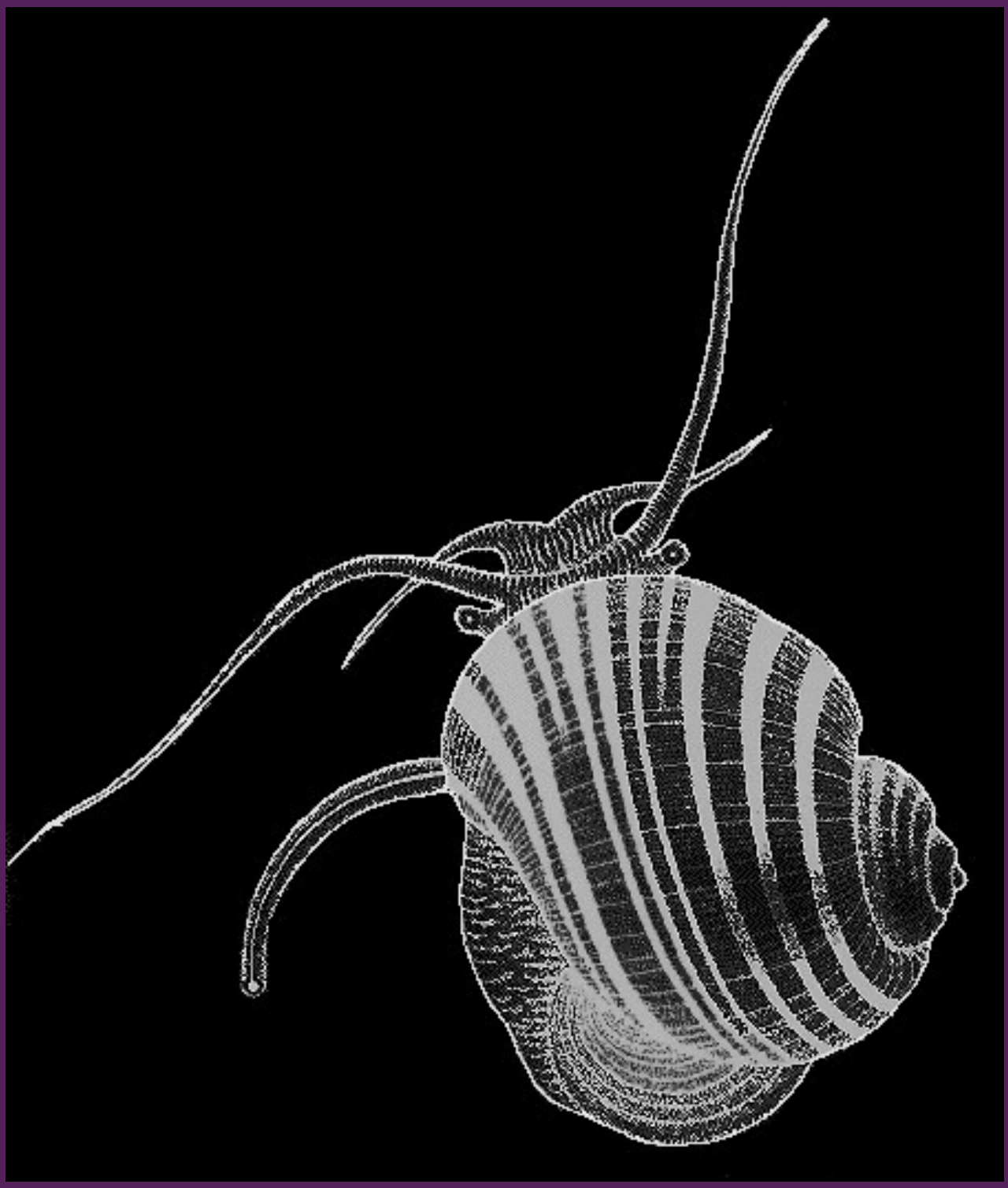

# *The* Malacologist

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The Bulletin of the Malacological Society of London

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# Editorial

With this issue **87** of *The Malacologist,* you may notice a slight change in the presentation. This is because in the past, production was via the *Microsoft Publisher* package. Unfortunately, Microsoft have decided to stop supporting *Publisher* so issue **87** has been produced using *Libreoffice*, a serviceable and free alternative. I have taken the opportunity to slightly reformat the presentation. However, the single column format has been retained. This is because, on a screen, with two columns, the reader must constantly scroll up and down the same page. The single column obviates this waste of time and effort.

As usual in August, issue **87** includes the **Annual Report of Council** which was presented by the President at the AGM. This report describes the activities of the Malacological Society of London (MSL) over the previous year. The Finance report from Treasurer Dr Tom White intriguingly describes how MSL spent £31,589 this year in supporting malacological research, the Forum and travel to research conferences.

The AGM was hosted by the British Society for Parasitology (BSP) at their meeting in Glasgow. The AGM was supported by a presentation from Dr Ruben Scholls entitled *Why parasitologists appreciate molluscs (and malacologists) - and why malacologists return the favour* (page 10). There were several malacologically flavoured presentations at the BSP and I was so struck by a talk from Dr Bonnie Webster that I asked her to offer to *The Malacologist* an **invited article** based on her talk. This article, entitled *Zanzibari fresh-water snails; the hunt for the culprits of bovine schistosomiasis* is presented on page 24. The article intentionally represents only the malacological part of the talk. A major feature of the oral presentation in Glasgow, however, concerned a directional hybridisation/introgression of *Schistosoma bovis* into *Schistosoma haematobium.*

Issue **87** also includes **Early Career Research** award reports from Jamila Rizgalla (University of Tripoli) on *A nine-year journey into Libya's marine biodiversity* (page 12), Leonel Pacheco (Museo Argentino de Ciencias Naturales "Bernardino Rivadavia", Buenos Aires) on *Uncovering mysteries of the Protobranchia from Argentinian waters* (page 14), Anel Ishayeva (Institute of Zoology, Kazakhstan) on *Distribution and phylogeny of the genus Turcomilax in the Northern and Western Tien Shan, Central Asia* (page 16) and Elisa Nocella (Sapienza University of Rome) on *A molecular approach to the trophic specialization in Epitoniidae (Gastropoda): insights into the evolution of corallivory* (page 20).

Two **travel grant** reports also feature. Anna M. Jansson (University of Cambridge) describes her attendance at the *Cephalopod Neuroscience Gordon Research Conference 2026 in Galveston Texas* (page 22) and Mariana Osório Côrtes (Museum de Zoologia da Universidade de São Paulo) describes her contribution to the *XIII Congreso Latinoamericano de Malacología, Colombia* (page 23).

The main source of income to the MSL, which allows the support for these research and education endeavours, comes from a profit share with Oxford University Press based on income from the *Journal of Molluscan Studies* (JMS). The Editor of JMS, Dr Dinazarde Raheem, deserves congratulations and thanks for making the JMS such an academically and financially viable publication.

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Editorial

# Notes and notices

**Invertebrate of the year**

This is an annual contest organised by *the Guardian* newspaper. Readers put forward nominations which are edited down to a shortlist of ten.

The public then votes to determine a winner at the beginning of April.

Competition organiser Patrick Barkham says that the aim of the competition is "*to celebrate the spineless species that make up 95% of animal life on earth".*

Last year's winner was the tardigrade (2025), The first winner of the UK invertebrate of the year in 2024 was the earthworm. It seemed to be time for a mollusc to mount the winner's podium.

*Triplofusus giganteus* (on the right – its predatory proboscis is arrowed in blue) was a past nominee but the 2026 winner was…. (drum roll)…

*Costasiella kuroshimae* – the photosynthetically-capable leaf sheep (below)

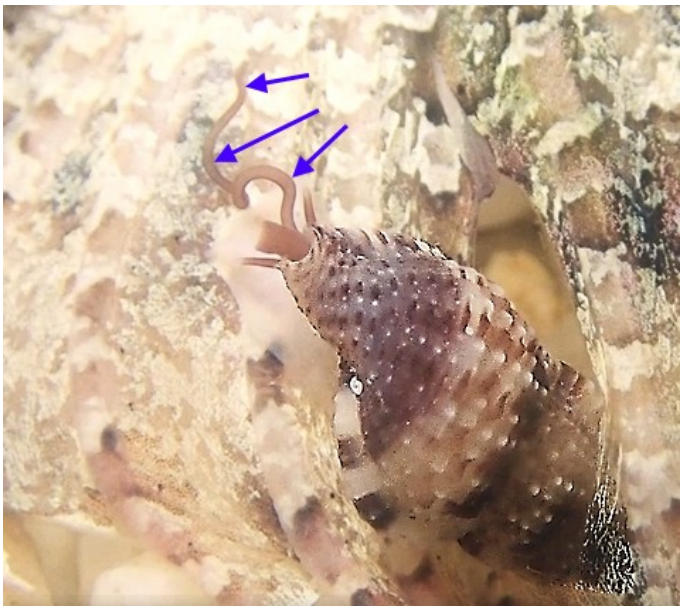
The leaf sheep, which lives in tropical waters around Japan, Indonesia and the Philippines, was only first described by science in 1993. Photograph: Marli Wakeling/Alamy

You can find out more at the Guardian newspaper website at ….. **https://www.theguardian.com/environment/2026/aug/20/winner-invertebrate-of-the-year-2026-crowned-leaf-sheep**

***Triplofusus giganteus* - The Atlantic's giant predator snail that swallows its prey whole**

Meet the Horse Conch (*Triplofusus giganteus*), a true giant of the sea. At up to 60 cm long, it is the largest marine snail in the Atlantic Ocean and one of the biggest gastropods on Earth. This predator stalks its prey in shallow seagrass meadows from North Carolina through Florida and into the Gulf of Mexico, where it hunts other molluscs by enveloping them with its massive foot in a deadly embrace. Recent research shows that the Horse Conch lives for only about 16 years and does not start breeding until it is 6 or 7 years old. The biggest individuals are often the breeding females, so when those spectacular shells are collected, it removes the animals most important for the next generation. Decoding the genome of this remarkable snail would provide powerful tools to track populations, understand how the species has evolved, and predict how well it can cope with environmental change. That knowledge could help protect both *Triplofusus giganteus* and its coastal home. **Let the Atlantic's giant apex predator take the crown – vote *Triplofusus giganteus*!**

NEXT SPECIES



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Notes & notices

**This message from Dr Nipu Kumar Das is about recent publications. The research was part-funded by the Malacological Society of London.**

"I am pleased to inform you that another paper resulting from the project supported by the Malacological Society of London has recently been published in the latest issue of the *European Journal of Taxonomy*. The study describes two new species of microsnails from the caves of Meghalaya, India. This publication is an outcome of your generous support for my project on taxonomic sampling in the caves of Meghalaya. I sincerely thank you for your support and encouragement.

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Paper link: https://europeanjournaloftaxonomy.eu/index.php/ejt/article/view/3284
News coverage: 1. Hubnetwork: https://hubnetwork.in/hidden-life-beneath-meghalaya-scientists-discover-two-new-microsnail-species-in-khasi-hills-caves/
2. The Meghalayan Express (29th May 2026): https://epaper.themeghalayanexpress.com/view/649/29-may-2026
3. IndiaTodayNE: https://www.facebook.com/share/p/1CWwb7MwSY/

**Molluscs in unexpected places**

**In a fancy restaurant**

**In a TV panel show**

**On a pub ashtray**

**In the lavatory of an acquaintance**

**On a record player in the film *Delicatessen***

CONTINUED>

## Molluscs in unexpected places - continued

…bank of cockle shells on Newborough Warren, Anglesey, Wales, December 2023

…on a table in a restaurant in France 2025

The film *Delicatessen* (again)

Insect or mollusc?

## Mollusc predation by a gardener

As a malacologist and gardener, I am often asked about slug and snail control in the garden. I have tried almost everything but what follows is the most effective technique I have tried so far.

Slugs and snails seem to focus on particular plants that are struggling – for example recently planted seedlings, and, even then, the molluscs home-in on the weakest seedling of the bunch.

At midnight in Mid-February to Mid-March, I take my slug-hunting kit (Fig. 1) and a torch into the garden and collect all the slugs and snails I can find on my plants over a period of usually about an hour. The numbers of molluscs caught decreases nightly, so 7-10 successive nights' foraging is enough to protect the plants (Figs. 2, 3). It is important to start on the day the seedlings are planted.

To dispose of the collection, I put the container in the fridge over night and then into a freezer for several days. Although slugs can resist frost, a freezer temperature is beyond their survival capacity. The remnants are then recycled by being buried deeply in the compost heap.

The slug-hunting kit includes plumbers gloves, which are usually more effective than forceps for picking up animals. Catching slugs is peculiarly satisfying, especially when several have congregated on, and are in the process of stripping the leaves from, a single seedling (it reminds me of bullying).

Figure 1. Slug-hunting kit

Fig. 3

An old cartoon from *the Guardian* newspaper January 21, 2016

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# Annual report of Council of the Malacological Society of London 2025/2026

The 133rd Annual General Meeting (AGM) of the Malacological Society of London took place on the 7th April 2026. Atendance was both in-person and on-line. The AGM was part of the British Society for Parasitology (BSP) Spring meeting, University of Glasgow, Scotland

## Annual report of Council, delivered by the President, Fiona Allan

### 1. Membership Report - (report by Harriet Wood)

At the end of 2025, the Malacological Society of London had 77 members. The membership was made up of 55 ordinary members, 18 students and 4 honorary members (including the journal Editor). There were 25 new members, but the total was down by 14 members from the previous year and this was mainly a reduction in students.
This was the first year with the new membership fee of £29 for Student members and £50 for Ordinary members. The new 'membership level referral access system' ran smoothly through the year, giving new or renewing members immediate access to the journal. At the beginning of 2026 a new subscription facility was added to the website, so members can now either continue to actively pay yearly or set up an automated yearly payment.

So far in 2026, we have 61 members. There were 2 student prizes awarded at the World Congress of Malacology in Sao Paulo (one postponed until next year) and the annual Oxford Prize and poster prize at the Molluscan Forum also included membership to the Society. In addition, we have had two successful applications for the Broadening Access Membership Scheme (BAMS), so there are eight places remaining for the year. We do encourage the membership to advertise this scheme to anyone who might be interested: Broadening Access Membership Scheme - The Malacological Society of London (malacsoc.org.uk)
Many thanks to all members for supporting the Society.

### 2. FINANCIAL REPORT for 2025 (reported by by the MSL Honorary Treasurer, Dr Tom S. White)

Finance for the financial year ending 31st December 2025

The Malacological Society's finances remained stable during 2025, with a pleasing increase of spending on its charitable objectives of ~£11,000, matched by a similar increase in income. The Society continues to be in excellent financial health, with plenty of reserves to ensure operation should income ever become an issue.Overall income for 2025 was £56,171, an increase of ~£9,000 on 2024, primarily due to an increase in the profit share generated by Journal of Molluscan Studies. This enabled the Society to continue its recent pattern of increasing expenditure on awards and meetings year-on-year, with an increase of over £11,000 on research and travel awards.

As of 31st December 2025, the total funds available to the Malacological Society of London are £596,876.03, of which £138,109.18 are in cash deposits, and £458,766.85 in its COIF investment funds, which have decreased in value by ~£5,000 over the last year due to stock market fluctuations. No funds were transferred from the current account to savings accounts during 2025, and our cash reserve is stable.

In 2025 the main charitable activities were the funding of ECR and SCR grants (total cost of £24,802.47), travel awards to support conference attendance for students (£1,738), holding the annual Molluscan Forum (£5,048.55) and publishing the Society's newsletter, *The Malacologist* (£217.02). Separately, the profit-share from the publication of the *Journal of Molluscan Studies* (JMS) in 2025 provided the Society with most of its income to its cash account, contributing £47,527, a healthy increase on the £42,399 received in 2024. The Editor-in-Chief of the JMS, Dr Dinarzarde Raheem, and her Editorial Board, and the Editor of *The Malacologist*, Prof. Georges Dussart, are to be commended for their hard work contributing to the publication of our scientific journal and newsletter.

Costs relating to council meetings was significantly lower in 2025 than in previous years due to the current composition of the Council (many members being relatively local to London) and the ability to hold hybrid meetings, with some council members attending online.

Overall, my aim to break even for the year in terms of relative income/expenditure was achieved, with significantly higher spending on the Society's charitable aims matched by an increase in income. The latter is difficult to predict, however, as the OUP profit share generated by the Journal varies considerably year-on-year, and the overall value of our investments fluctuates with the stock market. However, with our assets now approaching £600k, more can be done to increase spending in support of malacological research, and this will be a major topic of discussion at future Council Meetings.

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## 3. Meetings

### 3.1 The AGM (report by Fiona Allan)

The 133 AGM was held as a hybrid meeting on 7th April 2026. The AGM and associated talk were part of the British Society for Parasitology (BSP) Spring meeting, University of Glasgow, Scotland. MSL would like to thank the BSP organising committee for allowing us to join in with their meeting. The invited talk was given by:-
**Ruben Schols**: "*Why parasitologists appreciate molluscs (and malacologists)*".
The talk included content on invasive snails in Africa and their impact on disease transmission, the importance of malacologists for parasitology, the freshwater snail microbiome and the new position at ETH: EPIMIC – unravelling EPIgenetic and MICrobial drivers of adaptation in *Bulinus truncatus,* a snail host of *Schistosoma haematobium*

### 3.2 Molluscan Forum (report by Aidan Emery)

The 27th annual Molluscan Forum was held on the 5th of November 2025 in the Flett Lecture theatre, Natural History Museum, organised by James Witts with help from Aidan Emery, Giada Spagliardi, Jon Ablett and Andreia Salvador. Around 90 people registered in advance to attend the Forum, where we enjoyed a diverse programme of 24 full and quick-fire talks with 8 poster presentations. The prize for best talk went to Amal Shakir for his talk entitled: "*Mapping the presence of calcite in order Mytilida*" and best poster to Katie Smith for a poster entitled "*Regressive Evolution of Eye Loss in Deep Sea Snails"*

## 4 Publications

### 4.1 *The Malacologist* `(reported on by Georges Dussart)

Issue **85** (August 2025) of *The Malacologist* was thinner than usual, partly because there was no conference associated with the AGM, so there were no abstracts to publish. Nevertheless, Angus Davison, Associate Professor and Reader at the University of Nottingham gave a talk at the AGM on *Left right asymmetry in mirror-image snails* and an abstract of the talk appeared in issue 85. As usual, the August issue included the Annual Report of Council together with a report from the President, Dr Fiona Allan. This Annual Report revealed a small, active Society fulfilling its objectives to support research in malacology. These efforts were evidenced by articles published in *The Malacologist* which described support for education through the Global Participation Postgraduate Student Scheme, travel to conferences (as reported by Sally Henderson on her supported trip to the *14th International Temperate Reefs Symposium* 2025, Brest, France) and research (such as the work reported by Piero Amodio on *Seeking the social octopus in the wild*).

If issue **85** was 'light' (twenty pages), issue **86** (February 2026) was the opposite (fifty pages). The 2025 Molluscan Forum, organised by the Malacological Society of London (MSL) featured in this issue. It comprised a hybrid meeting of 'in person' and 'on-line contributors'. The Forum, held at the Natural History Museum of London (NHM), was well-supported and resulted in 15 pages of illustrated abstracts in issue **86**. Alongside these were research reports from early career researchers whose work had been partly or wholly financially supported by the MSL. Examples include Sonia Landro & Florencia Arrighetti of the Museo Argentino de Ciencias Naturales, Buenos Aires who reported on *The mussel Brachidontes rodriguezii as a sentinel of microplastic contamination*, Casey Richards of the University of Chicago who reported on the *Characterization of advantageous traits across heterogenous environments in the intertidal bivalve, Mytilus californianus*, Giada Spagliardi of the Naturalis Biodiversity Centre, Leiden in the Netherlands who reported on *Integrative taxonomy of cold-water Limacina: type material and historical collections* and Chiara Pinkau of the Ludwig-Maximilian-University in Munich, Germany who reported on *Exploring molluscan biodiversity of a protected pre-alpine landscape in Southern Bavaria*.

The MSL also supports more senior researchers. For example, issue **86** included reports by Dr Ting Hui Ng of the Universiti Malaysia Sabah on *Aquatic shelled molluscs of Tioman Island, Peninsular Malaysia*, and Dr Crispin Little (University of Leeds) and colleagues from several other institutions on *Mineral coatings on gastropods at hydrothermal vent sites and the implications for fossilization processes.*

The MSL supports the scientific travel aspirations of young researchers. Awardees are encouraged to submit reports of their travels to be published in *The Malacologist*. Thus issue **86** included a report from Abril Luján Soria of the Universidad Nacional del Sur, Bahía Blanca, Argentina who described her attendance at the *XXII World Congress of Malacology, São Paulo, Brazil* and Renato Dantas of the Universidade Federal de Santa Catarina, Florianópolis, Brazil who described his attendance at *The Cephalopod International Advisory Council Conference 2025* in Okinawa, Japan.

The above account covers reports from awardees from seven different countries and four continents.

### 4.2 The *Journal of Molluscan Studies* (reported on by Dinarzarde Raheem)

*Editor's Report for 2025*
The ISI impact factor for the *Journal* in 2024 decreased to 1.2 (compared with 1.9 in 2023,1.2 in 2022, 1.631 in 2021 and 1.348 in 2020). The *Journal* stands at number 85 in the ISI list of 182 zoological journals (it was 31 out of 180 in the previous year). The new pricing structure has been fixed for 2026. The cost for an online-only subscription is £678 /$1291/€1019 for institutional subscriptions. Please see https://academic.oup.com/mollus/subscribe for more information. Volume **91** (2025) contained 35 papers in 4 issues. In total, 133 manuscripts were submitted in 2025 (a decrease of 13% on the 152 in 2024) and the acceptance rate was 26%. The image of the pelagic octopod genus *Argonauta* (family Argonautidae) on the cover of Volume **92** was kindly donated by Mike Bartick.

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Our board of Associate Editors is now: Coenraad Adema (immunology, genomics, parasitology), Thierry Backeljau (molecular phylogenetics and genetics), Liz Boulding (population and reproductive biology), Richard Cook agricultural malacology, physiology, feeding behaviour), Simon Cragg (life histories, sense organs), John Grahame (population genetics, morphometrics), Liz Harper (marine bivalves), Gerhard Haszprunar (microanatomy, 3D reconstruction, minor molluscan classes), Bernhard Hausdorf (terrestrial gastropods), Michal Horsák (ecology and biogeography of terrestrial gastropods), Yasunori Kano (systematics of vetigastropods, tropical ecology), Joris Koene (reproductive behaviour of gastropods), Kara Layton (heterobranch systematics and biology), Nicole Limondin-Lozouet (palaeoecology), Manuel Malaquias (opisthobranchs), Peter Marko (marine biogeography and phylogenetics), Pablo Martín (freshwater ecology, life history), Ellinor Michel (ecology, freshwater gastropods), Jeff Nekola (community ecology of terrestrial gastropods), Thomas Neubauer (freshwater gastropods, evolution and biogeography), Nicolas Puillandre (neogastropods), Ellen Strong (freshwater and marine caenogastropods), Janet Voight (cephalopods), Janice Voltzow (microscopic anatomy), Tony Walker (biochemistry, immunology, cytology), Suzanne Williams (molecular phylogenetics and genetics), Yoichi Yusa (general ecology and behaviour) and Alexandra Zieritz (freshwater mussels, biogeography and conservation).

I would like to thank all the members of the editorial board and those members of the international malacological community who have contributed to the review process. At Oxford University Press, I would like to thank Jennifer Paxton-Boyd (Publishing Director), Sadie Griffiths and Eleanor Lambert (Publishers); James Fellows (System Manager); Cindy Hyde (JMS editorial office); and Hannah Chippendale and Amy Young (OUP Production Specialist Team). My thanks also to Gulshan Kumar and the production team at Aptara Incorporated for their work on behalf of the *Journal*.

## 5 Website (reported on by John Grahame)

The website has been the subject of routine maintenance of information, with revisions of our Research Grant application documents posted and two issues of *The Malacologist* posted at the appropriate times. Work on restructuring the Awards page and the *Journal* information display is pending but will not be done in time for the AGM.

## 6 Facebook & Twitter (reported by Phil Hollyman on behalf of Vicky Sleight)

Twitter/X followers = 191
Facebook followers = 3,384

We now have two new social accounts:
Instagram, followers = 346 (@malacsoc)
Bluesky, followers = 89(@https://uk01.l.antigena.com/l/dS41y4P6yHtbyuodaES-DfkcMB54PCmOvKcEOcmELQu_fw_586a1A1Y6r7wHT-kgJ8QVPs3cQDlPnz1B2PjPmiDSe9D7PEjAj5bVGMnuIK2e6U9VttGF--HPUN1zRKzs7msYnkL )

VS will use content from *The Malacologist* to populate social sites, as well as continuing to use for advertising events/news

## 7 Awards (reported by Alan Hodgson)

### 7.1 Early Career Research (EC) Applications

Sixteen eligible applications for a 2025 ECR award were received. The applications came from 10 countries including Argentina, UK, Philippines, Georgia, Kazakhstan, Vietnam, USA, Germany, Japan and Sri Lanka. Of the applicants, 4 were postdocs, 8 PhD students, 3 MSc and 1 teaching assistant on contract. After review 7 applicants were awarded funding that totalled £11814.

### 7.2 Senior Research Awards

Five applications from researchers in four countries (Czech Republic, UK, USA, Sri Lanka) were received for Senior Research Awards. After review all applications were deemed to be worthy of funding. The total amount of funding awarded was £8664.

### 7.3 Travel Awards

Eight applications (7 for March deadline and 1 for September deadline) were received in 2025. Of these 5 were from members of the Malacological Society of London and 3 from non-members. Four of the applications were funded (total amount awarded = £1238) to enable applicants to attend the following meetings:- Cephalopod International Advisory Council Conference, Japan; Temperate Reef Symposium, France; World Congress of Malacology, Brazil; Cephalopod Neuroscience, Gordon Research Conference.

### 7.4 Workshop Organisation

Funding (£580) was provided in support of the following workshop:- Identification of Western Ghats' land snails: a workshop forming part of the "VAJRA 2.0 Seminar 2025: 21st Century Collection-based Natural History". This was held at the Central University of Kerala, Kerala, India in February 2025.

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AGM - Report of the Council

## 8 President's Report

In my second year as President, I would like to begin by expressing my sincere gratitude to the wonderful people who make up the Council. It is a true privilege to serve in this role, and I am deeply thankful for the opportunity to continue into the coming year. The dedication and support of my fellow Council members make everything we do possible. I am especially grateful to Jon Ablett and Tom White for their guidance, discussions, and unwavering support over the past year—it is remarkable how much we have navigated together.

As highlighted by Alan Hodgson, this year the society's awards have provided invaluable support to students, early career researchers, and senior researchers, enabling them to advance their work and share knowledge. I am incredibly appreciative of the vibrant and diverse research showcased at the Molluscan Forum, which stands as a testament to the strength of our community. It is particularly inspiring to see researchers at all stages supported, and I was delighted that the best talk award was presented to a master's student—an excellent reminder that outstanding science can come from any level. The many reports produced for *The Malacologist* further demonstrate the important role our Society plays in supporting and promoting molluscan research.

It has been another rewarding and fulfilling year as President, and I am truly thankful for the continued enthusiasm and commitment of our members. Thank you all for being part of the Society and for the contributions you make. I would also like to extend my heartfelt thanks to the entire Council—your time, effort, and dedication are deeply appreciated and are the foundation of all we achieve together.

## 9 Election of Officers and Council

AGM - Election of Officers

Council at April 2025, and nominations going forward to 2026:

| **Year of existence** | **2025-2026** | **2026-2027** |
|---|---|---|
| | **132** | **133** |
| President | Fiona Allan (2) | Fiona Allan (3) |
| Vice Presidents | Victoria Sleight (1) | Victoria Sleight (2) |
| | Aidan Emery (2) | Aidan Emery (3) |
| Councillors (6) | Katrin Linse (1) | Katrin Linse (2) |
| | Phil Fenburg (2) | Phil Fenburg (3) |
| | Crispin Little (2) | Crispin Little (3) |
| | Katie Collins (2) | Katie Collins (3) |
| | James Witts (2) | James Witts (3) |
| EC-Rep | Giada Spagliardi (2) | Giada Spagliardi (3) |
| Co-opted (4) | Lauren Sumner-Rooney (2) | Lauren Sumner-Rooney (3) |
| | John Grahame (1) | John Grahame (2) |
| | Rowan Whittle (1) | Rowan Whittle (2) |
| | Jon Ablett (1) | Jon Ablett (2) |
| Journal Editor | Dinazarde Raheem | Dinazarde Raheem |
| Bulletin Editor | Georges Dussart | Georges Dussart |
| Hon.Treasurer | Tom White (2) | Tom White (3) |
| Membership Secretary | Harriet Wood | Harriet Wood |
| Hon. Secretary | Philip Hollyman | Philip Hollyman (2) |
| Web manager | John Grahame (web)/ Victoria Sleight (Facebook) | John Grahame (web)/ Victoria Sleight (Facebook) |
| Awards Officer | Alan Hodgson (2) | Alan Hodgson (3) |
| Archivist | Andreia Salvador | Andreia Salvador |

(The number in brackets indicates the number of years in office)

AGM Lecture

# Why parasitologists appreciate molluscs (and malacologists) - and why malacologists return the favour

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At the recent British Society for Parasitology meeting in Glasgow, I was invited by the President of the Malacological Society of London (Dd Fiona Allan) to speak about the interconnectedness of parasitology and malacology. I chose to approach this topic from my own background focussed on trematode parasites and freshwater snails. Looking back at my career, I realised that this relationship is much more obvious than it may appear. In fact, much of what we know about trematode diversity, transmission dynamics, and host–parasite coevolution stems from a thorough understanding of their molluscan hosts.

**Figure 1: The next generation of scientists is easily amazed by the incredible diversity of trematodes and freshwater snails in their backyard pond.**

As a parasitologist, I often joke that I became interested in snails by accident. Growing up academically, I was fascinated by parasites. Their bizarre life cycles, their ability to manipulate hosts, and the ecological stories they reveal all drew me into the field. Yet it did not take long before I realised that many of these stories begin with -and often hinge on- a snail.

Arguably, having a conservation area as your backyard did help in this case (Zimbabwe, 2023). Frequently, I receive the same look when I tell people that I study snails. Today, more than two-thirds of the publications to which I have contributed involve snails in one way or another. I still identify primarily as a parasitologist, but after dissecting my first snail penis a few years ago under the guidance of Jean-Pierre Pointier and colleagues in Perpignan, I realized there may be a little malacologist hidden inside me as well.

## A partnership written in life cycles

For trematodes, snails are not simply hosts; they are indispensable partners. Without a suitable snail host, parasite transmission stops. Understanding which snail species are present, where they occur, and how they interact with their environment is therefore essential for predicting disease transmission. This dependence means that parasitologists routinely rely on malacologists. Accurate species identification, understanding host biology, maintaining laboratory cultures, and interpreting ecological patterns all require expertise that many parasitologists simply do not possess.
The relationship, however, goes both ways.

## Parasites are relevant for malacology

Parasites are powerful ecological and evolutionary forces. They influence host survival, reproduction, competition, and ultimately biodiversity itself. In certain ecosystems, parasites may be among the strongest selective pressures acting on molluscan populations.

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**Figure 2: We have routinely depended on malacologists to help us identify snail specimens linked to parasite transmission in the field. Left: *Lentorbis*-like planorbid classified with the help of Christian Albrecht. Right: *Radix aff. Plicatula* classified with the help of Maxim Vinarski.**

One of the most famous examples comes from the New Zealand mud snail, *Potamopyrgus antipodarum.* These snails occur as both sexual and asexual lineages. At first glance, asexual reproduction seems advantageous: clones can reproduce faster because every individual can produce offspring. Yet sexual populations persist.*

Research by Curtis Lively, Jukka Jokela, and colleagues demonstrated that parasite pressure helps explain why. Trematode parasites preferentially infect common host genotypes. As clones become abundant, they become easy targets. Rare genetic variants gain an advantage, favouring sexual reproduction and maintaining genetic diversity. This phenomenon forms one of the strongest empirical examples supporting the Red Queen hypothesis: in this hypothesis, hosts and parasites are engaged in a continuous evolutionary arms race in which neither side can afford to stand still.

For malacologists interested in biodiversity, adaptation, and evolution, parasites are therefore not merely passengers. They are active drivers of change and should therefore not be ignored.

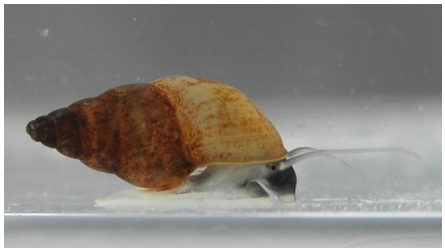

**Figure 3. *Potamopyrgus antipodarum*. Photo by Bart Zijlstra**

## More than hosts

When parasitologists collect snails, it is often because we are searching for parasites. Over time, however, many of us discover that the snails themselves become equally fascinating. They are ecological engineers, take part in evolutionary arms races, and are reservoirs of hidden biodiversity. They shape parasite communities while simultaneously being shaped by them. As my parasitological research progresses, I find myself relying on malacology more than ever. At the same time, I have come to realize that parasites can provide a unique window into the ecology, evolution, and diversity of their molluscan hosts.

So, while I am still trying to determine exactly how much of a malacologist I have become, one thing is certain for me: malacology and parasitology have been, are, and will continue to be, indispensable to each other.

*Further reading

C.Gerard investigated the parasitism of *P. antipodarum* by *Sanguinicola* sp. in the Bay of Mont St Michel and C Morel Vareille comprehensively investigated the invasion and subsequent collapse in populations of *P. antipodarum* in rivers in the area of Dordogne in France……


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Editor

## Early Career Research Grant Reports

# A nine-year journey into Libya's marine biodiversity

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Upon my return to Tripoli, Libya, from Stirling, UK, in 2017 after completing my PhD, I resumed my role as a lecturer at the Department of Aquaculture, Faculty of Agriculture, University of Tripoli. After four intensive years of doctoral research, my brain felt like a racing horse suddenly placed in a dark box with the light switched off. My brain hurt; I did not know what to do next. During one of our conversations, my brother (Marwan) suggested: "Why don't you just grab your diving goggles, go snorkel, and see what you find?"

I found things! In the summer of 2018, I encountered my very first sea slug: *Felimare picta*. This beautiful animal, so colourful and versatile, was just gliding away. Then came *Elysia timida,* beautiful and so understated! For years, it practically carpeted the natural bay of Regatta, with over one hundred individuals visible at times within a very limited area. Regatta's closeness to my home, just a five-minute drive away, made it incredibly accessible.

Thus, by chance and sheer desperation, I found my calling. I have since completed nine years of continuous field surveys covering Tripoli (including Regatta and the Tripoli Harbour), Jodayem, and Surman in western Libya, as well as Tobruk, El Burdi, and Ain al-Ghazala in the east. No two places are the same; marine biodiversity adapts uniquely to each area. While some sites share the same algae, others display a remarkable richness that neighbouring spots lack. Heterobranchs, particularly nudibranchs, are definitely the group I have encountered most during these years.

I have also documented non-indigenous species (NIS) from the Indo-Pacific at the Tripoli Harbour and two other locations: Regatta, and Surman. Their proximity to major commercial and oil harbours probably accounts for the presence of these alien species. *Lamprohaminoea ovalis* was my first NIS. I found this beautiful sea slug in Regatta, and despite its invasive nature, I cannot deny its striking beauty. For several years it was omnipresent in the natural bay of Regatta, but it almost entirely disappeared between 2022

**(A) Natural Bay of Regatta. (B) *Felimare picta* (C) *Elysia timida* (D) *Godiva quadricolor* that was found under a rock, at 50-70 cm of depth. (E) Two *Berghia verrucicornis* found under a rock at 70 cm of depth; the insert shows the predominantly white body, and the orang tips of the cerata. (F) Substrate ready for transport**

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and 2024. Just as I thought I would never see it again, it appeared in Surman. At first, I found just a single individual after years of searching. Then, suddenly, more appeared, and larger too. This year alone, I have already spotted five, and the season hasn't even peaked yet! In Regatta, their numbers usually peak between June and July.

I believe *L. ovalis* will establish viable populations in the bay of Surman, much like other species have across the Tripoli Harbour, Regatta, and Surman, such as *Bermudella pellucida, Biuve fulvipunctata, Bursatella leachii*, and the Vetigastropod *Diodora ruppellii.* Meanwhile, others remain a one-time encounter in the survey areas, such as the voracious *Godiva quadricolor* and the striking Atlantic *Aplysia dactylomela.* The latter record was only one-time encounter in the study area of Regatta but with the help of citizen science, it has also been reported from the eastern part of Libya, as well as other locations in the western region.

The bay of Surman is a beautiful spot bordered by small islands. The substrate transitions mostly from sand to rock, featuring a main island at its centre. The area is highly dynamic and subject to tidal movements; sometimes, one can cross to a smaller island without even getting wet. I love that little island. I first surveyed it back in 2012 when I was still searching for a PhD topic. Little did I know then that I would return years later, and that this very bay would become another core focus of my research in assessing marine biodiversity, with a specific emphasis on Heterobranchia.

Of course, it is not all straightforward. The challenges are plentiful, starting with the lack of local facilities to conduct the molecular analyses required for positive species identification to finding museums willing to house my specimens which remains difficult, though some of my collection can now be accessed at the Senckenberg Museum in Frankfurt, Germany. Fortunately, I have been incredibly lucky to meet supportive colleagues who showed genuine interest in my work, co-authored papers, or offered unwavering encouragement, including Argyro Zenetos and my former PhD supervisors James Bron, Andrew (Andy) Shinn, and Hugh Ferguson. I am also immensely grateful to the Malacological Society of London, whose financial support and recognition provided a vital boost, enabling me to undertake essential parts of this research

The study area of Surman lies in close proximity to the ancient Phoenician and Roman ruins of Sabratha. With its beautiful bays, the entire coastline stretching from Surman to Sabratha remains full of promising, uncharted waters just waiting to be investigated.

**(A-H) Photographs from the 2026 survey season. (A&B) The natural bay of Surman, little island during tidal movement. (C) Substrate kept in plastic containers for up to 24 hours *Lamprohaminoea ovalis* was found in the substrate. (D) *Biuve fulvipunctata* three mating individuals, and an egg clutch. (E) *Camachoaglaja Africana.* (F) At Surman during one of the sampling trips. (G) Preparing the substrate for transport. (H) The ancient Phoenician and Roman ruins of Sabratha, showing part of the Roman theatre built in the 2nd century AD.**

# Uncovering mysteries of the Protobranchia from Argentinian waters

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## Introduction

The subclass Protobranchia encompasses around 750 bivalve species (Zardus, 2002), with the majority being detritivores, inhabitants of the soft substrate and distributed worldwide in diverse environments, but predominant in waters deeper than 200 m (Allen, 2008). These depths hinder the collection of material, resulting in a shortage of studies involving this group. This problem is even greater in regions of the world with less funding for deep-sea sampling, such as the Southwestern Atlantic.

The primary goal of the project was to identify and describe Protobranch bivalves of the southern Southwestern Atlantic collected in several oceanographic surveys. These included two recent surveys by the vessel Falkor (too) from the Schmidt Ocean Institute (FkT 250712 and FkT 251206), as well as material deposited in malacological collections, both local (Museo de La Plata and Museo Argentino de Ciencias Naturales "Bernardino Rivadavia") and foreign (United States National Museum of Natural History, Smithsonian Institution; Museum of Comparative Zoology, Harvard University; Academy of Natural Sciences of Drexel University, Philadelphia).

## Summary of research activities

The area of study was the southern Southwestern Atlantic south of ~36°. Samples came from different areas of the Argentine Sea (e.g., Mar del Plata submarine Canyon, San Jorge Gulf, Beagle Channel, among others) and the Scotia Arc. The specimens were studied through traditional tools, such as stereomicroscopy and scanning electron microscopy (SEM), and the modern technique of micro-computed tomography (MicroCT). In the latter, a series of tomographic images is obtained by exposing the specimen to X-rays. Through this method, a virtual reconstruction can be generated and digitally dissected, avoiding the need to destroy or damage these specimens that are problematic to collect. The specimens with soft tissues were bathed for around 45 days, according to their size, in a solution of phosphotungstic acid (PTA) at 0.3% with dimethyl sulfoxide (DMSO) at 3% in ethanol 95%, following Machado *et al*. (2019), and then scanned through a Nikon Xt H225 ST 2X scanner at the Comisión Nacional de Energía Atómica (CNEA). The scans were inspected through the software Dataviewer and Ctvox, and 3D models were created through 3Dslicer v5.12.3.

For SEM studies, valves were cleaned with ultrasound and commercial bleach (sodium hypochlorite), while the soft parts were critical-point dried. Both were coated with gold-palladium and examined with a Philips XL30 microscope at MACN.

## Preliminary results

The use of MicroCT scans was a major advantage for dissecting specimens multiple times from multiple angles, leaving no damage behind. Twenty specimens (Table 1) were scanned during this study, resulting in the detailed anatomical description of several of them, which in most of them was almost absent, describing several characters including digestive tube, musculature, ctenidia, ganglia, among others, in the exact position as they were fixed (Figure 1 and 2). An important advantage of this technique for taxonomic studies is the availability of the scans to be shared with fellow scientist . Thus the dissections of the same specimen can be replicated, allowing the reproducibility of the research.

However, there were some disadvantages. A major one was the analysis of samples that are only present in gray gradients, and result in a minor inconvenience when separating anatomical structures of similar density. Particularly for protobranchs, during the scanning of Nuculidae specimens, whose shells were much thicker than most protobranchs. Conequently, ome suboptimal scans were obtained, resulting in the need to repeat them with changed parameters.

The scans obtained were also beneficial for creating faithful 3D models of the shells (Figure 3), also providing the opportunity of generating separate models between layers, isolating the periostracum from the rest of the shell. In addition, this tool also allowed for the creation of 3D models of important anatomical characters such as the hindgut (Figure 4a-b), whose shape has been proposed as diagnostic (Rhind & Allen, 1992). In this study, *Ennucula grayi* specimens showed an extra coiling as *Enncula puelcha* and *Ennucula uruguayensis.* However, no distinction was found between the hindgut of the latter species.

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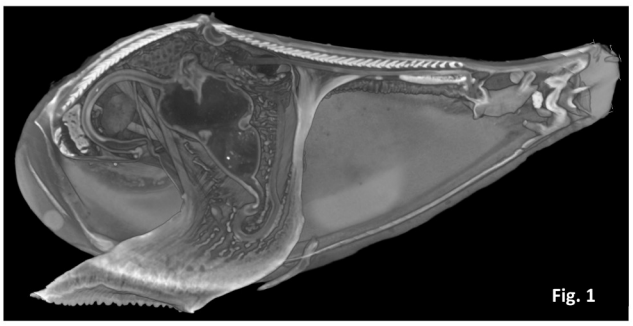
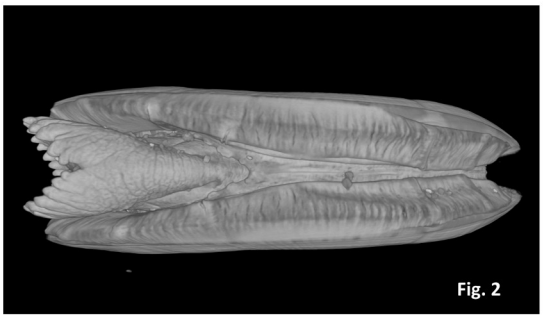
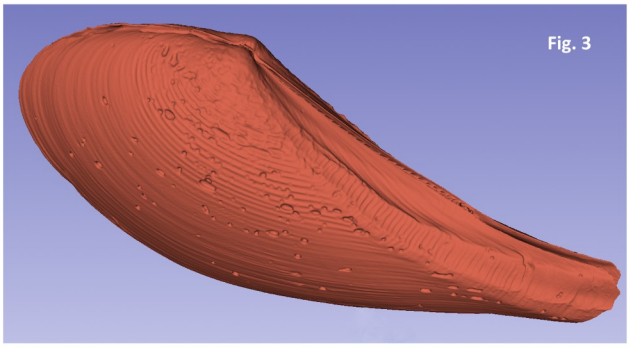
| Family | Genus | Species |
|---|---|---|
| Nuculidae | *Nucula* Lamark, 1799 | *Nucula* cf *atacellana* |
| | | *Nucula semiornata* A. d'Orbigny, 1846 |
| | | *Nucula falklandica* Preston, 1912 |
| | | *Nucula pisum* G. B. Sowerby I, 1833 |
| | *Ennucula* Iredale, 1931 | *Ennucula eltanini* Dell, 1990 |
| | | *Ennucula grayi* (A. d'Orbigny, 1846) |
| | | *Ennucula uruguayensis* (E. A. Smith, 1880) |
| | | *Ennucula puelcha* (A. d'Orbigny, 1844) |
| | | *Ennucula perforata* (Rhind & J. A. Allen, 1992) |
| | | *Ennucula savatieri* Mabille & Rochebrune, 1889 |
| Nuculanidae | *Propeleda* Iredale, 1924 | *Propeleda longicaudata* (Thiele, 1912) |
| | *Saccella* Woodring, 1925 | *Saccella* sp. |
| Neilonellidae | *Neilonella* Dall, 1881 | *Neilonella sulculata* (A. A. Gould, 1852) |
| Malletidae | *Malletia* Des Moulins, 1832 | *Malletia cumingi* (Hanley, 1860) |
| Siliculidae | *Silicula* Jeffreys, 1879 | *Silicula patagonica* (Dall, 1908) |
| Solemyidae | *Acaharx* Dall, 1908 | *Acaharx* sp. |
| | *Solemya* Lamark, 1818 | *Solemya* sp. |
| Yoldiidae | *Yoldiella* A. E. Verrill & K. J. Bush, 1897 | *Yoldiella* sp. 1 |
| | | *Yoldiella* sp. 2 |
| | | *Yoldiella* sp. 3 |



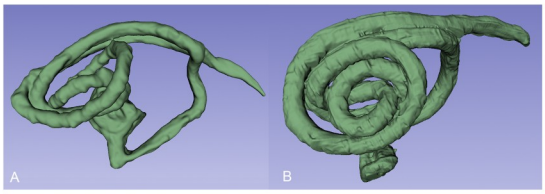




**Figure 1 Sagittal section of *Propeleda longicaudata*.**
**Figure 2 Ventral view of *Solemya* sp.**
**Figure 3 3D model of the shell of *Porpeleda longicaudata.***
**Figure 4 3D model of the digestive tube of *Ennucula puelcha* (A) and *Ennucula grayi* (B).**

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**Future research activities**

The high number of samples processed limited the results, leaving some specimens' identities still in the process of being confirmed, especially for groups of complex taxonomy, such as Yoldiidae. The next steps of the research are to complete their identification, and future research will approach other areas of MicroCT, particularly 3D morphometrics for species morphologically similar, such as *E. puelcha, E. uruguayensis* and *E. savatieri,* whose synonymy has been debated by several authors (Dell, 1964; Villaroel & Stuardo, 1998; Scarabino *et al*., 2006, among others), and DNA analysis.

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Early Career Research Grant Report

# Distribution and phylogeny of the Genus *Turcomilax* in the Northern and Western Tien Shan, Central Asia

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**Introduction**

The genus *Turcomilax* (Gastropoda: Limacidae) is endemic to the Tien Shan and the Himalayas. The Tien Shan is a mountain range located in Central Asia, spanning across parts of Kazakhstan, Kyrgyzstan, Uzbekistan, and China. Molecular phylogenetic studies on plants and vertebrate animals suggest the presence of refugia in this region during the last Pleistocene glaciation (Zhang *et al*., 2008; Li *et al*., 2016; Wang *et al*., 2016; Zhang e*t al*., 2017).

The genus was first described in the late 19th century (Michaelis, 1892; Simroth, 1901), but further research resumed only in the latter half of the 20th century. For most species, the most recent records date back more than 50 years. Despite the long period of study, the genus *Turcomilax* remains poorly known, and the existing data are fragmented.

The taxonomy of the genus is based exclusively on anatomical features, which can vary within a single species. At present, the genus *Turcomilax* comprises six species assigned to three subgenera: *Kasperia, Michaelisia* and *Turcomilax.* Five species are known from the Tien Shan region of Kazakhstan, Uzbekistan, and Kyrgyzstan. One species, *Turcomilax oli* Wiktor, Naggs & Gupta, 1999, is known from only two publications in Nepal and India (Wiktor *et al*., 1999; Bössneck *et al*., 2006).

A more comprehensive study of *Turcomilax* would not only improve our understanding of the genus itself but also contribute to resolving phylogenetic relationships within the family Limacidae and provide new insights into the dispersal history and evolution of the Tien Shan fauna.

While collecting *Turcomilax turkestanus* (Simroth, 1898) is relatively straightforward within its core range in the Ile Alatau due to its proximity to Almaty, other species, including *Turcomilax nanus* (Simroth, 1902), *Turcomilax natalianus* (Michaelis, 1892), and *Turcomilax ferganus* (Simroth, 1910), are known only from remote localities in the Northern and Western Tien Shan that are difficult to access. The aim of the grant was to collect specimens of *Turcomilax* from these regions for further molecular analysis.

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Early Career Research Grant Report

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## Materials and Methods

The fieldwork focussed on type localities and sites located far from the main known distribution range. For this purpose, published literature (Michaelis, 1892; Simroth, 1901, 1910; Likharev & Wiktor, 1980; Schileyko & Rymzhanov, 2013), collection of the Zoological Institute of the Russian Academy of Sciences (hereafter ZIN RAS), and observations from iNaturalist were used. From literature and museum records, exact locality data were used when available; when only approximate localities were known, sampling sites were inferred based on elevation and habitat type. Although species-level identification based on external morphology was not possible for iNaturalist records, genus-level identification appeared to be feasible. A total of three field expeditions were conducted.

The first expedition (10.06-15.06.2025) was carried out in Kazakhstan in the Dzungarian Alatau (Jetisu Alatau, Semirechenskiy Alatau) in the vicinity of the village of Koktuma, where *T. natalianus* had previously been recorded.

Two expeditions were conducted in Uzbekistan (29.06-02.07.2025) and Kyrgyzstan (17-31.07.2025). In search of *T. nanus* and *T. ferganus*, surveys were carried out in the vicinity of the villages of Arslanbob, Arkyt, Lake Sary-Chelek (Kyrgyzstan), near the Chimyon village and Samarkand city (Uzbekistan).
For *T. turkestanus*, sites outside the typical distribution range were investigated at the southern shore of Issyk-Kul Lake near Karakol and in the Ala-Archa Gorge near Bishkek (Kyrgyzstan). In addition to the main sampling sites, supplementary searches were conducted along travel routes.

Specimens were preserved in 96% ethanol and identified using the handbooks by Likharev & Wiktor (1980) and Schileyko & Rymzhanov (2013), based on anatomical characters. For molecular phylogenetic analyses, DNA was extracted using the QIAGEN DNeasy Blood & Tissue Kit. PCR was performed to amplify mitochondrial genes COI (Hutchinson *et al*, 2026) and ELAVI8 (Nekola *et al,* 2023). PCR products were sequenced in both directions using the Sanger sequencing method.

Distribution map of mollusks was generated using QGIS.

## Results and Future Work

As a result of the field trips, specimens of *T. natalianus* were collected in Kazakhstan, while *T. nanus* was collected in Kyrgyzstan (Figure 1; Table 1).

A total of three specimens of *T. natalianus* were collected in the Dzungarian Alatau near Lake Alakol. Specimens were found in willow thickets along rivers, in leaf litter, and within crevices at elevations of 418–864 m above sea level (a.s.l.). The surrounding landscape was predominantly arid, with desert-like vegetation and limited tree cover outside the riparian habitats where the specimens were recorded.

A total of 41 specimens of *T. nanus* were collected in the vicinity of Arkyt village and around Lake Sary-Chelek. They occurred in rock crevices, under stones, among herbaceous vegetation, and in walnut forests at elevations ranging from 1308 to 1955 m a.s.l. Interestingly, no specimens of *T. nanus* were found in the walnut grove of Arslanbob, where only slugs of the genus *Deroceras* were encountered, a genus which is frequently associated with disturbed habitats. By contrast, *T. nanus* specimens were present in a less disturbed walnut grove with similar vegetation structure but with an intact leaf-litter layer. Several specimens were infected with parasitic worms that remain to be identified. Notably, no cases of parasitism in this genus have been recorded previously. The ecological conditions of the localities inhabited by *T. natalianus* and *T. nanus* differed markedly. While *T. natalianus* was recorded from relatively low-elevation, arid environments associated with riverine vegetation, *T. nanus* occurred in more humid montane habitats, including walnut forests. These two species, belonging to different subgenera, appear to occupy distinct ecological settings.

No specimens of *T. turkestanus* or *T. ferganus* were found during the present field surveys. Notably, *T. ferganus* is known only from two records (Simroth, 1910; ZIN RAS collection, 1973), whereas *T. turkestanus* is known from a single undated record (Schileyko & Rymzhanov, 2013). All available records lack coordinates or precise locality data; these species could not be found in the presumed areas.

During the expeditions, specimens of other genera within the families Limacidae and Agriolimacidae were also collected. These will be included in the broader phylogenetic analysis of the family Limacidae.
Preliminary molecular analyses have been conducted for all collected specimens, including sequencing of the mitochondrial COI marker and the nuclear ELAVI8 gene. The preliminary phylogenetic tree based on these markers shows that the genus *Turcomilax* is monophyletic and is recovered as the sister group to the genus *Limax.*

Additional markers, including 16S and ITS1, are planned for further analysis. Presence-absence data of *Turcomilax* were also recorded and will be used for distribution analyses. Publications based on these results are being prepared for the *Journal of Molluscan Studies*.

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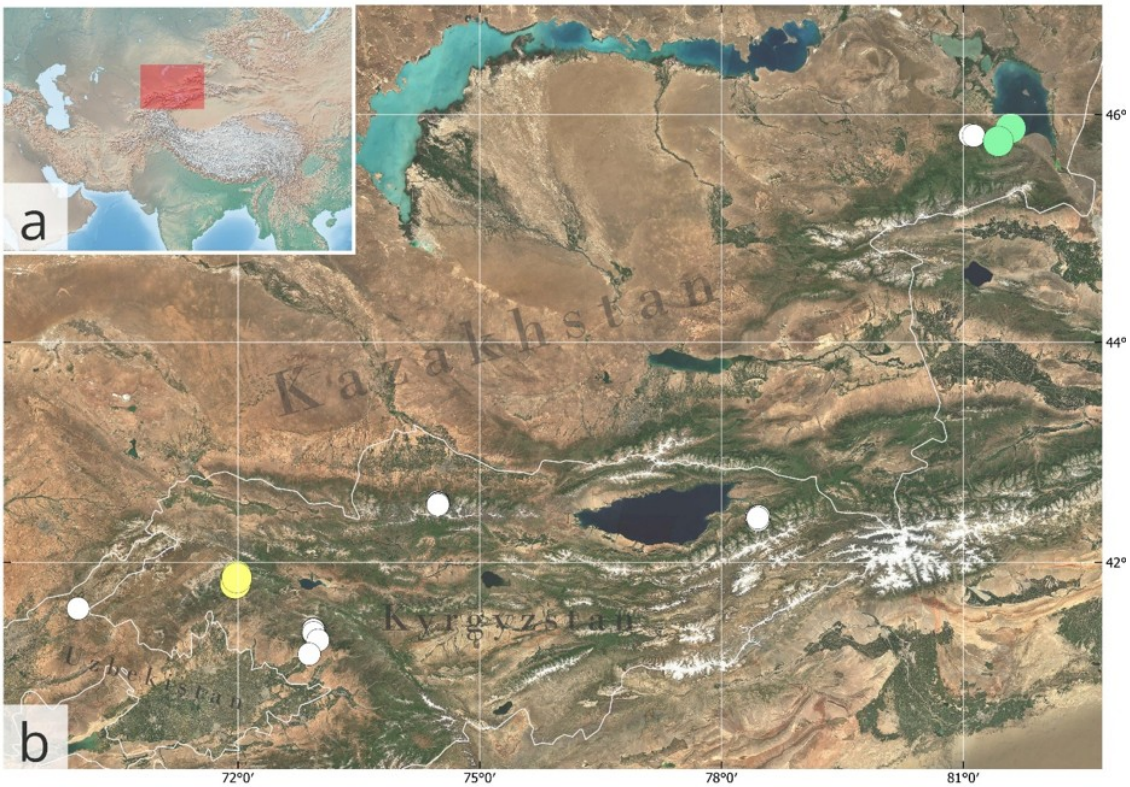


**Figure 1 – Map of the field trips and sampling localities. Yellow dots indicate collection sites of *T. nanus*, green dots indicate sites of *T. natalianus*, and white dots represent surveyed localities where *Turcomilax* specimens were not found, although other slug taxa were occasionally collected.**

**Table 1 – Sampling localities of *Turcomilax*.**

| Species | Number of specimens | Date | Lat. | Long. | Elevation (m a.s.l.) | Locality | Biotope |
|---|---|---|---|---|---|---|---|
| *Turcomilax nanus* | 13 | 23.07.2025 | 41.80416 | 71.96584 | 1308 | Kyrgyzstan, Arkyt village | Walnut forest; tree hollows |
| | 23 | 24.07.2025 | 41.85742 | 71.98513 | 1874 | Kyrgyzstan, Sary-Chelek Lake | Walnut grove; leaf litter and fallen logs |
| | 5 | 24.07.2025 | 41.86745 | 71.98526 | 1955 | Kyrgyzstan, Sary-Chelek Lake | Moss-covered rocks with shrub vegetation |
| *Turcomilax natalianus* | 1 | 14.06.2025 | 45.7702 | 81.43373 | 864 | Kazakhstan, Dzungarian Alatau | Riparian willow thickets; concrete bridge crevice |
| | 2 | 13.06.2025 | 45.88234 | 81.58657 | 418 | Kazakhstan, Dzungarian Alatau | Riparian willow thickets; leaf litter and stones |

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**Figure 2 – *T. nanus* (a, b), *T. natalianus* (c), and collection sites of *Turcomilax* species (d–f).**

# A molecular approach to the trophic specialization in Epitoniidae (Gastropoda): insights into the evolution of corallivory

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## Introduction

Epitoniidae are a diverse family of marine gastropods that includes highly specialised predators and ectoparasites of cnidarians. Although associations with corals and sea anemones are well documented for some shallow-water species, host use remains poorly known for many lineages, particularly those collected in deep water. This limits our ability to reconstruct how trophic specialisation evolved within the family and to understand whether host associations are conserved or flexible over evolutionary time.

The project supported by the Malacological Society of London aimed to combine museum material, molecular data and stomach-content metabarcoding to investigate trophic relationships in Epitoniidae. The original objectives were to incorporate poorly represented or previously un-sequenced specimens into a broader molecular framework, recover molecular evidence of cnidarian prey from preserved material, and ultimately map host identity onto an Epitoniidae phylogeny to explore the evolution of corallivory. The work was carried out using material from the National Museum of Natural History, Smithsonian Institution, in collaboration with the Department of Invertebrate Zoology.

## Materials and methods

The final integrated database contains 199 Epitoniidae vouchers, closely matching the planned sampling effort. Tissue diversity included stomachs, oesophagus, buccal apparatus and, when the whole specimens was recovered at under 3 mm, the whole body. These specimens represent a broad geographic and bathymetric range, including material from New Caledonia, Papua New Guinea, Vanuatu, the Philippines, Madagascar, China, Taiwan, the Solomon Islands, Australia, Mozambique, French Guiana and several Pacific archipelagos. Recorded sampling depths extend from the surface to 1,397 m, allowing the project to include both shallow-water and deep-sea representatives.

DNA obtained from the available preserved tissues was quantified and analysed using two metabarcoding sequencing, referred to here as NS (NextSeq) and MS (Miseq). A total of 145 samples in total showed amplification success. DNA concentrations were frequently low, as expected for museum-preserved material, with a median concentration of 0.836 ng/$\mu$l and values ranging from 0.001 to 11.219 ng/$\mu$l. Despite this, every quantified sample produced sequence reads in at least one of the two datasets. NS reads were recovered from 131 samples, with approximately 7.81 million reads in total, whereas MS reads were recovered from 114 samples, with approximately 74,500 reads in total.

## Preliminary results

BLAST-based screening produced candidate cnidarian identifications for 135 samples in the NS dataset and 114 samples in the MS dataset. The two markers proved highly complementary. Among 104 samples represented in both BLAST datasets, 100 shared at least one genus-level assignment between NS and MS, providing strong cross-marker support for the occurrence of the same potential prey lineages.

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*Hexacorallia* dominated the recovered assignments. In the NS dataset, 109 of 135 samples contained exclusively hexacorallian assignments, while 23 contained a mixture of *Hexacorallia* and *Octocorallia.* Similarly, 102 of 114 MS samples contained only *Hexacorallia,* and 10 contained both groups. Only a very small number of samples yielded exclusively octocorallian assignments. This overall pattern is consistent with the expected importance of hexacorallian hosts in the trophic ecology of Epitoniidae.

Several cnidarian genera recurred across independent samples and across both metabarcoding datasets. *Desmophyllum* was the most frequently recovered genus, occurring in 60 NS samples and 65 MS samples. Other recurrent assignments included *Phymanthus, Herpolitha, Epizoanthus, Eunicella* and several actiniarian lineages. The presence of multiple potential host assignments in some individuals required careful interpretation. Candidate identifications were therefore evaluated not only according to sequence identity and read support, but also in relation to ecological plausibility, including known depth distributions. Assignments with low sequence identity or implausible bathymetric ranges were flagged rather than treated as confirmed host records.

**Outcomes and next steps**

The project demonstrated that informative trophic signals can be recovered from a large and taxonomically diverse collection of preserved Epitoniidae, including samples with low DNA concentrations. More importantly, the use of two metabarcoding datasets provided a way to cross-check candidate prey identifications and reduce reliance on single-marker assignments. The resulting dataset substantially expands the number of Epitoniidae specimens for which molecular trophic information is available and provides a first, broad, comparative view of cnidarian associations across geographically and bathymetrically diverse material.

The metabarcoding results are now being integrated with the molecular phylogeny so that host associations can be compared among lineages and, where appropriate, between historical and more recent collections. This will allow subsequent ancestral-state analyses to test whether major Epitoniidae clades show conserved host preferences or repeated shifts among cnidarian groups. These analyses will also help identify cases in which apparent trophic specialization may be associated with particular habitats or depth ranges.

The support of the Malacological Society of London was essential for completing the molecular and sequencing component of this work and for transforming museum specimens into a dataset that can address both ecological and evolutionary questions. The project has generated the core data for a manuscript currently being developed on trophic specialization and the evolution of corallivory in Epitoniidae, while also establishing a framework that can be extended as additional host and phylogenomic data become available.

**Acknowledgements**

I am grateful to the Malacological Society of London for supporting this research through an Early Career Research Grant. I also thank the Department of Invertebrate Zoology at the National Museum of Natural History, Smithsonian Institution, and in particular Ellen Strong and Andrea Quattrini, for their support, access to collections and scientific collaboration.

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## Travel Grant Reports

# Cephalopod Neuroscience Gordon Research Conference 2026 (Cephalopod Genomics, Neural Circuits, and Behavior), Galveston, Texas, United States

**Anna M. Jansson**
Email: ajansson@wisc.edu

Supervisory team: Amy Courtney[1], Eve Seuntjens[2], William R. Schafer[2,3]
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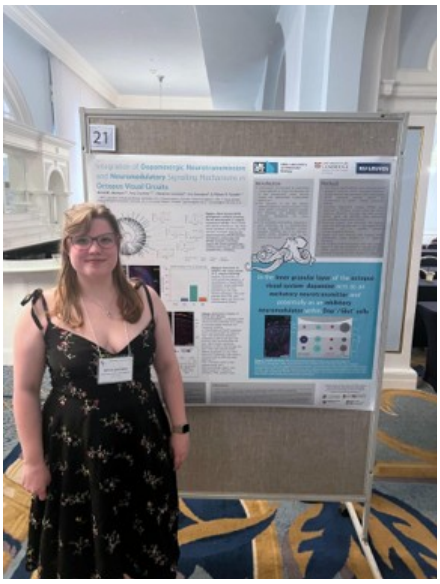
Master's Funding Support: MRC Laboratory of Molecular Biology, British Neuroscience Association, Darwin College, Marine Biological Association
PhD Funding Support: NIH/NINDS T32 NS105602

Thanks to the generous support of the Malacological Society of London, I was able to attend the first official Cephalopod Neuroscience Gordon Research Conference (GRC) in Galveston, Texas this February. As part of the conference, I presented a poster on my Master's research project conducted at the University of Cambridge and the MRC Laboratory of Molecular Biology titled, "Integration of dopaminergic neurotransmission and neuromodulatory signalling mechanisms in octopus visual circuits." I shared about my discovery of two dopamine-binding G-protein coupled receptors (GPCRs) in the paralarval *Octopus vulgaris* optic lobe and their spatial relationship to the dopamine-gated cation channel identified by my former supervisor, Dr. Amy Courtney (preprint: doi.org/10.1101/2025.04.02.646353). It was especially exciting for me to share my work with a group of experts who could provide detailed feedback on my project. The conference also marked an important transition point for me personally, as I recently began a PhD at the University of Wisconsin-Madison and am moving into a new area of research. The Macological Society of London travel grant was integral to my participation given my recent transition between labs, both for me and for my previous supervisor. I am really excited to see how Dr. Courtney continues to expand on this work, including my discovery of two serotonin- and two norepinephrine-binding GPCRs and additional promising GPCR targets in the *O. vulgaris* proteome, through her new position as an Anne Warner Research Fellow at the Marine Biological Association in Plymouth.

Beyond sharing my work, this was a fantastic opportunity to reconnect with many researchers in the subfield, including our collaborators at KU Leuven in Dr. Eve Seuntjens' lab. I also was able to strengthen my connections with other groups in the United States that I hope to collaborate with in the future on some connectomics projects. During the conference there was also a discussion about pursuing funding to build shared community infrastructure and tools, in particular for comparative genomics and genome annotations (but also including other aspects like behavioral tools and cell atlases). Improved genomic resources for cephalopods will probably benefit the broader molluscan research community as well, so if anyone is interested in participating in this initiative I am happy to share details or you can reach out directly to Loyal Goff (loyalgoff@jhmi.edu) or Gert Jan Veenstra (gertjan.veenstra@ru.nl) who are leading the project.

Thank you to the Malacological Society of London and the Travel Grants team for making this trip possible!



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Travel Grant Report

# XIII Congreso Latinoamericano de Malacología, Cartagena de Indias, Colombia

**Mariana Osório Côrtes**[1]
Supervisory Team: Luiz Ricardo Lopes de Simone[1] and Tatiana Silva Leite[2]
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From August 17 to 21, 2026, I had the opportunity to participate in the XIII Congreso Latinoamericano de Malacología (CLAMA), at the Universidad de Cartagena, in Cartagena de Indias, Colombia. This participation was made possible thanks to a travel grant from the Malacological Society of London. At the event, I presented a poster based on part of the first chapter of my doctoral thesis — conducted at the Museum of Zoology of the University of São Paulo (MZUSP) — which won the award for the second-best poster presented by a doctoral student.

My project is a taxonomical, morphological and phylogenetical study of Sepiolidae (Cephalopoda: Sepiolida) from Southwestern Atlantic, and the poster I presented was a description of the anatomy of *Semirossia patagonica* (E.A. Smith, 1881). In this region of the Atlantic, the anatomy of most Sepiolidae species has not been described, and there is little information regarding their morphology. No taxonomic or morphological study of these specimens has ever been conducted, and their diversity may be underestimated. A review and morphological analysis of these specimens could help reveal phylogenetic relationships important to the family, given that genetic data remain scarce compared to other cephalopods, particularly within the subfamily Rossinae.

In the poster describing the anatomy of S. patagonica, I included descriptions of the reproductive and digestive systems, the buccal mass, and the odontophore muscles. Other systems are still being analysed I also included a discussion on character variation across decapodiform species, genera, subfamilies, and orders, addressing how anatomical analyses can aid in differentiating taxa.

CLAMA is a significant congress for Latin American malacologists, facilitating the exchange of information and networking among colleagues. As a student, it was invaluable to meet students, professors, and learn about opportunities in my field from other countries. It was particularly meaningful to connect with researchers from regions where the species I study are found, enabling a valuable exchange of knowledge. I participated in a mentoring activity where professors from various countries interacted with student groups, answering questions about academic paths and offering advice on academic life and career options — a truly important and enjoyable experience. Furthermore, in my capacity as Second Secretary of the Brazilian Malacological Society (Sociedade Brasileira de Malacologia - SBMa), it was important to meet and interact with the Brazilian students attending the event. I left the congress with valuable contacts and promising professional partnerships for future projects in malacology.

Thank you to the Malacological Society of London for financing my attendance at the conference.

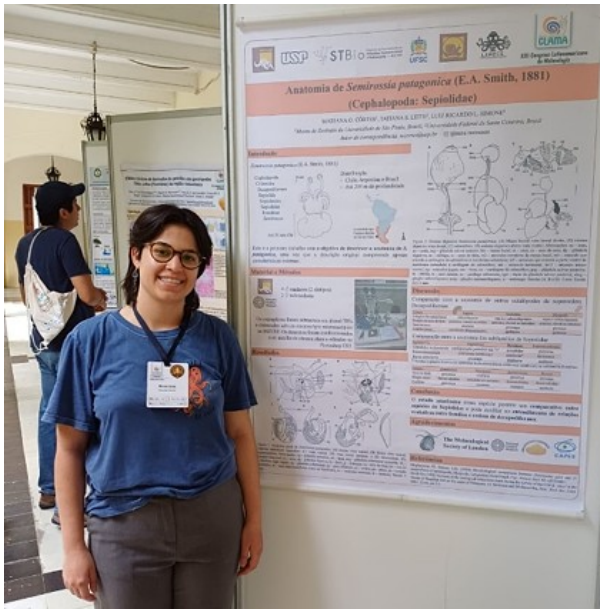


**Figure 1. Poster presentation intitled "Anatomy of *Semirossia patagonica* (E.A. Smith, 1881) (Cephalopoda: Sepiolidae)".**

**Figure 2. Photo of the award ceremony for the second-place poster in the doctoral student category.**

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# Invited article

**Background note: This article is an excerpt from a more extensive presentation made at the British Society of Parasitology 2026 meeting (7th – 9th April 2026), University of Glasgow.**

## Zanzibari fresh-water snails; the hunt for the culprits of bovine schistosomiasis

This article is dedicated to our friend and colleague Khamis Rashid Suleiman, a devoted Pemban Malacologist and public health worker and lab manager at PHL-IdC who retired in March 2026

Bonnie Webster[1], Khamis Rashid Suleiman[2], Steffi Knopp[3,4], Aidan Emery[1], Said Mohammed[2], Aaron Ringo[5], Tom Pennance[1]
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### Introduction

Zanzibar is an archipelago of islands off the east coast of Tanzania in the Indian Ocean, with the two largest islands being Pemba (North) and Unguja (South). The islands are known worldwide as the birthplace of Freddie Mercury, picturesque coral sand beaches, fantastic wildlife, friendly locals, the spice trade… and for the over 100 years of research into the neglected tropical disease schistosomiasis (Trippler *et al*., 2023). Well, perhaps less so for the latter.

Schistosomiasis is a chronic and debilitating disease in humans, livestock and wildlife caused by infection with parasitic flatworms of the genus *Schistosoma*. The parasite is transmitted to its host via specific freshwater snail vectors that reside in freshwater habitats in tropical and sub-tropical regions (Fig. 1). The free-swimming larvae (called cercariae) are released from infected snail vectors into the water and will directly penetrate the skin of their hosts during water contact. Associated with poverty, disease transmission is driven by the lack of safe water and sanitation, leading to high levels of freshwater contact by local communities. However, the geographical distribution of specific freshwater snail vectors dictates where the disease is endemic, and the diversity and focality of their habitats challenge control interventions (Fig. 2). Moreover, the biological relationship between the snails and the *Schistosoma* species is complex but also highly successful, with snails acting as vessels for the clonal replication and multiplication of the parasite that can be constantly produced and released from the snails daily over several weeks to months. This means that the freshwater snail vectors, although passive, provide an extremely successful biological driver of transmission.

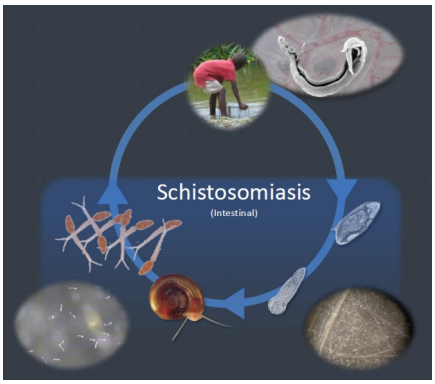


**Figure 1. Schistosome life cycle**

**Figure 2. Distribution of schisosomiasis across the world**

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**The history of schistosomiasis and snail mapping on Zanzibar**

Records of human urogenital schistosomiasis, caused by infection with *Schistosoma haematobium*, on Zanzibar date back to 1925. At this time, despite major medical complications associated with the disease, only a basic understanding of transmission and primitive interventions were available. Records show that 1,158 people were treated for schistosomiasis at the British Colonial Government hospital in Unguja from 1925 to 1927, likely using the recommended treatment at this time, injections of tartar emetic (antimony potassium tartrate), a highly toxic compound with several unpleasant side effects. During this time, several freshwater sites containing the *Bulinus* snail vectors were also implicated in transmission, which led to island-specific research into the disease, biology of the parasite and snail vectors that continued steadily over the next century in addition to advances in treatment and intervention mechanisms (see review by Trippler *et al*. 2023). Through collective efforts, urogenital schistosomiasis was deemed to be eliminated as a public health problem in 2017 in most endemic areas (Knopp *et al.*, 2019 a & b). However, transmission was not completely interrupted, and considerable ongoing efforts are aimed at targeting focal regions of high prevalence, known as persistent hotspots of transmission. These hotspots are localised in the rural regions of the islands, and particularly in Pemba (Fig. 4), where the island's hilly geography and climate leads numerous freshwater bodies where the *Bulinus* snail vectors thrive in very high numbers (Penance *et al*., 2022). Access to safe water sources and sanitation is also very limited, with many local communities having no alternative but to use the freshwater bodies for everyday needs, locking them into a vicious cycle of schistosomiasis transmission.

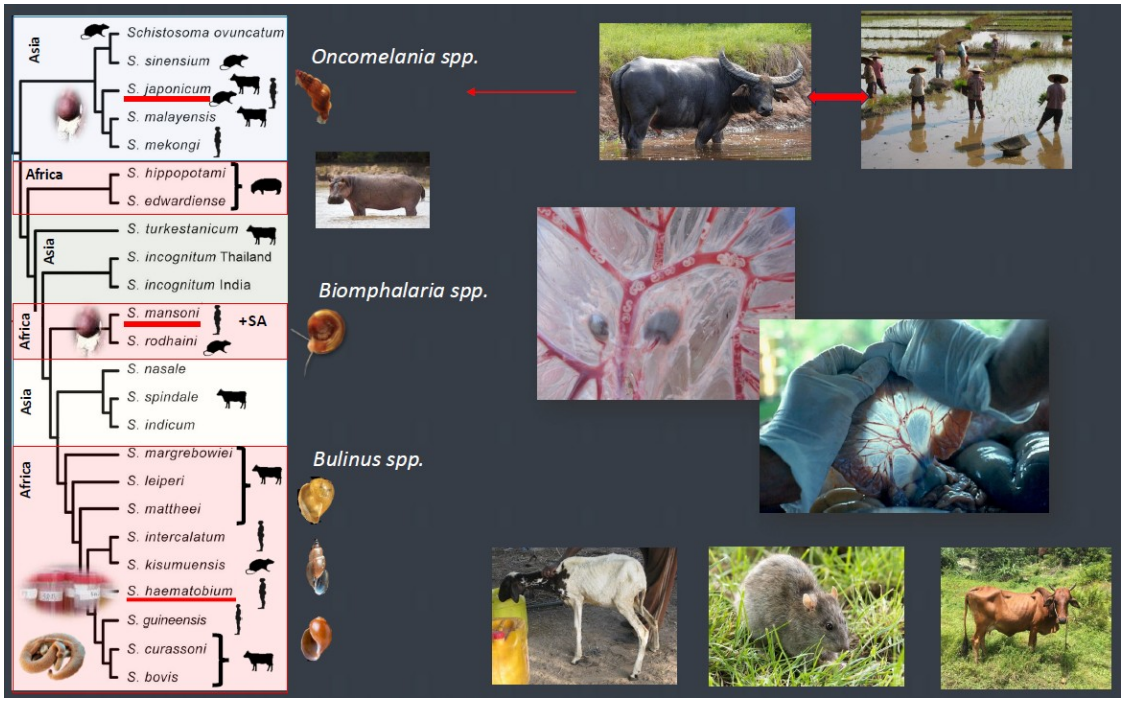


**Figure 3. Geographic and phylogenetic relationships of schistosomes and their intermediate hosts**

Conducting malacological surveys at freshwater bodies is an essential component of assessing the risk of schistosome transmission to local communities and implementing appropriate intervention strategies. This is because only specific snail species transmit specific schistosome species, and the snail species also have specific habitat preferences dictated nuances in water permanency, temperature, chemistry, substrate, vegetation and more, which are difficult to untangle. In short, this means that not all water bodies present risk of transmission due to the absence of an established snail population.

Another factor that complicates accurate mapping and surveillance of transmission sites is the difficulty in accurate snail species identification using on-the-ground morphological characteristics, which can be difficult to distinguish between distantly and closely related species. *A Schistosome Snail Vectors Pocket Guide Schistosome Snail Vectors Pocket Guide* for the identification of African snail vectors was recently published by the Global Schistosomiasis Alliance, which will help malacologists conducting surveys to distinguish between *Bulinus* and *Biomphalaria* (vectors of *S. mansoni*) and similar-looking non-vector snails, but also demonstrates the difficulty in distinguishing between species within the *Bulinus* and *Biomphalaria* genera. Mitochondrial barcoding is one of the most utilised methods for distinguishing morphologically cryptic snail taxa. In the case of Zanzibar, a rapid diagnostic PCR that can be used to differentiate between *B. globosus* and *B. nasutus*, the former being implicated as the primary vector for *S. haematobium* and the second playing an infrequent role in transmission, has been developed to speed up and reduce costs of snail identifications (Pennance *et al*., 2026 a & b) (Fig. 3). The two species have been mapped across most of Pemba, helping support the identification of high-risk areas of urogenital schistosomiasis transmission, enabling targeted interventions.

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Invited article

**The discovery of bovine schistosomiasis transmission on Pemba Island**

Prior to 2016, *S. haematobium* was thought to be the only *Schistosoma* species transmitted on the Zanzibar islands. This, together with its small and contained nature, made Zanzibar a model system for transmission control via treatment, behavioural change and snail control, and so has been the centre of ongoing schistosomiasis elimination efforts (Fig. 4).

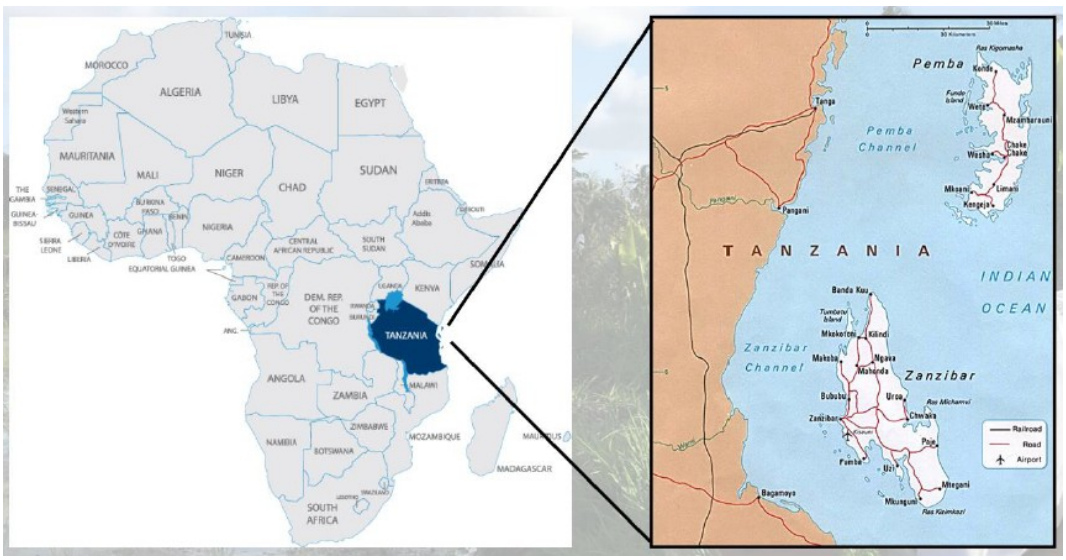


**Figure 4. Location of Pemba island**

Through malacological surveillance and the molecular identification of the *Schistosoma* cercariae released from collected snails 2016, however, the unexpected presence of the bovine species, *Schistosoma bovis,* was first reported (Pennance *et al*., 2018). Five *Bulinus globosus* snails from just one locality in Pemba in November 2016 were found to be infected with *S. bovis.* This triggered a wider interest in the surveillance of bovine schistosomiasis and concern for animal health across both Pemba and Unguja.However, through malacological surveillance and the molecular identification of the *Schistosoma* cercariae released from collected snails 2016, the unexpected presence of the bovine species, *Schistosoma bovis,* was first reported (Pennance *et al*., 2018). Five *Bulinus globosus* snails from just one locality in Pemba in November 2016 were found to be infected with *S. bovis.*

This triggered a wider interest in the surveillance of bovine schistosomiasis and concern for animal health across both Pemba and Unguja. Since *S. bovis* had not been observed in any collections prior to 2016, it is postulated that the parasite has been imported from mainland Africa in the recent past. Cattle trade from mainland to the islands has increased over the past couple of decades due to the increased demand for meat in the tourism industry and due to improved living standards for residents of the island. In the North of Pemba, it is likely that *S. bovis* transmission became established via the common practice of open grazing of tethered animals in what can be swampy pastures, which have also been found to be ideal habitats for the *Bulinus* snails (Fig. 5).

**Figure 5. Tethered cow**

The discovery of *S. bovis*-infected *Bulinus* snails in this one locality in the north of Pemba raised several questions about the level of transmission across Zanzibar, the impact on bovine health, whilst also highlighting the need for more scrutiny of infected snails to decipher those transmitting *S. haematobium* from those transmitting *S. bovis.* This can only be done via molecular methods, with snail infections typically assumed to be associated with *S. haematobium* based on observational data.

The next step in this surveillance of *S. bovis* in Pemba, therefore, was to establish whether local cattle were infected, completing the transmission cycle between the snails and the local livestock in this area. In 2019, faecal samples were collected from cattle grazing in the locality where the *S. bovis*-infected snails were found. The faecal samples were processed to isolate and hatch any *Schistosoma* eggs (if present) (Fig. 6). Samples were observed for any free-swimming *Schistosoma* larvae (miracidia), with a positive result obtained from one animal, with molecular confirmation of the miracidia as being *S. bovis* (Pennance *et al.*, 2021). Additionally, further snail collecting and subsequent molecular xenomonitoring identified further *S. bovis*-infected and/or exposed snails in the same locality but also in an additional four sites, one of which was in a different locality further south in Pemba (Pennance *et al*., 2020 and 2026b). This indicated significant transmission of bovine schistosomiasis in Pemba, with *Bulinus globosus* being the primary snail vector.

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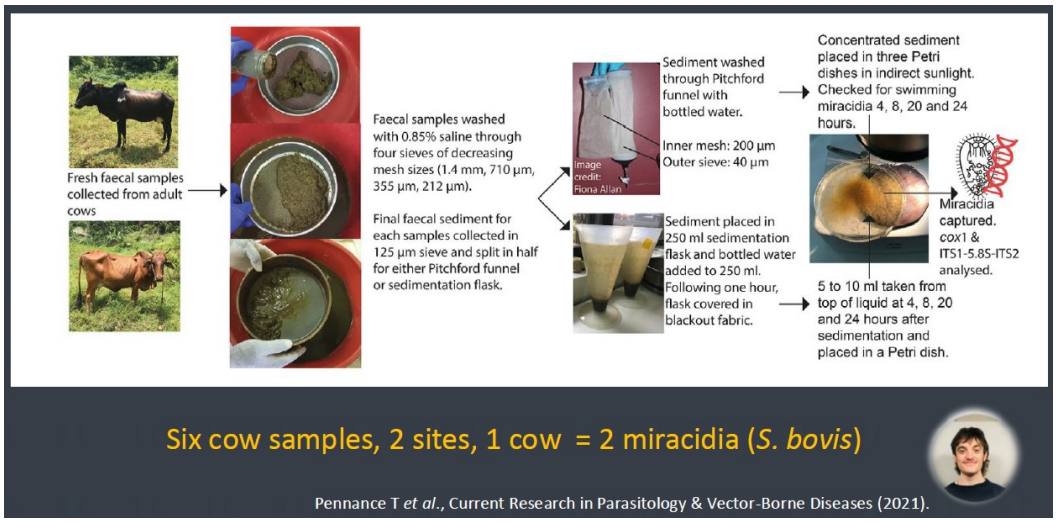


**Figure 6. Processing of samples for the investigation of *Schistosoma bovis* on Pemba Island (2019)**

Since 2019, further investigations have been carried out to understand the epidemiology of bovine schistosomiasis not only in Pemba but also the southern island of Unguja, where a large number of livestock are imported from the African mainland. Investigations have identified a high infection rate with both *S. bovis* and another livestock species common to East Africa, *Schistosoma mattheei*; however, it is yet to be established whether these represent only imported infections or whether there is local transmission (Ame *et al.*, 2025). So far, no *Bulinus* snails infected with bovine schistosomes have been found in Unguja, and since the cattle are generally imported for slaughter, they are typically penned under quarantine restrictions, which may reduce the chances of the diseases becoming established in Unguja.

**Recent surveillance of Bulinus snails on Pemba (February 2026)**

In February 2026, we conducted follow-up surveys in the north of Pemba to confirm the ongoing transmission of *S. bovis* to better understand the impact on livestock, whilst also gathering information on the snail vector habitats and ecology. During this time, we were also fortunate to work with the local Ministry of Livestock and Fisheries to raise awareness of bovine schistosomiasis and its potential impact on livestock health. This partnership enabled us to advance the investigations, whilst supporting future surveillance plans. As part of this surveillance, we were able to conduct follow-up snail surveillance, live faecal sampling of cattle, and try to find adult *S. bovis* worms in slaughtered local cattle, with the aim of getting a better idea of the prevalence levels.

Malacological surveillance was conducted on 10th February 2026 at two sites in Kinyasini in the Northern regions of Pemba Island, previously surveyed as part of the snail surveillance and xenomonitoring projects in 2017/2018 (Pennance *et al.*, 2018), one being located in the valley where, a few days previously, a cow grazing in the valley was diagnosed as positive for *S. bovis* via faecal examination. At both sites, *Bulinus globosus* snails were collected from the muddy swamp habitats, which also act as semi-cultivated land adjacent to tethered animal grazing areas. All snails collected from these sites were screened for shedding schistosomes using the generic shedding method (snail placed in a 12-well ELISA plate well filled with water and exposed to light. Only one snail was observed shedding cercariae, which was confirmed to be *S. haematobium* and not *S. bovis.* At a third new site on the outskirts of Wete, ~6 km from Kinyasini, situated at the base of a valley adjacent to rice paddies, several hundred *Bulinus* snails were collected from an irrigation drainage ditch used to regulate water flow for rice cultivation on 6th February 2026. None of the snails collected from this site was observed shedding schistosome cercariae.

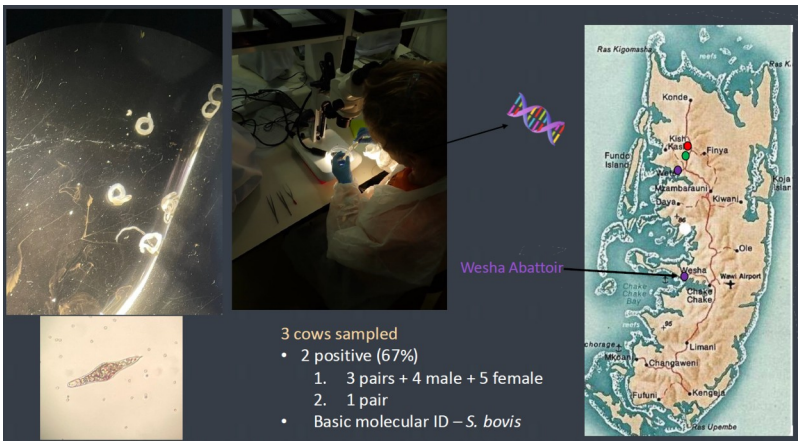


**Figure 7**

***Schistosoma bovis* on Pemba island – positive survey outcomes.**

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Invited article

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**Outcomes and findings**

From our findings, it is clear that *S. bovis* is now endemic, and at a high prevalence, in Pemba Island, transmitted primarily by *Bulinus globosus* snail vectors. Transmission is enabled by the tethering of cattle for grazing within marshy areas or next to small water bodies that contain the *Bulinus globosus*. This enables the cattle to become infected via water contact and enables snails to become infected via faecal contamination. Further investigations are needed to understand if bovine schistosomiasis has a significant impact on livestock health and local economics, in comparison to other significant infections such as *Fasciola* and tick-borne pathogens. Additionally, it is yet to be determined whether there is any zoonotic threat to local communities in line with ongoing research across sub-Saharan Africa. Furthermore, our findings of *S. bovis* now being endemic in Zanzibar highlight the mobility of schistosomiasis given the widespread distribution of suitable snail vectors present in very high numbers, and how novel schistosome-snail encounters can lead to established transmission (Martínez-Ortí *et al*., 2022).

**Recognition of Khamis Rashid Suleiman and PHL-IdC**

Zanzibar was always considered to be endemic only for human urogenital schistosomiasis, until a chance encounter with *S. bovis*-infected snails occurred in 2016. It was only due to the new molecular xenomonitoring methods being used to survey snail populations that this was discovered. For decades, PHL, Swiss TPH and the NHM have worked in partnership to advance schistosomiasis research and control in Pemba. The main focus has always been to reduce the devastating human impact of urogenital schistosomiasis, a preventable disease that is directly linked to the community's reliance on freshwater bodies, which are the natural habitats for the snail vectors. These snails are probably a vital part of the natural ecosystem, but through no fault of their own, present a significant disease threat. PHL has always had a strong focus on malacology, with Zanzibari staff members having unique expertise in identifying snail habitats and the snail vectors, whilst also having a natural knowledge of Zanzibar's geography and connections to the local communities. This valuable expertise and knowledge have greatly advanced the understanding of schistosomiasis transmission across Pemba, whilst having a positive impact on the health of the local communities. With that, we dedicate this article to our resident PHL malacologist (retired March 2026), Khamis Rashid Suleiman, who has walked many miles with us across Pemba to survey water bodies and collect *Bulinus* snails. He has helped lead all our snail expeditions and analyses across Pemba (and more), and his ability to find the most hidden transmission sites is truly unique. We will miss his knowledge and expertise, but more his companionship and unwavering support. We wish him a well-deserved rest and a healthy retirement, and we thank him for teaching us so much.

**Figure 8 Parasitological malacologists happy in the field. Khamis Rashid Suleiman is third from the left.**

**Acknowledgments**

We would like to thank the following funders for supporting various aspects of past and present research detailed above: Wellcome Trust, Swiss National Science Foundation (SNSF) and Gates Foundation.

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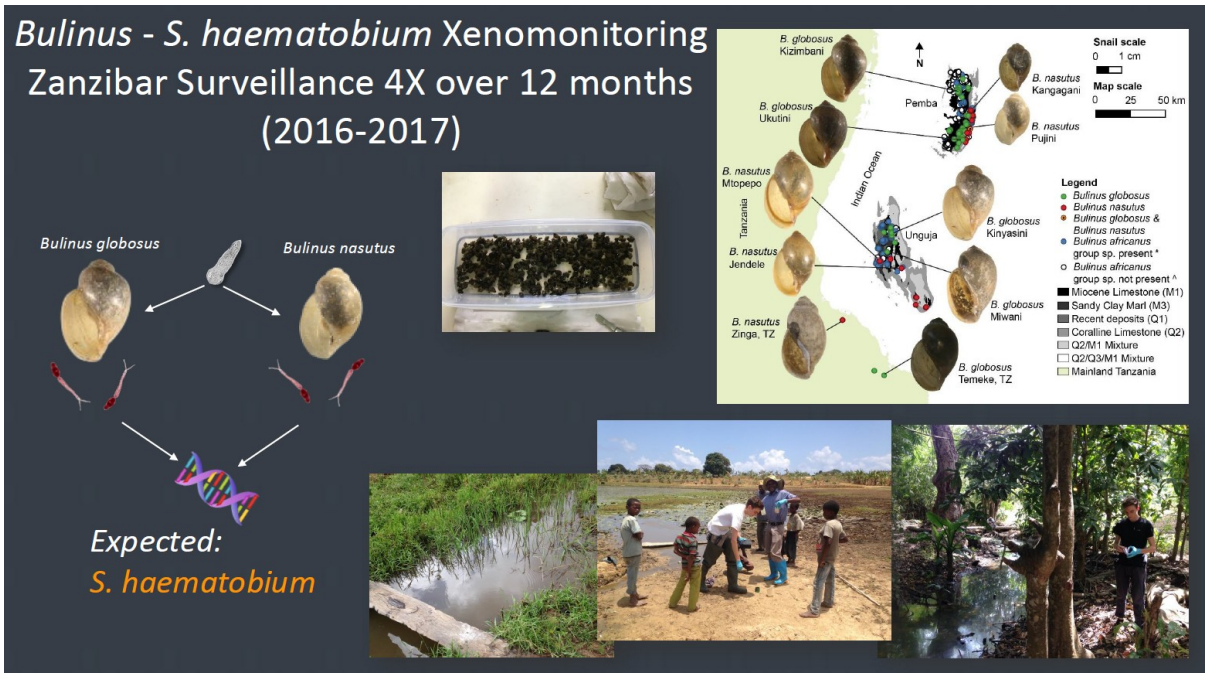
Invited article



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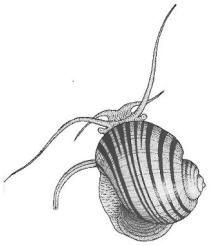

# Molluscan Forum



## CALL FOR REGISTRATIONS AND PAPERS

This informal, annual, and successful meeting is designed to bring together people starting their research on molluscs, to give them the opportunity to present and discuss their work and to compare notes on methods and problems.

Attendance at the annual Molluscan Forum is open to all, but presenters should be **research students, post-doctoral researchers, undergraduate students** starting molluscan projects, and **amateurs** engaged in substantial projects that have not yet been published. Any topic related to molluscs is acceptable: palaeontological, physiological, behavioural, ecological, systematic, morphological, cellular, or molecular.

*Presenters*
Talks (~12 minutes), quick fire talks (~3 minutes) or posters may be offered. They need not be polished accounts of completed work; descriptions of new methods, work in progress, and appeals for assistance with unsolved problems are equally acceptable. . The organising board might be prepared to accept a few pre-recorded short talks, but in-person presentations are preferred. Posters must be presented in-person.

*Non-presenters*
Virtual attendance of talk sessions for non-presenters will be possible, so please indicate whether you will be attending in person or virtually.
Please let us know whether you will be coming so that we can estimate numbers.

## THERE IS NO REGISTRATION FEE

**Enquiries and registrations to lead organiser Dr Aidan Emery**
events@malacsoc.org.uk

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## The Malacological Society of London

## Molluscan Forum, Wednesday 11th November 2026
## 9.00 – 6.30
## Flett Lecture Theatre, Natural History Museum, London

## REGISTRATION FORM

**Return before 19th September 2026, by email to:**

events@malacsoc.org.uk

Name.....

Institute.....

.....

Email.....

**Status:** PhD student / Masters student / Undergraduate / Post-doctoral researcher / amateur (delete as appropriate)
'Other' (please state) ……..

I wish to give a talk (12 min)/ quick fire talk (3 Min)/ poster (delete as appropriate) entitled:

.....

.....

Please attach, as a Microsoft Word attachment, an abstract of not more than 300 words, **TOGETHER WITH TWO .JPG IMAGES IN SUPPORT OF THE ABSTRACT**. Abstracts and images of accepted contributions will be published in the Society's on-line bulletin which is called *The Malacologist. The Malacologist* has an ISSN number and is published and archived on the website of the MSL

Posters should be roll-ups or mounted on stiff cards, and should require no more than a 1 metre x 1 metre display area. They will be mounted on boards (velcro supplied).

If you are unable to get financial support from elsewhere (students and amateurs only) and need assistance with travel costs, please enter here the cost of the cheapest possible public transport return fare to London (maximum £250).

£.....

Funding is not guaranteed but we endeavour to support as many presenters as possible. Late registrations may miss the opportunity for financial support. The support will be limited, so funding from elsewhere should be sought first. A provisional programme will be sent out late October.

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## Abstract submission

Abstracts submitted for the Molluscan Forum should be sent as Microsoft Word files.
Please use the following format:

Title (12pt, centred)
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Authors (10 pt, centred, presenting author underlined; use superscript numbers to indicate institutional affiliation)
<blank line>
Institutions (10pt, centred; in this order: Number (superscript), Department, Institution, City, Country)
Presenting Author email
<blank line>
Abstract (11pt, no indentation, justified, 350 words maximum)



### EXAMPLE ABSTRACT

### The Geographic Scale of Speciation in *Stramonita* (Neogastropoda: Muricidae)

**Martine Claremont1,2, Suzanne T. Williams1, Timothy G. Barraclough2, and David G. Reid1**

1Department of Zoology, Natural History Museum, London, UK
2Department of Biology, Imperial College London, Berkshire, UK
Email: m.claremont@nhm.ac.uk

*Stramonita* is a relatively small, well-defined genus of muricid marine gastropods limited to the tropical Eastern Pacific and the Atlantic. The type species, *S. haemastoma*, is known to have teleplanic larvae and is estimated to remain in the water column for several weeks. *Stramonita haemastoma* shows regional variation, and this has led to the recognition of five geographical subspecies: *S. h. haemastoma*, from the Mediterranean and Eastern Atlantic to Brazil, *S. h. floridiana*, on the east coast of Florida and in the Eastern Caribbean, *S. h. caniculata* on the west coast of Florida and the Gulf of Mexico, *S. h. rustica* in the Western Caribbean and *S. h. biserialis* in the Eastern Pacific. The protoconch has been shown to be similar across the *S. haemastoma* complex, implying that all subspecies have equally long lived larvae. Within these subspecies, cryptic variation is suspected. For example, *S. h. biserialis* is suggested to be differentiated North/South on a small scale. In the presence of teleplanic larvae, speciation on such a small scale seems paradoxical. Various explanations for this paradox are possible. Actual (or realized) dispersal of *Stramonita* species may be more limited than presently believed, leading to allopatric differentiation. Alternatively, morphological differentiation may not be a reliable indicator of genetic differentiation, and *S. haemastoma* (*sensu lato*) might indeed prove to be a single taxa. It is also possible that ecological speciation could result in geographical speciation on a small scale in the presence of wide dispersal. My results suggest that five species of *Stramonita* are present in the Caribbean, at least three of which occur sympatrically. Gene flow is maintained between Caribbean and Mediterranean populations in at least one species, while no genetic differentiation was found along the Eastern Pacific coast. The implications of these results are discussed.

**NOTE THAT ABSTRACTS ARE PUBLISHED IN *THE MALACOLOGIST* WHICH IS THE BULLETIN OF THE SOCIETY. *THE MALACOLOGIST* HAS AN ISSN NUMBER.**

**BEFORE THE FORUM, EMAIL TO THE EDITOR TWO IMAGES TO ACCOMPANY YOUR ABSTRACT. TRY TO MAKE THESE IMAGES ONES THAT YOU WOULD NOT USE IN AN EVENTUAL FULL PAPER.**
**EDITOR georges.dussart@canterbury.ac.uk**

# Grants and Awards

The Research Grants scheme was established to commemorate the Society's Centenary in 1993. Under this scheme The Society currently anticipates awarding at least five Early Career Research Grants per year, and up to five Senior Research Grants per year each with a value of up to £1,800, to support research on molluscs that is likely to lead to publication. The maximum amount available should not be considered as a 'target'; rather requests for monies should reflect the research that is proposed. Early Career Research Grants are conferred on students and researchers without professional positions, but without regard to nationality or membership of the Society. Senior Research Awards are aimed at established researchers in professional positions, but without regard to nationality. These awards are also open to researchers who have retired from such positions but are still active in research. Postdoctoral fellows/researchers should apply for an Early Career grant. Applicants for Senior Research Awards must be members of the Society. Preference for both award types is given to discrete research projects that fall within the subject areas covered by the Society's *Journal of Molluscan Studies*. Applications will be assessed by scientific merit, value of the project, and the extent to which the research will benefit the applicant's scientific aspirations. Applicants should bear in mind these criteria when submitting an application. In addition applications will be assessed in terms of scientific merit, significance and justification of budget requested, and the degree to which the proposed research will benefit the scientific aspirations of the applicant.

You are urged to read the Terms & Conditions for Research Grants before making an application for an award.

Successful applications to the Early Career Research Grants scheme that are concerned with the study of Bivalvia may be awarded as Sir Charles Maurice Yonge Awards.

**Deadlines**

Applications for Early Career Awards open in September and close on December 15th in the year that precedes the year of the award. The closing date for the Senior Research Grant scheme is 15th June. Applications should be made by email sent to MSL_awards@nhm.ac.uk. Please include your surname and the award proposed in the subject line of the email. Applicants will be notified of the outcome of their application after the subsequent Annual General Meeting. The Society's preferred method of payment is PayPal.

Early Career Research Grants will be reviewed by MSL Council members and Senior Research Grants will be reviewed by a Reviewers Panel including both Council and non-Council members invited for that purpose.

**Conditions**

Recipients of all Research Grants are required to submit a report to the Society within a month of completing the work supported by the award. This report should be written as an article of approximately 1000 words for publication in The Malacologist, the Society's newsletter. Any delay or alteration of the work originally proposed should be notified in advance by email to the Honorary Awards Secretary at the above address.

Financial support from the Society should be acknowledged in any publication arising from the research by including the following sentence in the Acknowledgements: "This study was partially funded by a Research Award from the Malacological Society of London". (Replace "partially" with "entirely" if appropriate).

For Research Grants, payment will be made to the successful applicant before the work commences.

Any enquiries should be directed to the Honorary Awards Secretary Prof. Alan Hodgson, MSL_awards@nhm.ac.uk

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***Early Career Research grants***

Eligibility is restricted to those investigators at the outset of their independent scientific career. Applications must therefore be 1) postgraduate students, 2) within five years of being awarded their PhD (adjustable for career breaks), or 3) independent researchers not having a PhD. Early Career Research Grants will only be awarded to individuals twice, but not within 3 years of receiving a first award. From December 2021, the Society also offers additional awards, under its Global Participation Postgraduate Student Scheme**,** to a) applicants from developing and transition countries (as according to the UN), and b) UK/EU applicants from Black, Asian, or any other underrepresented ethnic background (see next page for application procedures)

***Sir Charles Maurice Yonge Award***

Sir Charles Maurice Yonge was a seminal marine biology researcher, teacher and malacologist in the mid-20th century. For example, his handbook on sea shore organisms became a bible for countless numbers of biology students undertaking coastal fieldwork. A successful Early Career Research Grant applicant who focusses on the study of Bivalvia may be awarded a Sir Charles Maurice Yonge Award.

***Senior Research Awards***

These are aimed at established researchers in professional positions, but without regard to nationality. Applicants for Senior Research Awards must be members of the Malacological Society of London. The Society currently awards up to five Senior Research Grants per year, each with a value of up to £1,800, to support research on molluscs that is probably to lead to publication. The maximum amount available should not be considered as a 'target'; rather requests should reflect the research that is proposed. The grants are reviewed by a Reviewers Panel including both Council and non-Council members invited for that purpose.

***Travel Grants***

Travel Awards are available as bursaries to support attendance at a conference or workshop relevant to malacology. Grants are preferentially conferred on students but researchers without professional positions may also apply. The maximum amount for one of these awards is £500 for Society members and £300 for non-members. Preference will be given to members of the Society. There are two closing dates each year, The deadlines are 1st March, for travel scheduled between 1st June and 30th November, and 1st September for travel scheduled between 1st December and 31st May.

For further information, guidance notes and to access the application form see here - http://malacsoc.org.uk/awards-and-grants/travel-grants

***Annual Award***

This Award is made each year for an exceptionally promising initial contribution to the study of molluscs. This is often a thesis or collection of publications. The value of the Award is £500. Candidates need not be a member of the Society but must be nominated by a member. There is no application form: the nominating member should send the material for evaluation with a covering letter or letter of support to the Honorary Awards Secretary. The closing date each year is 15th January. The winner(s) will be notified by 31st March, and announced at the Annual General Meeting.

***Applications***

Applications for Research Awards and Travel Grants should be sent to the
**Honorary Awards Secretary,**
Prof. Alan Hodgson, MSL_awards@nhm.ac.uk

For further information, guidance notes and to access the grant application form see
http://malacsoc.org.uk/awards-and-grants/research-grants

## Global Participation Postgraduate Student Scheme

This is an initiative of the Malacological Society of London to help support more students from across the world in their malacological studies.
The scheme will run every year, so each year ten new students will be given free membership for a 3 year period. So, in 2023 there will be 10 students, in 2024 there will be 20 and in 2025 and thereafter there will be 30.

We are offering 10 students each year free membership to *The Malacological Society of London* for a period of 3 years. Students who are studying a postgraduate malacology-related course in countries designated 'developing economies' are invited to apply for this award with the support of their supervisor. Applications are open immediately and will close when all 10 memberships have been allocated. Membership of the first round starting on 1st January 2023 and ending on 31st December 2025.

The scheme will run on a yearly basis and applications will open again next autumn.
Successful candidates will benefit from:

- online access to entire archive of *Journal of Molluscan Studies* (back to 1893)
- electronic delivery of Society's bulletin, *The Malacologist*
- access to a higher rate of travel grant

regular communication from MSL about the Society's themed meetings and the annual Molluscan Forum

### Application procedure

Please send applications and proof of course registration to the Membership Secretary: membership@malacsoc.org.uk

### Selection criteria

Applicants must fulfil the conditions stated below and will be selected on a first-come basis.

### Conditions

Students must be registered for their postgraduate course in a country designated as a 'developing economy'.
The course must have a strong malacological focus.
Students must have the support of their supervisor and must send proof of course registration with their application and for each membership year.
Membership will last for a maximum of 3 years, not the duration of a course, and an individual can only receive the award once.
If there is a gap in a student's study their membership will stop, but if a course is upgraded (e.g., from MSc to PhD) and the student's study is continuous, then the membership can continue for the full duration of the scheme.
Students on part-time courses and those undertaking coursework-only courses can also apply.

# Malacological Society of London – Subscription and Membership

## Objects

The objects of the Society are to advance education and research for the public benefit by the study of molluscs from both pure and applied aspects. We welcome as members all who are interested in the scientific study of molluscs. There are Ordinary Members, Student Members and Honorary Members. Members are entitled to receive a digital copy of the *Journal of Molluscan Studies* and such circulars as may be issued during their membership. The Society's website is at: http://www.malacsoc.org.uk

## Publications

The Society has a continuous record of publishing important scientific papers on molluscs in the *Proceedings*, which evolved with Volume 42 into the *Journal of Molluscan Studies*. The *Journal* is published in annual volumes consisting of four parts which are available on-line by members and student members. The Society no longer produces paper copies of the Journal. Members also receive access to *The Malacologist*, which is the bulletin of the Society, issued twice a year, in February and August. *The Malacologist* is published on- line on the website of the Society

## Meetings and articles

In addition to traditional research on molluscan biology, physiological, chemical, molecular techniques are amongst the topics considered for discussion meetings and papers for publication in future volumes of the *Journal*.

## Subscriptions

Membership subscriptions are valid from **1st January** for a single calendar year.

## Membership fee structure

Ordinary Members: Journal on-line only £50
Student Members: Journal on-line only £29

## Methods of Payment

***New Members:***
To join the Society for the first time please fill in the Membership Form on the MSL website and make your payment using a Credit or Debit Card (Mastercard, Visa, American Express):
https://malacsoc.org.uk/membership-form/

***Existing Members*:**
If you already have an account on the MSL website please **login** to renew your membership and make your payment using a Credit or Debit Card (Mastercard, Visa, American Express)
OR
If you have already set up a standing order you may continue to pay in this way. We do not encourage members who have a MSL account on the website, or any new members, to set up a standing order.

## Institutional Subscriptions to the Journal

Enquiries should be addressed directly to Oxford University Press, Walton Street, Oxford OX2 6DP, U.K.

**For any membership queries please contact the Membership Secretary: membership@malacsoc.org.uk**