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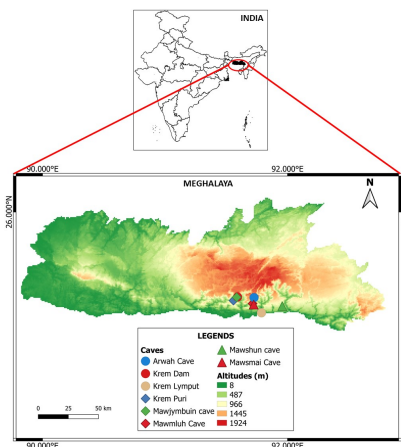
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This issue includes a report of the 130th AGM of the Malacological Society of London, plus a report on the special symposium, entitled "*William Benson and the golden age of malacology in India*" co-hosted by the Society and the Natural History Museum



Images from the research grant report by Nipu Kumar Das entitled *Non-marine molluscs of anthropogenically impacted caves of Meghalaya: understanding diversity and threats for conservation*. The report is on page 18 of this issue.

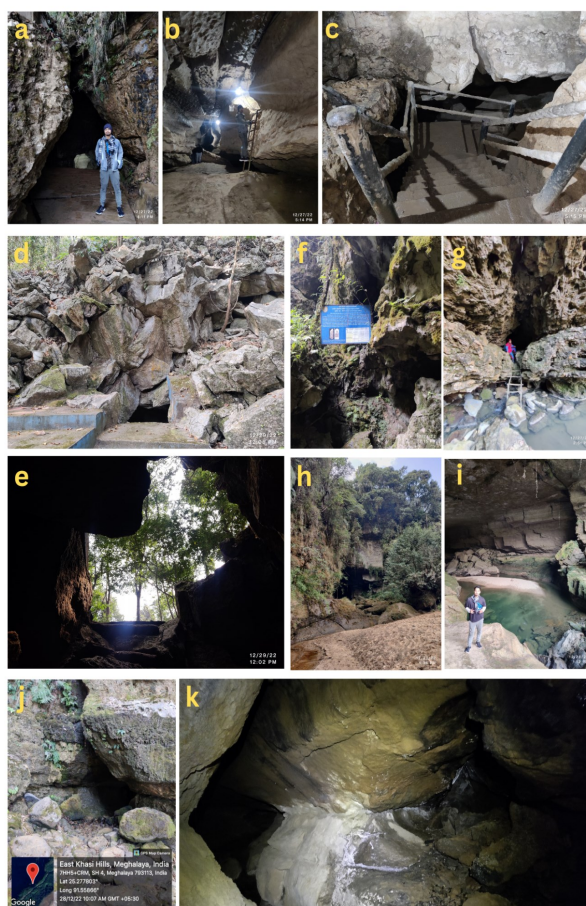


Figure 2: The surveyed limestone caves of Meghalaya:

The Malacological Society of London was founded in 1893 and registered as a charity in 1978 (Charity Number 275980)

EDITORIAL

Many malacological research projects have addressed issues of climate change and in times of global warming, having access to past data is vitally important. The Malacological Society of London (MSL) awarded a senior research grant to Louise Firth to further such a project and this issue includes her report entitled "Standing on the shoulders of giants: archiving Rosemary Bowman's historical limpet data" (page 24).

As well as climate change, the other major issue of our time (other than nuclear Armageddon, catastrophically declining biodiversity and death by plastic pollution) is artificial intelligence. It is only a matter of a (probably short) time before the abbreviation is abundant in the pages of *The Malacologist*. Sufficient unto the day the evil thereof. In the mean time, we can cheer ourselves up with molluscs, particularly at the Malacological Forum which takes place in November 2023 and is featured in this issue (pages 6 & 30). If you know any young malacologist, please bring the Forum to their attention as it is a high point of our malacological year. The MSL also supports early career research and Nipu Das presents a report on non-marine molluscs of anthropogenically impacted caves of Meghalaya.

Young malacologists need to travel, and MSL funded travel award reports are also presented in this issue including reports on "Reducing shipworm larval settlement on wood modified by furfurylation" by Lucy Martin, "*Angiostrongylus malaysiensis* in gastropod and rat population at recreational parks of Kuala Lumpur" by Suey Yee Low, "Connectivity patterns of invasive snails *Callinina georgiana* and *Heterogen japonica*" by W.A.N.U Nimanthi Abeyrathna and "Developing a nationwide baseline of giant clam population densities across the coral reefs of Thailand" by Matthias Desmolles.

An obituary on page 17 celebrates the life and work of Maryna Plesoway.

TAXONOMIC/NOMENCLATURAL DISCLAIMER

This publication is not deemed to be valid for taxonomic/nomenclatural purposes [see Article 8b in the International Code of Zoological Nomenclature 3rd Edition (1985), edited by W.D. Ride *et al.*].

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**Annual Award of the Malacological Society of London (MLS)**

The Malacological Society of London received two nominations for the Annual Award before the new deadline of the 1st December. The winner of the Annual award for 2022 was Alison Irwin for her PhD thesis on the *Evolution and function of vision in strombids*. The reviewers agreed that this multifaceted body of work united the fields of evolutionary and sensory biology, demonstrated a range of skills, and provided new insights to the biology of this fascinating family and their ecology.

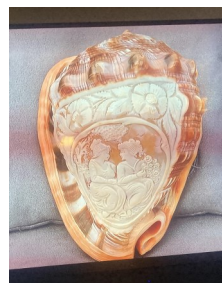
Other awards

The Oxford University Press award for the best student poster at the 2023 Malacological Forum went to Margrethe Johansen, School of Life Sciences, University of Nottingham, for her talk 'A high density linkage and binary trait map for shell-colour phenotypes in the grove snail (*Cepaea nemoralis*)'. At the World Congress of Malacology 2022, MLS awards went to Lauren Eggleton for her oral presentation and Elisa Nocella for her poster

**Molluscs on the Antique Roadshow**

African celebratory vase studded with cowrie shells. This item featured on the Antiques

Viewers were challenged as to the value of three items of carving, including a ring and a carved conch shown here. The machine-carved 20th century conch was the least valuable at £100-200.



New publication—Joseph Crosse 1826-1898).

At the end of December 2022 the Royal Belgian Institute of Natural Sciences published the book:-

Joseph Charles Hippolyte Crosse (1826-1898). 1, biography, bibliography and new taxa introduced

Edited by Abraham S. Breure, Cédric Audibert & Jonathan D. Ablett

You can download a PDF of this book for free at: <https://jemu.myspecies.info/node/6511#overlay-context=>

The password to open the PDF is: Crosse2022

A print-on-demand version (hardcopy) can be purchased at: <https://tinyurl.com/mnv538n8>

In 2023 two more volumes will be published.

Contact—Thierry Backeljau

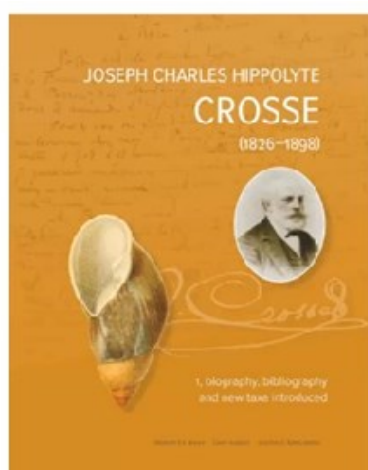
Head of the Operational Directorate "Taxonomy and Phylogeny"

Royal Belgian Institute of Natural Sciences

Vautierstraat 29

B-1000 Brussels

Belgium



Joseph Charles Hippolyte Crosse (1826-1898)

Volume 1: biography, bibliography and new taxa

Abraham S.H. Breure, Cédric Audibert, Jonathan D. Ablett.

Available to purchase as hardback or free to download

<https://jemu.myspecies.info/node/6511>



The bivalve conference in Cambridge is replete!

Bivalves - Where Are We Going?

September 5, 2023 to Friday, September 8, 2023, University of Cambridge (UK)

We aim to provide a relaxed, open, in-person meeting. The following information will help you to apply for attendance grants and plan your visit. We expect to launch the website and a full circular by the end of March.

The meeting will start in the afternoon on 5th September with Registration and a Reception in Sedgwick Museum of Earth Sciences. The meeting will close with the Banquet in the main Hall of Gonville & Caius College on the evening of Friday 8th September.

We have finalized the costs and confirm that registration fees will be £110 (students £75). Registration will cover Reception in the Sedgwick Museum, Poster session with refreshments, one lunch and all tea and coffees. The Conference Banquet will be additional at a cost of £80 per head.

Organisers: Liz Harper (University of Cambridge), John Taylor, Emily Glover & Katie Collins (NHM London)

Contact Email: emh21@cam.ac.uk

<https://bivalves.esc.cam.ac.uk>

Update 10/07/2023: We have reached capacity, please get in touch with the organisers if you wish to be contacted in the event of places becoming available.



Limpets 2020 (+4)

Biology of Limpets: evolution, adaptation, ecology and environmental impacts (Meeting of the Malacological Society of London)

First Announcement

Date of Meeting – 5th & 6th March 2024

Venue: Natural History Museum, London

Meeting Organisers

Dr Phillip Fenberg (University of Southampton), Prof Steve Hawkins (Plymouth MBA), Dr Louise Firth (University of Plymouth/University College, Cork), Prof Alan Hodgson (Rhodes University), Mr Jon Ablett (NHM, London)

In 2020 plans to hold a 3-day meeting providing a forum to discuss recent findings on all aspects of limpet biology was cancelled due to the covid-19 pandemic. Now that in person meetings are happening, we would like to announce a 1.5 day conference in early 2024 on all things limpet. It is hoped that a scaled-down meeting will still stimulate more research on these ecologically important molluscs. A number of key-note speakers are being approached (names to be announced later this year) and sessions will be available for contributed papers and posters. Presentations of research in which limpets (marine and freshwater, living and extinct) have been used as model animals in evolutionary, adaptational (morphology, physiology, reproductive biology, behaviour), ecological, environmental and climate studies are especially encouraged.

Meeting duration – 1.5 days with no parallel sessions

(Note: meeting will commence with talks and an informal social gathering on the afternoon/evening of the 5th March)

Registration Fee – FREE

During the meeting the Malacological Society will also hold its AGM

To help plan the meeting, **e-mail your expression of interest** to Alan Hodgson (A.Hodgson@ru.ac.za) indicating type of presentation you would prefer (platform paper or poster) and possible topic.

Details about registration, deadlines, and outline programme will be announced later in 2023 as plans for the meeting take shape.



World's first octopus farm—from a BBC report

A plan to build the world's first octopus farm has raised deep concerns among scientists over the welfare of the famously intelligent creatures. The farm in Spain's Canary Islands would raise about a million octopuses annually for food, according to confidential documents seen by the BBC. They have never been intensively farmed and some scientists call the proposed icy water slaughtering method "cruel." The Spanish multinational behind the plans denies the octopuses will suffer. The confidential planning proposal documents from the company, Nueva Pescanova, were given to the BBC by the campaign organisation Eurogroup for Animals.

Nueva Pescanova sent the proposal to the Canary Islands' General Directorate of Fishing. Octopuses caught in the wild using pots, lines and traps are eaten all over the world, including in the Mediterranean and in Asia and Latin America. Research in to breeding them in captivity has been going on for decades. Nueva Pescanova announced in 2019 that it had made a scientific breakthrough.

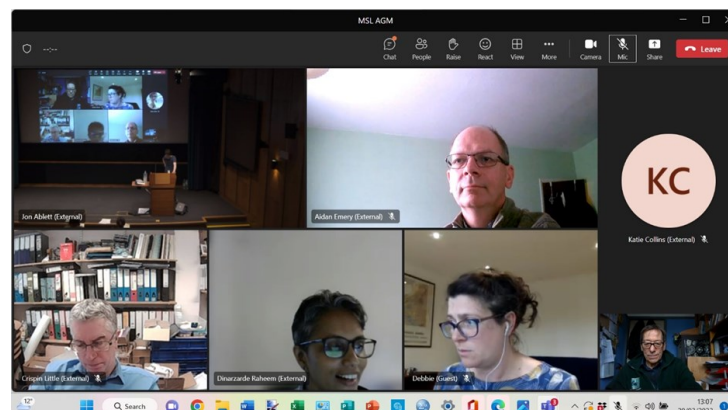
The prospect of intensively farming octopus has already led to opposition: Lawmakers in the US state of Washington have proposed banning the practice before it even starts. Nueva Pescanova's plans reveal that the octopuses would be kept in tanks with other octopuses, at times under constant light. The creatures - the species *Octopus vulgaris* - would be housed in around 1,000 communal tanks in a two-storey building in the port of Las Palmas in Gran Canaria. They would be killed by being put in containers of water kept at -3°C. Currently there are no welfare rules, as octopuses have never been commercially farmed before. However studies have shown that this method of slaughtering fish using 'ice slurry' causes a slow, stressful death. The World Organisation for Animal Health says it "results in poor fish welfare" and the Aquaculture Stewardship Council (ASC) - the leading farmed seafood certification scheme - is proposing a ban unless specimens are stunned beforehand.

Some supermarkets have already moved away from selling fish that have been killed using ice, including Tesco and Morrisons. Prof. Peter Tse, a cognitive neuroscientist at Dartmouth University, told the BBC that "to kill them with ice would be a slow death ... it would be very cruel and should not be allowed." The global octopus trade is now estimated to be worth more than £2.2bn. To supply "premium international markets" including the US, South Korea and Japan, Nueva Pescanova wants to produce 3,000 tonnes of octopus a year. This equates to around one million animals, with some 10-15 octopuses living in each cubic metre of tank, according to campaign group Compassion in World Farming (CiWF). Nueva Pescanova estimates there will be "a mortality rate of 10-15%".



IMAGE SOURCE, GERARDO G. MOURÍN -

Some members of the Council of the Malacological Society of London attending a Zoom Council meeting



The Malacological Society of London

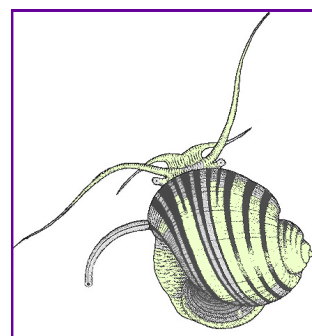
[HTTP://WWW.MALACSOC.ORG.UK](http://www.malacsoc.org.uk)

Molluscan Forum

Thursday 16th November 2023
9:00 am – 6.30 pm
Flett Lecture Theatre
Natural History Museum, London

CALL FOR REGISTRATIONS AND PAPERS

See page 30 in this issue for more details



Front page news

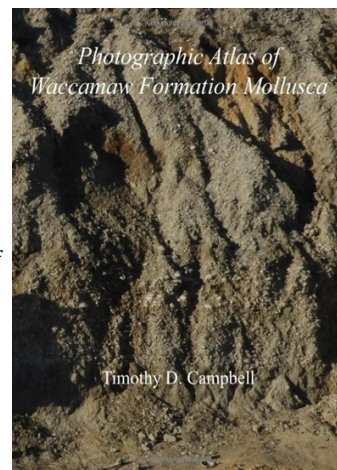
Slugs make it to the front page of the Daily Star
(it is the silly season, after all)



Photographic Atlas of Waccamaw Formation Mollusca

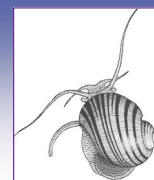
Paperback – July 26, 2023
by Timothy David Campbell

This book provides a photographic guide to over 1100 species of mollusks from the basal Pleistocene Waccamaw Formation of southeastern North Carolina and Northeastern South Carolina. It expands the set of molluscan species well-documented from the formation from ~650 to ~1250, and reveals a much more complex fauna than previously known, including numerous endemics, genera not previously reported from the western north Atlantic, and numerous temporal range extensions. In addition to just over 3000 black-and-white photographs, it contains 16 identification keys, a glossary, an appendix of additional accurate records not figured, and an appendix of taxonomic notes. This contains the highest number of species and photographs of mollusks of any reference on a single formation in the southeastern United States. In addition to its focus, *A Photographic Atlas of Waccamaw Formation Mollusca* should prove a useful reference for other Neogene and recent faunas of the region.



Annual report of Malacological Society Council for 2022/2023

delivered by the President, Dr Jon Ablett



The 130th Annual General Meeting of the Malacological Society of London took place on Wednesday the 29th March from 12:30 to 13:30 in person in the Flett Theatre of the Natural History Museum, London, as part of the '*William Benson and the golden age of malacology in India* symposium'. The meeting was also accessible remotely via Teams,

Membership reported by Harriet Wood

At the close of 2022 the Malacological Society of London had 74 members, of which 17 were new to the Society. There were 56 ordinary members, 15 student members & 3 honorary members (including the journal Editor). Two long standing members of the Society left at the end of 2022, including Elizabeth Andrews who sadly died on 5th Jan 2023.

For 2023, we currently stand at 85 members, of which 30 are students. The significant student increase is partly due to the Broadening Access Membership Scheme through which 7 students were awarded membership. In addition, there were 2 student prizes awarded at the World Congress of Malacology and the annual Oxford Prize at the Molluscan Forum, all including membership to the Society.

The Broadening Access Membership Scheme was launched in November 2022 to support more postgraduate students, from countries listed as developing economies, in their malacological studies. It offers free membership for 3 years to 10 postgraduate students each year and there are still 3 awards available for 2023 (Broadening Access Membership Scheme - The Malacological Society of London (malacsoc.org.uk)).

We are now in full alignment with Oxford University Press (OUP) regarding our membership list and members' online access to the journal. They have also been able to resolve all known web access issues for our members. With the assistance of OUP we have, where possible, managed to send missing journal issues to the affected members and OUP continue to work with our web developer to set up 'member level referral access' between the MSL and OUP websites.

Many thanks for supporting the Society through your membership.

Finance for the financial year ending 31st December 2022 reported by Katrin Linse

The finances of the Malacological Society have been impacted during 2022 by UK's challenging economy and stock market, with an overall loss of £30,052. This loss is explained by significant losses in the Investment funds. The total funds of the Malacological Society are £486,577, of which £101,667 are in cash deposits and £398,158 in unrestricted funds.

Our investments had an overall loss of £43,663 (comparing market value at 31 December 2022 with market value at 31 December 2021), with the COIF Investment Fund making a loss of £29,780 and the COIF Fixed Interest Fund a loss of £13,883. During 2022, no funds were transferred from the current account to savings accounts.

In 2022 the main charitable activities were the funding of ten ECR and two SCR research projects, of which all were claimed, (total cost of £17,534), the support of three students to attend conferences and eleven students to attend the Molluscan Forum (£2,840), and support to the organization of two malacological conferences (£3,522).

Separately, the profit-share from the publication of the *Journal of Molluscan Studies* in 2022 provided the Society with most of its income contributing £43,431, compared to £48,035 in 2021. This year OUP did not provide information on sales of the digital archives. The Editor of the Journal, Dr Dinarzarde Raheem, and the Assistant Editors are to be commended for their hard work contributing to the publication of our scientific journal.

In 2022, more funds were used for research awards, being £17,534 in 2022 compared with £13,948 in 2021. Spending on travel and meeting related spending, which significantly dropped during the pandemic, increased to pre-pandemic levels. The Society (MSL) spent more money in 2022 compared to 2021, based mainly on more expenses paid for research, travel and meeting awards.

Meeting - the Molluscan Forum, reported on by Phil Hollyman and Thomas Goulding

The annual Molluscan Forum was held on the 17th of November 2022. This year, we were able to return to an in-person meeting. In order to increase accessibility, however, we offered a hybrid format to allow for talks and attendance for those unable to be there in person. Over 96 people registered in advance for the event.

This year in addition to the traditional Poster sessions, we again used Quick-fire talks, where each speaker had five minutes and two slides to present their findings. Overall, there were 35 applications for Full and Quick-fire talks and 12 applications for Posters which were presented during 2 virtual, 2 full talk, and 2 Quick fire sessions with posters on display throughout the day. The Oxford prize, awarded annually for the best early career talk, was given to Margrethe Johansen, School of Life Sciences, University of Nottingham, for her talk 'A high density linkage and binary trait map for shell-colour phenotypes in the grove snail (*Cepaea nemoralis*)'

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Publications

The Malacologist, reported on by Georges Dussart

The *Malacologist* is the on-line bulletin of the Malacological Society of London (MSL). The editorial policy is to publish research grant reports, travel grant reports, obituaries and abstracts of conferences and symposia to show the support given by the Society to malacology and malacologists. The *Malacologist* offers an eclectic mix of malacological news, emphasising coloured images as well as text in its format. Although it is issued on-line, a limited number of paper copies are produced for various libraries worldwide, including the British Library. The 24 pages of Issue **79** came out on time and, as usual, contained a copy of the President's report of Council and abstracts of the conference which accompanied the AGM; in 2022, the conference was on Molluscan Tropical Biodiversity. It also included a Senior Research Grant report from Abraham Breure entitled *Towards an annotated and illustrated checklist of Peruvian land snails: a visit to Berlin* and reviews of three books including *A Guide to Land Snails of Australia* by Stanisic, J., Potter, D. & Stanisic, J., *The Sound Of The Sea* by Cynthia Barnett and *Interesting Shells* by Andreia Salvador. Issue **80** (February) came out on time and comprised 35 pages. This issue featured the report of the Malacological Forum of November 2022, thereby including 37 abstracts from 24 countries. There was also a research report from Dr Jose Fernández-Simón in Spain (*Barcoding the diversity of neglected meiofaunal molluscs in the western Mediterranean*), a malacological obituary from Dr. Joris M. Koene in the Netherlands (for Prof Ronald Chase in the USA) and an invited article on *The deep-sea Scaly Footed Snail* from Dr Chong Chen in Japan. Since changes to the rules of the MSL had been proposed by the Council, to be ratified at the 2023 AGM, issue 80 included a copy of the new proposed rules. The *Malacologist* continues to be an important medium by which the Council communicates with the membership, keeping them and the wider world up-to-date on developments relating to both malacology and the interests of the MSL.

The Journal of Molluscan Studies, reported on by Dinarzarde Raheem

The ISI impact factor for the Journal in 2021 increased to 1.631 (compared with 1.348 in 2020, 1.461 in 2019, 1.345 in 2018 and 1.483 in 2017). The Journal stands at number 82 in the ISI list of 176 zoological journals (it was 98 out of 125 in the previous year). The Journal continues to be truly international in terms of the geographical distribution of its authors; for volume **87** (2021) the corresponding authors represented 34 countries (of which the leaders were 17% USA and 13% Germany). The average publication time from receipt to Advance Access publication was 7 weeks for 2021.

Circulation for the Journal in 2022 was 28 institutional and 87 membership subscriptions (compared with 29 and 85 respectively for 2021). In addition, a further 2,551 institutions have electronic access to the Journal through publishers' collections (includes migrated figures; compared with 2,610 in 2021) and 975 have access through OUP's Developing Countries Offer (for details see http://www.oxfordjournals.org/access_purchase/developing_countries.html).

The new pricing structure has been fixed for 2023. The cost for an online-only subscription is £597/\$1,136/€897 for institutional subscriptions and £747/\$1,418/€1,119 for corporate subscriptions. Please see <https://academic.oup.com/mollus/subscribe> for more information.

Volume **88** (2022) contained 38 papers, research notes and review articles. In total, 94 manuscripts were submitted in 2022 (a decrease of 7.7% on the 122 in 2021) and the acceptance rate was 40%. The image of the nudibranch on the cover of Volume 89 was kindly donated by Jenny Stock.

Our board of Associate Editors now comprises Coenraad Adema (immunology, genomics, parasitology), Thierry Backeljau (molecular phylogenetics and genetics), Liz Boulding (population and reproductive biology), Robert Cameron (ecology and genetics of terrestrial gastropods), Richard Cook (agricultural malacology, physiology, feeding behaviour), Simon Cragg (life histories, sense organs), Mark Davies (marine ecology and behaviour), Dan Graf (freshwater bivalves), 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), 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), Nicolas Puillandre (neogastropods), Ellen Strong (freshwater and marine caenogastropods), Janet Voight (cephalopods), Janice Voltzow (microscopic anatomy), Heike Wägele (opisthobranch biology), Tony Walker (biochemistry, immunology, cytology), Suzanne Williams (molecular phylogenetics and genetics) and Yoichi Yusa (general ecology and behaviour). Nerida Wilson has temporarily stepped down from the editorial board.

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 Oluwatooni Akinkuotu (Publisher); Yasmin Bahar and Chloe Francis (Journal Managers); Jennifer Paxton-Boyd (Publishing Director for Science); and Matt Senderling (Marketing Coordinator). My thanks also to Gulshan Kumar, Shreya Shukla and their production team at Aptara Incorporated) for their work on behalf of the Journal.

The Website, reported on by John Grahame

There is little to report other than the day-to-day maintenance of the site, which continues and is very sporadic - it depends on what is happening! The main activity this past year has been keeping the Grant and Travel award documents current. Thanks in great part to the work of our Membership Secretary and our original site designer, the membership side of things is now working more smoothly.

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Facebook & Twitter, reported on by Jon Ablett and Lauren Sumner-Rooney

The Society's Facebook page (<http://www.facebook.com/malacsoc/>) continues to perform well. We currently have 3,265 followers on the page, continuing the trend of gradual increase over the years. We therefore have a direct outreach population of over 3,000 people/organisations who receive notifications about our posts, for example the post advertising the Society's 130th AGM has been seen by 3612 people to date. In terms of countries represented, we have the most followers from USA (487), followed by Mexico (335), the UK (243), Brazil (194), Italy (188), and the Philippines (166). The Society's twitter account currently has 830 followers and is another useful resource for communications.

Awards, reported on by Lauren Sumner-Rooney

Following Covid-related disruptions, one ECR (Early Career Research) award recipient was granted, an extension on their research project. We received 20 applications for ECR Awards in December 2022. Of these, eight were eligible for the Global Development Award. Given the challenges faced by young malacologists over the past two years, and the healthy financial position of the Society, ten ECR awards were granted, including two that qualified for Global Development awards. Five applications for Travel Awards were received in December 2022 and all were awarded. We also received seven applications for Travel Awards in March 2023: six for the meeting '*Bivalves: where are we going?*' hosted at the University of Cambridge, and one for the International Conference of the World Association for the Advancement of Veterinary Parasitology in Chennai. Finally, two applications for Senior Research Grants made in June 2022 were awarded.

The Society received two nominations for the Annual Award before the new deadline of the 1st December. The winner of the Annual award for 2022 was Alison Irwin for her PhD thesis on the *Evolution and function of vision in strombids*. The reviewers agreed that this multifaceted body of work united the fields of evolutionary and sensory biology, demonstrated a range of skills, and provided new insights to the biology of this fascinating family and their ecology.

Early Career Research Awards

Coline Monchanin: *Giant clams population, health and role as substrate for scleractinian corals in Thai waters*. Aow Thai Marine Ecology Center Thailand, **£1450**

Elea Giraud: *Ecological and evolutionary trade-offs in specialised predator-prey relationship where the prey is also a predator*. University of Portsmouth UK, **£1,468**

Jesús Martínez Sanjuán: *3D morphoanatomic study and molecular systematics of Pruvotinidae (Mollusca, Aplacophora)*. University of Alabama USA, **£1500**

Jose Armando Vidal Miralles: *Between sea angels and butterflies: a comprehensive phylogeny of Pteropoda molluscs*. University of Barcelona Spain, **£1,497**

Jose Fernandez-Simon: *Diversity and characterization of the meiofaunal molluscs of the Catalan coast (Western Mediterranean)*. University of Barcelona Spain, **£1,450**

Karolina Magdalena Zarzeczny: *The genetic consequences of tropicalisation by intertidal gastropods*. University of Southampton UK, **£1500**

Leila Belén Guzmán: *Comparative mitogenomics and phylogenetics of Biomphalaria, snails transmitting schistosomiasis*. Universidad Nacional de La Plata, Argentina, **£1500**

Nimanthi Abeyrathna: *Genetic characterization of parasites in the invasive snail Cipangopaludina chinensis in the US*. Clarkson University USA, **£1,450**.

Nipu Kumar Das: *Non-marine molluscs of anthropogenically impacted caves of Meghalaya: Understanding diversity and threats for conservation*. ATREE, University Bangalore India, **£1500**

Zeyuan Chen: *Whole-genome sequencing project of Sadleriana bavarica Boeters, 1989*. Zoologische Staatssammlung München, Germany, **£1500**

Senior Research Awards

Louise Firth: *Data rescue and reuse: archiving historical datasets to address new environmental challenges*. University of Plymouth, **£1445**.

Chiara Papetti: *Estimation of mutation rates in the Venus clam Chamelea gallina*. University of Padova, **£1274**

Travel Awards, March 2023

- Andy Tan, **£500**

- Eulynn Low, **£300**

- Ranita Saha, **£500**

- Taro Yoshimura, **£500**

- Matthias Desmolles, **£300**

- Matteo Garzia, **£300**

- Ruiqi Li, **£500**

- Yue Deng, **£500**

- Aniket Mitra, **£500**

- Isobel Ollard, **£500**

- Tabitha Blackwell, **£500**

- Alessandro Formaggioni, **£300**

- Sam Tan, **£300**

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Other matters

From this year, the Society is offering payment of Travel Awards upfront, to alleviate financial pressure on recipients. The deadlines for applications have also been shifted to better reflect the academic and conference seasons:

1st March for travel between 1st June and 30th November

1st September for travel between 1st December and 31st May

Change to Rules of the Society

It is proposed that the rules of the Malacological Society of London are changed to better comply with the running and activities of the Society in its current form. The Rules will be voted on by members of the Society at the AGM.

Presidents Report

This has been my second year as President, and thanks to the wonderful people that make up the council it has been a enjoyable and productive time for me and I feel for the society as a whole. A highlight for me this year has been a return to in-person conferences with the Molluscan Forum in November and the William Benson symposium later on today. Such in-person meetings provide a great space not only for students and early career researchers to share their work but also allow a chance for people to discuss problems and issues, learn from each other and to network. However by introducing a hybrid element to our meetings, I hope we are able to reach new audiences and presenters who may be unable to engage with the society and further the opportunities and experiences for learning that the Society provides.

Along with the meetings, and of course the journal which Dinazarde Raheem runs with incredible diligence and dedication, I believe that the support provided by our awards and grants are a real pinnacle of the society's work. I would like to thank the council and Lauren Sumner-Rooney and Harriet Wood in particular for all their hard work on the new Global Development Awards, the Equity and Inclusion Awards and the Broadening Access Membership Scheme which started this year. As a Society we are in the incredible fortunate position to have the financial ability to fund these schemes – which require extra planning, input and implementation for the officers involved - but which I hope will allow the MSL to reach new audiences and to engage globally with students and researchers across malacology. It is an honour to be the current President and I would like to recognise all that the council do for the society and I look forward to working with everyone in the forthcoming year.

Members elected to Council at the 130th Annual General Meeting 2023

Year of existence	2022-2023	2023-2024
	129	130
President	Jon Ablett (2)	Jon Ablett (3)
Vice Presidents	Fiona Allan (2)	Fiona Allan (3)
	Phillip Hollyman (1)	Phillip Hollyman (2)
Ex officio		
Councillors	Alan Hodgson (3)	Aidan Emery (3)
	Aidan Emery (2)	Robert Cameron (3)
	Robert Cameron (2)	Victoria Sleight (3)
	Victoria Sleight (2)	Katie Collins (3)
	Katie Collins (2)	Rowan Whittle (2)
	Rowan Whittle (1)	John Grahame (2)
	John Grahame (1)	
EC-Rep	Thomas Goulding (1)	Thomas Goulding (2)
Co-opted	Phil Fenburg (1)	Phil Fenburg (2)
	Crispin Little (1)	Crispin Little (2)
		Alan Hodgson (1)
Journal Editor	Dinazarde Raheem	Dinazarde Raheem
Bulletin Editor	Georges Dussart	Georges Dussart
Treasurer	Katrin Linse (final year)	Katrin Linse (final year)
Membership Secretary	Harriet Wood (2)	Harriet Wood (3)
Hon. Secretary	Debbie Wall-Palmer (2)	Debbie Wall-Palmer (3)
Web manager	John Grahame (web)/Chong Chen (Facebook)	John Grahame (web)/Victoria Sleight (Facebook)
Awards Officer	Lauren Sumner Rooney (2)	Lauren Sumner Rooney (3)
Archivist	Andreia Salvador (2)	Andreia Salvador (3)

(Numbers in brackets indicate number of years in office)



Rules revision

Rules of the Society as amended by the 130th AGM 2023

I. NAME

The Society shall be called The Malacological Society of London.

II. OBJECTS

The objects of the Society are to advance education, research and learning for the public benefit in the study of molluscs from both pure and applied aspects. In furtherance of these objects, but not further or otherwise, the Society shall have the following powers:

- (a) To promote and co-ordinate meetings and symposia,
- (b) To promote and co-ordinate research both pure and applied;
- (c) To provide for the worldwide dissemination of the useful results of such research by publication of the *Journal of Molluscan Studies*;
- (d) To award prizes to outstanding students in the field of molluscan biology;
- (e) To award research grants to individuals which will advance the study of molluscan biology;
- (f) To do all such things as will further the objects of the Society
- (g) To award travel and membership support to students and early-career scientists in the field of molluscan biology.

III. MEMBERSHIP

Membership will be open to all individuals who are interested in the study of molluscs, both from pure and applied aspects.

- (a) There will be Student Members, Ordinary Members and Honorary Members. Honorary Members shall currently be limited to five; they shall be exempt from all payments and receive the same privileges as Ordinary Members. They shall be nominated by the Council and such nominations shall be confirmed at the ensuing Annual General Meeting.
- (b) Members shall be entitled to online access the *Journal of Molluscan Studies* together with such circulars as may be issued during their membership.
- (c) The Council has the discretion to remove any member that is considered to fall below a standard acceptable to the Society but shall not exercise these powers unreasonably.

IV. MANAGEMENT

The business of the Society shall be managed by a Council elected at Annual General Meetings of the Society. The Council shall comprise the Honorary Officers (President, Treasurer, Secretary, Membership Secretary, Editor of the *Journal*, Editor of *The Malacologist*, Archivist, Website Manager, Facebook Manager, Twitter Manager, Early Career Representative and Awards Officer), the immediate Past-President (*ex-officio* for one year), two Vice-Presidents and six Ordinary Members. One individual may hold more than one council position/role. In addition, Council may co-opt up to four members on an annual basis.

Vice-Presidents and Ordinary Members of Council are elected for three years and shall not be eligible for re-election in their respective offices for one year; the Officers of the Society shall be eligible for re-election each year, but the President shall normally serve for three years and upon retirement shall serve as a Vice-President (*ex officio*) for one year. Treasurer, Secretary and Membership Secretary shall normally serve for three years but shall be eligible for re-election after each three year period of service and can be re-elected indefinitely with agreement of the Council and the membership.

Nominations for Council from members must be proposed and seconded and in the hands of the Secretary by 31 December. It shall be the duty of Council to nominate members for election to the offices of President, Treasurer, Secretary, Membership Secretary, Editor of the *Journal*, Editor of *The Malacologist*, Archivist, Website Manager, Facebook Manager, Twitter Manager, Early Career Representative and Awards Officer, and for the vacancies in the Council caused by annual retirement. Nominations from the members and from Council shall be submitted to the Society with the notice convening the Annual General Meeting which shall be sent to every member of the Society not less than fourteen days before the Meeting.

In the case of a vacancy arising in any office of the Society, or in the Council, the Council shall have power to fill up such vacancy until the next Annual General Meeting.

At Council Meetings any six members shall form a quorum.

>CONTINUED

V. FINANCE

- (a) Admission fees and annual subscriptions shall be such sums as may be determined by a Special General Meeting convened under Rule VI(c), or at the Annual General Meeting.
- (b) Subscriptions shall be due from the 1 January in each year; but in the case of a new member, immediately after election.
- (c) Any member whose current subscription has not been received in full by 31 January shall be reminded of the arrears in subscription and be informed that online access of the Journal, and other membership benefits, are suspended until the arrears are paid.
- (d) The Council shall revise and publicize the conditions of the Society's awards and grants from time to time.
- (e) For the purpose of legal protection of the property of the Society, all funds, books and other property shall be declared vested in Council as the Society's Trustees.
- (f) The Council shall cause to be kept Minutes of Council and Society Meetings and books of account in respect of all receipts, payments, assets and liabilities. Accounts shall be presented to each Annual General Meeting for approval by members and such accounts shall be independently examined.

VI. MEETINGS

- (a) Council shall each year organize a programme of Ordinary Meetings of the Society, which may include meetings held in association with similar institutions.
- (b) The Annual General Meeting shall be held at some time during the period February to April.
- (c) The Council may, when they think fit, and shall upon a Requisition signed by not fewer than twelve members, convene a Special General Meeting of the Society. A notice of every Special General Meeting, stating the business, shall be sent to every Member of the Society not less than fourteen days before such meeting or announced in the Bulletin; no business shall be considered at such Meeting except that for which it was specially convened.
- (d) Council shall meet regularly though out the year to discuss society business.

VII. RULES

Matters relating to the interpretation of the Rules shall be decided by the Council.

VIII. AMENDMENT

No rule shall be altered except by a majority of votes of those present at a Special General Meeting called for the purpose, or at the Annual General Meeting. No change shall be made that would have the effect of causing the Society to cease to be a Charity in Law.

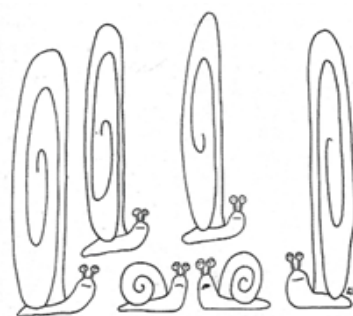
IX. WINDING UP

If upon winding up or dissolution of the Society there remains, after the satisfaction of all its debts and liabilities, any property whatsoever, the same shall not be paid or distributed among the members of the Society, as such, but shall be given or transferred to some other charitable institution or institutions having objects similar to the objects of the Society and which shall prohibit the distribution of its or their income and property among its or their members, such institution or institutions to be determined by the members of the Society at or before the time of dissolution, and if so far as effect cannot be given by such provisions, then to some charitable object.

(Adopted 17 May 1978, revised 25 March 1998, 19 March 2001, 28 April 2005 and 29 March 2023)



From a Facebook post



"This area's been ruined by developers"

17-23 March 2023 | The New Statesman

Report on the AGM associated scientific meeting
Wednesday 29 March 2023

William Benson and the Golden Age of Malacology in India

The symposium was based around the launch of the new book '*William Benson and the golden age of malacology in British India*' and featured talks from some of the authors along with research that has been inspired by Benson and the regions he studied

Speakers included

- Dr Aravind Madhyastha (Ashoka Trust, India)
- Dr Richard Preece (Museum of Zoology, Cambridge)
- Dr Barna Pall-Gergely (Centre for Agricultural, Hungary)
- Dr Dinazarde Raheem (Rajarata University of Sri Lanka)
- Dr Tom White (NHM, London)



This meeting followed the AGM of the Malacological Society of London. Talks were given in the Flett Theatre, Natural History Museum, London by an international team of malacologists and were followed by a wine reception. This free meeting was attended by participants in-person and virtually via Zoom.

Programme

12.30 AGM for Council and Members

14.00 Symposium welcome and introductions

14.10 Richard Preece (Museum of Zoology, Cambridge) '*William Benson and the golden age of malacology in British India*'

14.40 Tom White (NHM, London)
'*William Benson, his successors, and his legacy*'

15.10 Dinazarde Raheem (Rajarata University of Sri Lanka) '*The Sri Lankan land-snail fauna: Benson's contribution and recent research on Corilla*'

15.40 Coffee break

16.10 Aravind Madhyastha ((Ashoka Trust, India)
'*Benson, Godwin-Austen and the current status of studies on nonmarine molluscs of India*'

16.40 Barna Pall Gergely
'*It all began with Benson*'

17.15 Closing Remarks

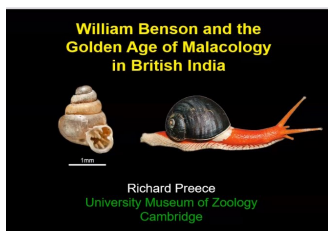
17.30 Wine Reception



Some of the joint authors of the Benson publication
L-R Tom White, Richard Preece & Jon Ablett

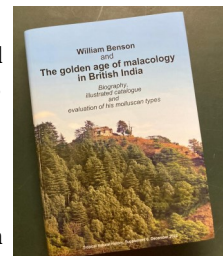
Richard Preece

Museum of Zoology, Cambridge

William Benson: pioneer of the golden age of malacology in British India

William Henry Benson (1803-1870) made extensive collections of molluscs, particularly land snails, from South Africa, Mauritius, and especially from the Indian subcontinent, where he worked for the East India Company's Bengal Civil Service. He also received specimens from friends, family and a network of colleagues that included naturalists, physicians, clergy, military personnel and staff of the Geological Survey of India. By this means he obtained material from diverse and often remote parts of India, as well as from Burma, Sri Lanka, China, Borneo, Singapore, Australia, St Helena and Cape Verde. Biographical details of Benson and his malacological net-

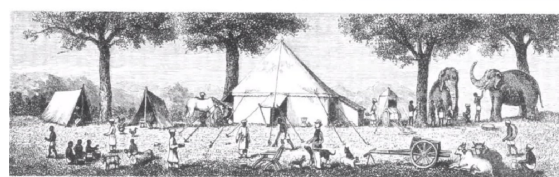
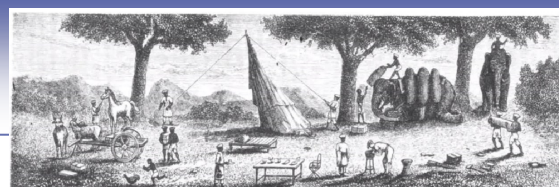
work are discussed, as is his pioneering role initiating the golden age of malacology in British India. In a series of papers published between 1829 and 1865, he introduced 471 species-level names belonging to 60 families of gastropod and 8 families of bivalve, as well as names for 32 genus-groups. Benson gifted or exchanged many specimens with other researchers, and many ended up in the British Museum and are now housed in the Natural History Museum in South Kensington. However, the bulk of his collection was acquired after his death by Robert McAndrew, who incorporated it into his own huge collection, which he bequeathed to the University Museum of Zoology, Cambridge (UMZC) in 1873. The Benson collection suffered badly before it was acquired by the UMZC and many of Benson's original labels were replaced with the loss of detailed locality and other data, making it difficult to evaluate the type status of many specimens. In a new publication we have attempted such an evaluation based on surviving archival and other evidence and we provide a comprehensive illustrated catalogue of his species, designating lectotypes and neotypes where appropriate. His taxa have been set in a modern systematic framework and the volume includes a comprehensive geo-referenced index of localities for the taxa considered.

**Tom White**

NHM, London

William Benson: his successors and his legacy

William Benson's pioneering work laid the foundations for subsequent research by such notable malacologists as W.T. Blanford, H.H. Godwin-Austen and G.K. Gude. Following Benson's death in 1870, his collection was acquired by Robert McAndrew, who integrated it into his own large collection of mainly marine shells. McAndrew loaned the Benson collection to Sylvanus Hanley, who had many of the specimens figured for *Conchologia Indica*, the first major illustrated work on Indian non-marine Mollusca, which he co-authored with William Theobald. In 1873 the Benson collection was bequeathed, as part of the McAndrew collection, to the University Museum of Zoology, Cambridge. By this time, many of Benson's original labels had been replaced (mainly by Hanley) and his manuscript notebooks mislaid; nevertheless, his material continued to be a primary source for publications such as the molluscan volumes of *Fauna of British India* and Godwin-Austen's *Land and Freshwater Mollusca of India*. The 'Golden Age' of Indian malacology that began with Benson's early work in the 1820s concluded with the deaths of Godwin-Austen and Gude in the early 1920s.



From "People, Life in India" by W. B. D. (1890)

THE CAMP AT 6 A.M. AND 6 P.M.

Sylvanus Hanley (1819–1899)

- Known for various conchological works, including *Photographic Conchology*, the first to use photographs to illustrate specimens.
- Borrowed specimens (bivalves) from Benson in the early 1850s, some of which he described using Benson's manuscript names.
- Notorious for removing labels and locality data from specimens lent to him...

Jon Ablett

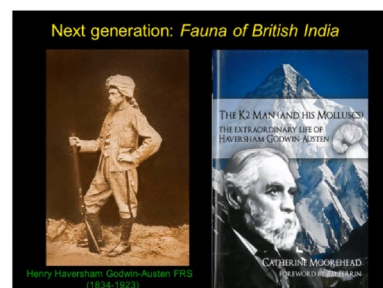
**H.H. Godwin-Austen (1834–1923)**

Great Trigonometrical Survey K2, "greatest mountaineer of his day"

Married Kudikji in 1858, adopted Islam Son, Edward, born in 1857

Land and Freshwater Mollusca - successor to *Conchologia Indica*

Introduced 905 molluscan taxa (a good proportion of which are invalid)



Dinarzarde Raheem

Rajarata University of Sri Lanka

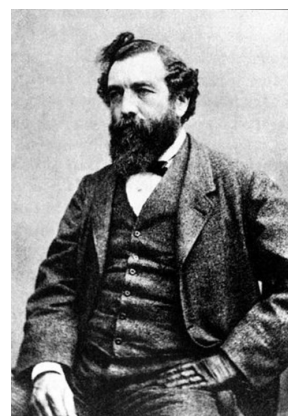
The Sri Lankan land-snail fauna; William Benson's contribution and recent on Corillo

The Sri Lankan fauna is phylogenetically diverse and rich in endemic species. The total number of recognized indigenous species is 207, of which 186 (89%) are endemic to the island. Nearly all of these species were described during the 19th century and the first decade of the 20th century; William Henry Benson (1803–1870) was a hugely significant contributor to this work. Benson named 33 endemic species from the island, but his contribution goes far beyond that. He was well ahead of his time in the emphasis he placed on the geographical distribution of species, and by the 1850s was the leading authority on the British Indian land-snail fauna. He made only two short visits to the island, so nearly all of the species he named from the island were collected by Frederick Layard (1823–1872) and Edgar Layard (1824–1900). Since Benson's time, the Sri Lankan fauna has been treated as being distinct from the Indian fauna. However, it has been recognized only recently that the Sri Lankan fauna exhibits a high-level of localized endemism. What factors underlie this pattern? A first step to tackling that question is to establish what species there are in key groups, develop a solid grasp of their distribution and then to investigate their diversification. Being of manageable size (11 recognized species: 10 endemic to Sri Lankan and 1 to India), the genus *Corilla* is a particularly attractive group for such work. My recently published molecular phylogenetic study of Sri Lankan *Corilla*, which is



Indoartemon layardianus (Streptaxidae), a species collected by Edgar Layard and described by Benson. Photo D.Raheem

based on restriction-site-associated DNA sequencing data, agrees with the shell-based taxonomy of five of the species (all maximally supported as monophyletic species). I found that *C. erronea* and *C. fryae* constitute a single relatively widespread species (for which the valid name is *C. erronea*). The most significant finding was that the names *C. gudei* and *C. odontophora*, as currently used, apply to at least two distinct, yet conchologically-cryptic species. Further surveys are likely to yield previously undiscovered species. However, the more urgent issue is to obtain highly detailed data on the distribution and habitat requirements of *Corilla* species surviving in the most severely deforested regions; the three species currently included under the Benson's name *C. odontophora* are a high priority.



Edgar Leopold Layard (1824–1900).

https://en.wikipedia.org/wiki/Edgar_Leopold_Layard

**Barna Páll-Gergely****'It all began with Benson'**

Plant Protection Institute, Centre for Agricultural Research, Herman Ottó út 15, 1022 Budapest, Hungary

During the last decade I have been mostly working on taxonomic revisions of Southeast Asian land snail groups. The two largest and most widespread group I have been revising are the Alycaeidae (Cyclophoroidea) and Plectopylidae (Stylommatophora). The Alycaeidae currently contains ca. 350 accepted species from the Western Himalayas and the Western Ghats until Japan in the east. That family (that time as the genus *Alycaeus*) was first revised by William Henry Benson (1803–1870) in 1859, and included 20 species, of which 16 was described by him.

Currently, the family Plectopylidae includes ca. 120 species, and they are distributed between Himalayas to southern Japan. The genus *Plectopylis* was named and diagnosed by Benson in 1860. He realized that six species that were classified in multiple genera share the same characteristics (presence of internal lamellae), and needed a group of their own.

The majority of the species and genera of Benson are considered valid, which is not surprising because he was among the firsts to describe land species in British India. However, several groups (e.g. *Dioryx* Benson, 1859, Plectopylidae) are still diagnosed with the character that Benson originally observed. This indicates that he was an outstanding naturalist, whose work is referred to very positively after ca. one and a half centuries.



N.A. Aravind**Benson, Godwin Austen and the current status of studies on non-marine molluscs of India**

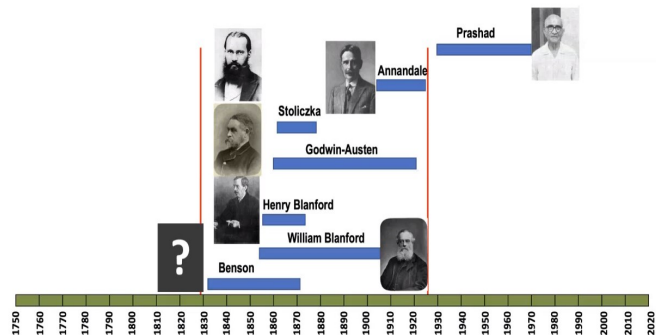
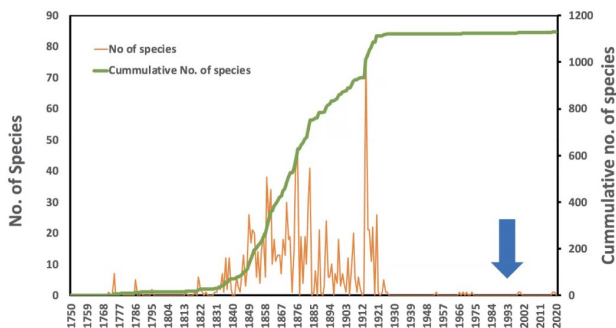
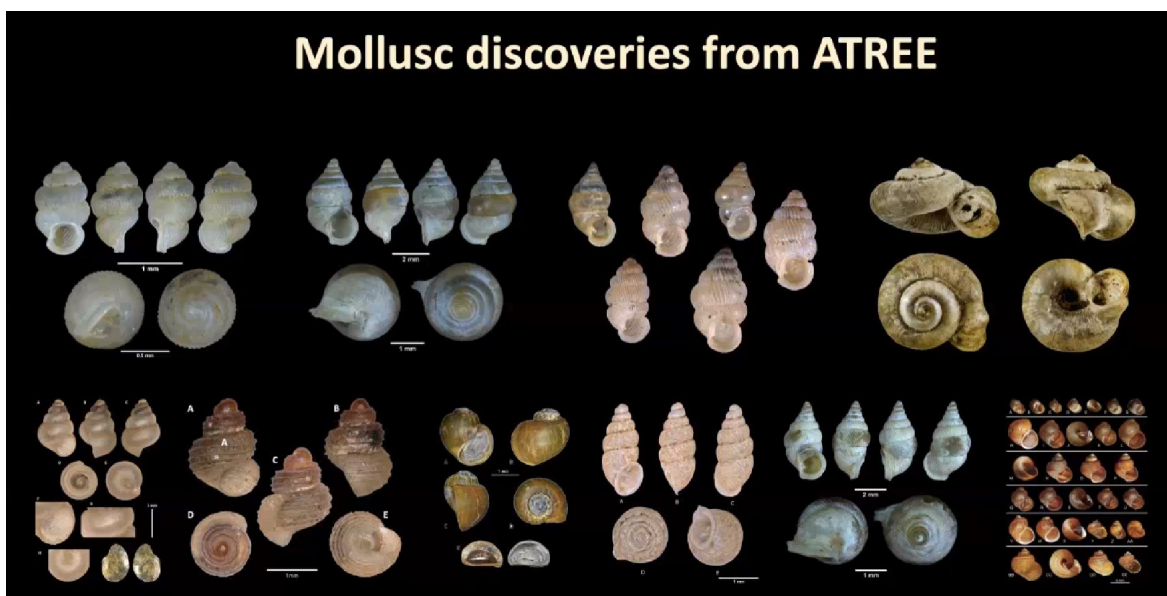
SM Sehgal Foundation Center for Biodiversity and Conservation,
Ashoka Trust for Research in Ecology and the Environment (ATREE),
Royal Enclave, Srirampura, Jakkur PO,
Bangalore 560064, India

Benson, Godwin-Austen and the current status of studies on non-marine molluscs of India

Aravind N.A.
ATREE, Bangalore
aravind@atree.org



The realm of Indian malacology, particularly in relation to non-marine molluscs, witnessed significant growth through the pioneering efforts of William Benson during the early to mid-19th century. Subsequently, from that time until the year 1930, a host of European malacologists significantly enriched our knowledge of the systematics of molluscs. Among these malacologists, HH Godwin-Austen stands out as the final luminary who achieved significant achievements. Following his demise in 1923, the momentum of Indian malacology subsided, marked by limited contributions from a handful of researchers hailing from India. However, the landscape of Indian malacology experienced a renaissance during the latter half of the 20th century, largely catalysed by the pioneering endeavours of Fred Naggs from the Natural History Museum in London. His exploration of the works of William Benson ignited a spark of interest among numerous young malacologists in India. In the wake of this resurgence, our laboratory embarked on an extensive survey encompassing the documentation, systematics, biogeography, and conservation efforts pertaining to non-marine molluscs of India. Through these surveys, we made a substantial collection from over 500 distinct sites across India, encompassing an assemblage of more than 1,000 species and a staggering tally exceeding 20,000 specimens. My presentation elucidates how these comprehensive collections have been judiciously harnessed to unravel the intricacies of the aforementioned subjects. In conclusion, I deliberate upon the impending challenges and the abundant prospects that lie on the horizon, in the realm of non-marine mollusc research and conservation within the Indian context.

Species discovery**Mollusc discoveries from ATREE**

Obituary

Maryna Pauline PLESOWAY

June 18, 1980 - December 31, 2022

Dr. Maryna P. Lesoway was born in Edmonton and grew up in London, Ontario, and Calgary, Alberta. Maryna died at her home in San Diego on December 31, 2022.

After completing her Bachelor of Science in Zoology at the University of Calgary, Maryna completed a Master of Science in Biology at the University of Victoria. Maryna then took a break from the lab and spent two years teaching English in Kamikawa, Hokkaido, Japan. When she came home to Canada, Maryna moved on to PhD studies in Biology at McGill University and the Smithsonian Tropical Research Institute in Panama. Upon graduation, she took a postdoctoral fellowship at the University of Illinois Urbana-Champaign. Most recently, she was a postdoctoral scholar at the Scripps Institution of Oceanography, University of California, San Diego.



Maryna is survived by her parents, Robert and Linda Lesoway of Calgary, her grandmother, Katie Dyck of Edmonton, and her three siblings and their families: David and Colleen Lesoway and their son Vasy, in Belmont, California; Kathryn Lesoway and David Shinner and their sons Jack and Cole, in Perth Australia; and Nicholas and Fiona Lesoway, in Beaumont, Alberta. Maryna is also survived by numerous aunts, uncles, cousins and friends. She was predeceased by her grandparents Peter Dyck and Nicholas and Josephine Lesoway and her step-grandfather, Henry Buhler.

Maryna was brilliant and beautiful and kind and good and talented and funny and strong and resilient and deep. We were so lucky to have basked in her love, even though our time with her was far too short. Our lives without her will never be the same. A celebration of Maryna's life was held on February 25, 2023, at 1:00 p.m. at the Eden Brook Funeral Home, 24223 Township Rd 242, Calgary, Alberta.

Vichnaia pamiat. May she always be remembered.

Marie Lesoway

Publications

- Collin R, Shishido CM, Cornejo AJ, Lesoway M.P., 2020 Ancestral form and function of larval feeding structures are retained during development of non-planktotrophic gastropods. *The International Journal of Developmental Biology*. PMID 32930356 DOI: 10.1387/Ijdb.200154Rc
- Henry JQ, Lesoway M.P., Perry KJ. 2020 An automated aquatic rack system for rearing marine invertebrates. *Bmc Biology*. 18: 46. PMID 32366250 DOI: 10.1186/S12915-020-00772-W
- Armisen D, Rajakumar R, Friedrich M, Benoit JB, Robertson HM, Panfilio KA, Ahn SJ, Poelchau MF, Chao H, Dinh H, Doddapaneni HV, Dugan S, Gibbs RA, Hughes DST, Han Y, ... Lesoway M.P., et al. 2018 The genome of the water strider *Gerris buenoi* reveals expansions of gene repertoires associated with adaptations to life on the water. *Bmc Genomics*. 19: 832. PMID 30463532 DOI: 10.1186/S12864-018-5163-2
- Henry JQ, Lesoway M.P., Perry KJ, Osborne CC, Shankland M, Lyons DC. 2017 Beyond the sea: *Crepidula atrasolea* as a spiralian model system. *The International Journal of Developmental Biology*. 61: 479-493. PMID 29139534 DOI: 10.1387/Ijdb.170110Jh
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- Lesoway M.P., Abouheif E, Collin R. 2016 Comparative Transcriptomics of Alternative Developmental Phenotypes in a Marine Gastropod. *Journal of Experimental Zoology. Part B, Molecular and Developmental Evolution*. 326: 151-67. PMID 27194576 DOI: 10.1002/Jez.B.22674
- Lesoway M.P., 2016 The future of Evo-Devo: the inaugural meeting of the Pan American Society for evolutionary developmental biology. *Evolution & Development*. 18: 71-7. PMID 26773456 DOI: 10.1111/Ede.12181
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- Abouheif E, Favé MJ, Ibarrarán-Viniegra AS, Lesoway M.P., Rafiqi AM, Rajakumar R. 2014 Eco-evo-devo: the time has come. *Advances in Experimental Medicine and Biology*. 781: 107-25. PMID 24277297 DOI: 10.1007/978-94-007-7347-9_6
- Mcdonald KA, Collin R, Lesoway MP. 2014 Poecilogony in the caenogastropod *Calyptraea lichen* (Mollusca: Gastropoda) *Invertebrate Biology*. 133: 213-220. DOI: 10.1111/lvb.12057
- Lyons DC, Perry KJ, Lesoway MP, Henry JQ. 2012 Cleavage pattern and fate map of the mesentoblast, 4d, in the gastropod *Crepidula*: a hallmark of spiralian development. *Evodevo*. 3: 21. PMID 22992254 DOI: 10.1186/2041-9139-3-21



Early career research grant reports

Research financially supported by the Malacological Society of London

Non-marine molluscs of anthropogenically impacted caves of Meghalaya: understanding diversity and threats for conservation

Nipu Kumar Das^{1,2}

¹SM Sehgal Foundation Center for Biodiversity and Conservation, Ashoka Trust for Research in Ecology and the Environment (ATREE), Bangalore, Royal Enclave, Jakkur, 560064, Karnataka, India

²Manipal Academy of Higher Education (MAHE), Manipal, Karnataka, India

INTRODUCTION

Cave biodiversity studies have been conducted globally, documenting diverse molluscan species and their compositions in unique cave habitats. These caves possess distinct environments characterized by darkness, high humidity, low temperatures, and hypoxic conditions, fostering unique faunal diversity (Culver & Pipan 2019; Biswas 2009). Biospeleology, the study of cave organisms, aids in understanding regressive evolution and conserving endemic species. Caves provide ideal habitats for numerous taxa, including molluscs, with the discovery of the world's smallest snail species (Dumrongrojwattana *et al.*, 2021). These cave species are highly sensitive to environmental changes, anthropogenic activities, and climate change, highlighting the importance of understanding their diversity, ecology, and relationship with environmental parameters.

Regrettably, India's caves have received limited exploration; only a few specific caves have been investigated. Studies conducted in caves such as Siju Cave (Garo hills, Assam), Kotumsar Cave (Chhattisgarh), Borra Cave (Visakhapatnam, Andhra Pradesh), and Mawsmmai Cave (Meghalaya) have focused mainly on taxonomy and species listing, lacking in-depth studies on molluscan ecology and microhabitat associations. There is a lack of comprehensive data on the number of mollusc species inhabiting these unique environments.

Potential non-marine cave mollusc species may exist in the Naga hills, Arunachal Pradesh, and other northeastern states of India. Recent surveys in Mawsmmai Cave documented two microsnail species, *Acmella tersa* and *Georissa mawsmmaiensis*, along with their natural history and potential threats (Das & Aravind., 2021; Das *et al.*, 2021). Meghalaya, known for its abundance of limestone caves, faces threats from activities such as mining, tourism, and recreation. Therefore, my research aimed to investigate the molluscan fauna within selected caves in Meghalaya to bridge existing knowledge gaps.

MATERIAL & METHODS

Meghalaya, an Indian northeastern state, borders Bangladesh to the west and south, and Assam to the east and north. It features a hilly plateau with an average altitude of 1000 meters (Harries *et al.*, 2008). This study focused on sampling non-marine molluscs in Meghalaya's caves, both land and freshwater species (Figure 1-2). Mawsmmai cave is being resurveyed following research conducted by Das *et al.* in 2021. Opportunistic sampling was conducted both inside (to approx. 10 m inside, targeting the cave floor and walls) and outside the caves (nearby the cave entrance, within 150-200 m from the forest floor). Soil-leaf litter samples were collected from each forest plot and stored for later sorting. Visual searches were conducted outside the caves, targeting tree trunks and under logs to collect arboreal and cryptic species. If present, freshwater molluscs were sampled from streams. Site characteristics such as canopy cover, litter depth, vegetation cover, altitude, soil pH, and microhabitat type were recorded to assess habitat variables and cave ecosystem characteristics.

Species identification relied on different shell characters, with relevant literature serving as a reference. Collected specimens were preserved in ethanol and deposited at the Zoological Survey of India in Kolkata.

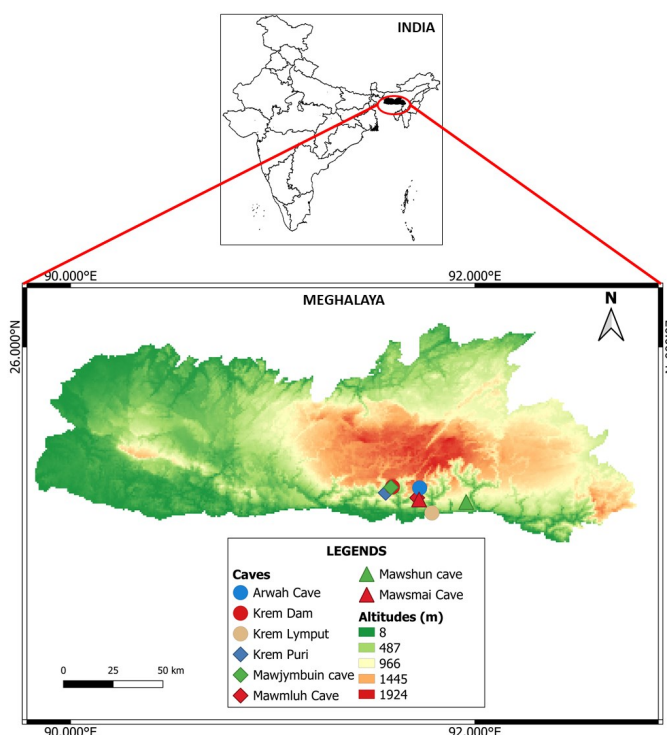


Figure 1 Map of caves sampled in Meghalaya, India

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Figure 2: The surveyed limestone caves of Meghalaya: Arwah cave(a-c), Krem Lymput (d-e), Mawmluh cave (f-g), Krem Dam (h-i), Krem Puri (j-k),

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Figure 2 continued The surveyed limestone caves of Meghalaya: Mawjymbuin cave (l-n) & Mawshun cave (o-p).

RESULTS

Diversity

We surveyed eight limestone caves in various altitudes of Meghalaya and collected molluscs from both inside and outside the caves (Figure 1-2). In total, we identified 49 species of land molluscs belonging to 27 genera and 15 families (Table 1). Mawsmi cave was being resurveyed following the research conducted by Das *et al.* in 2021, and the resurvey confirmed the presence of the same snail species composition in the interior. A significant proportion of the species are potentially new to science. The diversity of molluscs varied among the caves as well as between the inside and outside habitats (Figure 3-4). Among all the caves surveyed, Krem Lymput exhibited the highest diversity of malacofaunal composition, with five species found inside the cave and 31 species found outside.

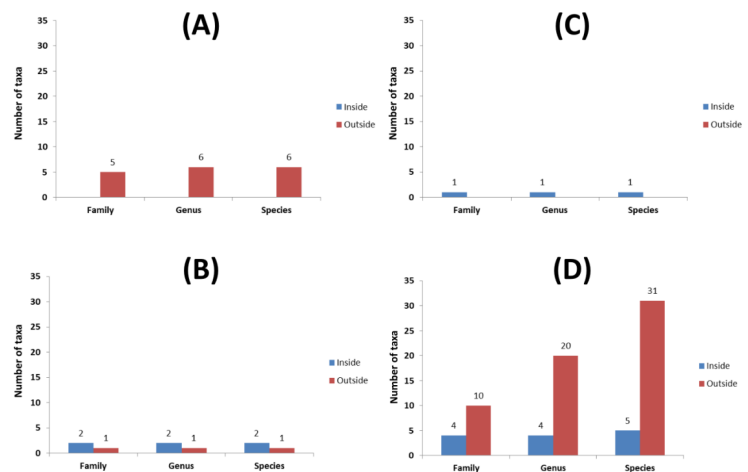


Figure 3: Number of taxa across the surveyed caves; (A) Mawshun cave, (B) Krem Puri, (C) Arwah, Mawjymbuin, and Mawmluh caves, (D) Krem Lymput.

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Table 1: Molluscan diversity across the surveyed caves in Meghalaya

Cave	Latitude	Longitude	Inside/ Outside	Family	Species
Mawmluh Cave	25.253222	91.714566	Inside	Helicarionidae	<i>Cryptaustenia sp1</i>
Arwah Cave	25.301939	91.72691	Inside	Assimineidae	<i>Acmella sp1</i>
Krem Puri	25.2777803	91.55866	Inside	Hyselostomatidae	<i>Angustopila milium</i>
			Inside	Assimineidae	<i>Acmella sp2</i>
			Outside	Hydrocenidae	<i>Georissa sp</i>
Krem Dam	25.30694	91.592073	No specimens found; fossilized freshwater snails on the rocks (Figure 6.3.u)		
Mawjymbuin cave	25.3046572	91.5850165	Inside	Hyselostomatidae	<i>Angustopila milium</i>
Mawshun cave	25.232175	91.957224	Outside	Diplommatinidae	<i>Diplommatina sp</i>
			Outside	Ariophantidae	<i>Macrochlamys cf molecula</i>
			Outside	Plectopylidae	<i>Endothyrella affinis</i>
			Outside	Helicarionidae	<i>Cryptaustenia sp2</i>
			Outside	Cyclophoridae	<i>Spiraculum cf nagaense</i>
			Outside	Cyclophoridae	<i>Cyclophorus sp</i>
Krem Lympu	25.178353	91.787333	Inside	Assimineidae	<i>Acmella sp4</i>
			Inside	Assimineidae	<i>Acmella sp3</i>
			Inside	Succineidae	<i>Succinea sp</i>
			Inside	Ariophantidae	<i>Khasiella sp</i>
			Inside	Cyclophoridae	<i>Scabrina sp</i>
			Outside	Diplommatinidae	<i>Diplommatina diplocheilus</i>
			Outside	Cyclophoridae	<i>Craspedotropis sp</i>
			Outside	Alycaeidae	<i>Alycaeus prosectus</i>
			Outside	Alycaeidae	<i>Alycaeus cf andamaniae</i>
			Outside	Alycaeidae	<i>Chamalycaeus sp1</i>
			Outside	Alycaeidae	<i>Dicharax cf hebes</i>
			Outside	Ariophantidae	<i>Sesara galea</i>
			Outside	Achatinidae	<i>Rishetia tenuispira</i>
			Outside	Plectopylidae	<i>Endothyrella cf affinis</i>
			Outside	Pupinidae	<i>Pseudopomatias pleurophorus</i>
			Outside	Cyclophoridae	<i>Scabrina cf phaenotopica</i>
			Outside	Chronidae	<i>Kaliella cherraensis</i>
			Outside	Pupinidae	<i>Tylotoechus imbriciferus</i>
			Outside	Plectopylidae	<i>Plectopylis cf plectostoma</i>
			Outside	Achatinidae	<i>Glessula crassula</i>
			Outside	Achatinidae	<i>Glessula sp1</i>
			Outside	Achatinidae	<i>Glessula sp2</i>
			Outside	Clausiliidae	<i>Oospira loxostoma</i>
			Outside	Cyclophoridae	<i>Cyclophorus affinis</i>
			Outside	Ariophantidae	<i>Macrochlamys sp1</i>
			Outside	Ariophantidae	<i>Macrochlamys cf lata</i>
			Outside	Ariophantidae	<i>Macrochlamys cf vesica</i>
			Outside	Ariophantidae	<i>Oxytesta pollux</i>
			Outside	Camaenidae	<i>Chloritis delibrata v khasiensis</i>
			Outside	Camaenidae	<i>Chloritis sp</i>
			Outside	Cyclophoridae	<i>Cyclophorus siamensis</i>
			Outside	Cyclophoridae	<i>Cyclophorus sp</i>
			Outside	Ariophantidae	<i>Oxytesta cf oxytes</i>
			Outside	Plectopylidae	<i>Endothyrella sp1</i>
			Outside	Plectopylidae	<i>Endothyrella sp2</i>
			Outside	Cyclophoridae	<i>Pearsonia cf hispida</i>
Mawsmi Cave	25.245	91.72405	Inside	Assimineidae	<i>Acmella tersa</i>
			Inside	Hydrocenidae	<i>Georissa mawsmiensis</i>

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Ecological features:

The interior and exterior environments of the caves exhibit temperature ranges of 17-21.5 °C and 16.8-23.3 °C, respectively, while the humidity ranges between 64-70% and 61-71%, respectively (Figure 5). The soil pH outside the caves ranged between 7 and 8.

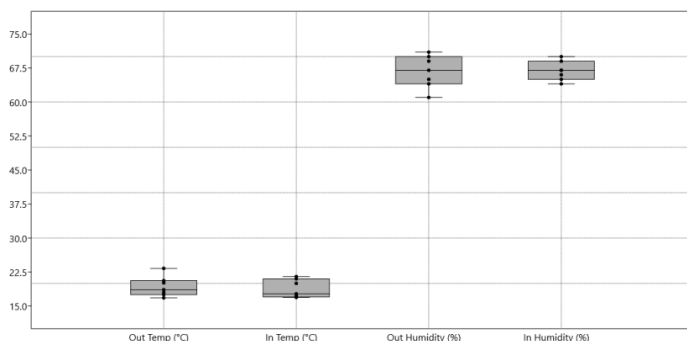


Figure 5 Temperature and humidity comparisons between interior and exterior environments across the surveyed caves



Figure 4 Representatives specimens from the caves and their surroundings. *Angustopilla milium* (A), *Acmella* sp1 (B), *Acmella* sp3 (C), *Craspedotropis* sp (D), *Macrochlamys cf molecula* (E), *Tyloechus imbriciferus* (F), *Glossula* (I, J, K, L, M, N, O, P, Q)

Threats (Figure 6):

Mawmluh cave faced a potential threat due from the presence of a cement factory (Mawmluh-Cherra Cements Ltd.), located outside, although it ceased operations around 2012-2014 (according to local guides). Water flowing from the cement factory, connects with the water flowing out of the cave. Inside the cave, plastic litter (plastic bottles) can be observed near the exit for a distance of approximately 100 meters.

Arwah and Mawsmai caves, being a popular tourist destination, had artificial lights installed throughout the cave, creating a bright internal environment. Staircases were constructed at the entrance to facilitate tourist access.

Krem Puri, Mawjymbuin cave, and Krem Dam are also significant tourist sites in Meghalaya. Although no signs of pollution were found, the presence of tourist footfall in these caves may have an impact on the faunal composition.

Mawshun cave stood out as the most natural cave among all the surveyed sites. In Krem Lympu, a long cemented staircase, approximately 500 meters in length, was constructed from Hat Nangjri road to the cave entrance. The cave and its surroundings have been developed as a resort, with various amenities such as cemented and bamboo houses, toilet facilities, water supply, power supply both in and near the cave. Additionally, there is a betel nut plantation surrounding the cave.



Figure 6
1. Potential threats like Plastic wastes (q-r), artificial lighting and tourists (s) observed inside the Arwah cave
2. Measuring the temperature using digital thermometer (t);
3. Fossil of freshwater snails observed inside the Krem Dam (u);
4. Collection of microsnails from the wall of Krem Puri (v)

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DISCUSSION & CONCLUSION

The survey conducted in Meghalaya's caves revealed a diverse molluscan fauna both inside and outside the caves. Notably, several species that are potentially new to science were discovered, highlighting the importance of further exploring the biodiversity of these caves. Meghalaya has numerous limestone caves, making it a crucial area for cave research and conservation efforts.

The study also indicated that the collected mollusc species are adapted to the cold and humid environments prevalent in the caves. Fluctuations in temperature and humidity within these caves and their surroundings may have an impact on the composition of the faunal communities. Understanding the effects of these environmental factors is crucial for assessing and preserving the delicate ecosystems within the caves.

One of the findings of the study was the identification of a potential pollution source for Mawmluh Cave. The presence of a cement factory located outside the cave raised concerns regarding water contamination, which could potentially affect the composition of snail populations in the cave. This highlights the need for proactive measures to address and mitigate such pollution sources to safeguard the unique fauna within the caves.

Overall, the study suggests the importance of further research and conservation efforts in Meghalaya's caves, considering their rich biodiversity and the potential threats they face. By understanding the ecological dynamics and implementing appropriate conservation strategies, we can protect and preserve these remarkable cave ecosystems and the species that depend on them.

ACKNOWLEDGMENTS

I am grateful to Malacological Society of London for the Early-Career Research Award, and Dr. NA Aravind (ATREE) for his support and guidance. Special thanks to Dibya Jyoti Das for invaluable assistance during data collection. I express my gratitude to Meghalaya Biodiversity Board for permitting field work (No.SBB.19/ABS/Pt.-IV/8243). I am thankful to the people of Meghalaya.

OUTCOMES

One paper of this work has been submitted to the *Journal of Conchology*. Several others are currently under preparation.

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Senior research award report

Research financially supported by the Malacological Society of London

Standing on the shoulders of giants: archiving Rosemary Bowman's historical limpet data

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In summer 2022, I was the proud recipient of the Malacological Society Senior Research Grant award. This grant helped support a placement student with the digitization of hundreds of files of the late Dr Rosemary Bowman.

Rosemary Bowman (1943-2021) was a marine biologist who spent much of her working life at the University of Leeds' Wellcome Marine Laboratory in Robin Hoods Bay, North Yorkshire. Rosemary is best well known for her incredibly detailed work on limpet morphology, reproduction and recruitment but being a key member of the Natural Environment Research Council (NERC) Rocky Shore Surveillance Group, she was an all-round rocky shore ecologist with expertise on trochids and barnacles amongst many other taxa.

Rosemary worked closely with John (Jack) Lewis - Director of the laboratory. Jack was an international authority on rocky shore ecology, who conducted extensive research on the development and distribution of rocky shore organisms. Alongside Jack and the rest of the NERC Rocky Shore Surveillance Group, Rosemary surveyed rocky intertidal species across the whole of Britain and to a lesser extent, Ireland and France. On collating her spreadsheets and meticulous field notebooks, it became apparent that she had spent an incredible amount of time on the shore at Robin Hood's Bay in particular. Despite the Wellcome Marine laboratory closing in 1982, we discovered that between 1972 and 1997 Rosemary visited the shore monthly (and sometimes up to five times monthly) during limpet reproductive seasons, trying to capture the exact timing of spawning of the limpets - *Patella vulgata* and *P. ulyssiponensis* (formerly *P. aspera*). This enabled her to identify the importance of temperature and other climatic factors (e.g., storms) in influencing spawning (Bowman and Lewis 1977, 1986).

In addition to collecting what must be one of the most in-depth breeding phenology datasets on any organism, Rosemary also revisited many fixed plots on the shore collecting regular data (Figure 1) on limpet and barnacle spat, juveniles and adults amongst other variables. This enabled her to determine the factors affecting survival of a range of organisms during early shore life (Lewis and Bowman 1975; Bowman and Lewis 1977; Bowman 1985; Kendall et al. 1982, 1985), in addition to producing the 'go-to' guide on juvenile limpet identification (Bowman 1981). She also investigated the impacts of oil pollution on marine life (Bowman 1978).

In 1981, Rosemary deployed temperature probes on the shores around Robin Hood's Bay. Despite the laboratory closing in 1982, she continued to collect the data (almost daily) until 1994. She also kept weather records and newspaper cuttings for nearby Whitby from 1983 to 2004 (Figure 2). Her in-depth knowledge and understanding of the role of small-scale temperature variation on the shore coupled with collaboration with European colleagues on the European Commission-funded COST 647 Project on Coastal Benthic Ecology, Rosemary gained invaluable insights on geographical variation in the breeding cycles and recruitment (Lewis et al. 1982; Bowman and Lewis 1986). These invaluable data provide an excellent baseline for comparison with contemporary data collected during a time of rapid climate change.

The last paper that Rosemary published was in 1986 (Bowman and Lewis 1986). She kept collecting data until the 1990s (biological) and 2000s (temperature, weather). On her passing in 2021, Rosemary's sister Penny kindly gifted her files to me. Despite having three excellent students working on the data over two consecutive summers, we have only managed to digitise a fraction of her data. Rosemary's data are a treasure and need to be properly curated and shared. We are currently working on publishing a number of datasets and papers.

Region	Shore	Site No.	Date	Observer																								
North Yorkshire	RH Bay: Staup	Obs 1, 2 + 3.	20. 2. 77.	LSB.																								
<table border="1"> <thead> <tr> <th><i>P. vulgata</i>:</th> <th>Adults</th> <th>Juveniles</th> <th>Spat</th> </tr> </thead> <tbody> <tr> <td>Obs 1:</td> <td>223</td> <td>24</td> <td>1 @ 1 m in post. Jaws @ 6-9 m.</td> </tr> <tr> <td colspan="4">A few vacant scars 25-30 mm. (Oyes - see Gen Obs).</td> </tr> <tr> <td>Obs 2:</td> <td>265</td> <td>35</td> <td>5 @ 1-2 in new post in SW corner.</td> </tr> <tr> <td colspan="4">Jaws smaller than on O1 - 5-7 m. Quite a lot of vacant holes.</td> </tr> <tr> <td>Obs 3:</td> <td>219</td> <td>24</td> <td>7 @ 1 m all in post. Jaws 6-8 m, not examined.</td> </tr> </tbody> </table>					<i>P. vulgata</i> :	Adults	Juveniles	Spat	Obs 1:	223	24	1 @ 1 m in post. Jaws @ 6-9 m.	A few vacant scars 25-30 mm. (Oyes - see Gen Obs).				Obs 2:	265	35	5 @ 1-2 in new post in SW corner.	Jaws smaller than on O1 - 5-7 m. Quite a lot of vacant holes.				Obs 3:	219	24	7 @ 1 m all in post. Jaws 6-8 m, not examined.
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Balarus: 10 x 5 cm ² counts; adults $\frac{Obs 1}{Obs 2}$ = 87, 115, 111, 81, 101, 102, 103, 81, 88, 98 = 960 (x40) = 38,400/m ² . No <i>Eliminaria</i> seen. Still good cover, ~80-90% Last yr's quite large & nearly solid-packed now, all slightly greenish. Obs 2 :- Porolith. Bad cover here, only ~60%. Obs 3 :- Bad only slightly better cover than on Obs 2.																												
<table border="1"> <thead> <tr> <th>Mytilus:</th> <th>Misc.</th> </tr> </thead> <tbody> <tr> <td></td> <td>Crack on Obs 1 widened slightly, 15-20m wide, 4 cm max. Max rock has been at scar for @ diff. indicating crack a little.</td> </tr> </tbody> </table>					Mytilus:	Misc.		Crack on Obs 1 widened slightly, 15-20m wide, 4 cm max. Max rock has been at scar for @ diff. indicating crack a little.																				
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Algae: Lowr. along cracks only on Obs 2. Virt ^l no weed along cracks or in post on Obs 3. 'scouring' (see Gen Obs). UPS/2624/4/77																												

Figure 1. Example of data recording sheet showing the level of detail that was captured in fixed plots on the rocky shore at Robin Hood's Bay.

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Other data archaeology and rescue efforts have been very successful. For instance, the MarClim (Marine Biodiversity and Climate Change) Project was established in 2001 to investigate changes that had occurred in rocky intertidal systems within the last 50 years around the UK. MarClim established a low-cost network of sites covering England, Wales and Scotland which provided subsequent annual updates to track how climate influences the marine biodiversity of the British Isles (e.g., Burrows et al. 2020; Mieszkowska et al. 2021).

Rosemary's data on limpets, other molluscs, and the wider data collected as part of the Rocky Shore Surveillance Group, and COST 647 Project on Coastal Benthic Ecology represent an ideal opportunity for a similar project to rescue data and revisit field sites. In an era of rapid global climate change and open data, it is of critical importance to look after the legacies of Rosemary Bowman and those who have gone before us. After all, we all know that our ability to see further is merely because we are standing on the shoulders of giants.

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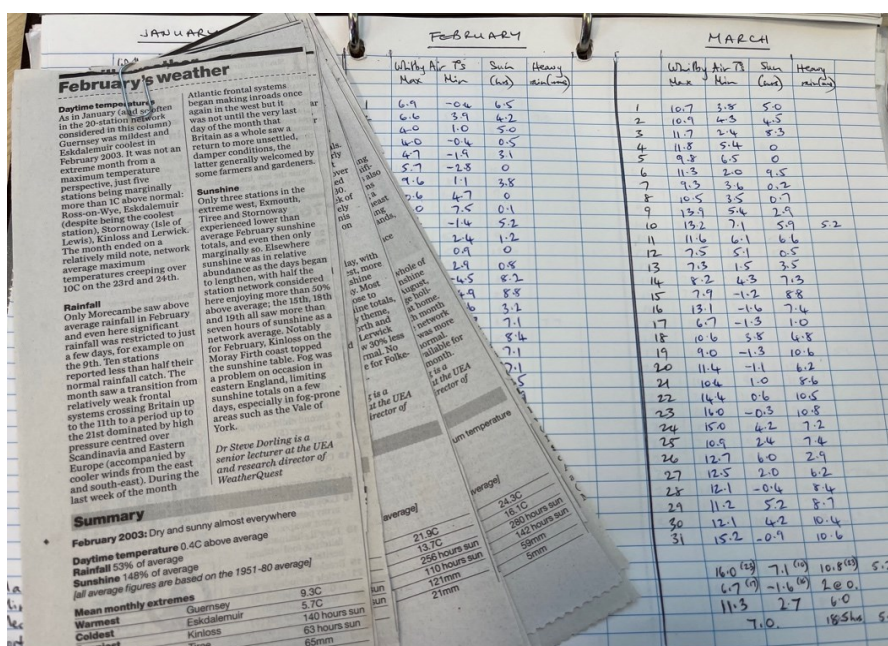


Figure 2. Example of temperature data recording sheet and newspaper cuttings of monthly weather reports.

TRAVEL GRANT REPORTS

Reducing successful shipworm larval settlement on wood that has been modified using furfurylation

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Thanks to an Early Career Research Grant from the Malacological Society of London, I was able to travel to the Institute of Marine Science (ISMAR-CNR) in Venice, Italy in June 2022, to complete a work placement assessing settlement attempts by the wood-boring bivalves on treated wood.

Teredinid bivalves, commonly known as shipworms, are aggressive attackers of wood in the marine environment, posing a particular risk to anthropogenic structures such as piers and sea defences. Their relatively large size (compared to crustacean wood-borers) and potential for rapid growth can result in damage to such structures that can amount to billions of pounds every year. It is therefore beneficial, in wood preservation technologies that are designed for marine use, if teredinids can be restricted at the early larval stage, before settlement and damage ever occur. Novel approaches to protecting wood in the marine environment are needed as restrictions by legislation in the EU, USA, UK and Australia, have limited the scope for the use of broad-spectrum biocides. Wood modification offers a promising alternative approach to protecting wood from marine wood borers, while also reducing environmental impacts from leaching of traditional treatments, such as CCA (chromated copper arsenate) and creosote. Processes of modification are evolving rapidly, so long-term testing needs to be supplemented by rapid lab and field testing methods in order to keep up with process development. The outline for assessing wood resistance to marine borers is set by the European Standard, EN275. However, the assessment is based on the percentage cover of adult animals observed on radiographs, which requires years of exposure in order to achieve comprehensive results. A rapid test monitoring larval settlement success can provide much faster initial results and allow for greater flexibility in modification processes and possibly act as a predictor of the long-term efficacy of commercial products.

Shipworm are prevalent in Venice due to their long history of maritime wood use, and the availability of shipworm larvae in the lagoon (in the late spring/early summer spawning season), provides an ideal environment to conduct rapid testing.

It was difficult to induce spawning in shipworm cultures that were reared in aquaria, so testing was instead conducted adjacent to EN275 test rigs that were already in operation in Venice, and that contained actively spawning adult shipworm. Small wood blocks (25mm x 20mm x 5mm) were cut from larger planks of wood that had been treated using a chemical modification known as furfurylation. Two treatments of furfurylated wood and an untreated control were deployed in June 2022, and assessed after 5, 10 and 15 weeks of exposure. Settlement attempts were identified via visible hemispherical indentations that were left by larvae that had failed to metamorphose and were counted manually. Any larvae that had successfully settled and metamorphosed produced a calcium carbonate deposit around the entrance of the bore hole and were also counted - these were classed as 'successful attempts'.

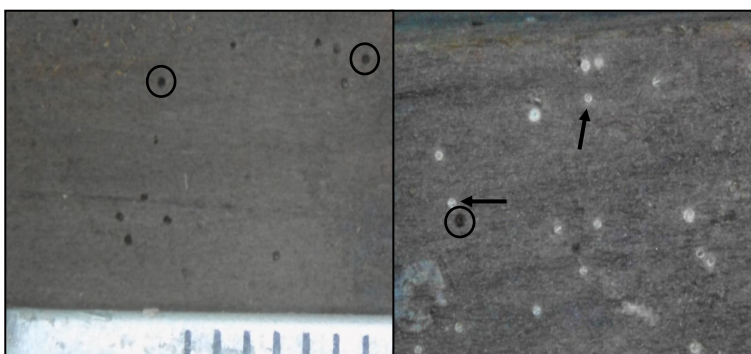
On treated wood, no successful settlement was observed until week 15 and this was only indicated by slightly larger entry holes that had begun to be covered by a calcareous deposit. Untreated control wood on the other hand were heavily infested by adult shipworm (seen by x-ray at week 10) and were terminated at week 15 due to the severity of attack. Fewer initial attempts were also made on the treated woods compared to the control.



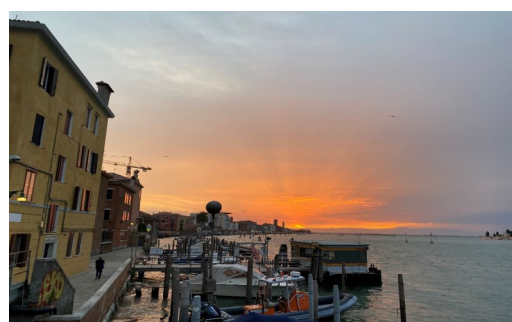
Shipworm *Teredo navalis* bivalve shell



Shipworm damage in experimental wood



Hemispherical bore holes from attempted shipworm larval settlement, examples circled. Metamorphosed larvae i.e., 'successful' settlement attempts, examples indicated by arrows. Scale 1mm.



View from the Arsenale di Venezia at the end of the work day.



***Angiostrongylus malaysiensis* in gastropod and rat population at recreational parks of Kuala Lumpur, Malaysia.**

29th International Conference of the World Association for the Advancement of Veterinary Parasitology in Chennai (India), 20 – 24 August 2023

Suey Yee Low

Department of Veterinary Pathology & Microbiology, Faculty of Veterinary Medicine, Universiti Putra Malaysia.

Email: eulynnlow96@gmail.com

The 29th International Conference of the World Association for the Advancement of Veterinary Parasitology (WAAVP) was held from August 20 to 24, 2023, in Chennai, India. The conference is organized triennially by WAAVP. The latter serves as a premier global platform for researchers in the field of veterinary parasitology to convene and deliberate upon the most pressing issues concerning parasites and their impact on both animal and human health. The theme of this year's conference is *Parasites; Global Impacts, Local Solutions*. As a first-time attendee at an international conference, this experience was enlightening, informative and unforgettable.

The conference started with two keynote lectures delivered by experts that provided deep insights into the current state of knowledge and ongoing research in the field of veterinary parasitology.

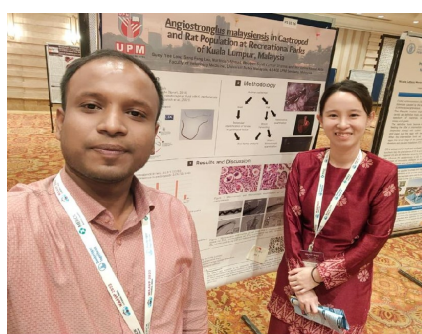
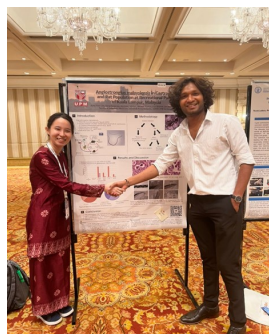
One of the most exciting moments during the conference was the opportunity to present my own work through a poster presentation: "*Angiostrongylus malaysiensis* in Gastropod and Rat Population at Recreational Parks of Kuala Lumpur, Malaysia." I got the opportunity to engage with fellow researchers who shared a similar fascination with the *Angiostrongylus* worm. The discussions with others provided me with fresh insights and perspectives that I had not previously considered.

In addition to the scientific sessions, the conference facilitated an environment for networking and collaboration through yoga sessions and fun runs. It was very interesting to interact with researchers from different geographical backgrounds. This connection not only expanded my professional network, but also fostered lifelong friendships.

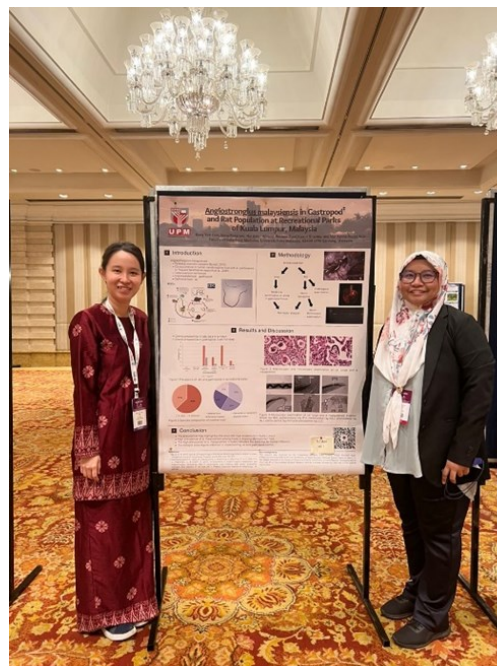
In conclusion, the 29th International Conference of WAAVP was a pivotal chapter in my academic journey. I am very grateful for the opportunity to attend this conference, and I owe a debt of gratitude to the Malacological Society for their generous travel grant that made this experience possible. This grant not only eased the financial burden of attending an international event, but also served as encouragement, strengthened my commitment to academic pursuits and is driving me further toward my academic goals. The support extended by the Malacological Society has rekindled my motivation to embark on a PhD journey with new insights and determination.



Photo booth of WAAVP 2023



Some participants from different countries.



Poster presentation session on 23 Aug 2023.



89th annual meeting of American Malacological Society 2023

Connectivity patterns of invasive snails *Callinina georgiana* and *Heterogen japonica*

W.A.N.U Nimanthi Abeyrathna

Clarkson University, New York, USA

Email: abeyranu@clarkson.edu

In the spring of 2023, I was looking for travel support to attend the 89th annual meeting of American Malacological Society 2023. As a PhD candidate, I was researching the connectivity patterns of invasive snails *Callinina georgiana* and *Heterogen japonica* and I gathered a lot of data to present at a conference. Earlier in my PhD journey, travel for conferences was impossible due to COVID, and this was the second-ever conference that I wanted to attend in my PhD studies. Funding support for this conference was not fully sorted from elsewhere and through this award from the Malacological Society of London, I was able to go to Alabama and present my work about invasive snails. I was able to later join a field trip which was very informative and we went to see Alabama's freshwater species in the Living River. I was surprised to see how biodiverse the river in Alabama compared to what I see in the rivers in New York.

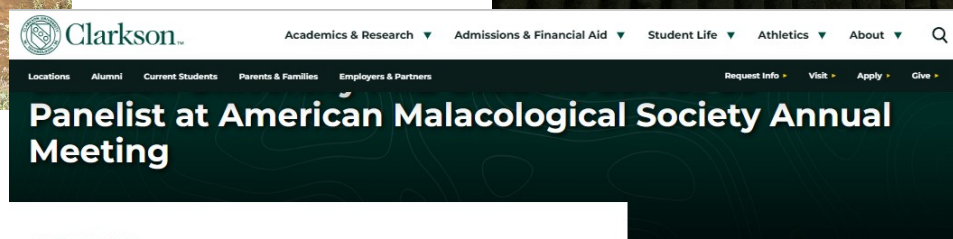
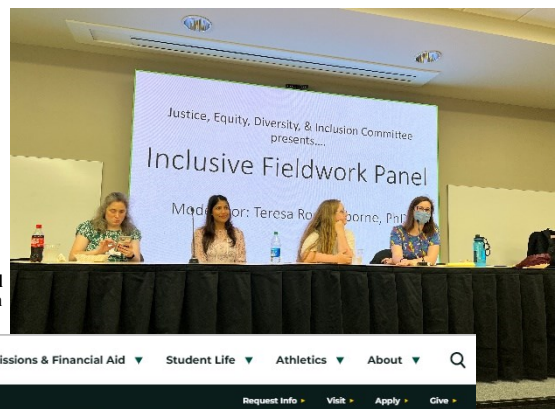
Additionally, I shared my experiences as a field ecologist on a panel that centered on 'Women and Safe Fieldwork.' As a panelist, I discussed the challenges I faced as an international student during fieldwork expeditions, shedding light on cultural adjustments. The panel delved into various themes, including menstruation, lactation, menopause, as well as issues of racial and gender discrimination in field settings. Our discussions encompassed strategies for cultivating safe and inclusive fieldwork environments, along with protocols for responding to emergencies. A detailed account of my participation in this panel was featured in a letter posted on the Clarkson University website ([Clarkson University PhD Student Serves as Panelist at American Malacological Society Annual Meeting](#)).

The support I received from The London Malacological Society profoundly impacted my journey. Without their assistance, these accomplishments would have remained beyond my reach.



With an elephants' ear mussel

Taking part in the panel discussion



AUGUST 11, 2023

Nimanthi Abeyrathna, an Interdisciplinary Bioscience and Biotechnology PhD student at Clarkson University, recently served as a panelist in a discussion on inclusive fieldwork and field courses hosted by the American Malacological Society's (AMS) Justice, Equity, Diversity, and Inclusion (JEDI) Committee.

AMS covered Abeyrathna's registration for the conference, and she also was awarded a travel grant by the London Malacological Society to attend the event.

The panel was held at the American Malacological Society's annual meeting, in Alabama on Aug. 3. Abeyrathna said topics covered during the panel ranged from general field work safety to discussions on women in field work and racial, cultural and gender dynamics and issues.

"There was lots of attention on the topics that we want people to know like, pregnancy, menstruation and menopause when doing field work," Abeyrathna said. "Emotional support when away from loved ones, finding mental stability in a field work station, what do you do in an emergency? What do you do if you encounter hunters in your field station? Or situations involving entering public lands and private lands and how to think about the safety first and then about sample collection."

Abeyrathna said she gained knowledge on several topics, including how to react in emergency medical situations and how to prepare an inclusive field station by offering things like vegetarian meals or accommodating other sensitivities. The conference also underlined for her the importance of discussing hurdles faced by women in the field more prominently.

"Pregnancy, lactation, menstruation, and menopause are challenges in the field," Abeyrathna explained. "We need to discuss matters openly."



RELATED LINKS

[Campus Events Calendar](#)

[Academic Calendar](#)

[Visit Clarkson](#)



5th Asia Pacific Coral Reef Symposium (APCRS) 2023 – Singapore

Developing a nationwide baseline of giant clam population densities across the coral reefs of Thailand

Matthias Desmolles

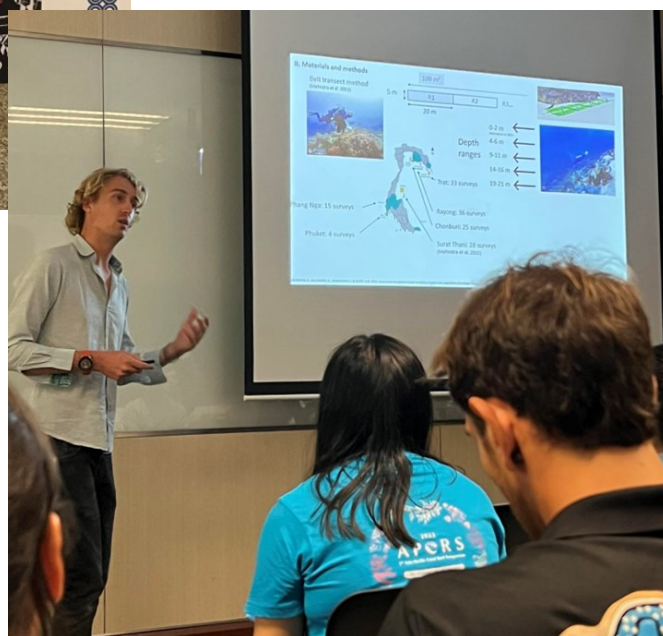
Aow Thai Marine Ecology Center (ATMEC), Bangkok, Thailand

This travel to Singapore was the occasion for our team to present the advances on our work concerning giant clams in the Thai waters. For this 5th version of APCRS, we had the excellent surprise of a full-day session dedicated to giant clams all across the Indo-Pacific waters. This session happened thanks to the work of Dr. Mei Lin Neo who was part of the organizing committee.

I had the privilege to show the survey work of our team to many tridacnids experts, especially since our session was fully dedicated to population assessments. Thus allowing us to compare our findings with surveys performed in the Philippines, Malaysia and Singapore. One of the biggest conclusion of that session was the necessity of such population monitoring, helping to review the IUCN status of giant clams in the Indo-Pacific. This status hasn't been updated since 1996, and clams are still in CITES Annex II (not a major concern), even if, in some parts of the Coral Triangle, some species like *T. crocea* or *T. gigas* have been widely wiped out.

On a non-« malacological » note, the whole Symposium was a great experience, and a first for me. I never had the opportunity to present my work in marine biology to academics and this was an eye-opening experience. I met many specialists and had great discussions about research fields I had never heard of! For that, I will always be thankful to the Malacological Society for offering me such an opportunity.

Overall, it was an outstanding experience. The conference involved more than 800 attendants from 40 countries, 450 talks, 200 posters, a huge diversity of subjects, many prospects for future research and a memorable banquet (the organizing committee clearly underestimated marine biologists party potential). Thanks a lot MalacSoc!



Forthcoming meetings

The Malacological Society of London

[HTTP://WWW.MALACSOC.ORG.UK](http://www.malacsoc.org.uk)

Molluscan Forum

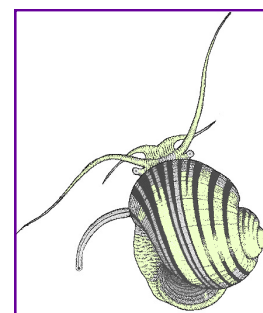
Thursday 16th November 2023

9.00 – 6.30

Flett Lecture Theatre

Natural History Museum, London

Organisers



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 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.

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.

With a hybrid format this year we will have two virtual sessions (with limited space) to give those unable to travel to the UK a chance to present their work. Posters will all be presented in person.

THERE IS **NO** REGISTRATION FEE.

Enquiries and registrations to:

events@malacsoc.org.uk

Non-presenters:

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

CONTINUED >

Molluscan Forum, Thursday 16th November 2023
9.00 – 6.30
Flett Lecture Theatre, Natural History Museum, London

REGISTRATION FORM

Return before 15th September 2023, 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 (~12minutes)/ quick fire talk (3 minutes) / poster
(delete as appropriate) entitled:

.....

.....

I would like to present in person / remotely (talks only). Delete as appropriate.

IMPORTANT

Please attach, as a Microsoft Word attachment, an abstract of not more than 350 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.

£.....

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.

CONTINUED >

>CONTINUED

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 Claremont^{1,2}, 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 AND HAS AN ISSN NUMBER.

BEFORE THE FORUM, PLEASE 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 Awards Scheme was established to commemorate the Society's Centenary in 1993. Under this scheme, the Society gives awards to support research on molluscs that is probably to lead to publication. The closing date for applications each year is 15th December. Grants are preferentially conferred on students and researchers without regard to nationality or membership of the Society. Preference is also 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 for student applicants, the extent to which the research will benefit the applicant's scientific aspirations. The successful applicants will be notified by 31st March and announced at the Annual General Meeting. Awardees are encouraged to publish their work in the *Journal of Molluscan Studies* (full papers) or *The Malacologist* (travel award reports, research award reports, news of ongoing research etc) as appropriate.

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

There is no application process for Sir Charles Maurice Yonge Awards. These awards are given for the best Travel Award application on bivalves. The award is to support attendance at an international meeting (not including the Molluscan Forum). Authors of exceptional studies on bivalves in the *Journal of Molluscan Studies* may on occasion also be given this award. The Editor will nominate such papers as he/she sees fit. The award covers the costs requested in a Travel Award, or for open access publication of the paper. Members of the Society will also receive a personal cash prize of £300. Non-members will receive a personal cash prize of £250 plus one year's membership to the Society. If a paper is multi-authored, the award will be made to the corresponding author.

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 £1,500, 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 December. 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, Lauren Sumner-Rooney**, Museum für Naturkunde, Invalidenstrasse 43, Berlin 10115, Germany.

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 a new MSL initiative 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 course work-only courses can also apply.



The Slug and the Snail.



Simon Lia cartoon in the Guardian 14 May 2023



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 £45

Student Members: Journal on-line only £25

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

***NEW * Broadening Access Membership Scheme**

We are excited to launch a new initiative to help support more postgraduate students from countries listed as developing economies in their malacological studies.

We are offering **10 postgraduate students each year free membership** to *The Malacological Society of London* for a period of 3 years under the new Broadening Access Membership Scheme (BAMS). 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 open each autumn and will close when all 10 memberships have been allocated.

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:

To find out more about the scheme, who is eligible and how to apply, please go to the following page on our website: <https://malacsoc.org.uk/developing-economies-membership-scheme/>

