## **ISSUE #174 I APRIL 2022**

The Newsletter of the International Association of Meiobenthologists

# **PSAMMONALIA**



Composed at MARE - Marine and Environmental Research Centre University of Évora, Portugal





DONT FORGET TO RENEW YOUR IAM MEMBERSHIP!
APPLICATION FORM CAN BE FOUND ON THE LAST PAGE.

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## **HIGHLIGHTS**



## **SAVE THE DATES**

June 30 2022	Abstract submission deadline for the 18th International Meiofauna Conference
Sept 30 2022	Registration Deadline for the 18th International Meiofauna Conference
Sept 22-25 2022	SiLPoly 2022 VI Latin-American Polychaeta

Nov MeioScool 2022 28 - Meiofauna Dec 2 International 2022 Workshop

Symposium

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### **EDITORIAL**

A new Psammonalia issue is now available highlighting "18IMCO- 18th International Meiofauna Conference". This major assembly, to present and share advances in meiofaunal research, will be held on 5 th -9 th of December 2022 in Wellington, New Zealand.

By the end of this month the organizing committee wil eventually decide if it will follow a hybrid or fully virtual form

Please follow the conference website:

https://confer.eventsair.com/18th-international-meiofauna-conference/

The suggested research themes encompass the most representative topics of the meiofauna research and the emerging topics with biological and ecological relevance.

Especially, I would like to point out to the last topic "Looking ahead":

- Systematics and evolution
- Biogeography and community dynamics in space and time
- Interactions between meiofauna and other components of the benthos
- Role of meiofauna in ecosystem processes and functions
- Anthropogenic impacts on meiofauna
- Looking ahead: developing and testing new methodologies and conceptual frameworks

18IMCO will be held in conjunction with MeioScool, a week-long summer school for students and researchers.

This is an important event for all meiobenthologists, we have a new opportunity to be in 18th IMCO as we never had before, we can be there in New Zealand virtually or in person and follow the work programme.

**Helena Adão**, Chairperson of the IAM

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## **UPCOMING CONFERENCES AND WORKSHOPS**



### VI Latin-American Polychaeta Symposium (SiLPoly 2022)

**Dates:** September 22-25, 2022 **Abstract submission**: *Open.* 

Earlybird Registration: August 30, 2022

Location: Puerto Varas, Chile

The VI Latin-American Polychaeta Symposium (SiLPoly 2022) will be held between November the 22nd and 25th, 2022, in the city of Puerto Varas, Los Lagos Region, Chile.

<u>Puerto Varas</u> in the spring is a beautiful area to visit, with Volcanos, Lakes, Temperate Rain Forests and Fjords all within easy reach.

SiLPoly 2022 will take place in person, and with the transmission via streaming of some of the activities.

In addition to the Scientific Program that we are developing for SilPoly 2022, other activities will include post-Symposium courses including (1) The Taxonomy of Polychaetes with Professors Nicolás Rozbaczylo and Oscar Díaz and (2) Scientific Illustration with Professors Fernanda Oyarzún and Felipe Portilla, with others being planned.

As the meiobenthologist on the organising committee I would like to encourage contributions on the interstitial polycheates of Latin America, so please feel free to contact me directly if you have any questions (matthew.lee@ulagos.cl).

#### More information:

http://silpoly2022.com

matthew.lee@ulagos.cl



MeioScool 2022 Meiofauna International Workshop

**Dates:** November 28—December 2, 2022

Location: Wellington, New Zealand

The 18th IMCO is coming (read more about it on the next page) and MeioScool goes with it to New Zealand!

The aim of MeioScool is to bring together meiofauna experts, researchers and students from around the globe, to:

- 1) train the next generation of meiobenthologists by providing theoretical and hands on training on the identification and description of different meiofaunal groups, and
- 2) exchange knowledge on the biology, evolution and ecology of meiofauna through presentations, workshops and group discussions.

With the theme "a dive into the microscopic world of meiofauna", over 5 days, participants will have the opportunity to take part in conference presentations, practical workshops, laboratory work and field sampling at Victoria University of Wellington, Pipitea Campus and Wellington University Coastal Ecology Laboratory (WUCEL).

We hope to see you in Wellington in December 2022! .

#### More information:

https://confer.eventsair.com/18th-internationalmeiofauna-conference/meioscool

**APRIL 2022** 

## **UPCOMING CONFERENCES AND WORKSHOPS**



#### **18th International Meiofauna Conference**

Dates: December 5-9, 2022

**Abstract submission deadline**: June 30, 2022 **Registration deadline**: September 30, 2022

Location: Wellington, New Zealand

The 18th edition of the International Meiofauna Conference (18IMCO) will be held in Wellington, New Zealand on 5-9 December 2022, by which time we hope travel restrictions will have eased.

The conference will provide a much needed opportunity for researchers and students to reconnect after what has been a challenging period due to covid, share their latest findings, and enjoy the austral summer.

18IMCO will be held in conjunction with MeioScool (28 Nov. – 2 Dec.), a week-long summer school for students and researchers wanting to obtain both theoretical knowledge and hands-on meiofauna experience under the guidance of international experts.

As Keynote Speakers, the 18IMCO has already confirmed Holly Bik (University of Georgia), Punyasloke Bhadury (Indian Institute of Science Education and Research), Ellen Pape (Ghent University), Diego Fontaneto (National Research Council of Italy), Martin V. Sørensen (Natural History Museum of Denmark), and Daniela Zeppilli (IFREMER).

We are currently planning a hybrid conference (face to face and virtual). However, due to the international nature of the conference and the current COVID situation, we will be deciding at the end of April whether to proceed as planned or go completely virtual (which will of course be reflected in a lower registration fee). We will update this information on 18imco.com regularly - please sign up on the website to receive updates.

Call for abstracts will be open until 30 June 2022. Also note that we are planning a special meiofauna issue with PeerJ for the combined 18IMCO and Meioscool.

Looking forward to see you all in 2022!

If you have any questions regarding these events, please feel free to contact conference convenor Daniel Leduc: daniel.Leduc@niwa.co.nz

Daniel Leduc on behalf of the local organizing committee

#### More Information and Registration:

18imco.com

daniel.Leduc@niwa.co.nz

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### **AFTER THE CONFERENCE**





## II Brazilian Symposium on Meiofauna (II Simpósio de Meiofauna do Brasil)

by Virág Venekey

From 21 to 25 June 2021 happened the II Brazilian Symposium on Meiofauna. The symposium was a fully on-line event, free of charge.

The event started in the first day with a keynote presentation by Dr. Paulo Jorge Parreira dos Santos entitled "State of the art of Meiofauna studies in Brazil", in which Dr. Paulo Santos gave a general panoram about the start of meiofauna studies in Brazil and where we are now in terms of knowledge and publications.

The event continued through the next four days with four thematic sessions (one in each day): Ecology in different environments; Tools to study and communication; Diversity of groups and Experimental studies.

The event in Portuguese was transmitted on-line through the YouTube channel of EADTec UFRPE. About 200 researchers and students from all regions of Brazil and also from other countries participated in the event. The best oral presentations and e-posters received the award "Verônica da Fonsêca Genevois".

Also in the event was realized the "Cultural Contest Meiofauna of Brasil" in the categories: best photography, illustration and text (poem and parody).

The abstracts of the event are available in the page: <a href="https://www.even3.com.br/iismb/">https://www.even3.com.br/iismb/</a>

The event is fully available to watch onin the links bellow:

21 June (Opening and Keynote presentation): https://www.youtube.com/watch?v=stpoon0mAs4

22 June (Ecology in different environments): <a href="https://www.youtube.com/watch?v=-SqRxqxvqEk">https://www.youtube.com/watch?v=-SqRxqxvqEk</a>

23 June (Tools to study and communications): <a href="https://www.youtube.com/watch?v=jU0WDTP9lvw">https://www.youtube.com/watch?v=jU0WDTP9lvw</a>

24 June (Diversity of groups): <a href="https://www.youtube.com/watch?v=W-hpaAc GHE">https://www.youtube.com/watch?v=W-hpaAc GHE</a>

25 June (Experimental studies, Premium Verônica da Fonsêca-Genevois, Closing Ceremony): <a href="https://www.youtube.com/watch?v=AUWuVYRzKpk">https://www.youtube.com/watch?v=AUWuVYRzKpk</a>

(text by Virág Venekey – Brazil)

## **CONNECTING MEIOBENTHOLOGISTS AROUND THE WORLD**

## Who wants to join GLOBAL WORMING?

by Wolfgang Sterrer

Having spent most of my scientific career collecting and describing interstitial fauna (Gnathostomulida, "Turbellaria" etc) from around the globe - I retired in 2005, but alas! - this didn't put me off worms (as Adolf Remane said: "... the worms will soon catch up with me...").

Anyway, I'm still interested in the taxonomy and biogeography of Gnathostomulida, of which 100 species are known, most of them only as morphospecies, and often from just one specimen collected. On the other hand, quite a few have been encountered as far apart as France, North Carolina and South Africa – which raises the question of morpho- vs. phylogenetic species, and evolution in time and space.

Chris Laumer, Martin V Sørensen and I have started a project to collect as many species as possible, and analyze their DNA to verify relationships and study genome biology. So far we have 16 spp. in RNAlater but still need more, from as many globally distributed sites as possible.

We thought a call to arms in PSAMMONALIA might reach our international membership, and get us some help...

According to the latest guidelines (Sørensen & Sterrer 2020) here's what to do:

- 1. Collect a bucket of sand (but not mud!) from the upper 10cm of a shallow, sheltered location (such as between seagrasses, corals, mangroves), then let it sit at room temperature.
- 2. After a day or more, extract and **observe the meiofauna live (!)**, by scraping the surface layer of the sample into a flask, adding seawater (or

better: an isotonic solution of magnesium chloride or -sulfate, i.e., Epsom salt); then shake the flask, let the sand settle, and pour the supernatant into a sieve made with a 63µm mesh size (but not like the one on p. 604 in Schmidt-Rhaesa (2020)!

- **3.** Do not invert the sieve but set it as is into a petri dish with seawater, let it sit for a half hour, then take the sieve out and check what's in the petri dish under a dissecting microscope.
- **4. Lo and behold there are worms crawling!** The slowest, with the fewest but longest cilia are probably GNATHOSTOMULIDA...
- 5. Put the **first specimen** on a microscope slide, with a cover slip, and calm with a drop of magnesium solution. Then, as the water evaporates and the specimen gets flattened so that its organs appear in more detail, make as many drawings and photographs as possible, preferably with a scale for each magnification. When you are through with documenting, add a tiny drop of fixative (formalin/glycerol) **to preserve the squeezed specimen**, seal the cover slip with varnish, and label it.
- 6. The **second specimen** of what you consider to be the same species should be preserved in RNAlater **for DNA analysis** ideally, all specimens preserved in RNAlater should also be accompanied by digital photograph vouchers (for more info on a suggested procedure for this, email Chris). Store at -20 C.
- 7. The **third specimen** should be preserved in formalin **for scanning microscopy** (for more info email Martin).
- 8. Proceed with this "minimum recipe" for as many specimens/species as you find. If many specimens are available, having up to 5-10 RNAlater-preserved specimens per species would be desirable for getting chromosome-quality genome sequences.
- 9. Contact one of us for instructions regarding where to send the specimens.

## **CONNECTING MEIOBENTHOLOGISTS AROUND THE WORLD**

If done right, this simple procedure may lead to the discovery of new species, and contributions to global biodiversity – apart from becoming a great student and collaborative project.

Good Luck with the Worms!

Wolfgang Sterrer westerrer@gov.bm

Martin Vinther Sørensen mysorensen@snm.ku.dk

Christopher Laumer christopher.laumer1@nhm.ac.uk

References:

SØRENSEN MV & STERRER W: Gnathostomulida. Pp. 199-226, In: Guide to the Identification of Marine Meiofauna, A. SCHMIDT-RHAESA (ed.), 607 pp. (2020). Friedrich Pfeil, München.

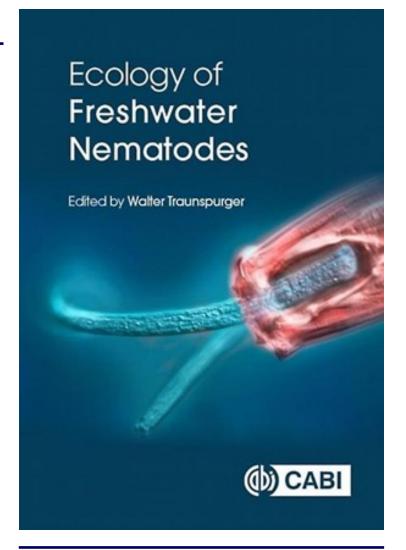
Book: Ecology of Freshwater Nematodes

Edited by Walter Traunspurger

Nematodes are incontestably the most numerous and the most diverse metazoans in freshwater habitats, and these properties bestow exceptional significance to their role in the environment. An array of functional roles has been attributed to them: they are grazers on bacteria and primary producers, regulators of decomposition of plant material, predators, prey for other animals, and closely associated symbionts of bacteria and other organisms.

Freshwater nematodes are central in the context of environmental monitoring, pollution assessments, global warming and food webs, and this is increasingly being recognized. Moreover, the short generation time (a few days to months) of many species makes nematodes ideal for laboratory studies. This book: Provides a follow-up to Freshwater Nematodes: Ecology and Taxonomy (2006). Offers guidelines for studying the ecology of free-living nematodes, including detailed protocols and case studies. Promotes free-living nematodes as model organisms for studies in a broad range of research fields. Despite the recognized importance of nematodes across ecosystems, many species of free-living nematodes have yet to be discovered, and essential knowledge gaps remain. Ecology of Freshwater Nematodes provides an overview of research efforts in this field, and is an important resource for researchers in the field of nematology and ecology.

Professor Walter Traunspurger University of Bielefeld, Germany



## **NEW MEIOFAUNA STUDENTS**

### **Ana Karoline Avila**

**Masters Student** 

Marine Biodiversity and Ecology Program in the Federal University of São Paulo, Santos, Brazil



## Simone Brito Masters Student

Marine Biodiversity and Ecology Program in the Federal University of São Paulo, Santos, Brazil



Ana Karoline is a Master student of the Marine Biodiversity and Ecology Program in the Federal University of São Paulo, Santos, Brazil.

Supervised by Professor Fabiane Gallucci in collaboration with Dr. Maurício Shimabukuro.

During her research, she is studying deep-sea ecology, particularly investigating the ecological interactions between benthic organisms and organic islands in the deep sea.

She is trying to understand the dispersion and connectivity of the deep-sea nematodes in organic islands and other chemosynthetic environments.

The knowledge about the structure of communities in organic islands is important for understanding the connectivity, phylogeny, and evolution of benthic organisms in the deep sea.

Nonetheless, although nematodes colonize whalebone carcasses and wood parcels in the deep sea in significant numbers, data about assemblages' composition is still lacking.

Simone is a Master student of the Marine Biodiversity and Ecology Program in the Federal University of São Paulo, Santos, Brazil.

Supervised by Prof. Fabiane Gallucci in collaboration with Prof. Gustavo Fonseca. The aim of her project is to develop a methodological tool based on artificial neural networks to help in the identification of free-living marine nematode species.

As a start point, she is considering the well known genera Sabatieria Rouville (1903) and Acantholaimus Allgén, 1933.

According to WORMS Sabatieria has 110 species, while Acantholaimus 55.

The methodology will be available as a free app in order to facilitate species identification.

We hope to release the first version of the app already in 2022.

## **NEW MEIOFAUNA STUDENTS**

#### William Johnson

**Masters Student** 

Marine Biodiversity and Ecology Program in the Federal University of São Paulo, Santos, Brazil



William is a Master student of the Marine Biodiversity and Ecology Program in the Federal University of São Paulo, Santos, Brazil, supervised by Prof. Gustavo Fonseca.

His research is focused on the relationship between functional and phylogenetic traces to understand niche segregation between species.

His master thesis will be divided in two parts. The first has the aim to understand which characters of the nematodes can be used as a functional trait truly, and which is, until the moment, just a functional morphology.

In the second part, it will be analyzed the importance of these functional traits and phylogenetic relationships to explain the niche segregation between species. Since the niche dimension of a species is usually difficult to obtain, the project aims at understanding whether these two measures could be used as a proxy of the niche occupied by the species. To answer this question a large-scale data set across multiple environmental gradients and composed by hundreds of species will be considered.

If these two measures proved to be efficient in explaining the niche of species, it will be possible to access the niche redundancy on any type of marine nematode community.

### RECENT LITERATURE

#### IMPORTANT NOTE FROM THE EDITORS:

Out of tradition the Psammonalia Newsletter has kept featuring a list of recent literature related to meiofauna research. However, the online environment allows for more efficient searching these days and an extensive listing of publications in the newsletter becomes quite pointless.

So this will be the last Psammonalia issue featuring an extensive list of recent publication references.

Instead, from now on we will introduce a "Featured Literature" section where interested researchers can send in their papers (just like they did now for listing) along with a brief paragraph about it to a wide audience, that will be published in this section of Psammonalia. We think that will a brief explanatory paragraph, readers will be more interested in reading about the works presented, and it goes more along the aims of this newsletter, than with just a references list.

So, if you're interested in having your papers featured in the next Psammonalia, you can start preparing them for the next call for contributions to the next issue (#175).

#### For now, here's the traditional list.

Disclaimer: This is not a complete list of ALL meiofauna-related literature published between the last issue of Psammonalia and the present one, but one compiled from the contributions sent to us and a guick data base search.

Adão H. (2021) Metazoan Meiofauna: Benthic Assemblages for Sustainable Marine and Estuarine Ecosystems. In: Leal Filho W., Azul A.M., Brandli L., Lange Salvia A., Wall T. (eds) Life Below Water. Encyclopedia of the UN Sustainable Development Goals. Springer, Cham. https://doi.org/10.1007/978-3-319-71064-8\_41-1

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Gerald, C., Deshazo, B., Patterson, H., & Spence, P. (2022). Growth and chemotaxis of nematodes reduced upon exposure to Third Fork Creek surface water. Environmental Sciences Europe, 34(1), 1-11.

Gheller, P. F., & Corbisier, T. N. (2022). Monitoring the anthropogenic impacts in Admiralty Bay using meiofauna community as indicators (King George Island, Antarctica). Anais da Academia Brasileira de Ciências, 94.

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### RECENT LITERATURE

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## INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS

#### APPLICATION FOR MEMBERSHIP OR RENEWAL

The International Association of Meiobenthologists is a non-profit scientific society representing meiobenthologists in all aquatic disciplines. The Association is dedicated to the dissemination of information by publishing a quarterly newsletter and sponsoring a triennial International Conference. The newsletter, Psammonalia, is published mid-month in OCTOBER and August. Membership is open to any person who actively is interested in the study of meiofauna. Annual membership dues are EU\$10 (US\$10) and payment for up to 3 years in advance is possible. New members will receive Psammonalia beginning with the Jannuary issue of the year after joining. Additional contributions to the **Bertil Swedmark Fund**, used to support student attendance at the triennial conferences, is encouraged.

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