

FROM THE PRESIDENT	1
NEWS FROM THE MEMBERSHIP	2
ARTICLES	3
MASSIVE STRANDING OF <i>ELECTRA PILOSA</i> ON THE COAST OF THE NETHERLANDS IN 2020/21	3
MEETING ANNOUNCEMENTS	6
IBA 2021 AUSTRALARWOOD X 17 TH LARWOOD MEETING	6
SHORT COURSE ANNOUNCEMENTS.....	7
'MONITORING MARINE ALIEN SPECIES IN PORTS WITH THE SERC PROTOCOL'	7
IN MEMORIUM.....	9
JACK GRANT-MACKIE	9
JOB OPPORTUNITIES	10
NATURALIS BIODIVERSITY CENTER.....	10
FUNDING OPPORTUNITIES	10
SYNTHESYS+ TRANS-NATIONAL ACCESS CALL 3 – LAUNCHES 15 MARCH	10
BOOKS.....	10
THE BIOGEOGRAPHY OF LAND WATER BODIES. GLOBAL REVIEW	10
JOURNAL COVERS.....	13
<i>CRIBRILARIA PROFUNDA</i> SP. NOV. – JOURNAL OF PALEONTOLOGY	13
RECENT PUBLICATIONS.....	14

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Antonieta Rosso, President
Catherine Reid, Secretary
Abigail Smith, Treasurer
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Comments regarding this Bulletin should be addressed to the IBA Secretary: catherine.reid@canterbury.ac.nz
Copies of the Bulletin are archived at the Natural History Museum London.

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

FROM THE PRESIDENT

Dear friends and bryozoan-lovers,

I hope our community and related families are doing well.

After more than one year-lasting isolation period, I think that we all wish to meet again to share some time, talks, activities, bryozoansand food! We all hope and I reasonably believe that the situation will soon improve, resolved with the spread of vaccines in the global population. Actually, we can already see improvements in some world regions, largely supported by data provided from the United Kingdom and Israel in the very last days.

However, although the general situation is promising for next future, it is not yet time to think about face-to-face meetings for the current 2021 year. Consequently and again, for this year we must be pleased to remain at distance but possibly safe, at home. For this reason, the IBA council decided to launch a Larwood web meeting for this year and you have the details from Abby Smith later in this newsletter (page 6). In this way, we can double the 2020 event, surely improved after that experience and the large and qualified staff at Abby's disposal.

The council also started a discussion about a decision to be possibly taken for next year, when our main three-year IBA meeting was scheduled to be held in Brazil. However, some concern exists about the present-day and even the possible future safety situation in that country next year. Taking into consideration the present lack of certainty about the future evolution of the pandemic and its influence on our mobility, the council suggested reassessing the situation in June hoping to have more clear views at that time.

Hoping you a safe state and a soon vaccination in a vaccinated community, all my best wishes

Antonietta



NEWS FROM THE MEMBERSHIP

Emanuela Di Martino - My new project **SELECT** will kick off on the 1st of April and will run for the next three years at the Natural History Museum Oslo.

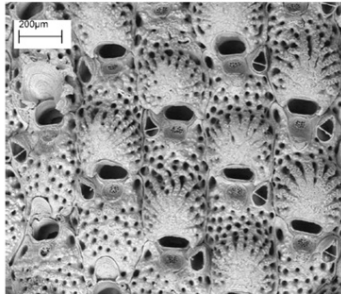


SELECT

*Fossil temporal dynamics of
phenotypic selection & life history evolution*



UiO • Naturhistorisk museum



Funded by the Research Council of Norway, **SELECT** will use fossil and modern colonies of *Microporella* from New Zealand to investigate phenotypic and life history evolution on geological time scales. Lee Hsiang Liow, Mali H. Ramsfjell, Arthur Porto and Kjetil L. Voje will be my precious collaborators. A postdoctoral position will also be available for 2 years starting from 2022 (more details soon).



Abby Smith - upcoming **Bryocruise** - Abby Smith's New Zealand bryozoan project is running a short cruise in late April, this time to Puysegur Bank, which runs off the southwest corner of the South Island (latitude 46.2°S). A remote and forbidding spot, with strong currents and waves, it is understandably under-sampled. We have found wonderful bryozoans there in the past, and are hoping to collect more, this time carefully preserving them for genetic and electron microscopic research. If you are looking for a particular taxon or specimen, let us know!



ARTICLES

MASSIVE STRANDING OF *ELECTRA PILOSA* ON THE COAST OF THE NETHERLANDS IN 2020/21.

Hans De Blauwe

Introduction

Electra pilosa is one of the most common Bryozoa on the Atlantic coast of Europe. It has several colony forms, both encrusting and erect. In 1967, H. Prigge describes spherical colonies with a diameter of 3 to 7 cm that allow themselves to be carried along by the current over the seabed and in the meantime grow in all directions. This growth form washed up on the Dutch coast and on the German Wadden islands. Prigge witnessed the massive washing up on Norderney Island. Ancient islanders had never seen anything like it. That means it probably happened for the first time after 1900 in 1965/66. There was odour nuisance and problems with bathing and fishing.

After that, a massive wash-up was no longer reported, until in 2020 many dozens of sightings with photos were posted on, among others, Waarneming.nl and on facebook. For the nature lover it provided beautiful images, the beach got knee-high moss animal cliffs and golden yellow moss carpets.



Left - *Electra pilosa*, spherical colony, beach of Katwijk, December 3d 2020, photo: Jacoline van Duijn Right - *Electra pilosa*, carpet of beached colony fragments, beach of Texel, December 18th 2020, photo: Sytske Dijksen

Massive stranding of bryophytes is a rare occurrence.

A massive wash up of moss animals, to the extent that it becomes a nuisance for the beach visitor or for the fishery, is a rare occurrence. Two of the following cases are an explosive increase in established colonies of an introduced species: *Amathia chimonidesi* (Gordon & Spencer-Jones, 2013) washed up in large packages in Auckland - New Zealand, so that the local population complained in a local newspaper.

Upright colony fragments of *Membraniporopsis tubigerum* (Osburn, 1940) were so abundant in New Zealand in 2001 that the fishing nets became clogged. The washed up bryozoans lay on the local beaches in stinking 20 cm thick packages. This suggests that the detached erect colony parts move along the bottom and Gordon et. al. (2006) suggest that the easy detachment of erect colony parts may be a dispersal mechanism. Two massive washings of the native *Electra pilosa* are known, on the German Wadden Islands in 1965/66 (Prigge, 1967) and on the Dutch coast in 1965 (Prigge, 1967) and in 2020/21.

Reproduction and establishment of *Electra pilosa*

Newly established ancestrulae and small colonies are mainly found in late summer and fall. Colonies with eggs and spermatozoa can be found in August and September. The breaking off of established colony parts can be an additional spreading mechanism.

The massive stranding of Hairy moss animal in 2020/21

On January 26, 2020, a large amount was reported on the beach of Egmond aan Zee. Taking into account the main settlement in August / September, these belong to the 2019 generation. On May 10, 2020, the KNMI announced code yellow for heavy gusts of wind for all coastal provinces. A quantity of *Electra pilosa* may have fallen loose from their substrate. From 19 to 21 May there is an off-shore easterly wind, in which loose material on the bottom is transported to land and they wash up en masse.

These are probably detached colonies on dead pieces of hydroids from 2019 that had not previously washed up and could still continue to grow. It suggested that there was still an enormous amount at sea, attached or loosely moving on hydroid fragments, which produced a mass of eggs from August onwards. They may then have established themselves en masse, including on the hydroid generation of 2020. The real mass beaching in North Holland starts on 6 November. *Electra* is deposited in carpets of hundreds of metres long, tens of metres wide and from 15 cm to knee high. From mid-December to February 2021, entire beach strips on Texel are covered under moss animals.



Electra pilosa, carpet of beached material forming a cliff, beach of Ijmuiden, November 27th 2020, photo: Mathias Deen

Sampling at sea

The NIOZ (Royal Netherlands Institute for Sea Research) has seen the amount of *Electra pilosa* increasing in samples in recent years, even at great distances from the coast. During the massive washing up of moss animals in 2020, NIOZ happened to conduct benthos research along a large part of the North Holland coast up to the west point of Terschelling. Between December 7 and 14, a total of 70 stations were sampled with the Triple D plane. A strip of

bottom 20 cm deep and 20 cm above the bottom was sampled over a strip of 50 metres long. So in total 10 square metres. The total area in which was sampled was approximately 3800 km².

All live animals are counted and measured from the catches. In the case of *Electra pilosa*, the wet weight has been determined. Amounts per station varied between 55 and 5800 grams per 10 square metres. North of the Texel stones (halfway Texel) no *Electra pilosa* was found in the catches. This suggests that the massive presence of material on the Texel beach was fed by transport from the south.

The sampled area where *Electra pilosa* was found in all catches spans 2300 km², the amount of animals caught is on average 37.7 grams per 1 m². This means roughly 86 thousand tons of *Electra pilosa* on the seabed. We probably only see a small part of it washing up on our beaches.

How can this increase in *Electra pilosa* be explained?

A first possibility is an increase in substrate. In recent years, many windmills have been built on the Dutch border in Belgium and in Dutch waters. On the basis of those windmills there is a lot of space for all kinds of organisms, including hydroids and moss animals. Another theory is the changed fishing pressure and fishing methods, so that the soil is less disturbed, so that shell tube worm fields of the polychaete *Lanice conchilega* and hydroid fields can develop better.



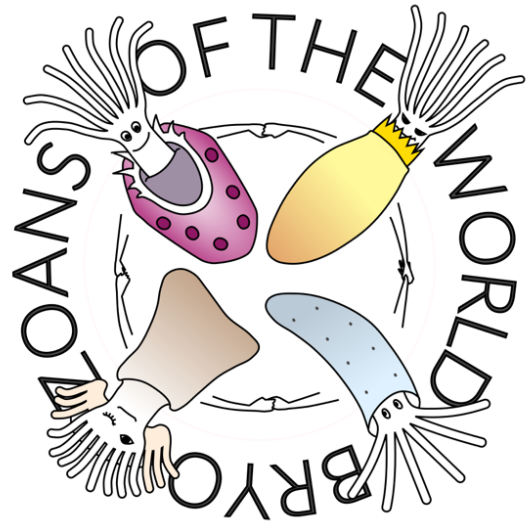
MEETING ANNOUNCEMENTS

Preliminary Notice

IBA 2021 AUSTRALARWOOD X 17TH LARWOOD MEETING

“Bryozoans of the World”

*Bryozoology meetings are combining
on-line in this unusual year*



Where

Prof Abby Smith and her many students will host the meeting, based at University of Otago. We will, of course, do our best accommodate the time-zones of speakers and listeners.

Timing

The Larwood is traditionally held in June and the Australarwood is often in February, with a view to having our meetings in summer. This time, we can hold it anytime (after June).

Please go to the link below and register your preference for timing in the Doodle poll. You can click any box once for YES (green tick), twice for MAYBE (yellow tick), or not click for NO (blank).

https://doodle.com/poll/xw5q66qsbyz6gat4?utm_source=poll&utm_medium=link

This doodle poll will close at the end of April.

Approach – we need your help

Many of you will have attended on-line conferences and workshops over the last year. What worked? What didn't?

Please send ideas and feedback.

We do not expect to require any registration fee. We do hope to be able to offer prizes for the best student talk.

What do you think about posters on-line? A competition for best photo?

We plan to ask participants to record their talks for later uploading, so that those who were asleep can still hear them.

We think we might use Breakout Rooms to enable chat and connections, bring your own cup of coffee/tea.

Our preference is to use Zoom as our connector – do you have thoughts about that?

Stay in touch

Please email Abby to register your interest, and to provide your ideas.

Don't forget to do the Doodle poll.

Everyone who registers interest will be sent the Call for Abstracts in May.

Email: abby.smith@otago.ac.nz

Bryozoans of the World
artwork by:

Yuta Tamberg



SHORT COURSE ANNOUNCEMENTS

'MONITORING MARINE ALIEN SPECIES IN PORTS WITH THE SERC PROTOCOL'

Announcement

The second edition of the Summer School on '**Monitoring marine alien species in ports with the SERC protocol**' Pavia (Italy), originally expected in 2020, has been rescheduled with a new '*blended learning*' format.

New dates: June 28 - July 2, 2021.

This summer school, organised by the University of Pavia (Italy) and the Smithsonian Environmental Research Center (USA), is open to professionals, public/private employees, researchers, master/PhD students with a marine biology background and/or involved in marine bioinvasion monitoring.

Participants will be instructed to monitor ports using the method conceived and successfully applied for over 25 years in the United States by the Smithsonian Environmental Research Center. Moreover, experts of different taxonomic groups will provide lectures and laboratory activities on the identification of the most common fouling species of port habitats, with a focus on cryptogenic and alien invertebrate species.

Due to Covid-19 restrictions, this second edition of the school will be organized with a **blended learning** modality: **12 places** are available for the **traditional place-based classroom** at the University of Pavia, Italy (including lectures + field trip + laboratory training), and additional **unlimited places** are available to attend the **online lectures** via Zoom.

Deadlines:

- Submission of the application: April 19, 2021
- Communication to participants (Admission to the Summer School): May 3, 2021
- Payment of participation fee: May 31, 2021

Instructions for application and complete programme available at: <http://aliensummerschool.unipv.it>
For info: ecolab.unipv@gmail.com ;

Aquatic Ecology Lab-Pavia (Facebook page: <https://www.facebook.com/ecolabPV/>)

For more information contact Jasmine Ferrario jasmine.ferrario@unipv.it





Monitoring marine alien species in ports with the SERC protocol



NEWS! Blended learning: Either traditional classroom or online learning! *

International Summer School

**June 28 –
July 2, 2021**
University of Pavia
Italy



Via Sant'Epifanio 14
Pavia

Complete program and infos on the
official Summer School website:
<http://aliensummerschool.unipv.it/>

This summer school will instruct participants to monitor ports using a method that has been conceived and successfully applied for over 20 years in the United States by the Smithsonian Environmental Research Center (SERC, USA).

Experts of different taxonomic groups will provide lectures and laboratory activities to instruct participants on the identification of the most common fouling species of port habitats, with a focus on cryptogenic and alien invertebrate species.



Maximum number of
admitted participants: **12***

Language of the school: **English**

Deadlines

April 19, 2021 - Submission of application
May 3, 2021 - Communication to participants
May 31, 2021 - Payment of participation fee

Lecturers

Marco Bertolino - Italy
Alfonso A. Ramos Esplá - Spain
Cinzia Gravili - Italy
Erica Keppel - USA
Jasmine Ferrario - Italy
Agnese Marchini - Italy
Anna Occhipinti - Italy



ecolab.unipv@gmail.com

Aquatic Ecology Lab-Pavia

@abrickagainstalienspecies

*only 12 students can attend the lectures, laboratory and field work activities live at the University of Pavia, but UNLIMITED places are available to attend the lectures online:

Far away but close!

JACK GRANT-MACKIE

1932-2021



Photo from the Geoscience Society of New Zealand website. (photo - Bruce Hayward)

John Augustus (Jack) Grant-Mackie (1932-2021) passed away recently in Auckland, New Zealand. Jack was not a member of the IBA, but will be known to many who attended the 1996 Wellington meeting, and through his publications with Priska Schafer and Andrej Ernst on Triassic bryozoans.

Jack graduated from Auckland University with a BSc in 1954, and then an MSc in 1957 on stratigraphy and palaeontology of Triassic-Jurassic rocks. He started as a lecturer at Auckland University in 1958, whilst completing his PhD, which with all that goes with academic life he did not get completed until 1974. His thesis was entitled “The stratigraphy and taxonomy of the Upper Triassic bivalve *Monotis* in New Zealand”. Jack’s career focus was on molluscs, especially *Monotis* and *Inoceramus* and their application in biostratigraphy, and he was internationally recognised for this. He also attended a conference in Peking in 1964, where within NZ geology circles at least, he famously met Chairman Mao. This meeting was because of his achievements in science with *Monotis*, rather than politics, however Jack was also a member of the NZ communist party, and the photo of him meeting Mao still held a spot on his office wall when I was a student in the mid 90’s.

Jack didn’t restrict himself to Mesozoic molluscs however, and his passion for good science and stratigraphy led him to work with younger rocks as well as branching out into vertebrates, pollen, plants, forams, barnacles and of course bryozoans. Jack was a major figure in the New Zealand palaeontological scene known not only for his research output and quality science, but also his sense of fairness and social justice, and his promotion of Māori language and culture. He supervised a huge number of students all who would have benefited from his attention and support both in the field and at write up time. Jack supervised my MSc thesis on Miocene stratigraphy and palaeoecology, and was partly responsible for my introduction to the existence of bryozoans when he came to visit me in the field after the Wellington IBA meeting, and brought Priska Schafer with him. That trip was also the only time I remember being properly scolded by Jack – for having the audacity to wash my hands before I got the beers out of the fridge at the end of the day.

Jack will be sorely missed in New Zealand and palaeontology has lost one of its true characters.

Catherine Reid

- Ernst, A., Schäfer, P. & Grant-Mackie, J. A. (2015). New Caledonian Triassic Bryozoa. *Journal of Paleontology*, 89(5), 730-747.
- Schäfer, P. & Grant-Mackie, J. A. (1998). Revised systematics and palaeobiogeography of some Late Triassic colonial invertebrates from the Pacific region. *Alcheringa*, 22(2), 87-122.
- Schäfer, P. & Grant-Mackie, J. A. (1994). Triassic Bryozoa from the Murihiku and Torlesse Super-groups, New Zealand: Association of Australasian Palaeontologists Memoir 16.



JOB OPPORTUNITIES

NATURALIS BIODIVERSITY CENTER

Two senior research positions and two postdoctoral positions are available at Naturalis.
Note the closing date is the 19th April 2021.

<https://www.naturalis.nl/en/vacatures/two-senior-researchers-and-two-post-doctoral-fellows>

FUNDING OPPORTUNITIES

SYNTHESYS+ TRANS-NATIONAL ACCESS CALL 3 – LAUNCHES 15 MARCH

SYNTHESYS+, the NHM-led consortium of Europe's most prestigious natural history institutions, is inviting new applications for **Transnational Access** funding for short-term research visits to partner institutions. Access to world class collections, facilities and expertise is being offered by 21 partner institutions across 13 European countries. The *Access Call 3* will open for applications on 15 March 2021. **The Call 3 deadline will be 17.00 (UK time,) Thursday 15 April 2021.**

Colleagues are invited to apply during this month-long period.

Access to world class collections, facilities and expertise is being offered by 21 partner institutions across 13 European countries.

Although COVID-19 related restrictions are in place across the whole SYNTHESYS+ consortium, the Call including the User Selection Panels to score and award applications are planned to take place as usual so that successful projects can go ahead once travel and collections/facilities restrictions are lifted.

Information on how to apply for a funded visit to any of the participating institutions can be found at www.synthesys.info/access/transnational-access.

SYNTHESYS+ is the fourth iteration of the EC-funded SYNTHESYS project which to date has funded over 54,000 researcher days via more than 4,400 projects, resulting in c.5,000 research outputs.

The second **Virtual Access** call will open later this Spring and further details on the Virtual Access, Transnational Access and all other SYNTHESYS activities are on the website: www.synthesys.info.

BOOKS

THE BIOGEOGRAPHY OF LAND WATER BODIES. GLOBAL REVIEW

Translations from Russian

Vinogradov A.V.

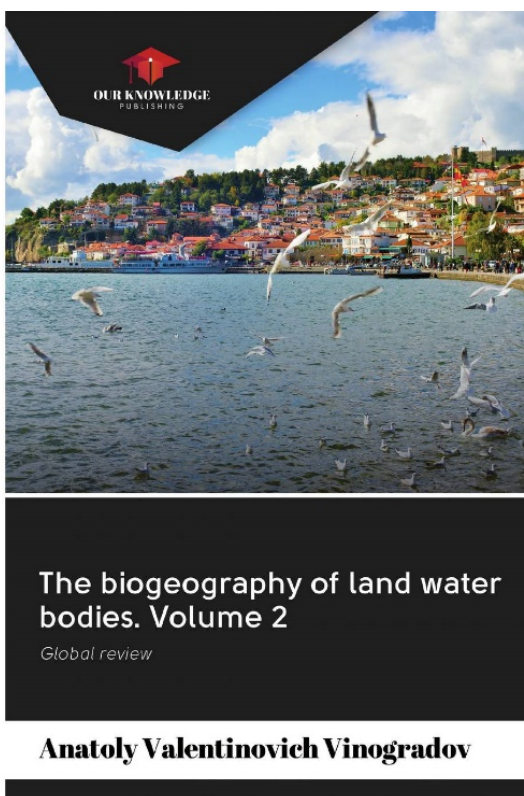
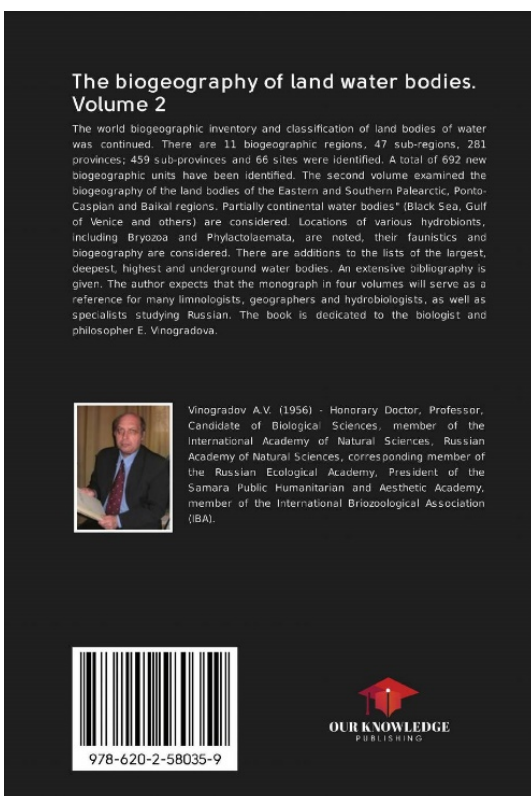
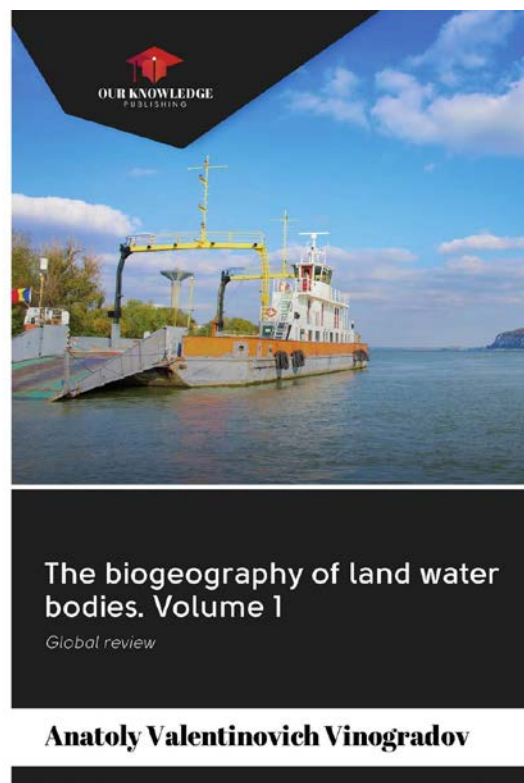
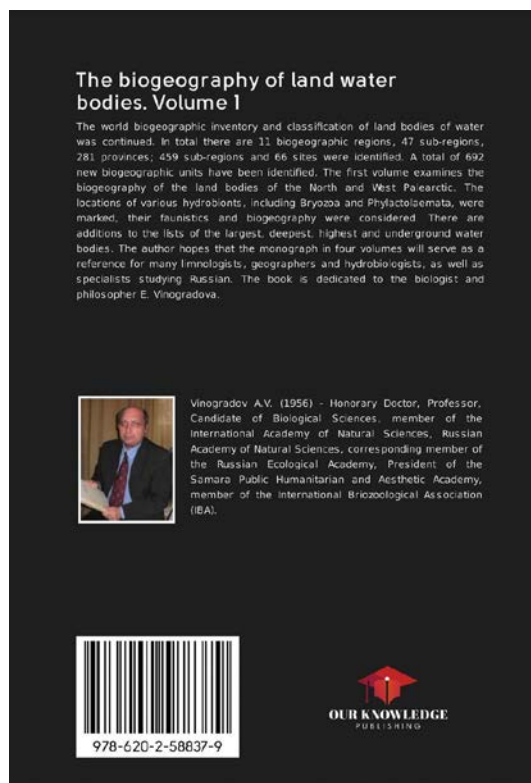
Devoted to biologist and philosopher Ekaterina Yu. Vinogradova.

The book is in 4 volumes in Russian was published in January 2020 (v.1 – January, 9; v.2 – January, 13; v.3 – January, 20; v.4 – January, 28). The book was translated from Russian into English, German, French, Danish, Italian, Spanish, Portuguese, Polish and published in the publishing house «Scienia Scripts» (32 volumes in 8 languages) since June 2020.

Unfortunately, the translations are inaccurate. During the translation, many mistakes were made, including in geographic, hydrological and biological terminology. The author did everything he could and does so that the translations are of high quality. The main basis for them is the first version of the book in four volumes in Russian. The author advises readers to refer to this version of the book to clarify misunderstandings and a more complete and correct understanding of the main content of the book. The author also hopes that translations into national languages will help readers navigate the Russian text and scientific issues.

Monographs by A.V.Vinogradov "The biogeography of land water bodies. Global review" (2020) in four volumes in Russian and "Biogeography of underground water bodies. Catalogization and classification" (2020, one volume) in Russian constitute a pentology (quintet). The most complete and best version of geographical terminology is presented in the book by A.V.Vinogradov "Biogeography of underground water bodies. Catalogization and classification" (2020) in Russian.

For the full reference citation for each of these volumes please see the reference list at the end of the newsletter – *Editor*.



The biogeography of land water bodies. Volume 3

The world biogeographic inventory and classification of land bodies of water was continued. In total there are 11 biogeographic regions, 47 sub-regions, 281 provinces; 459 sub-provinces and 66 sites were identified. A total of 692 new biogeographic units have been identified. The third volume deals with the land biogeography of the Sino-Indian region, Africa and America. Partially continental water bodies" (Hudson Bay and others) are considered. Locations of various hydrobiota, including Bryozoa and Phylactolaemata, are noted, their faunistics and biogeography are considered. There are additions to the lists of the largest, deepest, highest and underground water bodies. An extensive bibliography is given. The author expects that the monograph in four volumes will serve as a reference for many limnologists, geographers and hydrobiologists, as well as specialists studying Russian. The book is dedicated to the biologist and philosopher E. Vinogradova.



Vinogradov A.V. (1956) - Honorary Doctor, Professor, Candidate of Biological Sciences, member of the International Academy of Natural Sciences, Russian Academy of Natural Sciences, corresponding member of the Russian Ecological Academy, President of the Samara Public Humanitarian and Aesthetic Academy, member of the International Briozological Association (IBA).



978-620-2-58050-2



Vinogradov



The biogeography of land water bodies. Volume 3

Global review

Anatoly Valentinovich Vinogradov

The biogeography of land water bodies. Volume 4.

The world biogeographic inventory and classification of land bodies of water was continued. There are 11 biogeographic regions, 47 sub-regions, 281 provinces; 459 sub-provinces and 66 sites were identified. A total of 692 new biogeographic units have been identified. Volume 4 considers the biogeography of land bodies of water in Australia, Tasmania, New Guinea, New Zealand, Oceania and Antarctica. The biogeography of various intermediate reservoirs is discussed, including underground reservoirs, springs, geysers, permafrost swamps, marshes, wadis, river deltas, estuaries, lagoons, bodies of oceanic islands, glaciers, icebergs, temporary reservoirs, fords, partially continental water bodies*, political and monotypic provinces, watersheds, interstitial and soil hydrobiota, hydrobiology and problems of preserving biogeographical diversity of land bodies of water are considered. The locations of various hydrobiota, including Bryozoa and Phylactolaemata, have been noted and their faunistics and biogeography have been considered. There are additions to the lists of the largest, deepest, highest and underground water bodies. The book is dedicated to the biologist and philosopher E.Y. Vinogradova.



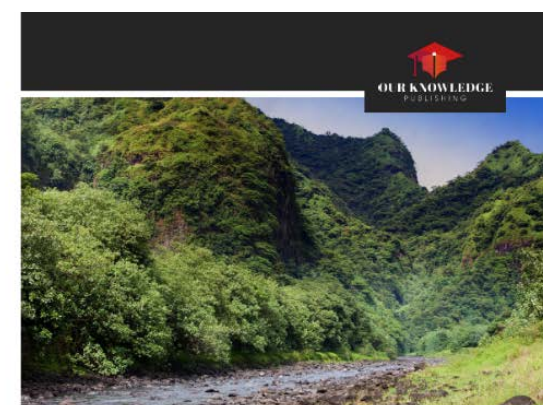
Vinogradov A.V. (1956) - Honorary Doctor, Professor, Candidate of Biological Sciences, member of the International Academy of Natural Sciences, Russian Academy of Natural Sciences, corresponding member of the Russian Ecological Academy, President of the Samara Public Humanitarian and Aesthetic Academy, member of the International Briozological Association (IBA).



978-620-2-59305-2



Vinogradov



The biogeography of land water bodies. Volume 4.

Global review

Anatoly Valentinovich Vinogradov



JOURNAL COVERS

CRIBRILARIA PROFUNDA SP. NOV. – JOURNAL OF PALEONTOLOGY

Cribrilaria profunda sp. nov. from the Pleistocene of Sicily made it to the cover of *Journal of Paleontology*



Rosso A., Di Martino E.* & Ostrovsky A.N. (2020) Cribrilinid bryozoans from Pleistocene Mediterranean deep-waters, with the description of new species. *Journal of Paleontology*, 95, 268–290. <https://doi.org/10.1017/jpa.2020.93>

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 re-drafting is required by the editor accuracy is not guaranteed! Reprints will be gratefully received by the IBA archivist, Mary Spencer Jones.

ALMEIDA, A. C. S.; SOUZA, F. B. C.; VIEIRA, L. M. 2021 Free-living bryozoans (Cheilostomatida, Cupuladriidae) from northeastern and northern Brazil. *Zootaxa*, v. 4933, p. 39-62.

ALMEIDA, A. C. S.; SOUZA, F. B. C.; VIEIRA, L. M.; NOGUEIRA, M. 2020. Influence of depth on bryozoan richness and distribution from the continental shelf of the northern coast of Bahia State, north-eastern Brazil. *Anais da Academia Brasileira de Ciências*, v. 92, p. 1, 2020.

Achilleos, K., Jimenez, C., Berning, B. & Petrou, A. 2020. Bryozoan diversity of Cyprus (eastern Mediterranean Sea): first results from census surveys (2011–2018). *Mediterranean Marine Science* 21(1): 228–237. <http://dx.doi.org/10.12681/mms.21201>

Barnes, D.K.A., Ashton, G.V., Morley, S.A. et al. 2021. 1 °C warming increases spatial competition frequency and complexity in Antarctic marine macrofauna. *Commun Biol* 4, 208 (2021). <https://doi.org/10.1038/s42003-021-01742-w>

Belmonte G., Guido A., Mastandrea A., Onorato R., Rosso A., Sanfilippo R. 2021. Animal forests in submarine caves. In: Rossi S., Bramanti L. eds, *Perspectives on the Marine Animal Forests of the World*, https://doi.org/10.1007/978-3-030-57054-5_5 Springer Nature Switzerland.

Brasier M, Barnes D, Bax N, Brandt A, Christianson A, Constable AJ, Downey R, Figuerola B, Griffiths H, Gutt J, Lockhart S, Morley SA, Post A, Van de Putte A, Saeedi H, Stark JS, Sumner M, Waller C. Responses of Southern Ocean seafloor habitats and communities to global environmental changes. *Frontiers in Marine Science* 8:622721. <https://www.frontiersin.org/articles/10.3389/fmars.2021.622721/abstract>

Costa G., Bavestrello G., Cattaneo-Vietti R., Dela Pierre F., Lozar F., Natalicchio M., Violanti D., Pansini M., Rosso A., Bertolino M. 2021. First siliceous sponge spicules record at the northern edge of the Mediterranean basin preceding the Messinian Salinity Crisis. *Facies*. (2021) 67:9, <https://doi.org/10.1007/s10347-020-00619-4>

Decker, S. H., Gordon, D. P., Spencer Jones, M. E., & Schwaha, T. (2021). A revision of the ctenostome bryozoan family Pherusellidae, with description of two new species. *Journal of Zoological Systematics and Evolutionary Research*. 2021;00:1–18. DOI: 10.1111/jzs.12466

Denisenko N.V. 2020. Species richness and the level of knowledge of the bryozoan fauna of the Arctic region. *Proceedings of Zoological Institute of RAS*, v.324 (3), p. 353-363.

Di Martino E. & Liow L.H. (2021) Trait-fitness association do not predict within-species phenotypic evolution over 2 million years. *Proceedings of the Royal Society B: Biological Sciences*, 288, 20202047. <http://doi.org.ezproxy.uio.no/10.1098/rspb.2020.2047>

Di Martino E. & Liow L.H. (2021) Larger offspring associated with lower temperatures across species of *Microporella*, a widespread colonial invertebrate. *Marine Ecology Progress Series*. <https://doi.org.ezproxy.uio.no/10.3354/meps13656>

Ernst, A., Krainer, K. Schönlaub, H.-P. & Vachard, D. (2021): Bryozoans, foraminifers, algae, and sedimentological characteristics of an exotic limestone block of the late Viséan Kirchbach Formation, Carnic Alps, Austria. – *Bulletin of Geosciences*, **96**(2), 181–194.

- Ernst, A., Li, Qi-j., Zhang, M. & Munnecke, A. (2021): Bryozoans from the lower Silurian (Telychian) Hanchiatien Formation from southern Chongqing, South China. *Journal of Paleontology*, **95**(2): 252–267.
- Figuerola B, Hancock AM, Bax N, Cummings V, Downey R, Griffiths H, Smith J, Stark JS. A review and meta-analysis of potential impacts of ocean acidification on marine calcifiers from the Southern Ocean. *Frontiers in Marine Science* 8:584445. <https://www.frontiersin.org/articles/10.3389/fmars.2021.584445/full>
- FARIAS, J.; SOUZA, F. B. C.; VIEIRA, L. M.; ALMEIDA, A. C. S. 2020. On some Smittinidae (Bryozoa, Cheilostomata) from Bahia, north-eastern Brazil, with the description of a new species. *Marine Biodiversity*, v. 50, p. 72, 2020.
- Gontar, V. 2021. *Plumatella astrachanensis*, new species of freshwater Bryozoa (Phylactolaemata) from the Volga River (Russia). *Biologicheskij zhurnal*, № 1 (23), 2021. (In Russian)
- Grech D., van de Poll B., Bertolino M., Rosso A., Guala I. 2020. Massive stranding event revealed the occurrence of an overlooked sponge ecosystem engineer in Sardinia (Italy, Western Mediterranean). *Marine Biodiversity*, 50 (5):82. 12 pp. <https://doi.org/10.1007/s12526-020-01105-4>
- d'Hondt, V.L. 2019. Current knowledge on the larval primordial digestive tract of Alcyonidium polyomm (Hassall) (Bryozoa, Ctenostomata). *Bull. Soc. Zool. Fr.*, 2019, 144 (2): 79-88.
- d'Hondt, V.L. 2019. On the possible systematical interest of the cytoplasmic preticular inclusions in the Bryozoa larvae. *Bull. Soc. Linn. Lyon*, 2019, 88 (9-10): 205-220.
- d'Hondt, V.L. 2020. Considerations on the divergent evolution of the stem cells in Bryozoans: the case the larval infracoronal cells. *Bull. Soc. zool. Fr.* 2020, 145 (3): 215-224.
- d'Hondt, V.L. 2020. Purposes and interrogations of the phylogenetic relationships in the branch of the Bryozoa. *Bull. mens. Soc. Linn. Lyon*, 89 (9-10): 251-265.
- d'Hondt, V.L. 2020. Main actors of evolution of the systematics in the Bryozoa. *Bull. Soc. linn. Bordeaux*, 2020, 155, N. S., 48 (2/3): 151-158.
- d'Hondt, V.L. 2020. Eurystome Bryozoans: a mosaic of structural and ontogenetic characters. *Bull. Soc. zool. Fr.* 2020, 145 (3): 199-213.
- d'Hondt, V.L. 2020. Tabular keys for the determination of the major phylogenetic lineages in Bryozoa. *Bull. Soc. zool. Fr.* 2020, 145 (2): 169-177.
- d'Hondt, V.L. 2020. In memoriam: In memory of Max Goyffon (1935-2020). *Bull. Soc. zool. Fr.*, 2020, 145 (4): 359-363.
- d'Hondt J.-L. & P. Wyse-Jackson) Françoise Bigey (1941-2019). *The Palaeontology Newsletter*, 2020, 104: 83-84.
- Lombardi, C., Taylor, P. D. & Cocito, S. 2021. Bryozoans: the 'forgotten' bioconstructors. Pp. 193–217 in Rossi, S. & Bramanti, L. (eds) *Perspectives on the marine animal forests of the world*. Springer, Cham.
- LOPEZ-GAPPA, J.; PEREZ, L.; ALMEIDA, A. C. S.; ITURRA, D.; GORDON, D.; VIEIRA, L. M. 2021. Three new cribrimorph bryozoans (order Cheilostomatida) from the early Miocene of Argentina, with a discussion on spinocystal shield morphologies. *Journal of Paleontology*, v. 1, p. 1-15, 2021.
- Ma, J., Taylor, P. D. & Buttler, C. J. 2021. Sclerobionts associated with Orbiramus from the Early Ordovician of Hubei, China, the oldest known trepostome bryozoan. *Lethaia*, <https://doi.org/10.1111/let.12413>.

- NASCIMENTO, K. B.; MIGOTTO, A. E.; FEHLAUER ALE, K. H. Molecular data suggest the worldwide introduction of the bryozoan *Amathia verticillata* (Ctenostomata, Vesiculariidae). *Marine Biology*, v. 168, p. 32, 2021. <https://link.springer.com/article/10.1007/s00227-021-03837-8>
- Orr R.J.S., Sannum M.M., Boessenkool S., Di Martino E., Gordon D.P., Mello H., Obst M., Ramsfjell M.H., Smith A.M. & Liow L.H. (2021) A molecular phylogeny of historical and contemporary specimens of an under-studied micro-invertebrate group. *Ecology and Evolution*, 11, 309–320. <https://doi-org.ezproxy.uio.no/10.1002/ece3.7042>
- RODRIGUES, J.; ALMEIDA, A. C. S.; VIEIRA, L. M. 2020. New species of *Stylopoma* (Bryozoa, Cheilostomata) from Bahia State, northeastern Brazil. *Zootaxa*, v. 4786, p. 516-534, 2020.
- Rosso A., Reitano A., Sanfilippo R. 2020. Cemented on the rock. A Pleistocene outer shelf lithobiont community from Sicily, Italy. In: Sciuto F. ed. Quaternary sedimentary successions, *Geosciences*, 10, 343; doi:10.3390/geosciences10090343, 18 pp.
- Rosso A., Gerovasileiou V., Di Martino E. 2020. Really Onychocellids? Revisions and new findings increase the astonishing bryozoan diversity of the Mediterranean Sea. In: Crocetta F. ed. Benthic Biodiversity in the Northeastern Atlantic and the Mediterranean Sea, *Journal of Marine Science and Engineering*, sec. Marine Biology, 8(11):904, DOI:10.3390/jmse8110904.
- Rosso A., Di Martino E., Ostrovsky A.N. 2020. Cribrilinid bryozoans from Pleistocene Mediterranean deep-waters, with description of new species. *Journal of Palaeontology*, 1-23 pp. doi: 10.1017/jpa.2020.93
- Rosso A., Sanfilippo R., Guido A., Gerovasileiou V., Taddei Ruggiero E., Belmonte G. 2021. Colonisers of the dark: biostalactite-associated metazoans from “lu Lampiùne” submarine cave (Apulia, Mediterranean Sea). *Marine Ecology*. 2021;42:e12634. 15 pp. <https://doi.org/10.1111/maec.12634>
- Vinn, O., Ernst, A., Wilson, M. & Toom, U. (2021): Symbiosis of cornulitids with the cystoporate bryozoan *Fistulipora* in the Pridoli of Saaremaa, Estonia. – *Lethaia*, **54**: 90-95.
- Vinogradov A.V. The biogeography of land water bodies. Global review. – Deutschland, Saarbrücken, Scientia Scripts, Our Knowledge Publishing, 2020, v.1: 476 p.; v.2: 424 p.; v.3: 424 p.; v.4: 450 p.). The book is devoted to biologist and philosopher Ekaterina Yu. Vinogradova. In English. Translation from Russian [Виноградов А.В. Биogeография водоёмов суши. Глобальный обзор. – Deutschland, Saarbrücken, Lambert Academic Publishing (LAP), 2020. В 4-х томах; на русском языке. Том 1 (688 с.); т.2 (600 с.); т.3 (610 с.); т.4 (688 с.). Книга посвящена биологу и философу Е.Ю.Виноградовой]. ISBN v.1: 978-620-2-58837-9; ISBN v.2: 978-620-2-58035-9; ISBN v.3: 978-620-2-58050-2; ISBN v.4: 978-620-2-59305-2.
- Vinogradov A.V. The biogeography of land water bodies. Global review. – Deutschland, Saarbrücken, Lambert Academic Publishing (LAP), 2020. Vol.1 (688 p.); v.2 (600 p.); v.3 (610 p.); v.4 (688 p.). The book is devoted to biologist and philosopher Ekaterina Yu. Vinogradova. In Russian. [Виноградов А.В. Биogeография водоёмов суши. Глобальный обзор. – Deutschland, Saarbrücken, Lambert Academic Publishing (LAP), 2020. В 4-х томах; на русском языке. Том 1 (688 с.); т.2 (600 с.); т.3 (610 с.); т.4 (688 с.). Книга посвящена биологу и философу Е.Ю.Виноградовой]. ISBN v.1: 978-620-0-50260-5; ISBN v.2: 978-620-0-53098-1; ISBN v.3: 978-620-0-53714-0; ISBN v.4: 978-620-0-53820-8.
- Vinogradov A.V. Biogeography of underground water bodies. Catalogization and classification. – Deutschland, Saarbrücken, Lambert Academic Publishing (LAP), 2020: 490 p. The book is dedicated to the zoologist and speleologist Ya.A.Birshtein. In Russian. [Виноградов А.В. Биogeография подземных водоёмов. Каталогизация и классификация. – Deutschland, Saarbrücken, Lambert Academic Publishing (LAP), 2020: 490 с. Книга посвящена зоологу и спелеологу Я.А.Бирштейну]. ISBN: 978-620-3-19486-9.
- Famous-scientists: encyclopedia. – Moscow, Academy of Natural History Publishing House, 2020, v.16: 614 p. [Vinogradov Anatoly Valentinovitch – p.136 - 141; Vinogradova Ekaterina Yurievna – p.142 - 143]. Dedicated to the 25th anniversary of the Russian Academy of Natural History. Editors M.Yu.Ledvanov, N.Yu.Stukova. ISBN

978-5-91327-621-6. In Russian. [Известные учёные: энциклопедия. – Москва, Издательский дом Академии Естествознания, 2020, т.16: 614 с. (Виноградов Анатолий Валентинович: с.136 - 141; Виноградова Екатерина Юрьевна: с.142 – 143). Юбилейный выпуск к 25-летию Российской Академии Естествознания; под редакцией М.Ю.Ледванова, Н.Ю.Стуковой].