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The Newsletter of the International Association of Meiobenthologists

PSAMMONALIA

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National Institute of Water and Atmospheric Research (NIWA)
Wellington, New Zealand

19th International Meiofauna Conference (19IMCO)

10-12 December 2025

Fairfield by Marriott, Kolkata, India



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

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EDITORIAL

Kia ora

It is with great excitement that we release, for the first time, details of the upcoming 19th International Meiofauna Conference in Kolkata in this 177th issue of Psammonalia! Our colleague Punyasloke Bhadury has been busy organising this event for us with the conference website due to be launched early in the new year. In the meantime, set aside the dates in your calendars —see page 3 for details. Note that this time, the conference will feature parallel sessions as well as a 2 days training workshop for students and early career researchers. I look forward to see many of you in person next year—it has been too long since the last in-person conference (17IMCO) in Portugal!

Another big development for our organisation is the imminent change to not-for-profit status. This work which has been spearheaded by our undefatigable Treasurer Ellen Pape, will have some big implications for the way IAM functions.

I would like to thank both Punyasloke and Ellen for the great work they have done for IAM. The work that they do helps to keep IAM the kind of organisation that people want to be part of.

In this issue Alexander Kieneke contributes an interesting story about work that he and his team conducted on limno-terrestrial meiofauna in southern France (p.5). See also the featured research item from Jeff Baguley on the catastrophic impact of the Deepwater Horizon blowout and oil spill (p. 4). We also welcome a new meiofauna student, Venesa Utami (p.8).

Finally I want to wish everyone a pleasant, relaxing and Im sure very well-deserved holiday season. And let's not forget those of us who might be at sea doing meiofauna research during this time ;)

Daniel Leduc

19th International Meiofauna Conference

The 19th International Meiofauna Conference (IMCO) is heading to Global South, in Kolkata, the City of Joy, in India from 10-12 December 2025. This is the first time in the history of IMCO that this conference is going to be held in India. The 19th IMCO will bring together scientists, policymakers and citizen scientists working on different aspects of meiofauna or have an interest in meiofauna from all across the globe. The venue of the meeting will be Fairfield by Marriott, New Town in Kolkata. It is expected that a number of plenary talks, parallel scientific sessions and sessions dedicated on capacity development will be part of the 19th IMCO. By end of January of 2025, the dedicated website of 19th IMCO will offer updates of the conference.

Kolkata, the megapolis, offers a perfect setting for IMCO. Considered as the intellectual hub of India, Kolkata is located in close proximity to Sundarbans mangrove, world's largest contiguous mangroves, an UNESCO World Heritage Site in the South while the mighty Himalaya is located in the north of Kolkata. The megapolis of Kolkata is a major hub connected by numerous international flights including with other regional hubs such as Singapore, Kuala Lumpur (Malaysia), Hong Kong, Dubai and Abu Dhabi (United Arab Emirates). Besides, the capital city of India- Delhi as well as the financial capital of India- Mumbai are connected with innumerable number of flights on a daily basis.

The venue of the meeting is strategically located in terms of local connectivity including public transportation (metro, bus, etc) and also surrounded by huge number of hotels including budget hotels and hostels. The Local Organizing Committee of 19th IMCO will strive to facilitate availability of hotels and hostels on reasonable budget during the days of the conference.

There will be a dedicated training workshop on meiofauna between 8-9 December towards achieving capacity development for early career researchers (ECRs) from the Global South and wider geographical regions. The Local Organizing Committee along with the International Advisory Committee of 19th IMCO is working to generate funds for supporting travel and registration fees of many international ECR participants to achieve equity in knowledge sharing.

19IMCO will offer delegates to experience the cultural heritage and diversity as well as the pan regional cuisines of India. Overall, 19th IMCO is expected to connect Global South with the wider world through the knowledge of meiofauna.

Punyasloke Bhadury



Exciting News: IAM Becomes an Official Non-Profit Organization in Belgium!

We are thrilled to announce that the International Association of Meiobenthology (IAM) is undergoing a significant transformation. We are currently in the process of transforming to an official non-profit organization in Belgium, with the help of a Belgian accountant firm.

What does this mean for our community?

Donations: With our new status, we can now accept donations from individuals and organizations who believe in our mission. These contributions will directly support our initiatives, events, and projects.

Online Payment System: We understand the importance of convenience. Soon, we'll be rolling out an online payment system for membership fees. Say goodbye to manual transactions and paperwork!

Transparency and Accountability: As a non-profit, we are committed to transparency. Rest assured that every donation and expense will be meticulously tracked and reported.

Stay tuned for further updates! We'll keep you informed as the process is finalized. Thank you for being a part of IAM's journey toward positive impact and growth.

Ellen Pape

Using harpacticoid copepods to assess the impacts of the Deepwater Horizon spill

Two papers were recently published investigating the benthic response after the catastrophic impact of the Deepwater Horizon (DWH) blowout and oil spill occurred on April 20, 2010 in the northern Gulf of Mexico (NGOM) at 1525 m depth. In both papers, harpacticoid copepod biodiversity has been assessed over space (Baguley et al., 2024) and time (Baldrighi et

2024) to have a better understanding of DWH deep-sea impact and recovery trajectories of meiobenthic communities. Moreover, these studies confirmed that harpacticoid copepod family diversity and community structure are reliable indicators of impacts, and they provide a more comprehensive understanding of benthic community recovery patterns than major taxonomic community structure.

The evaluation of DWH oil spill impact and long-term community recovery is still ongoing as part of the NOAA Restore research program. The Open Ocean Restoration team focused on Habitat Evaluation and Assessment (HAE) is resampling both DWH impacted and non-impacted stations over a multi-year program (2022-2025) to assess community recovery trajectories. The meiobenthic project team includes Lead PI Dr. Jeff Baguley (Univ. Nevada-Reno), Dr. Elisa Baldrighi (Univ. Nevada-Reno), master's student Justus Fast (Univ. Nevada-Reno), and Dr. Hyun Woo Bang (Mokwon Univ., Korea). We are excited to continue these investigations and share new results in forthcoming publications.

Jeff Baguley

Baguley et al. 2024 Harpacticoid copepods expand the scope and provide family-level indicators of the Deepwater Horizon oil spill deep-sea impacts [https://doi.org/10.1016/j.marpolbul.2024.116343] and

Baldrighi et al. 2024 Deep-Sea Benthic Response to the Deepwater Horizon Oil Spill: Harpacticoid Families as Sentinels of Impact Through Space and Time [https://doi.org/10.1093/icb/icae064]



R/V Point Sur, Gulf of Mexico 2023. Transit between stations.

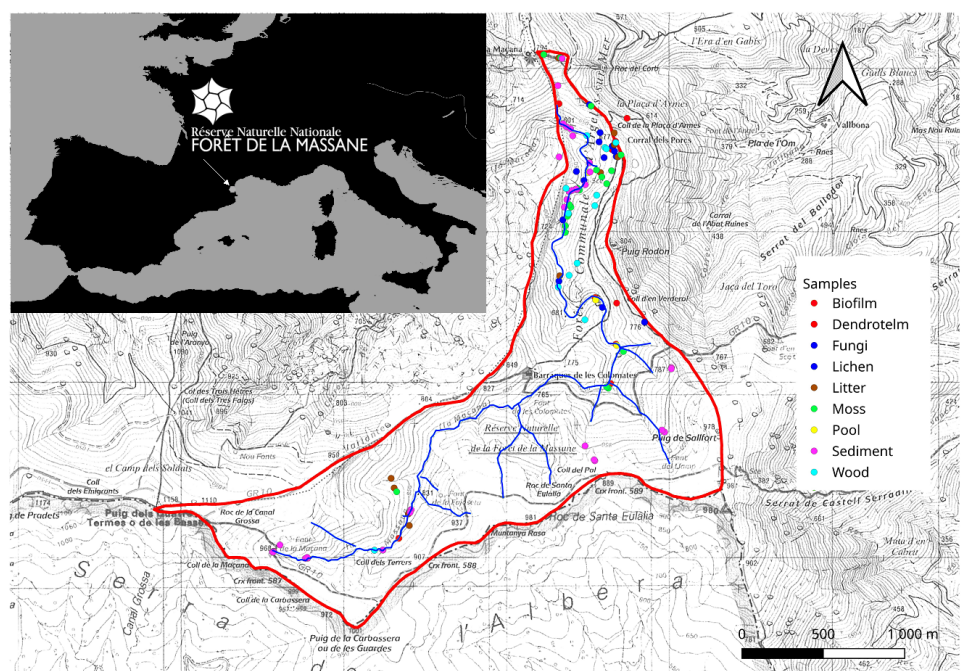
An expedition into the microcosm

International team of experts investigates limno-terrestrial meiofauna in France

In March and April 2023, specialists in various taxa of microscopic Bilateria came together in Banyuls-sur-Mer in the south of France, which is certainly known to many of our members for its rich tradition of marine and ocean research at the Observatoire Océanologique de Banyuls-sur-Mer, in order to study them not in the marine environment, which would probably be the most obvious thing to do. So what, or rather where, was the study area for the international team? The Réserve Naturelle Nationale de la Forêt de la Massane, one of 11 protected areas in the French part of Catalonia (Département Pyrénées Orientales) managed by the state and EU-funded organization Réserves Naturelles Catalanes, is located just 10 km northwest of Banyuls-sur-Mer as the crow flies. The protected area includes the natural forest of La Massane, a beech forest that clings to the sometimes very steep slopes of the Massif des Albères, a ridge of the Pyrenees in the border region between France and Spain that gradually slopes eastwards towards the Mediterranean. Several special features characterize the high value of this ecosystem.

For example, the local population of European beech (*Fagus sylvatica*) is located on the southern edge of the species' distribution, the area is also a glacial refuge and there has been no forest management in this mountain forest for at least 150 years. The forest consists of very old individuals with a high intraspecific genetic diversity and the entire forest ecosystem is characterized by an extraordinarily high biodiversity. The 336-hectare area, which is also very richly structured geomorphologically, is crossed by the La Massane stream, which in turn provides numerous aquatic biotopes and microhabitats. The

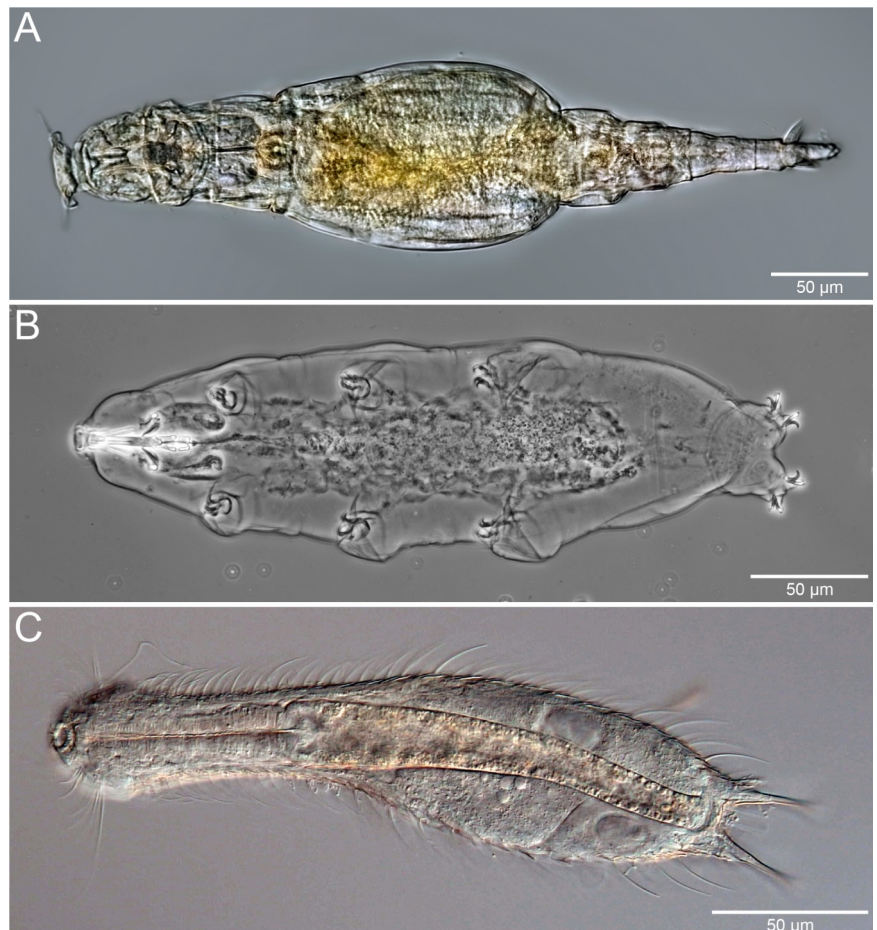
unique forest of La Massane has also been the subject of scientific research for over 100 years and this research has been published in over 1,000 specialist articles. The "Travaux" journals, which are published regularly by the Association des Amis de la Massane, are a separate series of publications that summarize the results and highlights of research carried out in the area. In particular, these journals also contain the results of the numerous species surveys for a wide range of organism groups, from fungi, mosses and vascular plants to mammals, amphibians and birds, as well as numerous insect orders, spiders, earthworms and molluscs (e.g. Nicolas 2022). A total of 10,200 species have been recorded in the protected area to date, a world record in terms of the number of species per hectare! Last but not least, all these special features have contributed to the fact that the forest has been under strict protection for 50 years and has also been listed as a UNESCO World Heritage Site since 2021. The nature conservation team at the Réserve Naturelle Nationale de la Forêt de la Massane sees the area as a unique open-air laboratory and is always happy to facilitate and support research projects in the area.



An expedition into the microcosm

However, knowledge of the impressive biodiversity in the beech forest of La Massane is by no means complete. There are still species yet to be discovered, and natural dynamics and the effects of global climate change will continue to change the species spectrum and food webs. Some groups of organisms have not yet been put under the microscope, and this is precisely where the research campaign in March and April 2023 came in. At the invitation of scientific director Dr. Nabil Majdi and the long-standing head of the reserve, Joseph Garrigue, and with financial support from the Fondation d'entreprise Hermès, an international team of 14 experts from France, Italy, Poland, the UK, the USA, Brazil and Germany were able to travel to the south of France for up to four weeks. The small research station above the Mediterranean botanical garden on the south-western outskirts of Banyuls-sur-Mer was used as the basis for extracting the meiofauna from a wide variety of substrates and for the subsequent microscopic examination and documentation of the nematodes, flatworms, rotifers, tardigrades and gastrotrichs. Some of the participants even brought high-quality research microscopes to the south of France by train. Collecting excursions to the remote nature reserve were undertaken on various days. The journey could initially be made by all-terrain pick-up trucks on forest roads, but then had to be continued on foot in order to reach the beech forest of La Massane and the stream of the same name. A wide variety of microhabitats were qualitatively sampled: Moist leaf litter, sediment in the stream bed, various biofilms and flooded mosses, aquatic plants in small natural pools, dendrotelms (small accumulations of water in knotholes and root hollows), organic material in woodpecker nesting cavities and so on. The overall "yield" of this campaign, which was carried out over a comparatively short period of time, was very pleasing. We were able to collect a total of 1,187 records of 315 taxa, mostly identified to species level (Majdi et al. 2024). Nematodes proved to be the most diverse taxon with 172 species recorded,

while gastrotrichs were the least species-rich with 19 species. However, it must be remembered that the data for the nematodes was collected over a longer period of time, whereas for the other taxa analyzed it was only an initial snapshot. In the case of gastrotrichs alone, the species identified in La Massane account for over 40% of the freshwater species known for France as a whole, and 7 species were even completely new records for France. Similar figures apply to the other taxa studied. Two definitively undescribed Gastrotricha species were also collected. Taking into account the seasonal dynamics in the area, repeated sampling at other times of the year and the use of other techniques, such as a metabarcoding approach, will certainly yield many more new records. Nevertheless, in terms of overall biodiversity and in particular that of the limno-terrestrial meiofauna, the La Massane protected area is probably already one of the best-studied biotope networks in the world.



Top to bottom: Rotifera, Tardigrada, Gastrotricha

An expedition into the microcosm

The first results have already been published and the corresponding data set has been published on the GBiF biogeography platform (Majdi et al. 2024; <https://www.gbif.org/dataset/7b80c4e1-b2e1-486b-9403-cf4be12fd0ce>). In November 2023, a scientific symposium was also held to mark the 50th anniversary of the protected area, during which we were also able to present some findings. Nevertheless, further tasks remain to be completed: Among other things, the newly discovered species are to be scientifically described. We very much hope that our contribution to the knowledge of biodiversity in the nature reserve of La Massane will not only contribute to a better and more detailed understanding of the processes, cycles and food webs, but will also continue to "underline" the importance of protecting this unique and wonderful habitat. Despite the very high protection status, there are climate-related threats in particular, as we experienced for ourselves last spring. The Languedoc-Roussillon region had already been plagued by drought for months, so that all the vegetation, including the forest of La Massane, was under drought stress and the upper reaches of the stream had partially dried out. Vegetation fires pose an even more direct threat. An unusually early fire broke out on 16.04.2023 between the villages of Cerbère and Banyuls-sur-Mer, spreading rapidly and ultimately destroying almost 1,000 hectares of vegetation and dozens of buildings. Although the forest of

La Massane was fortunately not directly at risk this time, the approach of the fire to the southern edge of the village meant that we had to briefly evacuate our laboratory in Banyuls-sur-Mer.

Alexander Kieneke



New meiofauna student

Venesa Utami is a student enrolled in the programme “Master of Science in Marine and Lacustrine Science and Management” (Oceans & Lakes), which is a Belgian inter university programme organized by the Free University of Brussels, Antwerp University and Ghent University. She is particularly interested in studying impacts of human activities on marine ecosystems, and for her MSc thesis (academic year: 2024-2025), she will investigate potential impacts of polymetallic nodule mining in the Clarion Clipperton Zone (northeast Pacific) on meiofaunal communities under the promotorship of Ellen Pape at the Marine Biology Research Group of Ghent University. To this end she will analyze sediment samples collected 1.5 years after a nodule collector test for meiofaunal abundance, and higher taxon composition and diversity. Her data will be part of a longer-term and multidisciplinary study looking into the environmental impacts of a nodule collector trial, and will contribute to the European DEEP REST research project (“Conservation and restoration of deep-sea ecosystems in the context of deep-sea mining”; <https://deep-rest.ifremer.fr/>).



INTERNATIONAL ASSOCIATION OF MEIOBENTHOLOGISTS

APPLICATION FOR MEMBERSHIP OR RENEWAL

The International Association of Meibenthologists is a non-profit scientific society representing meibenthologists 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 January 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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(*) New members are encouraged to introduce yourself to members in a short bio (ca. 10 lines).