental context'

Jefferson Murua, Michael Burrows, Roger Hughes, Steve Hawkins; Richard Thompson,

Stuart Jenkins 'Phenotypic variation in shell form in the intertidal acorn barnacle *Chthamalus montagui* (Southward) along the western coast of the United Kingdom: distribution, causes and trade-offs'

Gary R Carvalho, Sonia Pascoal, Roger Hughes, Sonia Mendo, Andrew Cossins, Kevin Ashelford, Lisa Olohan, Carlos Barroso, & Simon Creer 'Genes, phenotypes and environmental variation: exploring the determinants of population diversification in the dogwhelk, *Nucella lapillus*'

Isabelle Colson and Roger Hughes 'The tale of the sailing snail: dispersal patterns of the dogwhelk *Nucella lapillus*'

David Atkinson 'Putting ecology into metabolic scaling'

Patricio H Manríquez & Juan Carlos Castilla 'Behavioral traits of *Concholepas concholepas* competent larvae during the ontogenetic plankton-benthic shift'

Stefano Cannicci, Riccardo Simoni and Folco Gioni 'Ontogenetic approach to crab terrestrials: are embryos the missing phase?'

John Grahame 'North Atlantic *Littorina* as an evolutionary model'

Ewan Hunter 'Migrations of the edible crab *Cancer pagurus*'

R.N. Gibson, M.T. Burrows & L.Robb 'Field Experiments On Depth Selection By Juvenile Plaice (*Pleuronectes Platessa* L.)'

Paul R. Dando 'Home range, homing and migrations of flounder, *Platichthys flesus* (L.), in the Tamar Estuary, South-West England.

David J. Hughes 'Where's the reef? A five-year study of serpulid tube degradation in a Scottish sea loch'

John Davenport, T.V. Moloney, J. Kelly 'Sea anemones (*Actinia equina*) are sessile intertidal scavengers'

ANNOUNCEMENT

Special POGO Visiting Fellowship for On-board Training on Atlantic Meridional Transect (AMT) Cruise

The Partnership for Observation of the Global Oceans (POGO) announces a special Fellowship for on-board training on an Atlantic Meridional Transect (AMT) Cruise. One berth has been reserved on the next AMT cruise for the selected candidate. The programme is designed to promote training and capacity building leading towards a global observation scheme for the oceans.

Who can apply?

This fellowship program is open to scientists, technicians, graduate students (PhD) and Post-doctoral Fellows involved in oceanographic work at centres in developing countries and countries with economies in transition.

What does the fellowship offer?

The selected candidate will have the opportunity to visit either Plymouth Marine Laboratory (PML) or National Oceanography Centre, Southampton (NOC,S) in the UK, for one month prior to the start of the cruise to participate in cruise preparation and planning; to go on the cruise (12 October – 25 November 2010) and help make hydrological, bio-optical and ecological observations; and after the cruise to spend one additional month at PML or NOCS, learning to analyse the results statistically and interpret them. Core measurements are planned to include phytoplankton, zooplankton and bacterioplankton diversity, ¹⁴C primary production, nitrogen cycling, respiration, pCO₂, fast repetition rate fluorometry, optics, coloured dissolved organic matter (CDOM), pigments and micromolar nutrients.

Total period of Fellowship: 13 September 2010 – 17 December 2010. Candidates should be available to participate for the full period.

For more information and an application form visit this website:

http://www.oceanleadership.org/wp-content/uploads/2010/03/POGO_AMT_fellowship_2010.pdf

Planning for IBA 2016



One of the items for business at every IBA Conference is the consideration of a venue for the conference 6 years forward. Occasionally in the past this has been a somewhat uncomfortable and almost haphazard process, with some presentations thrown together at the last minute, rumors circulating, no one really sure what other venues might be proposed.

This year in Kiel we hope to make the process a little more transparent. If you considering the possibility of hosting the IBA 2016 Conference here are some steps you can take.

First, contact the IBA President, Judy Winston and let her know your intentions. There is no deadline for this, and no firm commitment is implied, but Judy is keeping track of all the prospective host candidates, and she can tell you who else might be considering a proposal.

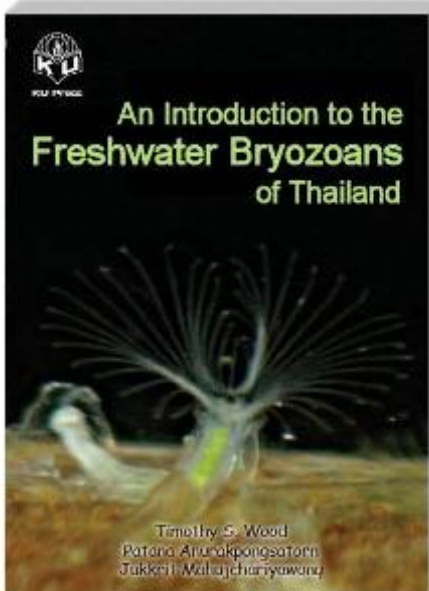
Next, you may want to contact the hosts of recent conference for advice. These include:

- Steve Hageman (Boone, 2007)
- Juan Cancino and Hugo Moyano (Concepción, 2004)
- Patrick Wyse Jackson (Dublin, 2001)
- Amalia C. Herrera and Jeremy Jackson (Panama, 1998)
- Dennis Gordon (Wellington, 1995)

Start assembling a Powerpoint presentation for the Kiel conference. Information should include:

- Possible dates
- Access by public transportation
- Options for lodging
- Conference facilities
- Who will handle the details (yourself? A conference planning office?)
- Estimated costs (*very* important)
- Field trip possibilities
- Nearby attractions for participants and guests

Bryozoan Bookstall



An Introduction to the Freshwater Bryozoans of Thailand, by Timothy S. Wood, Patana Anurakpongsatorn, and Jukkrit Mahujchariyawong. Kasetsart Univeristy Press, Bangkok, Thailand. ISBN 978-616-556-020-7 Softcover, 150 pages.

Includes sections on structure & function, historical notes, study methods, geography of freshwater habitats in Thailand, pictoral key to species, and a glossary. Description, ecology, distribution, and taxonomy are provided for 23 species, accompanied by 69 illustrations, 25 in full color. Publication date: May 2010.

Commercial book distribution is currently restricted to countries of Southeast Asia. However, the publisher will make copies available to IBA members, their students, and their institutional libraries. Orders may be placed through Tim Wood.

The book price is US\$15 or €11, or the equivalent in any major currency as established at www.xe.com (specify currency on check). Air mail shipping per book from Thailand is US\$4 to North, Central, and South America, US\$2.50 to Asia, Australia and New Zealand, and €3 to Europe. Institutions may submit a purchase order.

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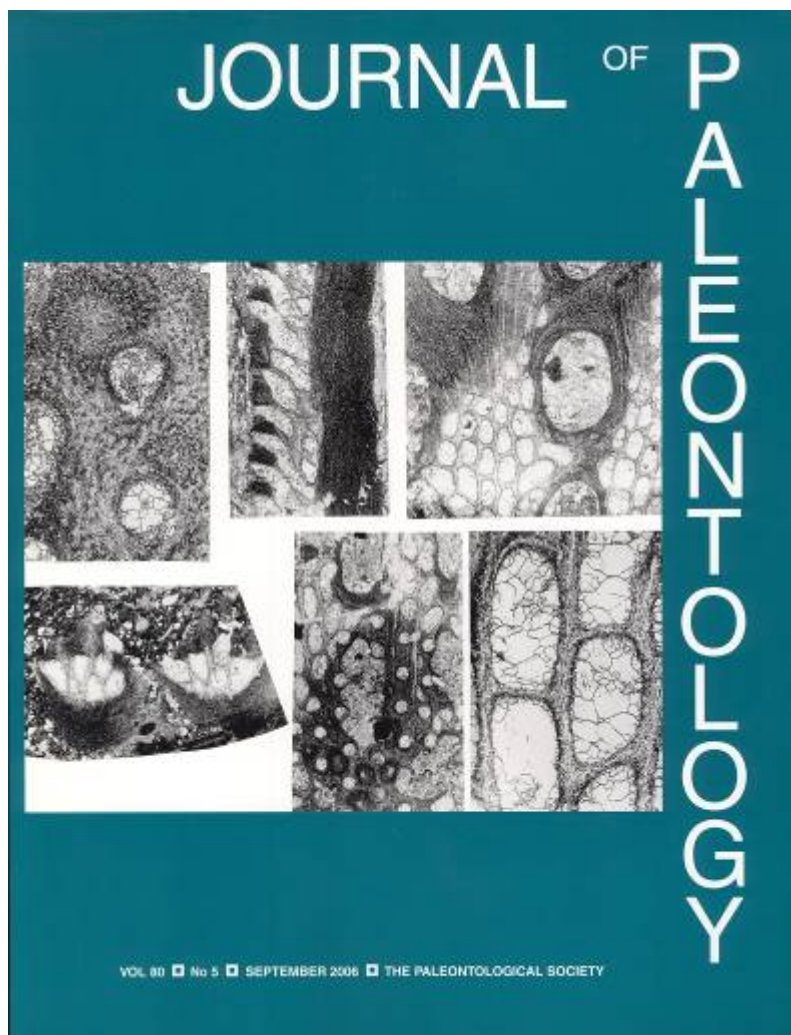
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Make checks payable to “Bryo Technologies” and send with this order information to Tim at Department of Biological Sciences, 3640 Colonel Glenn Highway, Wright State University, Dayton, OH 45431 USA. Sorry if this seems awkward. It just avoids a lot of hassle.

Featured Journal Cover

Editor's Note: This page continues a series highlighting the covers of journals or magazines featuring bryozoans. Currently we have enough suggestions for journal covers to last 3 more years, and by then more will have arrived. Keep them coming!!



This cover, appearing in 2006, accompanied an article inside by Ed Snyder and Ernie Gilmour: "New fenestrate Bryozoa of the Gerster Limestone (Permian), Medicine Range, northeastern Nevada." *Journal of Paleontology* 80:867-888.

Previous covers in this series (scroll down):



Upcoming Meetings and Conferences

Bryozoa

International Bryozoology Association
 2-6 August 2010, Kiel, Germany
www.ifg.uni-kiel.de/iba2010/

Paleontology

American Geophysical Union
 2010 Fall Meeting
 13-17 December, 2010, San Francisco, CA.
<http://www.agu.org/meetings/fm10/>

American Geophysical Union
 2010 Meetings of the America
 8-13 August, 2010, Iguassu Falls, Brazil
<http://www.agu.org/meetings/ja10/>

French Geological Society, Special meeting: Jurassic environments and faunas
22-24 April 2010, Lyon, France.
<http://SGF-elmi.univ-lyon1.fr>.

International Conference of Geobiology: 2010 Meeting and Field Workshop
4-6 June 2010, Wuhan, China.
<http://geobiology.org.cn/2010meeting> and <http://www.igcp572.org/>.

International Palaeontological Congress
28 June – 3 July 2010, London, UK
<http://www.ipc3.org/index.html>

The Palaeontological Association
54th Annual Meeting 2010, Ghent
(Details not yet announced)

Tenth North American Paleontological Convention
Summer, 2013, (Venue not yet announced)

Geological Society of America Annual Meeting
31 October – 3 November 2010, Denver, Colorado USA
<http://www.geosociety.org/meetings/2010/>

Biology

Aquatic Invasive Species, 17th International Conference,
29 August – 2 September 2010, San Diego, CA USA
http://www.icaiss.org/pdf/1st_annc_17th.pdf

12th International Coral Reef Symposium
June or July, 2012, Australia.
<http://coral.aoml.noaa.gov/pipermail/coral-list/2009-May/038801.html>

Ecological Society of America
1-6 August 2010, Pittsburgh, Pennsylvania
<http://www.esa.org/albuquerque/>

International Council for the Exploration of the Sea
2010 Annual Science Conference
20-24 September, Nantes, France
<http://www.ices.dk/indexnofla.asp>

International Society of Limnology
August, 2010, Capetown, South Africa
<http://www.limnology.org/news/circular2008.pdf>

Recent Publications

The following list includes works either published since the previous issue of the *IBA Bulletin* or else missed by previous issues. 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.

- Carter, Michelle C., Dennis P. Gordon, and Jonathan P.A. Gardner. 2010. Polymorphism and variation in modular animals: morphometric and density analyses of bryozoan avicularia. *Marine Ecology Progress Series* 339: 117-130.
- Carter, M., Bishop, J.D.D., Evans, N.J. & Wood, C.A. (2010). Environmental influences on the formation and germination of hibernacula in the brackish-water bryozoan *Victorella pavida* (Ctenostomata: Victorellidae). *Journal of Experimental Marine Biology and Ecology*, 383: 89-95.
- Cornée, J.J., Moissette, P., Saint Martin, J.P., Kázmér, M., Tóth, E., Görög, A., Dulai, A. and Müller, P., 2009. Marine carbonate systems in the Sarmatian (Middle Miocene) of the Central Paratethys: the Zsámbék Basin of Hungary. *Sedimentology*, 56: 1728-1750.
- Gontar, Valentina I. 2009. Benthic fauna of the Bryozoa of the Chuckchi Sea. "Herald of ecology, dendrology and landscape systems" of the Institute of the Problems of the Learning of the North of the Siberian Center of Academy of Sciences. Tyumen, # 10. <http://www.ipdn.ru/rics/ve2/index.htm>.
- Gontar, Valentina I., A. G. Tarasov, and S. Sh. Shamionova. 2009. Morphological variability, geographical distribution and ecology of *Conopeum grimmi* (Cheilostoma, Anasca) Gontar et Tarasov. *The World of Science, Culture and Education, Siberian Center of the Russian Academy of Sciences, Barnaul* 7(19):6-9
- Gordon, Dennis. 2009. *Baudina* gen. nov., constituting the first record of Pasytheidae from Australia, and Sinoflustridae fam. nov., with a checklist of Bryozoa and Pterobranchia from Beagle Gulf. *The Beagle Records of the Museum and Art Galleries of the Northern Territory* 25: 43-54.
- Hausdorf, Bernhard, Martin Helmkampf, M.P. Nesnidal, Iris Bruchhaus. 2010. Phylogenetic relationships within the lophophorate lineages (Ectoprocta, Brachiopoda and Phoronida). *Molecular Phylogenetics and Evolution* (epub ahead of print)
- Knowles, T., M. J. Leng, M. Williams, P.D. Taylor, H.J. Sloane, B. Okamura. 2010. Interpreting seawater temperature range using oxygen isotopes and zooid size variation in *Pentapoera foliacea* (Bryozoa). *Marine Biology*. DOI 10. 1007/s00227-010-1397-5.
- McKinney, Frank and Patrick N. Wyse Jackson. 2010. The tangled core at the heart of the bryozoan suborder Philloporinina. *Paleontology* 53(2): 441-456.
- Moissette, P., Cornée, J.J. and Koskeridou, E., 2010. Pleistocene rolling stones or large bryozoan nodules in a mixed siliciclastic-carbonate environment (Rhodes, Greece). *Palaios*, 25: 24-39.
- Moissette, P., Cornée, J.J., Mannäi-Tayech, B., Rabhi, M., André, J.P., Koskeridou, E. and Méon, H., 2010. The western edge of the Mediterranean Pelagian Platform: a Messinian mixed siliciclastic-carbonate ramp in northern Tunisia. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 285: 85-103.
- O'Dea, Aaron, Andrew N. Ostrovsky, and Felix Rodriguez. 2009. Embryonic brooding and clonal propagation in tropical eastern Pacific cupuladriid bryozoans. *Journal of the Marine Biological Association of the United Kingdom*

- Ostrovsky, Andrew N., Dennis P. Gordon, Scott Lidgard. 2009. Independent evolution of matrotrophy in the major classes of Bryozoa: transitions among reproductive patterns and their ecological background. *Marine Ecology Progress Series* 378: 113-124
- Ostrovsky, Andrew N., Claus Nielsen, Norbert Vávra, Ekaterina B. Yagunova. 2009. Diversity of brood chambers in calloporid bryozoans (Gymnolaemata, Cheilostomata): comparative anatomy and evolutionary trends. *Zoomorphology* 128: 13-35.
- Ostrovsky, Andrew N., Aaron O’Dea, and Felix Rodriguez. 2009. Comparative anatomy of internal incubational sacs in cupuladriid bryozoans and the evolution of brooding in free-living cheilostomes. *Journal of Morphology* 270: 1413-1430.
- Rodolfo-Metalpa R., Lombardi C., Cocito S., Hall-Spencer J., Gambi M.C. (2010). Effect of acidification and high temperatures on the bryozoans *Myriapora truncata* at natural CO₂ vents. *Marine Ecology- An evolutionary perspective* DOI: 10.1111/j.1439-0485.2009.00354.x
- Schwaha, Thomas, Timothy S. Wood, and Andreas Wanninger. 2010. Trapped in freshwater: the internal anatomy of the ectoproct *Loxosomatoides sirindhornae*. *Frontiers in Zoology*. 2010, 7:7. <http://www.frontiersinzoology.com/content/7/1/7>
- Smith AM, Girvan E. 2010. Understanding a bimineral bryozoan: skeletal structure and carbonate mineralogy of *Odontionella cyclops* (Foveolariidae: Cheilostomata: Bryozoa). *Palaeogeography, Palaeoclimatology, Palaeoecology* 289: 113-122.
- Vieira, Leandro M., Alvaro E. Migotton, and Judith E. Winston. 2010. *Marcusadorea*, a new genus of lepralioid bryozoan from warm waters. *Zootaxa* 2348: 57-68.
- Winston, J. E. and Maturro, F. J., Jr. 2009. Bryozoans (Ectoprocta) of the Gulf of Mexico. Ch. 68, pp. 1147-1164, In Felder, D. L. and D. K. Camp, eds. *Gulf of Mexico Origin, Waters and Biota. Volume 1, Biodiversity*. College Station, Texas University Press.
- Winston, J. E. 2009. Stability and change in the Indian River Area bryozoan fauna over a twenty-four year period. *Smithsonian Contributions to Marine Science*, 38: 229-239.
- Winston, J. E. and R. M. Woollacott. 2009. Scientific results of the *Hassler Expedition*, Bryozoa, no. 1. Barbados. *Bulletin of the Museum of Comparative Zoology* 159(5): 239-300.
- Wyse Jackson, Patrick N., Eoin Cross, and Robert Swift. 2009. *Ptilofenestella*, a distinctive rare fenestrate bryozoan from the Mississippian of Ireland: new records and an extension of its stratigraphical range. *Irish Naturalists’ Journal* 30(1): 76-77.

