

# Bulletin

### Volume 19 Number 2

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Caroline Butler, President Catherine Reid, Secretary Abigail Smith, Treasurer ISSN 1941-7918

Comments regarding this Bulletin should be addressed to the IBA Secretary: <a href="mailto:catherine.reid@canterbury.ac.nz">catherine.reid@canterbury.ac.nz</a> Copies of the Bulletin are archived at the Natural History Museum London.

Further information at <a href="http://www.bryozoa.net/iba/index.html">http://www.bryozoa.net/iba/index.html</a>

### **COUNCIL NEWS**

### A REPORT FROM THE IBA TREASURER

The IBA accounts continue to slowly grow thanks to donations from our members.

We have about \$6,000 NZD in the bank (= 3000 Euros = 3750 USD).

That's enough for two or three travel grants to Japan in 2025 for young bryozoologists – but we'd like to be able to do more. Last conference we were able to make six awards totalling over \$10,000 NZD. Assisting new scientists to be part of our Association is how we ensure our future.

It's always a good time for members to download the form and send us some money.

Any amount is very welcome. The Treasurer can issue a receipt either for "Membership Fees" or "Donation" whichever you prefer. The form is on-line, and attached to the email accompanying this Newsletter.

Any questions, please contact the Treasurer, Abby Smith, abby.smith@otago.ac.nz

#### **NEWS FROM THE MEMBERSHIP**

**Emmy R. Wöss** - Emmy is pleased to inform IBA members that after her retirement now she has moved to the Natural History Museum in Vienna where she is in the position of an associated scientist in the 3<sup>rd</sup> Zoological Department. However, for practical reasons, she will continue to use her *email address* of the University of Vienna in future.

**Penny Morris** - If anyone is interested in my extensive bryozoan library, they may have it for \$1000.00. Caveat: whoever wants it must be responsible for picking up and shipping – contact Penny at <a href="mailto:PPPacifica@aol.com">PPPacifica@aol.com</a>

**Seabourne Rust** - Researchers from the National Taiwan University YiSheng Tan and Alex Jih-Pai Lin are studying the taphonomic history of the Penghu Fauna, or Taiwan Land-Bridge Fauna, an assortment of Pleistocene ice age vertebrate remains recovered from the seabed of the Penghu Channel. The bones of terrestrial animals have in this case been re-exposed during marine transgression to become 'benthic islands', providing localised reef-like habitats,

bored into or encrusted by a fauna that includes polychaetes, foraminiferans, barnacles and bryozoans. According to Alex: "all specimens are recovered from fishing vessels. So, the water depth ranges from 20 m to 200 m, within the photic zone in the inner shelf. Movement or substrate depends on the shape and the weight of individual bone elements. The fact that epibionts cover virtually all surfaces in some specimens, these specimens move from time to time, but not constantly because there is no severe wear/rounding of individual bones in most cases... The main driver of moving those bones on the seabed should be the turbidites derived from tropical storms or typhoons that occur annually." Paleontologist Seabourne Rust (NZ) has been assisting in identification and interpretation of these encrusters. We are wondering if there are any other IBA members who have experience with the modern bryozoans -or other epifaunal marine life of the Taiwan – SE Asia area, who may be interested in this study. Please contact either Alex <u>alexjplin@ntu.edu.tw</u>] or Seabourne [ <u>seabourne.rust@gmail.com</u> ] for more information.

Seabourne also continues to study Late Eocene fossil bryozoans from North Otago, New Zealand with Dennis, Daphne and others... see <a href="https://northotagobryozoa.blogspot.com">https://northotagobryozoa.blogspot.com</a>



**Andrew Ostrovsky** - This year I managed to obtain two research grants – (1) from the Russian Science Foundation to study bryozoan symbiosis with bacteria (3 years) and (2) from the Austrian Science Fund to study evolution of bryozoan oogenesis (4 years). Anyone who is interested to collaborate on those topics is welcome to contact me (oan univer@yahoo.com, andrey.ostrovskiy@univie.ac.at).

Because of the Austrian project, I can be also a host for a post-doc (or two?) in a frame of the ESPRIT programme (3 years) in Vienna. <a href="https://www.fwf.ac.at/en/research-funding/fwf-programmes/esprit-programme">https://www.fwf.ac.at/en/research-funding/fwf-programmes/esprit-programme</a>
This is an equal opportunity position, and applicants from minority groups are encouraged. You have to write your own project, and will get salary and extra money for research. The project should somehow intersect with mine own research (bryozoan functional morphology, ultrastructure, reproduction, evolution, taxonomy, palaeontology), but other options will be considered too. The ESPRIT (former Lise Meitner fellowship) is very competitive and you should have the strong publication record. So, if you already have several articles in good journals, then think about this option and contact me. Then we will discuss the possible topic, and I will explain what is required for such application. Two people already showed their interest and sent me their suggestions.

**Ksenia Serova** finished her PhD Thesis on evolution of the neuro-muscular system of cheilostome avicularia (<a href="https://link.springer.com/article/10.1007/s13127-022-00562-y">https://link.springer.com/article/10.1007/s13127-022-00562-y</a>) at the St Petersburg State University. The defense is scheduled on the 15 November, 2023 at the Zoological Institute, Russian Academy of Sciences, St Petersburg.

Last May **Eugeniy Bogdanov** defended his Master Thesis on the dynamics of the funicular bodies with symbionts in *Dendrobeania fruticosa* from the White Sea (<a href="https://www.nature.com/articles/s41598-022-26251-6">https://www.nature.com/articles/s41598-022-26251-6</a>), and will apply for the PhD fellowship at the St Petersburg State University.



### **ARTICLES**

### **WOOSUK UNIVERSITY, SOUTH KOREA, AGAIN HOSTS VISITING BRYOZOOLOGISTS**

by Dennis Gordon and Kamil Zágoršek

After a hiatus of six years, partly owing to the interruption of Covid-19, Professor Ji Eun Seo was able to again host visitors to the Department of Life Science at Woosuk University's Jincheon campus. For the last half of June, Kamil Zágoršek (Technical University of Liberec, Czechia) and Dennis Gordon (NIWA, New Zealand) were back in her lab to interact with old friends, meet new ones and contribute to furthering knowledge of Korea's bryozoan fauna. Kamil and Dennis were delighted to revisit and to see again Ji Eun, GeonWoo NOH (currently working on his doctorate) and Hyun Sook CHAE and Hojin YANG (both now undertaking postdoctoral work). They also met new masters student Dong Hee LEE, who is working on *Watersipora*. Ji Eun is not only a cheerful and generous host but also a superb team leader, and Kamil and Dennis really enjoyed the fantastic spirit of camaraderie among past and present students.

Kamil's focus was describing Pleistocene material that was discovered on Jeju Island in 2016, when he and Dennis (and also Judy Winston) last visited. It turned out that the fossils, mostly encrusters of molluscan shell, were located in a conservation area, so, in order to make the finding official and to enable publishing descriptions of the bryofauna, it was necessary to obtain permission from the local authority overseeing the area. This necessitated a very early-morning flight to Jeju Island for Kamil and Noh, who showed two officials the locality and, though it was raining at the time, collected some more fossils. They returned to Jincheon late the same night.

Noh is doing a morphomolecular study of lower cheilostomes in Korean waters, there being 20 species in families Electridae, Membraniporidae, Aeteidae, Scrupariidae, Thalamoporellidae and Steginoporellidae. Dennis undertook a taxonomic assessment of the species of interest, soliciting help from other members of the IBA community. Leandro Vieira kindly sent descriptions and images of key European and other *Aetea* species for comparison with the three Korean forms. Thanks to information provided by Phil Bock, it seems clear that putative *Labioporella bursaria* in the tropical western Pacific and Korea requires a new species name. Judy Winston contributed data and expert opinion on the status of *Steginoporella magnilabris* in Korea. And Andrea Waeschenbach generously contributed methodological advice and mitochondrial sequence data and data sources for several species. One earlier species record, determined in a 1990 publication to be *Membranipora serrilamella*, represents a taxon of uncertain identity. The specimen, lodged in Ewha University in Seoul, is a target for re-examination. Noh's work on lower cheilostomes will be of interest well beyond Korea.



Left- Breakfast together before field work in Wando area. Clockwise left to right: Chae, Dennis, Lee, Kamil, Ji Eun, Noh, Dr Seung-Goo Ra (director of Ocean Research, on hand for diver safety), Yang. Right - Dr Bumsik Min.

For the first weekend of their stay, Kamil and Dennis joined the rest of the team for a visit to the island of Wando in the southwestern corner of the Korean peninsula. We arrived late in the afternoon but had time to collect bryozoans from natural and anthropogenic substrata at a shore on nearby Sinjido Island. Here we were pleased to meet up again

with Bumsik MIN, who now works with the National Park Service at Yeosu. He was an integral part of the team on previous visits. When we remarked on how all on the team were such good friends, he said, "No, family!" Which summed it up nicely. The next day Kamil and Dennis joined Ji Eun, Yang and Lee on a kelp boat. *Membranipora villosa* is currently a major pest of laminarian kelp (*Saccharina japonica*) along the south coast of Korea and Ji Eun's lab is researching the growth dynamics of the bryozoan. For this project, numbered kelp plants are lifted onto the kelp boat. Then pre-tagged colonies of *M. villosa* are remeasured and new colonies are tagged so their growth rates can also be measured at periodic intervals. During a period of several hours Yang and Lee tagged and measured about 200 colonies, with the giant kelp resubmerged for later re-examination.





Left - Ready to head out on the kelp boat. Left to right: Chae, Dennis, Ji Eun, Lee, Noh. Right - Kelp boat with hooked grab.



Above - Kamil with kelp fronds. Overpage - measuring tagged Membranipora on kelp.



The following weekend, Noh drove Ji Eun, Dennis and Kamil two hours south to the National Marine Biodiversity Institute of Korea (MABIK) in the Seocheon district. The lobby of the building houses a striking multi-storey tower in which is a winding staircase surrounded by jars of preserved marine organisms. There are many spectacular displays and much to interest families and children. After lunch we visited the nearby National Institute of Ecology, a very impressive Korean version of Kew Gardens, which features, alongside research and administrative functions, outdoor and indoor collections of plants representing various plant biomes. Dennis was delighted to photograph a

globally rare plant family, Penthoraceae. Before heading back to Jincheon, we drove along the 33-km-long Saemangeum Seawall, the world's longest man-made dyke, separating the former Saemangeum estuary from the Yellow Sea. Our Korean visit ended in Seoul the following day, allowing Kamil to see this amazing city for the first time, culminating in an Italian-style dinner for the four of us and Ji Eun's daughter Erin in the Seoul Tower before dusk, with panoramic views over the cityscape changing as lights twinkled on everywhere. A magical ending to a magical trip.

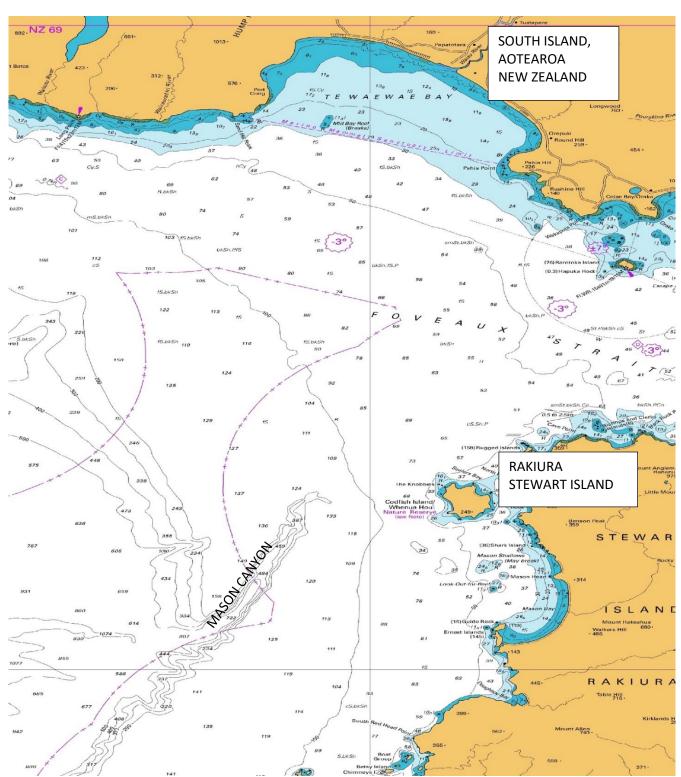


Left - National Marine Biodiversity Research Institute of Korea (MABIK). Right - Biodiversity tower in MABIK lobby.

Once again, our visit to Korea was a beautifully memorable experience, with full immersion in Korean cuisine, landscapes and bryozoans in the company of good friends. Kamil and Dennis are truly grateful to Ji Eun for the repeat invitation and for support from the National Institute of Biological Resources (NIBR) funded by the Ministry of Environment of the Republic of Korea and the Marine Biotechnology Program funded by the Ministry of Oceans and Fisheries of Korean Government (Marine Bryozoans Resource Bank of Korea—MBRBK).

## RESEARCH CRUISE TO MASON CANYON, SOUTHERN AOTEAROA NEW ZEALAND: REPORT Abby Smith

A group of ten scientists boarded the University of Otago *RV Polaris II* in mid-April 2023 for what proved to be a productive but short research cruise to Mason Canyon, west of Stewart Island (-46.7°S; 167.1°E). Contrary to previous experience in the Roaring Forties, it was flat calm and sunny and everything went very well.



A collection of seven seafloor dredges, at depths ranging from 100 to 750m, yielded bryozoans for mineralogical analysis (Ania Piwoni-Piorwicz); bryozoans for taxonomic and morphological work (Dennis Gordon, Lee Hsiang Liow, Hannah Mello); ctenostomes for Thomas Schwaha and the Vienna team; living *Otionellina* (Eckart Håkansson); *Hornera* (Peter Batson, Abby Smith); sponges for molecular work (Nathan Kenny, Katerina Achilleos); molluscs for taxonomic and museum collections (Kerry Walton, Hamish Spencer); and plenty of seabirds (Oscar Thomas).



Some of the team: Yuta Tamberg, Thomas Schwaha, Hannah Mello, Kerry Walton, Aaron Conroy, Tyler Feary.

Not all of us were able to actually go on the boat, but many of us convened in the laboratory afterwards or received excellent packages in the mail. Thanks to our helpers Tyler Feary, Aaron Conroy, Yuta Tamberg, and crew Bill Dickson, John Campbell, and Mark Elder.

# NEW GEOGRAPHICAL VARIETETS OF STATOBLASTS CRISTATELLA MUCEDO (PHYLACTOLAEMATA)

Vinogradov A.V., Kuzmina S.A.

Under the influence of environmental conditions (climatic, diet, temperature, illumination, water chemistry, seasonality), the number of spikes on statoblasts and tentacles in lophophore of *Cristatella mucedo* varies widely. According to M.A.Shakhanovskaya (1931), the number of spikes increases with an increase in the diameter of the statoblast. The size, number and shape of hooks and spikes vary widely. According to our data, statoblasts from the Moscow region are smaller, their cuticle is thinner and more flexible, unlike statoblasts from Transbaikalia (Vinogradov, 2011).

In this regard, the authors identify three new geographical varietets of *Cristatella mucedo* statoblasts:

- C. mucedo var. europaeus Vinogradov, Kuzmina, 2023;
- C. mucedo var. sibiriensis Vinogradov, Kuzmina, 2023;
- C. mucedo var. beringianus Vinogradov, Kuzmina, 2023.

Varietet *C. mucedo* var. *beringianus* is the largest of them, the *C. mucedo* var. *europaeus* variety is the smallest. This trend can be traced both on modern and fossil statoblasts. The specific dimensions of the statoblasts need to be clarified. Varietets are not subspecies, nor are they species, since they have few essential features. Images of various fossil statoblasts of *C. mucedo* are presented (photo by S.A.Kuzmina).



Photo 1,2,3 - Canada, Upper Liard River basin



Photo 4 - Moscow region, Ivantsevsky quarry near Dmitrov; Photo 5,6 - Central Yakutia, Vilyu River, Kyzyl-Syr section.

#### References:

- Vinogradov A.V. Phylactolaemata and Bryozoa of continental water bodies of Eurasia. Deutschland, Saarbrucken, Lambert Academic Publishing (LAP), 2011, v.1. Faunistics, ecology, zoogeography and evolution of the Phylactolaemata and Bryozoa of the continental water bodies of Eurasia. General bryozoology of continental water bodies of Eurasia: 350 p. The book is dedicated to bryozoologist G.A. Kluge.
- Виноградов A.B. Phylactolaemata и Bryozoa континентальных водоёмов Евразии. Deutschland, Saarbrucken, Lambert Academic Publishing (LAP), 2011, т.1. Фаунистика, экология, зоогеография и эволюция Покрыторотых Phylactolaemata и Мшанок Bryozoa континентальных водоёмов Евразии. Общая бриозоология континентальных водоёмов Евразии: 350 с. Книга посвящена бриозоологу Г.А.Клюге.
- Vinogradov A.V. Phylactolaemata and Bryozoa of continental water bodies of Eurasia. Deutschland, Saarbrucken, Lambert Academic Publishing (LAP), 2011, v.2. Taxonomy of Phylactolaemata and Bryozoa of the continental water bodies of Eurasia: 404 p. The book is dedicated to bryozoologist G.A. Kluge.
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- Shakhanovskaya M.A. On the taxonomy of freshwater Bryozoa // Proceedings of the 4th All-Union. Congress zool., anat. and histol. Kiev, May 6-12, 1930 Kiev Kharkiv, 1931. pp.66-67.
- Шахановская М.А. К вопросу о систематике пресноводных мшанок // Труды 4-го Всесоюзн. съезда зоол., анат. и гистол. Киев, 6 12 мая 1930 г. Киев Харьков,1931. С.66 67.

### ANATOLY VALENTINOVICH VINOGRADOV



A.V. Vinogradov on the Volga bank in the vicinity of Samara

In May 2023, Anatoly Valentinovich Vinogradov, a Soviet and Russian zoologist and ecologist, a specialist in freshwater bryozoa (Phylactolaemata), a member of the International Bryozoological Association since 1986, died after a serious illness. He was only 67 years old.

Vinogradov Anatoly Valentinovich was born in 1956. Even at school, he decided that he would do scientific research. In 1973, he entered the Faculty of Chemistry and Biology of the Samara State University (at that time the city was called Kuibyshev). Already in his first year, he chose an object of research – freshwater bryozoa, Phylactolaemata. In 1974, he made his first scientific report at a student conference. The topic is "The role of bryozoa in fouling". In 1978, Vinogradov graduated from the university, having defended his thesis "Ecological and systematic characteristics of bryozoa of the Samarskaya Luka". Later he worked in many regions of the Soviet Union: the Middle Volga (Samara region), Buryatia (Transbaikalia), Yakutia, Krasnoyarsk region. In any positions, on any trips, he examined local reservoirs for the presence of bryozoans. A.V. Vinogradov continued his scientific activity as a postgraduate student at the Paleontological Institute of the USSR Academy of Sciences (Moscow). In 1989 he defended his thesis for the degree of Candidate of Biological Sciences on the topic "Bryozoa of continental reservoirs of the USSR (modern and fossil)", specialty "paleontology and stratigraphy".

Later he expanded the topic of his research. He analyzed the species composition and distribution of freshwater bryozoans of Mongolia, Kazakhstan, Northern Eurasia, the Baltic province and other regions of the Palearctic. In 2003, a thesis for the degree of Doctor of Biological Sciences was prepared. The pre-defense was successfully held at the Zoological Institute of the Russian Academy of Sciences (St. Petersburg). However, it was not possible to defend the thesis due to illness. The research materials were published in 2011 as a monograph in two volumes "Phylactolaemata and Bryozoa of continental reservoirs of Eurasia".

Vinogradov was the curator of the collection of bryozoa of continental reservoirs of the Zoological Museum of Moscow State University, a member of the Commission on Bryozoa of the Problematic Council "Problems of Paleobiology and the development of the Organic World" of the USSR Academy of Sciences, and then the Russian Academy of Sciences.

Further work on the study of freshwater bryozoans led to the conclusion that Phylactolaemata are an independent phylum (type), significantly different from Eurystomata, marine bryozoa, Bryozoa proper. In recent years, Vinogradov has raised the question of the need to develop a special concept of the specia for colonial organisms, which are bryozoans. He was convinced, based, among other things, on paleontological data, that the evolution of freshwater bryozoa is very slow, the number of modern specia is small, and they practically do not differ from fossils.

In recent years, A.V. Vinogradov has been developing another topic – the biogeography of continental reservoirs, continuing the research of the Soviet zoologist Ya.I.Starobogatov. He sought to analyze the continental (that is, not related to the World Ocean) reservoirs of the entire globe, identified many new divisions, paying attention to thermal, underground, semi-continental reservoirs. The main works on this topic are published in the publishing house "LAP Lambert".

Anatoly Valentinovich was also actively engaged in public work in the field of ecology and nature protection, regional lore. He has published many popular science articles in newspapers and magazines. He worked in the Fish protection Inspectorate, at the institute studying fish stocks in Eastern Siberia, in regional lore museums. He was the director of the Samara Museum of Regional Lore for two years – during the difficult years of perestroika, he ensured the reorganization of the Museum and its relocation to a new building. He taught at universities, headed departments in four of them. He developed a program for the specialization "teacher-ecologist". He was twice elected Soros Associate Professor. He advised local media on environmental and nature conservation problems. A.V. Vinogradov was awarded the Order "Primus inter pares" for his significant contribution to the development of world science (from the European Scientific and Industrial Consortium ESIC and the Russian Academy of Natural Sciences). He was a member of several public academies. Since 2020, he has been the president of the Samara Public Humanitarian and Aesthetic Academy. A.V. Vinogradov has more than 1,500 publications – scientific, popular science, journalistic, including 92 volumes of monographs in personal authorship.

For 49 years, since the first year of university, A.V. Vinogradov has been engaged in scientific activity. He was, in a good sense of the word, a fanatic of science, continuing his research under any circumstances. He did not respect people who, having received an appropriate education, stopped doing science, strongly supported those who aspired to research, and despised those who neglected scientific reliability for personal gain.

There are few specialists in freshwater bryozoa in the world. Vinogradov's Soviet predecessor, G.A.Kluge, died in 1956, 10 months after the birth of A.V. Vinogradov. Vinogradov had no direct students, but he was sure that after some time there would be a person who would continue his research. Perhaps he has already been born.

### **Selected publications (in Russian)**

- Vinogradov A.V. Bryozoa. Proceedings of the Paleontological Institute of the USSR Academy of Sciences, vol. 213. Moscow, Nauka. Jurassic continental biocenoses of Southern Siberia and adjacent territories, 1985: 85-87, Table 7, Figures 1-4.
- Vinogradov A.V. Addition to the fauna of modern bryozoa (Bryozoa, Phylactolaemata) of Moscow region. Zoological journal, 1990, No.69, v.7: 142 144.
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- Vinogradov A.V. Taxonomic structure of the Phylactolaemata.—Bulletin of Zoology, Kiev, 2004, vol.38, v.6:3-14.
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- Vinogradov A.V. Phylactolaemata and Bryozoa of continental reservoirs of Eurasia. Deutschland, Saarbrucken, Lambert Academic Publishing (LAP), 2011, vol.2. Systematics of Phylactolaemata and Bryozoa of continental reservoirs of Eurasia: 404 p. The book is dedicated to bryozoologist G.A. Kluge.
- Vinogradov A.V. Biogeography of the continental reservoirs of the world, Phylactolaemata and Bryozoa. Deutschland, Saarbrucken, Lambert Academic Publishing (LAP), 2017, vol.1. Biogeography of Phylactolaemata and Bryozoa: 700 p. The book is dedicated to bryozoologist G.G.Abrikosov.
- Vinogradov A.V. Biogeography of the continental reservoirs of the world, Phylactolaemata and Bryozoa. Deutschland, Saarbrucken, Lambert Academic Publishing (LAP), 2018, vol.2. Biological diversity of Phylactolaemata and Bryozoa: 508 p. The book is dedicated to bryozoologist G.G.Abrikosov.

### **WINTERLARWOOD VIENNA 2023**

### WinterLarwood 2023

### 7th-9th December, Vienna, Austria



We cordially invite to a Bryozoology Meeting in December in Vienna. The dates are as following:

7th December: Icebreaker at 18:00

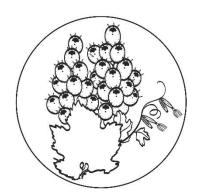
8<sup>th</sup> December: Talks

9th December: (Talks), social programme

According to initial responses all talks will probably take place on Friday, 8th. Depending on final group size, social activities will be announced later but will take place on Saturday, 9th. The venue for the talks will be announced soon.

For registration, please provide the following information and send this form back to <a href="mailto:thomas.schwaha@univie.ac.at">thomas.schwaha@univie.ac.at</a> until 30<sup>th</sup> September. Abstract deadline will be end of October.

Name:									
Affiliation:									
Presentation: talk		poster:							
Dietary requirements: omnivore		vegetarian		vegan					
We look forward to welcome and see you later this year for pre-Christmas time in									
Vienna. Best,									
Thomas & Team									



### **RECENT PUBLICATIONS**

The following list includes bryozoan related 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 redrafting is required by the editor accuracy is not guaranteed! Reprints will be gratefully received by the IBA archivist, Mary Spencer Jones.

- Bogdanov E.A., Vishnyakov A.E., Kotenko O.N., Grischenko A.V., Letarov A.V., Ostrovsky A.N. (2023) Seasonal dynamics of a complex cheilostome bryozoan symbiosis: vertical transfer challenged. Scientific Reports 13: 375.
- Bonfiglio L., Rosso A., Herridge V., Insacco G., Reitano A., Minniti G., Mangano G., Sanfilippo R. Pleistocene caves of Eastern Sicily: exceptional archives to reconstruct the history of island biota. Geosciences. 12(7), 258; https://doi.org/10.3390/geosciences12070258
- Bracchi V.A., Bazzicalupo P., Fallati L., Varzi A.G., Savini A., Negri M.P., Rosso A., Sanfilippo R., Guido A., Bertolino M., Costa G., De Ponti E., Leonardi R., Muzzupappa M., Basso D. 2022. The main builders of Mediterranean coralligenous: 2D and 3D quantitative approaches for its identification. Frontiers in Earth Science, Paleontology. 10:910522. doi: 10.3389/feart.2022.910522.
- Denisenko N.V., Denisrnko S.G. Large-Scale Variation in Diversity of Biomass-Dominating Key Bryozoan Species in the Seas of the Eurasian Sector of the Arctic. Diversity 2023, 15(5), 604;
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