

Browse or click on any of the following:

[Welcome](#)

[News from the membership](#)

[Larwood Symposium 2005](#)

[Circular for Bryozoan Workshop in Austria](#)

[IBA Bookstall](#)

[Remembering Dorothy Soule](#)

[Sizes of bryozoans: an IBA challenge](#)

[Recent publications](#)

Welcome to the first issue of the new IBA Bulletin. The purpose of this electronic publication is to provide bryozoologists with news and information in a rapid and timely manner. The IBA Bulletin will be published quarterly and distributed by email.

Your suggestions for the content and format of future issues will be very much appreciated. Please email these to the IBA Secretary, Tim Wood, at [tim.wood@wright.edu](mailto:tim.wood@wright.edu).

## News from the Membership

**Andrea Balduzzi.** Now I'm working not only on bryozoans and marine biology, but also on terrestrial fauna and environmental management.

**Phil Bock's** Bryozoa website was highlighted in the "NetWatch" section of the journal *Science*. The article is entitled *Life in the Colonies*. (*Science*, 18 March 2005, page 1701).

**Michelle Carter**, from Plymouth University, U.K., has enrolled at Victoria University of Wellington, New Zealand, to undertake a PhD. The provisional title of Michelle's dissertation research is "The adaptive function of the avicularia in cheilostome bryozoans". Michelle will be using TEM, SEM, and confocal microscopy to ascertain structure and function of avicularia in selected taxa. Funded by a Commonwealth Scholarship, she is based at the National Institute of Water & Atmospheric Research with Dennis Gordon as chief external adviser. Her e-mail address is [m.carter@niwa.co.nz](mailto:m.carter@niwa.co.nz).

**Erik Fluegel.** "I have to inform you that my husband Erik Fluegel died on April 14, 2004. Erik was able to finish his last job. He saw his book on "Microfacies of Carbonate Rocks" (published in July 2004 by Springer-Heidelberg, 976 pages) as a camera ready outprint just a month before his death. Many pages in this volume deal with fossils, therefore rock forming bryozoans play an important role, too. My best wishes go to the community of the friends of bryozoans.

Friendly greeting, Erentraud Fluegel-Kahler"

**Andrei Grischenko** is progressing with his PhD project devoted to faunal survey of intertidal cheilostome bryozoans from the Akkeshi Bay (Eastern Hokkaido) and searching for a postdoc position available starting late spring of 2006. Anyone with knowledge of a possible position for Andrei is invited to contact him directly at [gat@bio.sci.hokudai.ac.jp](mailto:gat@bio.sci.hokudai.ac.jp)

**Mary Spencer Jones** (NHM, London). Due to new worldwide postal regulations, would members please be aware that I am not able to send out any wet loans at the moment. This problem will hopefully be solved in the next few weeks but all subsequent wet loans will have to be done through couriers. Also we are experiencing some problems in sending, and receiving back, dried material as some countries have introduced various new laws. Please be aware of these problems if you ask for a NHM loan. Thanks, Mary

**Hui-Lian Liu.** I got my MS degree in 1999 in the field of bryozoan taxonomy and biogeography under the supervision of Prof. Xi-Xing Liu. My PHD degree was obtained in 2002 in the field of zooplankton ecology, especially in euphausiid ecology. And then I continued my work in this field till 2004. Now I found I am still interested in my old work, I mean the bryozoan research, such as its taxonomy, biogeography and ecology. So I decided to study the bryozoan again. My recent research work will concentrate on the taxonomy, biogeography and some ecology studies on the two superfamilies Celleporoidea and Coneschorelloidea (Bryozoa: Cheilostomatida Ascophorina: Lepraliomorpha)."

**Patricio Manriquez** is now at the Universidad Austral de Chile. Note the new postal and email address in the attached IBA address list. .

**Hans Arne Nakrem.** Hans Arne's recent paper in *Norwegian Archaeological Review* describes fossils found in a Mesolithic site in Norway, including a possible Ordovician *Corynotrypa*. (See Glørstad *et al.* in the bibliographic listing).

**Aaron O'Dea's** research is featured on the home page of the Smithsonian Tropical Research Institute ([www.stri.org](http://www.stri.org)) in an article entitled, "Asking the Big Questions with Small Animals." Others working on this project include Jeremy Jackson, Amalia Herrera, and Félix Rodríguez.

**Andrei Ostrovsky.** Two years I studied sexual reproduction of Cheilostomata at the Vienna University, working with Prof. N. Vavra. Results are very interesting, among others are discovery of the very early intraovarial fertilization, placental brooding in more than 10 families and unknown reproductive pattern (also involving placenta). Brood chamber structure has been studied in more than 250 Recent and fossil species (64 families and 142 genera), and I hope step by step to publish them.

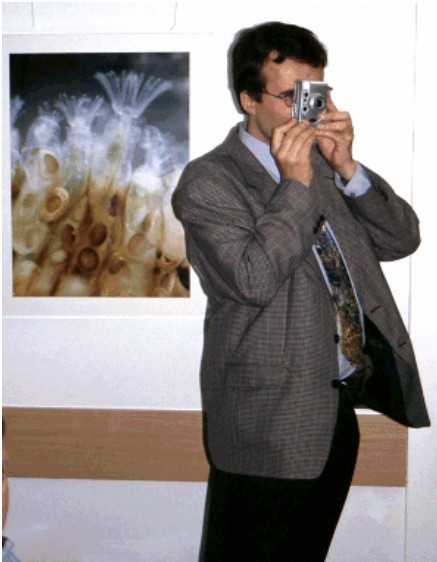
In February, 2005, I spent 2 weeks on Maldives collecting bryozoans for taxonomy and reproduction studies with SCUBA. I have got a good collection, but, unfortunately, my post-doc in Austria is over, and I return to Russia. That is why I ask you to use my Russian mailing address after 1<sup>st</sup> of May, 2005. I hope that I will continue my studies on bryozoans, but situation there is not very promising for the research. That is why I currently looking for a position abroad. Any suggestions are welcome.

Finally, small request to people – as far as I know, no one is working on bryozoan reproduction except me now. So I would be very appreciating for any information about the people who are dealing with oogenesis, fertilization and brooding in other groups of marine invertebrates.

My e-mail addresses are the same: oan\_univer@yahoo.com or a\_ostrovsky@mail.ru

**Nils Spjeldnaes.** At present (and for the last two years) I have been writing on my memoirs of the last 62 years of field (and lab) work in the Oslo Region. When that is finished (this year !), I will return to bryozoans full time.

**Emmy Wöss.** The bryozoan exhibition "Neptunschleier & Co." was opened on 21st April in the Biologiezentrum der Oberösterreichischen Landesmuseen in Linz, Upper Austria (<http://www.biologiezentrum.at>). The IBA was well-represented by Priska Schäfer, Norbert Vavra, Joachim Scholz, Andrej Ernst and Andrej Ostrovsky (see photos below). It became a well-visited as well as a well-documented event in the Austrian mass media, partly also because the marine biologist and diving pioneer Hans Hass, who is a legendary figure in our country, was present and gave a talk at the opening. In 1948 Hans Hass had started his career with publishing his thesis on Reteporidae (Hass H., 1948: Beitrag zur Kenntnis der Reteporiden. *Zoologica* 37/101:1-138). The exhibition - now also announced as "first bryozoan exhibition of the world" - is open till September 25th (except Saturdays). There is a special focus on freshwater bryozoans, but marine bryozoans - living (aquaria) and fossil – are documented as well. More detailed information you find in the exhibition catalogue, *Moostiere (Bryozoa)*, published in the monographic series *Denisia* (see table of contents enclosed). The exhibition catalogue contains a high number of coloured figures and can be ordered at <http://www.biologiezentrum.at/biowww/entxt/biblio/denisia.php> or [bio.buch@landesmuseum.at](mailto:bio.buch@landesmuseum.at) (price: €40 hardcover).



Opening of the “Neptunschleier & Co.” Exhibition

- Top left: Emmy Wöss and phylac zooid model
- Top right: Emmy and her mother.
- Center left: Joachim Scholz
- Center right: Emmy, Priska Schäfer, Andrej Ernst.
- Bottom left: Norbert Vávra with Ernie Ascht.

# 5<sup>th</sup> Larwood Symposium

## University of Wales Aberystwyth, 6-8 April 2005

by Paul D. Taylor

The Larwood Symposia provide an excellent opportunity for bryozoologists to get together in years when there is no International IBA Conference. Except for the 4<sup>th</sup> Larwood Symposium, which was held in Copenhagen, all have been based in Britain. This year it was the turn of the remote and windswept Welsh university town of Aberystwyth to host the symposium which was attended by thirty scientists. Even for people resident in Britain reaching Aberystwyth can be a daunting prospect, so it was particularly gratifying to see one Polish-, two German- and three Italian-based bryozoologists making the heroic effort to travel there. Jo Porter, newly installed as a lecturer at Aberystwyth, hosted the symposium. She deserves all the credit for the smooth running of what was a rewarding meeting both scientifically and socially.

Fourteen talks were spread across three sessions on the first day of the symposium. Opening the symposium Dr John Fish, Director of the Institute of Biological Sciences in Aberystwyth, drew attention to the fact that the meeting was taking place in the Edward Llwyd Building, noting that Llwyd, or Lhuyd as it is sometimes spelt, had been a 17<sup>th</sup> century Welsh botanist. Although Dr Fish did not mention it, Llwyd was also interested in fossils – he described the Cretaceous fossils from the bryozoan-rich Faringdon Sponge Gravels of Oxfordshire and was subsequently honoured by Leslie Pitt (*Proceedings of the Geologists' Association* **60**: 65-68) who named one of the oldest known cheilostomes, *Charixa lhuydi* (Pitt, 1976), from Faringdon, in his honour.

During the first session we heard from David Barnes (British Antarctic Survey) about the variability in metabolic rates between Antarctic bryozoan species. Oxygen consumption rates, for example, span the entire range documented in Antarctic invertebrates. Moving to the opposite pole, Piotr Kuklinski (NHM; with Paul Taylor) next introduced BRYOARC, a new project investigating the diversity, distributions and adaptations of bryozoans in Arctic seas. He reported on preliminary findings on the peculiar ascophoran genus *Harmeria* in which bands of small zooids are budded around the edge of the disc-shaped colony, seemingly to brood embryos. Paul Taylor (NHM; with Alan Cheetham, JoAnn Sanner and Andrei Ostrovsky) summarized the results of a restudy of the mid-Cretaceous cheilostome *Wilbertopora mutabilis* Cheetham, 1954, which is important not only in possessing the oldest known ovicells but also the first avicularia. Multivariate analysis shows that what was originally considered to be a single species actually comprises 8 species. These differ most clearly in their avicularia which show varying levels of differentiation from an ancestral monomorphic condition. Ordovician bryozoan mud mounds were the subject of the next talk by Caroline Buttler (National Museum of Wales; with Lesley Cherns and Dominique Massa). By analogy with Quaternary mounds in the Great Australian Bight, Caroline interpreted these as cool water mounds formed during glacial lowstands when upwelling occurred, rather than during a mid-Ashgill warming event as proposed by other researchers. Urszula Hara (Polish Geological Institute) gave a précis of her work on Antarctic Cenozoic bryozoans. Interestingly, the three main bryozoan occurrences were formed during preglacial (Eocene La Meseta Fm), glacial (Miocene Cape Melville Fm) and interglacial (Pliocene Cockburn Island Fm) intervals, showing the climatic adaptability of bryozoans. Mary Spencer Jones (NHM) completed the first lecture session by providing an overview of the diverse bryozoan projects,



curatorial and research, that are taking place in the Department of Zoology at the Natural History Museum in London. Fears that bryozoology might become extinct in the Department of Zoology with the retirement two decades ago of Pat Cook were clearly unfounded to judge from Mary's presentation.

The first of the two afternoon sessions was opened by Antonia Concetta-Elia (Perugia; with Martin Dörr, Giorgia Peroni and Maria Illuminata Taticchi). Antonia reported on how the phylactolaemate *Lophopus crystallinus* in Lake Piediluco showed different levels of antioxidant response which were probably related to variations in heavy metal levels in the lake. The same bryozoan species was the subject of the next talk, given by Samantha Hill (University of Reading; with Beth Okamura). Sam's doctoral study has investigated variations in abundance and statoblast production in this phylactolaemate which is regarded as an endangered species in Britain. Her novel use of inverted traffic cones as settlement panels raised a few eyebrows! Coincidentally, and unbeknownst to Sam, her study site at Barton Blow Wells in the shadow of the Humber Bridge is but a statoblast's throw away from South Ferriby, arguably the best locality in the world for bioimmured Jurassic ctenostomes. A ctenostome formed the subject of the next talk by John Bishop (University of Plymouth) who reported the results of a population study of the brackish-water bryozoan *Victorella pavidia* in Swanpool. This rare species grows best at salinities of about 18 ppt, overwinters and propagates asexually using hibernaculæ, and is apparently also able to reproduce sexually, as evidenced by the occurrence of ancestrulæ, although larvae have yet to be observed in the study population.

Four of the final five talks focused mainly or partly on molecular phylogeny. The exception was the presentation of Jasmine Sharpe (University of Wales Aberystwyth; with Mike Winson and Jo Porter) who has commenced a promising study of secondary metabolites in marine bryozoans. Jasmine suggested that biofilm formation on bryozoans may be regulated by a bacterial process called quorum sensing (QS), with at least some bryozoans having the ability to interfere with QS and thus control fouling.

Molecular studies have yet to make the same impact on bryozoans as they have done on some other groups. Andrea Waeschenbach (NHM; with David Skibinski and Peter Hayward) showed one reason why this was so. Her attempts to construct a molecular phylogeny of the ctenostome *Bowerbankia* have been undermined by nuclear mitochondrial pseudogenes, distorting the resultant trees. Thanos Roussos (University of Wales Swansea; with David Skibinski, Peter Hayward and Jo Porter) reported on a taxonomic and population genetic study of British species of the cheilostome *Callopora*. The observation of instances of within colony genotypic variations in mtDNA is an unexpected finding that is difficult to explain. Anton Tsyganov (University of Wales Swansea; with Peter Hayward, David Skibinski and Jo Porter) introduced an ambitious project to resolve the phylogenetic relationships among marine bryozoans. This will use a combination of 18S rRNA data and larval characters revealed by confocal microscopy. Jo Porter (University of Wales Aberystwyth; with Jean Leamon, Andrea Waeschenbach, Peter Hayward and David Skibinski) rounded off the lecture sessions by reviewing the contribution of molecular studies to resolving the position of bryozoans within the Metazoa. Time was left for viewing about half a dozen posters and informal discussions, lubricated by beer and wine.

The conference dinner was enlivened by a pyrotechnic cabaret when one of the waiters accidentally set fire to a tablecloth. Luckily, no-one was hurt and the sprinkler hoses were not

triggered by the smoke – they would have provided poor competition for the rainfall outside. The same rain stayed with us on-and-off the following morning as we drove south into Pembrokeshire for the biological fieldtrip, persisting just long enough for us to witness David Barnes don a comical hat before dry conditions set-in as we trekked down the cliff at Dale to observe and collect intertidal bryozoans. I was unable to stay for the geological fieldtrip which took place the next day but was subsequently informed by Andrej Ernst that the visit to a Silurian locality at Kington had also been successful. The venue for the 2006 Larwood Symposium has yet to be decided. Wherever it should be, on the strength of this year's symposium I would certainly urge participation by anyone who is able to attend.

(Editor's Note: Our intention to post presentation abstracts from the Symposium on the IBA website has hit a momentary snag. We hope to have them available soon – TW).

Circular for the **BRYOZOAN WORKSHOP** in the course of the exhibition  
**„NEPTUNSCHLEIER & CO“**  
September 8-10, 2005  
Biologiezentrum der Oberösterreichischen Landesmuseen  
Johann-Wilhelm-Klein-Straße 73, 4040 Linz-Dornach, Austria

Dear all,

A special Bryozoa exhibition entitled "Neptunschleier & Co" will be held from April 21<sup>st</sup> to 25<sup>th</sup> September in Linz, at the Biology Centre of the Upper Austria Museums (<http://www.biologiezentrum.at>). In the course of this exhibition a bryozoan workshop will take place in the English language at the Biology Centre. During September 8-10 The Upper Austrian Museums and I will welcome bryozoan researchers of all fields to meet and discuss various aspects of bryozoan research. Field trips to freshwater and palaeontological sites will be carried out to collect Bryozoa. The excursion day will bring us to the Salzkammergut, a famous lake region at the northern edge of the Austrian Alps.

Registration: For registration I ask you to contact me by email ([emmy.woess@univie.ac.at](mailto:emmy.woess@univie.ac.at)). Those who wish to make oral presentations I now ask to forward a title to me. Abstracts should be sent by 31<sup>st</sup> July. Talks should last for 15 minutes followed by five minutes for discussion. Presentations will be published in the *Linzer Biological Contributions*. Authors' instructions can be found at the museum's home page, [http://www.biologiezentrum.at/biowww/entxt/biblio/lbb\\_en.doc](http://www.biologiezentrum.at/biowww/entxt/biblio/lbb_en.doc)

Travelling information: Linz is the 3<sup>rd</sup> largest town in Austria and is situated about 180 km west to Vienna at the River Danube. It has an airport (Linz-Hörsching) and excellent railway connections from Vienna, Salzburg and Munich. A detailed description to find one's way to the museum public transport or car is given at the homepage of the museum: <http://www.biologiezentrum.at/biowww/entxt/austell/lage.html>

Accommodation: The biology centre of the museum is close to the University campus in the north part of the city and several accommodation facilities (from hotels to camping place) are nearby. Hotels near the Biology Centre include Hotel Sommerhaus, St. Magdalena, Gasthof Lüftner, and Hotel Haselgraben. Camping am Pleschingersee is also nearby. For these and other accommodations see [www.linz/tourismus](http://www.linz/tourismus). Room reservation can be done directly through the museum by Dr. Ernie Ascht ([e.aescht@landesmuseum.at](mailto:e.aescht@landesmuseum.at)).

Costs: There is no registration fee. A museum bus will be available for the excursions. Meals (with the exception of the reception at the museum) and entrance fees at touristic sites (Hallstatt) are not covered.

Emmy



Itinerary  
Thursday, 8. September  
Day at the museum

11: 00-11:20	Welcome by HR Dr. Gerhard Aubrecht, head of the Biologiezentrum of the Oberösterreichischen Landesmuseen
11:20-13:00	Talks
13:00-15:00	Lunch at the Oberwirt with view over the city
15:00-16:40	Talks
16:40-17:00	Coffee break
17:00-18:00	Tour through the museum
20:00-22.00	Reception at the ceremonial hall of the Landesmuseum, Museumsstraße 14. Welcome by Mag. Dr. Peter Assmann, director of the Oberösterreichischen Landesmuseen and tour through the Landesgalerie & Alfred-Kubin-collection, musical performance by Dr. Berthold Janecek

**Friday, 9. September**

Day at the museum and excursion to nearby sites with bryozoan sampling

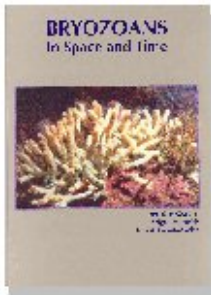
9:00-10:40	Talks
10:40-11:00	Coffee break
11:00-12:40	Talks
12:40-14:15	Lunch
14:15-17:00	Excursion to the Traunauen (Mitterwasser etc.) to bryozoan habitats followed by microscopical work at the museum
17:00-open end	Discussion workshop and actual topics of bryozoology

**Saturday, 10. September**

Day with excursion to the Salzkammergut, bryozoan sampling, natural and cultural sites

8:00	Departure to the town Mondsee
9:15-11:30	Presentation of the Institute for Limnology of the Austrian Academy of Science in Mondsee. Bryozoan sampling in the littoral zone or boat trip on the lake Mondsee
11:30-12:30	Trip to lake Gosausee
12:30-13:30	Lunch at the Untere Gosausee
13:30-14:30	Palaeontological site nearby the lake Gosausee
14:30-15:00	Trip to Hallstatt
15:00-18:30	Hallstatt at the lake Hallstättersee, world culture and world natural heritage of the UNESCO
20:00	Arrival in Linz

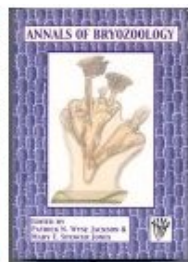
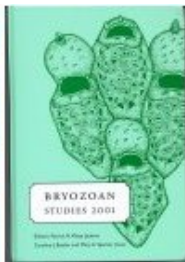
# IBA Bookstall



*Bryozoans in Space and Time*: Proceedings of the 11<sup>th</sup> IBA Conference in Wellington. Book plus postage (in New Zealand dollars, roughly NZ\$1 = US\$0.72): \$55.23 for UK and Europe, \$49.56 for North America/East Asia, \$37.24 to South Pacific, \$21.76 to Australia, \$58.35 to the rest of the world. Visa and Mastercard preferred (send the usual details); checks payable in New Zealand dollars payable to NIWA. Contact Mike Beardsell, Science Communication, NIWA, Private Bag 14901, Wellington, New Zealand. DDI: 4-386 0885; Fax: 4-386 0574.



Proceedings of the 11<sup>th</sup> IBA Conference in Panama. The published price is US\$50 but Amalia Herrera says we can get it for \$30. Shipping is extra. [http://www.stri.org/english/visit\\_us/bookstore/books.php](http://www.stri.org/english/visit_us/bookstore/books.php) has information and an order form. Fax the form to (507)212-8029 or (507)212-8148 or email: [AvilaX@si.edu](mailto:AvilaX@si.edu).



Patrick Wyse Jackson still has 4 copies of *Bryozoan Studies 2001* - the Dublin proceedings and 15 copies of *Bryozoan Studies 2004* - the Chile proceedings available for purchase at less than 50% of the publisher's list price. The cost is €45 each. Also available are copies of *Annals of Bryozoology* available, priced at €20 IBA members who

wish to purchase any of these copies should e-mail Patrick at [wysjcknp@tcd.ie](mailto:wysjcknp@tcd.ie).



*A New Key to the Freshwater Bryozoans of Britain, Ireland, and Continental Europe*, (2005) by Timothy S. Wood and Beth Okamura, Scientific Publication No. 63, Freshwater Biological Association. Price is €16. For ordering information see [www.fba.org.uk](http://www.fba.org.uk).



*Moostiere (Bryozoa)*. (2005). Biologiezentrum der O.Ö.Landesmuseum (Ed.), Wissenschaftliche Redaktion: E. Wöss. Denisia 16: 369 pp. Includes many fine color photos and papers by well-known IBA members. Giveaway price is €40 plus shipping. For table of contents and ordering information see <http://www.biologiezentrum.at/biowww/entxt/biblio/denisia.php>.

## Remembering Dorothy Soule



John D. Soule, 1920 – 2001  
Dorothy F. Soule, 1923 – 2005

March 7, 2005

Dear friends and colleagues of Dorothy and John Soule,

It is with deep regret that we inform you of the passing of Dorothy Fisher Soule in the early morning hours of March 5th, 2005. As you may already know, Dorothy had surgery to remove a malignant tumor last fall. We were very hopeful for her complete recovery. She was working at the University up to two weeks prior to her death. However, tests revealed that the cancer had spread. Upon that discovery, she made the decision that she would forego further medical intervention. Dorothy spent the last days of her life at peace, with dignity and clarity of mind until the very end, surrounded by family and others who loved her.

Dorothy Louise Fisher was born in Cleveland, Ohio, October 8th, 1923. She grew up near Cleveland, and received her Bachelors degree at Miami University of Ohio. Dorothy met John D. Soule in a biology laboratory at Miami University. (John wrote home that he had met a beautiful girl, who was really smart too.) Prior to John's departure for the Pacific during World War II, they were married July 3rd, 1943, in Denver Colorado.\* They embarked upon a life-long partnership of tremendous love and mutual respect. While awaiting the return of her beloved John, Dorothy began her association with the University of Southern California in 1945, as a Research Associate.

After John's return, Dorothy continued as a Research Associate while John earned his Ph.D. at USC, working in association with Dr. Raymond Osburn on the phylum Bryozoa. Dorothy also entered into the world of the Bryozoans at that time, typing John's thesis and creating scientific illustrations. A passion was born for both of them – they became true research partners. Dorothy eventually went on to earn her Masters degree from Occidental College, in

Los Angeles, and her Ph.D. from Claremont Graduate School, Claremont, California. Their work led them to many exotic locales, and they became colleagues and friends with wonderful people around the world. These friendships and connections were as important to them as their work. After John's death in 2001, Dorothy continued her work with the Bryozoans, and was actively engaged in research until one week prior to her death.

Dorothy is survived by two daughters, Patricia Kendrick and Susan Harrison, five grandchildren, and one great-grandson. In accordance with Dorothy's expressed wishes, there will be no memorial service. Contributions can be made in her memory to The Nature Conservancy, 523 West 6th Street, Suite 1216, Los Angeles, California 90014.

***Patricia Soule Kendrick and Susan Soule Harrison***

\* Patricia adds: They married when she was 19...and she finished school when he was sent off to WWII...she was the first "married woman" allowed in the dorms!

**Yvonne Bone.** To the family of Dorothy Soule, Would you accept some condolences from one of her Australian friends? I too am an elderly (67) female bryozoologist, and so as you can well imagine, Dorothy was an inspiration to me in so many ways. I shall miss her happy, jolly persona and her keenly enquiring scientific mind, at Boone in 2007. I might suggest to the committee that we have a special session for the plus-50's women, dedicated to her.

**Carla Chimenz.** I learned with sadness about the death of Dorothy. I nourished for her esteem and affection. I'll miss her greatly. I offer her family my deeply felt condolences.

**Wayne Florence.** To the daughters of Dorothy Soule: I would like to convey my deepest sympathy for your loss. I met your mother briefly at the International Bryozoology meeting in Dublin, Ireland during 2001. We sat next to each other for some of the talks, and I was amazed at how passionate she was about her chosen profession, which inspired me tremendously as a young scientist. She will be in my prayers and forever in my memory.

**Dennis Gordon.** What a sad loss! Dorothy (as with John before her) was one of that great series of West Coast bryozoologists that have contributed so much to our profession. They had their mentors, and mentored others in turn, and long may that intellectual "genealogy" continue. I very much appreciated Dorothy's collegiality, friendship, and hospitality. Brenda and I fondly remember a wonderful dinner with the Soules at their home in Eagle Rock back in 1978, and catching up with them at the many IBA meetings was always something to look forward to. Dorothy always seemed to have a youthfulness, a smile, and a twinkle in the eye, her forthrightness notwithstanding. Her passion for our science never waned, as was evident in Chile last year. Thank you Dorothy. Bon voyage.

**Asit K. Guha.** I with my graduate student Dr. K. Gopikrishna (for whose doctoral thesis Dorothy was an adjudicator) had been receiving her comments on our research work on Tertiary Bryozoans from India. Way back in 2002 she was so impressed with our find that she helped us a lot with all possible suggestions, SEM images and others. During that time she had been recovering from a fracture at her hip-joint. Later she took exceptional interest in getting the results of our study published as a Monograph (Irene McCulloch Foundation Monograph Series, Number 7, September 2004 from Hancock Institute of Marine Studies,

University of Southern California Los Angeles, California). Without her help such a publication (perhaps the only one by authors outside the HIMS, USC) would not have been possible. She herself did the proof-reading of this publication, and informed me at a later date that to save my postal expense she has sent copies of this Monograph to Bryozoologists within USA. Her magnanimity in recommending this publication to the HIMS becomes apparent from the fact that conclusions made in our work on the Tertiary fossil *Thalamoporella* from India were not in consonance with the evolutionary scheme proposed for the genus *Thalamoporella* worldwide (Monograph Numbers 1 and 4) by Soule, Soule and Chaney (1992 and 1999). Such a kind and broad-hearted gesture is a rarity among scientists and humanity as well. In January 2004, she introduced me at Concepcion, Chile as her "email collaborator" when we stood for a joint photograph. Her advice on further work and words of encouragement will be something that I would reminisce for the rest of my life. I feel privileged to have collaborated with Prof. Dorothy Soule and and blessed with her kind advice. The world of Bryozoology will be poorer by the absence of someone of Dorothy's stature.

**Joachim Scholz.** She was for me a mentor or, as the Japanese say, the *Sensei* in the international field. She and John picked me up when I arrived quite disorganized during my first IBA in Paris 89, and guided me around during the conference, introducing me to people. As a grown-up bryozoologist, I had visited her and John several times in L.A., actually never really for bryozoology although this was always the excuse to travel. They showed me the La



Brea tar pits (twice) that I wanted to see ever since I was reading as a schoolboy books about huge extinct animals. My photograph of her and John's unique car plate "California BRYOZOA - The Golden State is still decorating as a poster print the entrance to my office room. The last time we corresponded was two weeks ago. She did not feel well, but still seemed to be full of energy as usual.

In one of the letters Dorothy wrote to me, dated April 6, 2004, shortly after Chile, she gave one of her last examples of her typical dry humour, that those will always remember who knew her as a friend. This time, she referred (but not deferred) to the subject of her own declining health:

"Retirement is a state of mind, so I am not retired (my body may not agree with this, especially after long airplane rides). I am only 80 but I do not expect to see 100 - after what Voigt survived in WWII you would have thought he would be long gone, but I guess if you survive that, it's all easier. As one of our friends said, while doing a stand-up comedian gig at his 100th birthday, "I'm certainly glad to reach 100 because very few people die after that."

**Paul Taylor.** This is indeed very sad news. We have been robbed of too many bryozoologists during the last year without poor Dorothy adding to their number.

Dorothy made a great contribution to bryozoan research, both alone and in collaboration with her late husband John. Her published works represent a considerable scientific legacy that will be appreciated by generations of bryozoologists well into the future.

To me Dorothy was not only a valued scientific colleague but also a friend. I have fond memories of taking her and John to Winston Churchill's home at Chartwell during one of

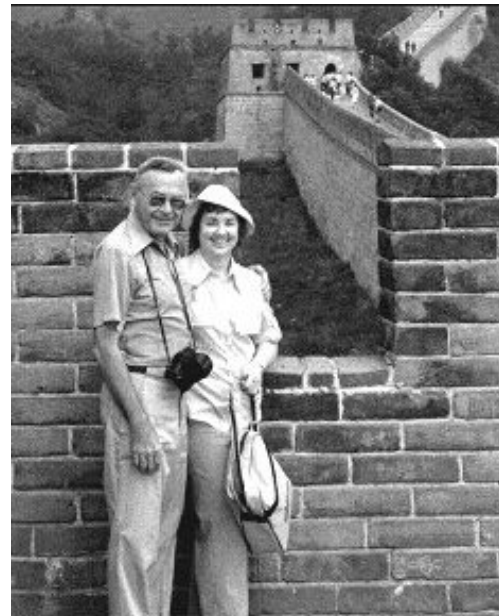
their visits to the Natural History Museum in the 1990s. On another occasion we shared in adversity when our suitcases failed to appear after a flight to Panama and we had to do battle with the airline who saw little reason for our concern.

Dorothy was forthright and stood no nonsense. She was still scientifically sharp and enthusiastic about her research when last I saw her in Chile just over a year ago. We will all miss her greatly.

**Morozova, L.Viskova, R.Goryunova, O.Weis, V.Lavrentjeva, D.Lisitsyn.** It was really very bitterly to receive such sad news again... Unfortunately we did not know Dorothy Soule personally but we always have been very happy to have any her or together with her husband John new publications on bryozoans. All these published works will be invaluable both for neobryozoologists and for paleobryozoologists forever and a day. We are deeply grieved by Dorothy's passing together with her daughters Patricia and Susan, with her grandchildren and great-grandson, together with Hunk, with her friends and colleagues.



Penny Morris, de Estados Unidos;  
Françoise Bigey, de Francia, y  
Dorothy Soule, de Estados Unidos.







Photos provided by Françoise Bigey, Joachim Scholz, and the Soule Family.

# Bryozoan Sizes: An IBA Challenge

Judith Winston and Ken McKinney

We recently responded to a request by Craig McClain from University of New Mexico for help with a chapter on patterns of body size for marine invertebrates for an upcoming volume on patterns of body size. We used autozooids in the estimates below, but Ken said, "I am a bit uneasy calling zooids the 'individuals' for bryozoans, rather than the colony. I'm not comfortable calling colonies the 'individuals', either. Where individuality resides in colonies is damned elusive. At any rate, the measurements requested had better be confined to autozooids and not get into the can of worms resulting from polymorphism. Can you imagine how far off the scale the smallest avicularium would be? But it is as much an 'individual' as is an autozooid, even though it doesn't feed."

I didn't do smallest cyclostomes, as the long tubes made it seem likely they would come out as smallest for the phylum overall, but what there is certainly not much meat in a *Filicrisia* or a single zooid of a *Lichenopora* colony.

Here is what we came up with for size records. It would be interesting to try to get some input from IBA members. (Editor's note: Send your responses to the IBA Secretary ([tim.wood@wright.edu](mailto:tim.wood@wright.edu)) for inclusion in the September Bulletin)

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## Smallest ????

Some of the boring ctenostomes, including those which bore into living zooids of other bryozoans, and the sand grain encrusting species are probably close to the minimum size for Recent bryozoans

	<u>Mean zooid length</u>	<u>Mean zooid width</u>	<u>T#</u>
Boring species			
<i>Immergentia suecica</i> Silén 1946.	.310 mm	.080 mm	9
<i>Terebripora parasitica</i> Winston and Hayward 1994 Loph diameter .24mm 7-8 T#, TL .19 mm, live inside living zooids and polymorphs (e.g., ovicells) of Antarctic cheilostomes, so no measurements for rest of zooid.			
Sand-grain encrusting species			
<i>Alderina smitti</i> . Osburn 1950.	.276 mm	.226 mm	11
This one is a little bigger, but can be reproductive by the third zooid produced.			
<i>Retevirgula caribbea</i> (Osburn) 1947	.252	.187	10
<i>Cymulopora uniserialis</i> Winston&Håkansson 1986	.211	.167	8
This species can definitely produce an ovicell in a colony of 6 zooids.			

<i>Cribrilaria parva</i> Winston&Håkansson 1986	.232	.185	?
<i>Hippothoa balanophila</i> Winston&Håkansson 1986	.221	.114	?

In terms of least volume of biomass, the boring ones probably win, but I'm not sure how to figure volume; they are more sacs than tubes. You could probably figure the volume of the encrusting ones as boxes though none of the above have a really rectangular shape. Length and width as given, we don't measure the height of encrusting, but it would be about ¼ of width.

## Largest ???

Volume of zooids is essentially missing from descriptive literature, but volume is the best overall measure of 'size'. That has to be estimated differently for bryozoans with box-shaped versus tubular zooids. In the measurements given below, any that are estimates are clearly indicated.

### Class Stenolaemata

Order Trepostomata (tubular zooids; dimensions given are for the epithelium-lined living chamber, not including proximal portions of the zooid that are walled off; if the proximal tissue-abandoned regions are included, the largest zooid would be something else)

*Anisotrypa* sp., Carboniferous, West Virginia (McKinney, unpublished): length ~1.2 mm  
X ~1.2 mm diameter = 1.4 mm<sup>3</sup>

Order Cyclostomata (Tubuliporata)

*Cinctipora elegans* Hutton, 1873, Recent, New Zealand (Boardman et al., 1992): length 4.3 mm X 0.5 mm average diameter = 0.84mm<sup>3</sup>

*Cinctipora elongata* Boardman et al., 1992, Pliocene, New Zealand: length 4 mm (est.) X 0.35 mm diameter = 0.38 mm<sup>3</sup>

### Class Gymnolaemata

Order Ctenostomata

*Nolella stipata* Gosse, 1855, Recent, Atlantic (Hayward, 1985): length 5 mm (McK personal observation) X 0.2 mm diameter = 0.16 mm<sup>3</sup>

Order Cheilostomata

Suborder Malacostega

*Gontarella gigantea* Grischenko et al., 2002, Recent, northwestern Pacific: length 1.85 mm X width 1.20 mm X depth (est) 0.8 mm = 1.6 mm<sup>3</sup>

Suborder

*Gigantopora polymorpha* (Busk, 1884), Recent, New Zealand (Gordon, 1984): length 1.55 mm X width 1.03 mm X depth (est.) 0.7 = 1.0 mm<sup>3</sup>

## A PALEOZOIC BRYOZOAN WITH VERY SMALL ZOOIDS:

Class Stenolaemata

Order Fenestrata

*Hemitrypa tenella* Barrande in Pocta, 1894. Devonian, Czech Republic (McKinney, 1986): length 0.199 mm X width 0.081 mm X height 0.136 mm = 0.002 mm<sup>3</sup>

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## Recent Publications

The following list includes works published since the printing of *Bryozoa 2004*, plus any publications not yet included in IBA bibliographies. As always, members are encouraged to support future compilations by continuing to send complete citations to the IBA secretary at any time. Reprints will be gratefully received by the IBA archivist, Mary Spencer Jones.

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