



ISSN 1759-1406

# The Malacologist

The Bulletin of The Malacological Society of London

NUMBER 69

AUGUST 2017

## Contents

EDITORIAL .....2

NOTICES .....2

### RESEARCH GRANT REPORT

Applying confocal microscopy to study neuro- and myo-  
anatomy of bivalves: a successful approach focusing on  
the mantle margin Jorge A Audino

.....3

Age distribution and habitat reconstruction of *Glycymeris*  
*insubrica* shells from Late-Holocene sediments

Alexandra Németh .....6

### TRAVEL GRANT REPORT

20th International Conference on Invasive Species

Conference presentation on the Quagga Mussel

Lisette de Hoop ..... 9

### ANNUAL GENERAL MEETING—SPRING 2017

Annual Report of Council .....10

### AGM CONFERENCE Symposium on Molluscan Colour and Vision

ORIGINAL NOTICE ..... 15

ABSTRACTS .....16

### IN MEMORIAM

Elizabeth Anne Platts .....19

### PAST AWARD WINNERS OF THE SOCIETY -

A CAVALCADE OF EXCELLENCE.....21

### FORTHCOMING MEETINGS

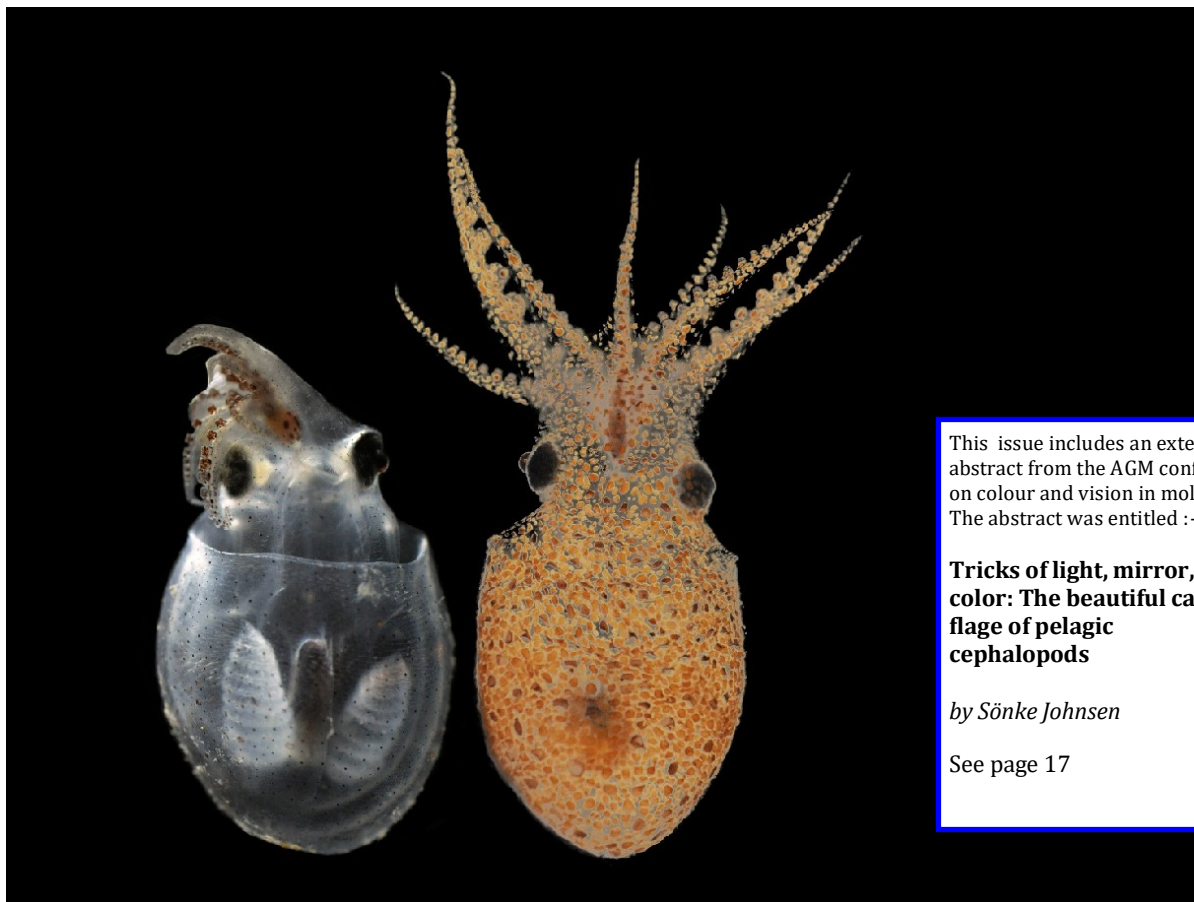
Molluscan Forum .....27

### AGM & Conference

New perspectives on evolution in molluscs: from fossils to next  
generation sequencing .....31

GRANTS AND AWARDS OF THE SOCIETY..... 32

MEMBERSHIP NOTICES .....33



This issue includes an extended abstract from the AGM conference on colour and vision in molluscs. The abstract was entitled :-

**Tricks of light, mirror, and color: The beautiful camouflage of pelagic cephalopods**

*by Sönke Johnsen*

See page 17

## EDITORIAL

For a small, taxon-based Society, the 'MalacSoc' is remarkably generous in its grants and awards (see page 23). A list of this year's awards is buried in the President's Report of Council (page 12) and a full listing of all awards is given on page 21. The awards list makes instructive reading, as it points to the creative growing points of our discipline, especially in relation to the varied enthusiasms of young researchers. Through its travel awards, the Society has, over the years, given a positive boost to a great number of students who will, hopefully, remember the role the MalacSoc played in their career development. One of Council's requests to awardees is that they should recognise such help by contributing material to *The Malacologist*, in the form of conference reports, abstracts of contributions to our scientific meetings, research reports or any miscellaneous acknowledgment. This is an opportunity to spark an interest in their particular field, especially by including images (for example, photographs of field locations) or videos of animal (hopefully not student) behaviour which might not be appropriate for academic journals such as the *Journal of Molluscan Studies*. In this issue, two awardees Jorge Audino and Alexandra Németh show that they have made excellent use of the financial opportunity they were given and it is to be hoped that more students will follow their example.

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## 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 3<sup>rd</sup> Edition (1985), edited by W.D. Ride *et al.*].

## NOTICES

## Molluscs in Archaeology

The subject of 'Molluscs in Archaeology' has not been dealt with collectively for several decades. This new volume in Oxbow's Studying Scientific Archaeology series addresses many aspects of the subject, covering environment economy, diet, trade, artefacts from UK to the Med. It gives an overview of the whole topic, including both methods of analysis and approaches to interpretation, and aims to be a broad-based text book giving readers an insight into how to apply analysis to different present and past landscapes, and how to interpret those landscapes. It aims to provide archaeologists and students with a first port-of-call giving them a) methods and principles, and b) the potential information molluscs can provide. The book concentrates on the kind of analysis and interpretation most archaeologists and students can undertake and understand, and reviews the 'heavier' science in terms of potential, application and interpretational value.

Dr Michael J Allen, MCIfA, FLS, FSA, (ed.), 2017 *Molluscs in Archaeology; methods approaches and applications*. Oxford: Oxbow Books c. 444 pages, 109 figures (25 in colour), 12 tables, 5 information boxes

## Kuphus polythalamia, the 1-meter-long shipworm

Live specimens of *K. polythalamia*, the 1-meter-long shipworm, have finally been discovered and studied. Surprisingly, it lives a sulfide lifestyle, instead of relying on wood as for other teredinids.

<http://www.pnas.org/content/early/2017/04/13/1620470114.abstract>

[https://www.washingtonpost.com/news/science/wp/2017/04/17/scientists-find-giant-elusive-clam-known-as-the-unicorn-of-mollusks/?utm\\_term=.15039e26ad54](https://www.washingtonpost.com/news/science/wp/2017/04/17/scientists-find-giant-elusive-clam-known-as-the-unicorn-of-mollusks/?utm_term=.15039e26ad54)

Alan Kabat



## Malacological Society of Australasia fun facts

In honour of our 60th birthday, the Malacological Society of Australasia is posting a fun fact each week to highlight discoveries, events, and people that have shaped Australasian malacology over the years. Please email any ideas or submissions to us at [saturns60@malsocaus.org](mailto:saturns60@malsocaus.org). You can follow the facts each week on Facebook or follow us on Twitter (@MalSocAus).

Rachel Przeslowski on behalf of the MSA Council  
Bailey-Matthews National Shell Museum

... Sad news arrived from the University of Nottingham as it announced that a garden snail whose love life captured the nation's imagination had died. Jeremy – a "one-in-a-million mutant snail" thanks to his rare left-coiling shell – shot to fame when his handler, Nottingham scientist Angus Davison, appeared on BBC Radio 4's *Today* programme to appeal for a mate for his lonely "leftie" snail. The "shellebrity" quickly gained cult status: one fan penned a tragic ballad about Jeremy's plight and another got a tattoo in his honour. Jeremy's burgeoning celebrity, however,

appeared to have little effect on potential mates. Two potential leftie beaux couriered from Ipswich and Majorca preferred each other and produced more than 300 snail babies between them, although Jezza was later to mate with the Spanish import after his love rival returned to Suffolk. Shell-shocked fans can pay their final respects at the Natural History Museum, where his shell will be displayed.



Does anyone know the provenance of this anonymously donated snippet of news?

### 8th European Congress of Malacological Societies EUROMAL- Summer 2017

There were 139 regular participants, including 32 PhD students. Participants came from 26 countries, comprising Poland (35), UK and Spain (13,) and Germany (12), Brazil (1), Japan (3), or USA (3). There were 73 oral presentations and 66 posters (+ ca 10 pieces of fine art).

The awards of the Scientific Committee for best PhD presentations went to:

I - David Willer

II - Alyssa Rita Frederick and Dagmar Rihova

Irina Ekimova received the Amber Snail award for the best poster.

*dr hab. Tadeusz Zajic, prof. IOP PAN*

*Chair of the Organizing Committee of 8th EUROMAL*

+48 12 37 03 541, [www.iop.krakow.pl](http://www.iop.krakow.pl)

**NB** The Malacological Society of London sponsored the prizes for best student presentations, as well as travel awards.

**The next, 9th EUROMAL, will be organized by Karel Douda in Prague, 2020.**

## Research Grant Reports

Research financially supported by the Malacological Society of London

### Applying confocal microscopy to study neuro- and myoanatomy of bivalves: a successful approach focusing on the mantle margin

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#### Introduction

In recent decades, anatomical investigations have been increasingly using confocal microscopy and 3D imaging software for numerous purposes (Wanninger 2007). Among the most fruitful fields using these tools, evolutionary developmental biology and comparative anatomy have revealed a plethora of novel anatomical information of crucial importance for the understanding of animal evolution. For instance, confocal microscopy is a key method for investigating larval anatomy, by means of different labeling, as illustrated by numerous investigations with invertebrate larvae (e.g. Fritsch & Richter 2010, Hindinger *et al.* 2013, Meyer *et al.* 2015). In general, musculature and nervous systems provide relevant features to infer functional properties, homologies, and evolutionary patterns (Halberg *et al.* 2009, Richter *et al.* 2010).

In molluscs, important anatomical data have been gathered for cephalopods, gastropods, and aplacophorans based on these methods (e.g. Wertz *et al.* 2006, Von Byern *et al.* 2012, Scherholz *et al.* 2013). These studies also exemplify the great potential of these techniques for investigating neuro- and muscular organization of the molluscan body plan. Nevertheless, neuro- and myo-anatomy of many molluscan groups are still poorly understood. For example, this methodological approach would be useful in comparative anatomical studies of bivalves, helping to recognize system patterns. As will be presented herein, the bivalve mantle, being such a diverse organ, serves as a model for such purpose.

In bivalves, the mantle margin is a key-feature for understanding the evolutionary radiation of the group and the occupation of diverse niches (Yonge 1983), which highlights its importance as a model for studies on evolution and diversity of the marine benthos. In the clade Pteriomorpha, which is largely composed of epifaunal bivalves, the mantle margin is extremely diverse and presumably associated with the habits and habitats occupied by these organisms (Audino & Marian 2016). The pallial margin might bear a wide range of structures, including different sort of glands, tentacles, muscular structures, and sensory organs, varying from simple to complex photoreceptor systems. Conversely, hypotheses of homology and evolutionary convergence of pallial characters are lacking. In the present report, I will present part of the ongoing investigations I have been conducting during my PhD on the functional anatomy and diversity of the mantle margin in members of Pteriomorpha, particularly the data obtained from applying confocal microscopy techniques. Muscular and nervous systems were studied in detail, providing data to further comparative studies on the mantle margin in bivalves.

#### Methods

Animals were collected during low tide in rocky coasts from São Sebastião and Ilha Bela, São Paulo state, Brazil. Fragments of the mantle margin from seven pteriomorphian species (listed in Table 1) were fixed in 4 % paraformaldehyde in 0.1 M phosphate-buffered (PB) for 2 h. Samples were then washed three times with buffer solution and stored in 0.1 M PB containing 0.1 % NaN<sub>3</sub> at 4 °C. Tissue permeabilization was investigated by immersion in PB containing 2 % Triton-X 100 (PBT) overnight. For F-actin staining, samples were incubated in a 1:40 dilution of Alexa Fluor 488 phalloidin (Molecular Probes, EUA) in PBT overnight, at room temperature, and in the dark. For alpha-tubulin staining, samples were incubated in a 1:400 dilution of Alexa Fluor 488 anti-alpha-tubulin (Molecular Probes, EUA) in the same conditions as exposed before.

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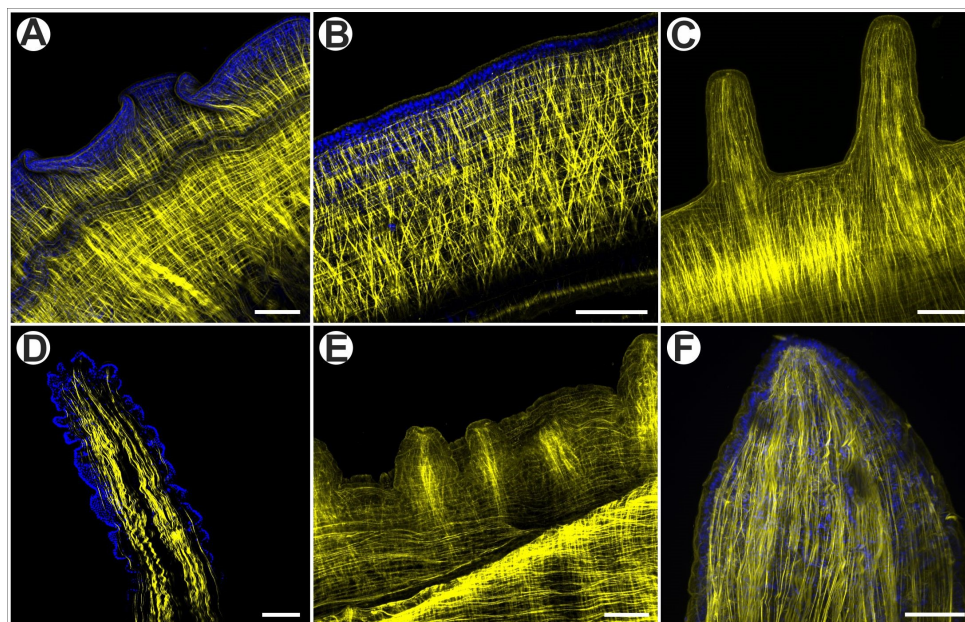
After the staining procedure, samples were washed three times in PBS for 15 min prior to mounting in ProLong Diamond Antifade Mountant with DAPI (Molecular Probes, EUA) on standard microscope slides. Analysis and image acquisition were performed on a ZEISS LSM 880 confocal laser scanning microscope (Zeiss, Germany). Confocal image stacks were recorded with 2  $\mu\text{m}$  step size along the z-axis and, when convenient, digitally merged as maximum intensity projections in the software ZEN lite 2.3 (Zeiss, Germany).

## Results and Conclusions

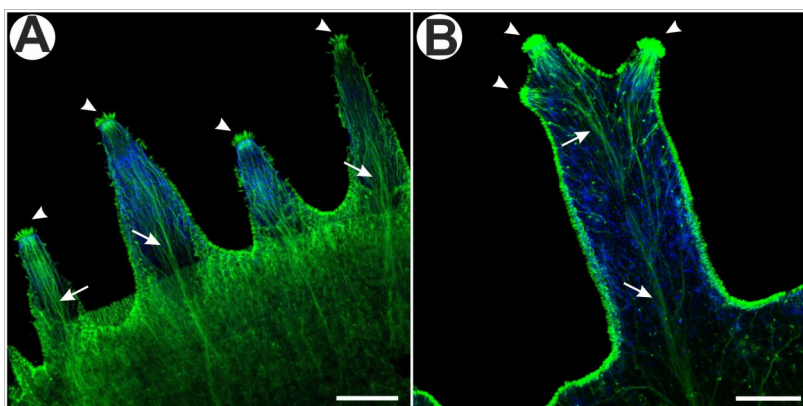
Mantle margin musculature comprises radial and commarginal fibers in all studied species. For instance, in *B. candida* these fibers are perpendicular to each other (Fig.1A). On the other hand, radial fibers are not parallel in *A. adamsi*, resulting in multiple orientations (Fig.1B). In both species, the second inner fold (IF-2) is the longest and most muscular fold, while the first inner fold (IF-1) is devoid of tentacular structures. In the remaining species, except for *P. carnea*, the IF-1 bears tentacles. Tentacular musculature is mostly organized in longitudinal fibres (Fig.1C-F), which are continuous with the radial muscles from the mantle margin (Fig.1C, E). Despite a similar organization, differences in the distribution and concentration of muscle fibers do exist, as observed in the tentacles of *P. imbricata*, short tentacles of *I. bicolor*, and large tentacles of *S. ictericus* (Fig.1D, F). The conservative pattern of musculature in tentacles from the IF-1 suggest the homology of these organs, while the observed differences indicate at least possible variation in functional capabilities.

Pallial nerves concentrate high levels of tubulin, making them visible when labelled by fluorochrome conjugated antibodies. Nevertheless, cilia, which are formed by numerous microtubules of tubulin, are also easily detected and might overlap the signal during analysis. Nonetheless, this technique is very useful for observing innervation of pallial structures. For example, the tentacular nerves of *O. equestris* and *P. imbricata* exhibit an intense branching pattern towards the distal region (Fig.2A, B). Distal tufts of cilia seem to be connected to mantle innervation by multiple thin nervous projections (Fig.2A, B). A different condition was observed in *Nodipecten nodosus* (Pectinidae), where the tentacle is provided with a unique, long nerve from where minute projections reach the ciliary tufts (Audino et al. 2015). In all cases, cilia innervation suggests sensory function, possibly associated with the interaction with the surrounding environment.

**Figure 1.** Mantle margin musculature. Phalloidin staining against actin in yellow and nuclei in blue. Distal portion to the top. Scale bars = 100  $\mu\text{m}$ . A. *Barbatia candida* (Arcida); mantle musculature comprises commarginal and radial fibers in a perpendicular pattern. B. *Arcoptis adamsi* (Noetiidae); mantle musculature comprises commarginal and radial fibers, the former being parallel and the latter with multiple orientations. C. *Ostrea equestris* (Ostreidae); tentacles from the first inner fold with longitudinal muscles. D. *Pinctada imbricata* (Pteriidae); detail of the longitudinal fibers in a tentacle from the first inner fold. E. *Isognomon bicolor* (Pteriidae); short tentacles from the first inner fold with longitudinal fibers. F. *Spondylus ictericus* (Spondylidae); dense longitudinal musculature in a tentacle from the first inner fold.



**Figure 2.** Mantle margin innervation and cilia. Anti-tubulin staining in green and nuclei in blue. Distal portion to the top. Scale bars = 100  $\mu\text{m}$ . A. *Ostrea equestris* (Ostreidae); innervation of the first inner fold. Tentacle nerves are intensely branched (arrow) towards the distal region, particularly when in contact with cilia (arrowhead). B. *Pinctada*



CONTINUED >

Table 1. Pteriomorphian species collected and preserved for mantle margin study by means of confocal laser scanning microscopy.

Species	Author and date	Family
<i>Arcopsis adamsi</i>	(Dall, 1886)	Noetiidae
<i>Barbatia candida</i>	(Helbling, 1779)	Arcidae
<i>Ostrea equestris</i>	Say, 1834	Ostreidae
<i>Isognomon bicolor</i>	(C. B. Adams, 1845)	Pteriidae
<i>Pinctada imbricata</i>	Röding, 1798	Pteriidae
<i>Pteria colymbus</i>	(Röding, 1798)	Pteriidae
<i>Pinna carnea</i>	Gmelin, 1791	Pinnidae
<i>Spondylus ictericus</i>	Reeve, 1856	Spondylidae

Altogether, these results provide an initial basis on which to identify patterns and trends in the evolution of pallial features of bivalves. Such information is crucial to future analyses of convergent evolution of the mantle margin and correlation with lifestyles, which I will also perform as part of my PhD. In summary, confocal microscopy, combined with other techniques, reveals detailed anatomical information useful for evolutionary, comparative, and functional studies.

### Acknowledgements

I thank the Malacological Society of London for providing funds (Early Career Research Grant 2016) that covered part of the expenses of confocal microscopy reagents.

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## Age distribution and habitat reconstruction of *Glycymeris insubrica* shells from Late-Holocene sediments

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### Introduction

*Glycymeris insubrica* is an extinct cockle of the Iberian coast and the Mediterranean, commonly found in shallow-marine sands from the Pliocene until the medieval times. Episodic events, such as storms and tsunamis, deposited layers containing a large number of these opportunistic molluscs along the coast of Cádiz Bay during the Roman Period ( $313 \pm 114$  AD) and the Dark Ages ( $648 \pm 108$  AD) (Gutiérrez-Mas and García-López, 2015).

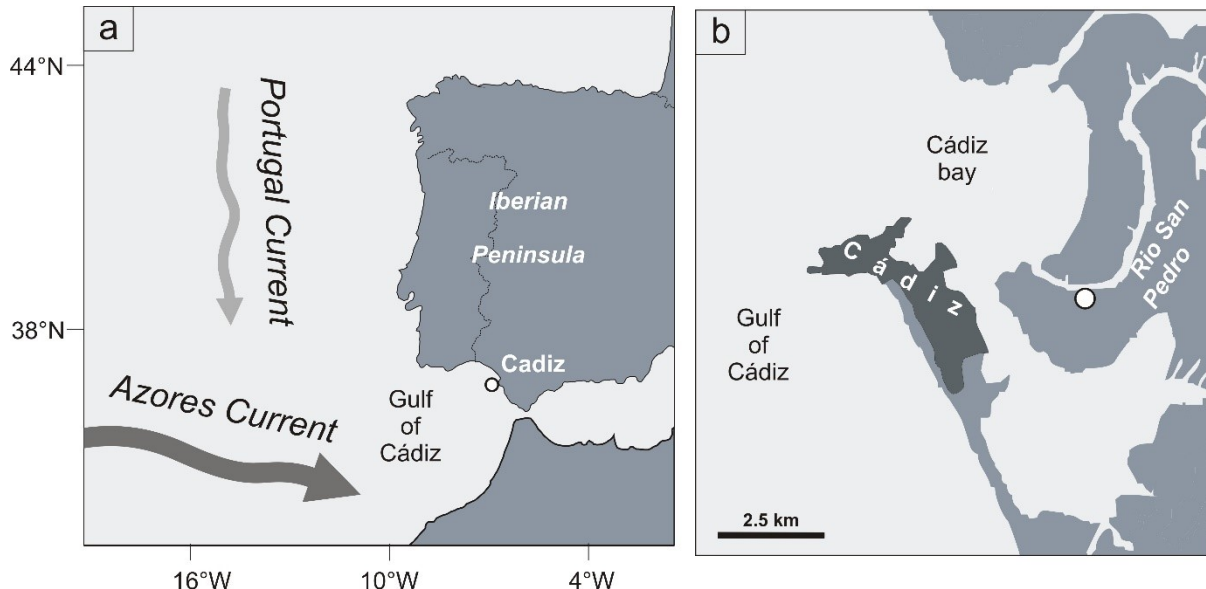


Fig. 1. a: Oceanic currents affecting the region. b: The situation of the collection site: an outcrop of the Late Holocene episodic layers (white dot) in the Rio San Pedro area.

The extinction of *Glycymeris insubrica* was thought to be connected to the reduction of marine productivity in the Eastern Mediterranean (Sivan *et al.* 2006) and live specimens have not been found since early-medieval times (possibly connected to the onset of the Little Ice Age) on the Iberian coast (Gutiérrez-Mas and García-López, 2015). These findings also confirm the sensitivity of this species to its changing environment, indicating that *G. insubrica* could probably be used for palaeoenvironmental reconstruction of the Holocene shallow marine-coastal environments of the Iberian coast. This research project focused on studying annual and intra-annual growth structures of previously collected shells from radiocarbon-dated tsunami layers to ascertain their ontogenetic age-distribution and to see if the shells could be sampled on a sub-annual resolution for stable isotope measurements of future paleoclimate studies. Certain traits of the shells' intra-annual structure (scars, periodically appearing groups of growth lines) were used to make assumptions about their original habitat. The motivation was that shallow marine *Glycymeris* species were reported to record most of the seasonal  $\delta^{18}\text{O}$  and  $\delta^{13}\text{C}$  change of their environment (Royer *et al.* 2013; Peharda *et al.* 2016).

The grant awarded from the Malacological Society of London was used for a one month visit at the Sclerochronology Laboratory of the School of Ocean Sciences, University of Bangor for sample preparation and for a one week visit to collect carbonate samples on a sub-annual resolution from the prepared shells using a high-resolution milling technique to recover sample powder for isotopic analysis at the University of Exeter, Penryn.

### Materials and methods

Two groups of shells, containing thirty specimens, collected previously from the two radiocarbon-dated tsunami layers, were measured (shell length, width) and were cut along their maximum growth (Fig 2c, dashed line), ground and polished. After 1-5 minutes of etching in 0.1 M HCl solution and air drying, acetate-peels replicas were made of the polished surfaces (Fig 2a). Panoramic micrographs were taken of the peels using a Meiji light transmitting microscope under 2.5 x magnification, while smaller-scale intra-annual structures were photographed under 10-50 x magnification. Annual growth increments were counted on the hinge since intra-annual lines were easier to recognize here (Fig. 2a).

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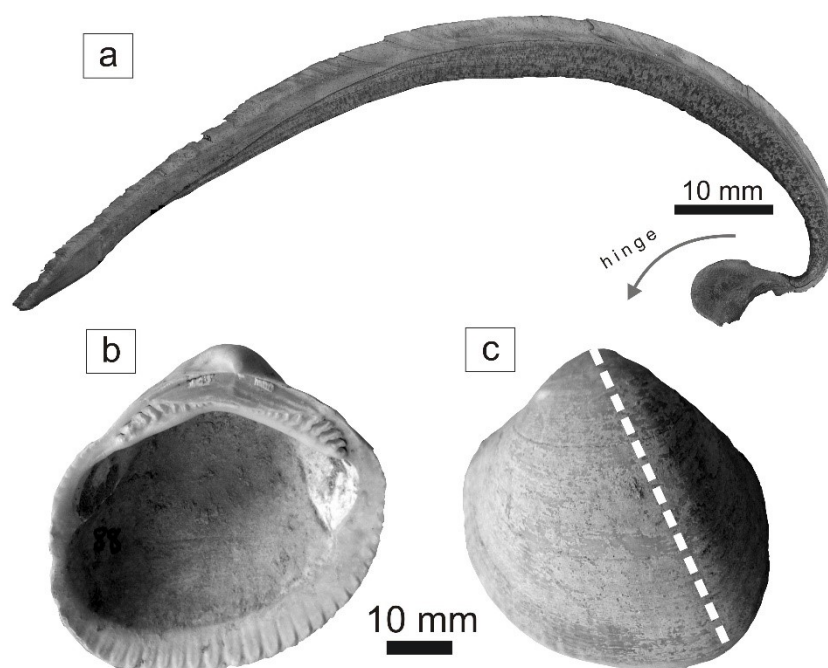


Fig. 2. a: Panoramic micrograph of an acetate peel replica of the L39 sample. b and c: Photographs of the same shell, the direction of sectioning is indicated by dashed line.

## Results

Plotting ontogenetic ages against shell length measurements show two different groups of specimens in both layers. The growth rate in these groups can be described by different linear trends (Fig. 3).

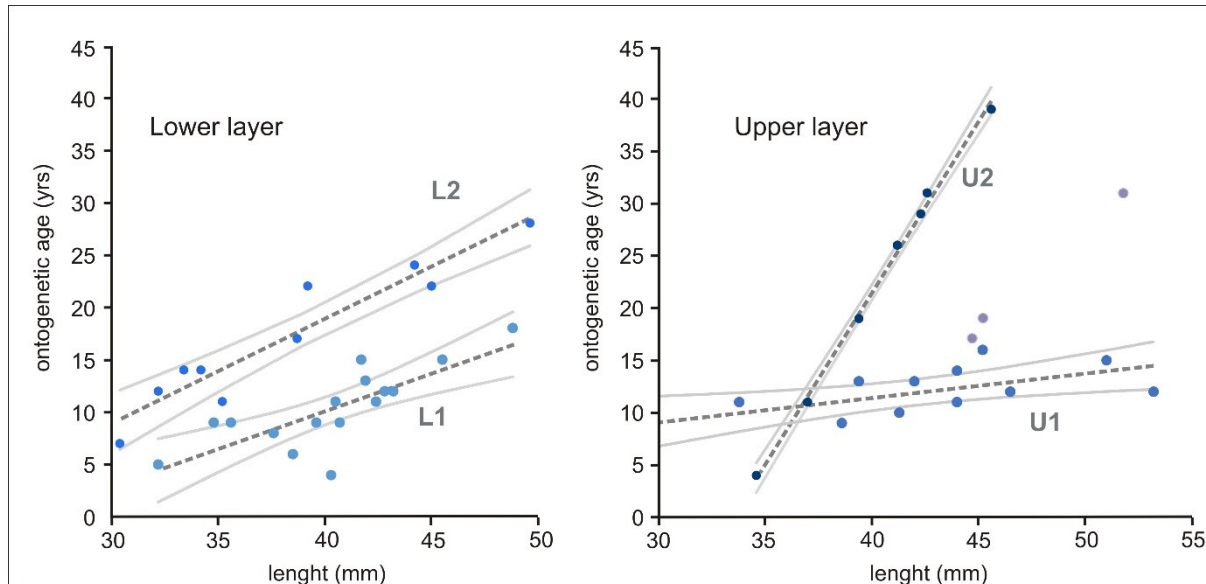


Fig. 3. Ontogenetic ages plotted against the measured shell lengths in the lower and the upper layer. Dashed grey lines show the linear trends of growth rate groups, light grey lines indicate the 95% confidence envelope.

Clearly distinguishable annual lines on the shell margin are often accompanied by encrusted grains (Fig. 4 white arrows) and scars (Fig 4b). Cyclically thinning and thickening intra-annual increments can be observed in several shells. In other cases, groups of 6-10, periodically re-appearing strong-intra-annual lines can be discerned on several peels in all four sample groups (Fig. 4c) indicating periodically occurring short interruptions during the shells' annual growth.



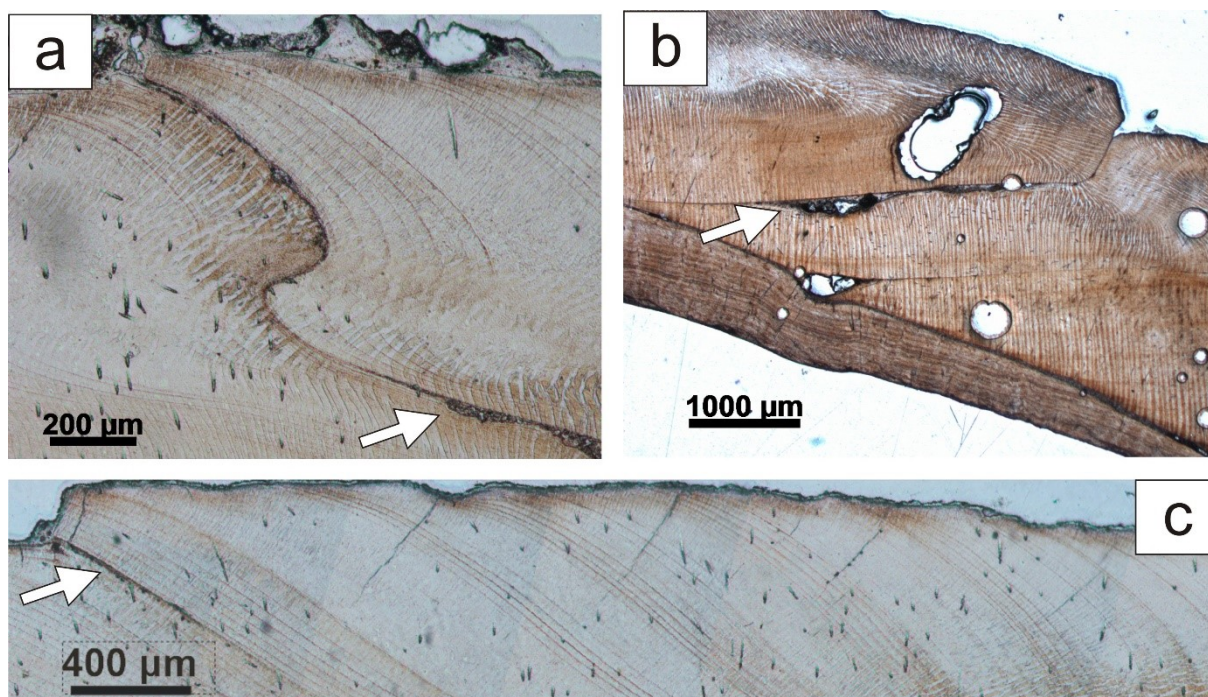


Fig. 4. a: Annual increment on the margin of the L39 shell aligned by a sharp change in the intra-annual increment width. Encrusted grains are indicated by white arrow. b: Encrusted grains in one of the annual increments of the L71 sample. c: Panoramic micrograph of periodically formed groups of intra-annual growth lines in sample L39.

## Discussion and conclusion

When studying redeposited shells, it is vital to ascertain their original environment before interpreting their geochemical signal. It is also useful to know whether all the samples were redeposited from the same or from different habitats –which was the case of the *G. insubrica* shells described by this paper. L1 and U1 sample groups contain shells with higher annual growth rates, typical for *Glycymeris* specimens living in a shallower habitat, or an environment, which was more exposed to food influx. U2 habitat must have been relatively stable (supporting shells to live up to 40 years) however the growth rates were significantly lower. This could have been a slightly deeper or more enclosed environment with a limited food availability but also with fewer harmful high-energy events. Scars and encrusted sand grains in annual growth lines indicate that in the original environment of the shells high-sediment input events were common, possibly burying the shells during their annual increment formation. Intra-annual growth lines in periodically re-appearing groups probably mean periodically changing environmental conditions, which is typical in tidally influenced coastal regions. Theoretically, twice in a lunar month, during spring tide, water flow is stronger and more sediment re-deposition happens. At the same time, low tides are occurring with much lower water levels, leaving the intertidal habitats in unusually shallow water or even completely emerged. Periodically re-appearing groups of strong intra-annual growth lines therefore could have been formed during the 5-10 days of spring tides, when more extreme conditions resulted in a short growth-interruption in the shells' structure. Neap-spring cycles recorded in the shells could provide a unique aid to interpret the seasonal resolution of the collected carbonate samples.

## Acknowledgements

This study was funded by a Research Award from the Malacological Society of London and was based on the collection of José Manuel Gutiérrez-Mas.

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## TRAVEL AWARD REPORT

### Travel Award for a conference presentation on the quagga mussel



Conference logo

#### Lisette de Hoop

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Every year, the *International Conference on Aquatic Invasive Species* invites researchers, managers and other interested stakeholders to share novelties on alien species and show possibilities for action from a global perspective. The 20<sup>th</sup> edition was held during October 22-26, 2017 in Florida, USA. I was pleased to be able to attend the conference due to the financial support I received in the form of a Malacological Society of London Travel Award.

The conference gave me the opportunity to present our research on the quagga mussel (*Dreissena rostriformis bugensis*) in relation to its use by municipalities and conservancies as an eco-engineer (biofilter) in Dutch urban surface waters. This use induced my colleagues and I to look into two issues regarding eco-engineering with the quagga mussel: 1) the species' risks for nature, economy and public health, and 2) the potential conflict between the release of a species and legislation for the conservation of (endangered) flora and fauna.

My presentation was relevant to those working on risk assessments and nature legislation, as well as it being useful for an audience to hear about ongoing activities with the deliberate release of quagga mussels to improve the water quality in turbid or polluted water systems. I encountered a range of opinions on eco-engineering with bivalves; for example, some conference attendees were surprised to find out the quagga mussel was used in this way.

Every day of the conference, a key-note speaker introduced circa two hundred attendees to their research. For example, Prof. Helen Roy discussed alien species in the UK and Dr. Darren Jinn talked about aquatic species in Singapore. These talks improved my insight into the problems faced and solutions used in other countries. Furthermore, many speakers at the conference included the early detection, biotic drivers, response and control of alien bivalves, such as the quagga mussel, zebra mussel (*Dreissena polymorpha*), and golden mussel (*Limnoperna fortunei*). In summary, my attendance improved my knowledge on the invasion biology and management of invasive molluscs and it expanded my international scientific network substantially.

I am grateful that the Malacological Society of London helped me achieve this.



Presentation during ICAIS 2017, Florida, USA



## Annual report of Council for 2016/2017

delivered by the President, Dr Suzanne Williams

### Membership (reported by Tom White)

After some initial teething troubles, subscription payments and renewals by credit card using the Stripe payment system are now available to existing and prospective MSL members. The re-design of the subscription payments system goes hand in hand with recent changes to the Society's banking affairs, which have been switched to HSBC, and a re-vamp of other webpages so that details of members are automatically updated and appended to the membership database at each renewal. As of April 2017 the Society has 145 members. In the coming weeks I will be contacting members who are currently still paying incorrect subscription rates by direct debit to ask them to re-subscribe via the new website, if possible. The new lower rate for subscriptions (without hard copies of the Journal) has attracted several new members, particularly students, over the last few months.

### Finance, for the financial year ending 31 December 2015 (reported by Katrin Linse)

The finances of the Malacological Society have been satisfactory during 2016 with a gain of £17,654. Our investments had an overall gain of more than £35k (comparing market value at 31 December 2015 with market value at 31 December 2016), with the COIF Investment Fund making a gain of £26,367 and the COIF Fixed Interest Fund a gain of £9,337. During 2016, a total of £9k was transferred from the current account to savings accounts: £5k was transferred from the current accounts into the COIF Investment Fund and £4k to the COIF Fixed Interest Fund. Separately, the profit-share from the publication of the *Journal of Molluscan Studies* in 2015 provided the Society with the majority of its income contributing £37k. The Editor of the Journal, Dr David Reid, and the Assistant Editors are to be commended for their hard work contributing to the publication of our scientific journal. In addition, sales of the digital archives provided over £2.8k of income. The Society added a Research Award for senior scientists (Senior Research Grants) in 2016. Similar funds were used for Travel Awards compared to 2015, while in 2016 the funding used towards Research Awards increased and towards Travel Awards to the Forum decreased. The Society spent more money on awards (£21k), meetings (£10k), JMS 2015 printing costs for members (£13k) and JMS colour figures in 2016 (£10.5k) than in 2015.

### Meetings

The 123<sup>rd</sup> Annual General Meeting of The Society was held at the Natural History Museum, London, on Wednesday 13<sup>th</sup> April 2016. The Society invited Dr Michael Schrödl from SNSB-Bavarian State Collection of Zoology and Prof. Gonzalo Giribet from Harvard University to present their work at the AGM in a half-day symposium "*Resolving relationships in Mollusca*". Their talks were titled, respectively, "*Slugs, snails and their allies: news and lessons from heterobranch systematics*" and "*Molluscan phylogenetics in the era of genomics*". Both talks were very well received and abstracts from the talks were published in *The Malacologist*. On 24<sup>th</sup> November 2016 the 19<sup>th</sup> Annual Molluscan Forum was held in the Flett Lecture Theatre at the Natural History Museum, London, organized by Andreia Salvador, with help from Jon Ablett, Wai-Yee Cooper and the President. A total of 70 people from 10 countries attended the Molluscan Forum 2016. Travel awards amounting to £724 were given to 8 students. There were 19 speakers and 13 posters. Aidan O'Hanlon (NUI Galway, Ireland) was awarded the Oxford Prize for Malacology for his talk '*Phenotype-environment matching in the Kerry spotted slug *Geomalacus maculosus* (Allman): exposure to UV radiation induces colour change resulting in camouflage*'. The Society provided lunch for all attendees and this served to create a cohesive meeting, with excellent opportunity to discuss the posters. The Forum was again held consecutively with the Young Systematists' Forum, affording an opportunity for students to attend both meetings. A full report of the Forum appears in number 68 of *The Malacologist*.

### Publications

#### *The Malacologist* (reported by Georges Dussart)

There are basic editorial principles for *The Malacologist*. Firstly, such a bulletin should report on the activities of the Society, in particular the President's Report of Council at the AGM (and associated AGM conference) and the Molluscan Forum. Secondly the bulletin should report on the Awards given by the Society. Thirdly, it should offer notices and information that might not be appropriate for publication the *Journal of Molluscan Studies* (JMS) but which are still relevant and interesting for the membership. Unfortunately, *The Malacologist* also has an important role in publishing obituaries. Since *The Malacologist* is published on-line (though paper copies go to a number of libraries worldwide), it is possible to make it colourful in ways that again would not be economically appropriate for the JMS. For example, Forum presenters are asked to support their abstracts with images that might be less formal than those which would accompany an academic article. It is a principle of the Society that award winners are asked to offer abstracts of their work for publication in *The Malacologist*; thus Travel Award winners report on conferences, the Annual Award winners present a summary of their thesis and research award winners report on their research progress. Each issue of *The Malacologist* is posted on the website of the Society. Members are notified of its availability by email. The August issue of *The Malacologist* in 2016-17 (No 67) was 33 pages long and included the minutes of the April 2016 AGM, plus abstracts by Michael Schrödl and Gonzalo Giribet from the AGM conference on "*Resolving relationships in Mollusca*". There was also a research report on the effects of substratum-borne vibration upon benthic marine molluscs. Following the lead of an earlier editor (Stuart 'Bill' Bailey), young (and not so young) authors are encouraged to submit short reviews; thus the August issue included a review of research on the Shining Ramshorn snail. This issue also included abstracts of grant and award winning presentations from attendees at the Unitas Malacologica (World Congress of Malacology) meeting in Penang, Malaysia. The 36 pages of the February issue (No. 68) included 16 pages of abstracts from the Molluscan Forum which took place on 24<sup>th</sup> November 2016 at the Natural History Museum. This issue included a report from Annual Award winner Chong Chen entitled, "*Systematics, ecology, and*

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evolution of hydrothermal vent endemic peltospirids from the Indian and Southern oceans". Reports from winners of research awards included "A highly structured microsnail population in Sabah, Borneo" and "The role of habitat gaps in the gene flow of the gastropod *Gibbula umbilicalis* in the bay of Biscay".

### **Journal of Molluscan Studies (reported by David Reid)**

The ISI impact factor for the Journal in 2015 dropped a little to 1.185 (compared with 1.326 in 2014, 1.495 in 2013, 1.358 in 2012, 1.227 in 2011 and 0.969 in 2010). The Journal stands at number 68 in the ISI list of 160 zoological journals (down from 58 of 153 in the previous year). This is disappointing, but at relatively low values of the IF statistic, fluctuations are only to be expected. Our chief competitor, *Malacologia*, had a slightly higher impact factor in 2015 (1.211). The Journal continues to be truly international in terms of the geographical distribution of its authors; for volume 81 (2015) the corresponding authors represented 25 countries (of which the first 4 were: 12% USA, 7% Portugal, 7% China, 6% UK). Circulation for the Journal in 2016 was 51 institutional (of which 24 were online-only and 16 print-only) and 145 membership subscriptions (compared with 60 and 147 respectively for 2015). In addition a further 2,645 institutions have electronic access to the Journal through publishers' consortia (includes migrated figures; compared with 2,500 in 2015) and 1,092 (compared with 1,113 in 2015) have access through OUP's Developing Countries Offer (for details see [http://www.oxfordjournals.org/access\\_purchase/developing\\_countries.html](http://www.oxfordjournals.org/access_purchase/developing_countries.html)). This means that the Journal is now available to 3,933 member and institutional subscribers (compared with 3,820 in 2015).

The new pricing structure has been fixed for 2017. The cost for a combined print plus online institutional subscription is £598; an online-only subscription is £469 and print-only subscription is £551. Volume 82 (2016) contained 72 papers and research notes, totalling 606 pages (a significant increase on the 526 pages of the preceding volume). The delay between acceptance of a manuscript and electronic publication was 5.9 weeks. In total, 195 manuscripts were submitted in 2016 (an increase of 3% on the 190 in the previous year) and the acceptance rate was approximately 37%. The image of the 'flying' *Limacina* pteropods on the cover of Volume 82 was kindly donated by Alexander Semenov.

The OUP website for the Journal has been redesigned and some access problems have been reported following the migration to the new interface in January 2017. Hopefully, these have now been resolved. Members are reminded that they can access the entire electronic archive of *Journal of Molluscan Studies* (and its precursor *Proceedings of the Malacological Society of London*).

I attended the World Congress of Malacology in Penang in July 2016 on behalf of the Society, in order to publicise the Journal and seek new submissions. We hope to publish a collection of papers from at least one of the symposia, on opisthobranchs, in 2017.

Our board of Associate Editors is now: 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), John Davenport (marine ecology and physiology), Mark Davies (marine ecology and behaviour), Dan Graf (freshwater bivalves), John Grahame (population genetics, morphometrics), Liz Harper (marine bivalves), Bernhard Hausdorf (terrestrial gastropods), Robert Hershler (freshwater gastropods), Michal Horsák (ecology and biogeography of terrestrial gastropods), Kurt Jordaens (systematics, ecology and pest control of terrestrial gastropods), Yasunori Kano (systematics of vetigastropods, tropical ecology), Joris Koene (reproductive behaviour of gastropods), Anne Lockyer (genomics), 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 Puilandre (neogastropods), Ellen Strong (freshwater and marine caenogastropods), Mikael Thollesson (opisthobranchs), Janet Voight (cephalopods), Janice Voltzow (microscopic anatomy), Heike Wägele (opisthobranch biology), Tony Walker (biochemistry, immunology, cytology), Suzanne Williams (molecular phylogenetics and genetics), Nerida Wilson (opisthobranchs, deep-sea and Antarctic molluscs) and Yoichi Yusa (general ecology and behaviour). I am sorry to report the resignation of Associate Editor Fred Naggs.

I would like to thank all the members of the editorial board, those members of the international malacological community who have contributed to the review process, and the staff of Oxford University Press, for their work on behalf of the Journal. I am sorry to say that Ian Sherman (Senior Editor at OUP) is no longer responsible for the Journal and I would like to express my gratitude to him for all his support of the Society and its publication, over a number of years.

### **The Society's websites – [www.malacsoc.org.uk](http://www.malacsoc.org.uk) (reported by Tom White)**

The MSL webpages continue to function well. The website has been updated to include new Membership pages that accommodate the Stripe payment system, which now enables us to receive subscriptions directly into our bank account, rather than relying on PayPal as an intermediary. In addition, an upgraded online form now automatically updates the membership database, streamlining this process for both the Treasurer and Membership Secretary.

The charges levied by our current Internet Service Provider (ISP) remain competitive and there is currently no reason to consider changing the current arrangements.

### **The Society's Facebook account [www.facebook.com/malacsoc](http://www.facebook.com/malacsoc) (reported by Chong Chen)**

The Society's Facebook page continues to perform very well. The number of "likes" on our page continues to increase, with 1,837 likes as of now. This means we have a direct outreach population of 1,837 people/organisations who sees our posts, a good growth from last year when there were fewer than 1,000. The actual post reach (i.e., how many people actually saw our posts generally exceeds 1,000; for example the posts made at the WCM 2016 reached 869-1,320 users and announcement for the AGM reached 1,693 users.



Again, although the Facebook page is doing well so far, it will benefit greatly from an increased number and variety of posts. If you come across items of potential interest for our Facebook audience, please e-mail me ([cchen@jamstec.go.jp](mailto:cchen@jamstec.go.jp)) with recommendations and I will generate posts. Also, if you have a Facebook account and would like to join the admin team with posting rights and see the performance stats, just let me know which e-mail address you used to register for Facebook, and I will add you as an admin.

If you have suggestions / comments on the Facebook page, please do not hesitate to contact me.

#### Awards (reported by Jon Ablett)

Overall, the Society is very pleased with the number of applications that it although we hope to increase the number of applications for Travel Awards over the coming years. The schemes seem to be achieving their global aim to enable young scientists to engage in malacological research activity both in the laboratory/field and at meetings. Reports from researchers funded through both schemes appear in *The Malacologist*.

The Society aims to make the following awards annually.

Travel Awards - at least 5 each of up to £500 for Society members, £300 for non-members

Research Grants - at least 5 each of up to £1500

Starting in 2016, a new research grant for senior scientists has also been offered annually. To distinguish it from previous Research Grants, the two grants are named Senior Research Grants and Early Career Research Grants. These are discussed in more detail below.

Application forms and guidance notes for both schemes have been updated recently and can be downloaded from The Society's website.

#### Travel Awards

In 2016, as usual, there were two rounds of Travel Awards, June and December. The Society received four applications for awards to travel and was able to fund all of these requests. All Travel Award applications are reviewed by an Awards Committee. The Society is pleased to have announced the following four awards.

##### June Travel Awards:

Elena Moya Urbano (University of Malaga)

£300 for the 'Iberian Symposium on Marine Studies (SIEBM XIX).' Porto, Portugal

Pamela Imperadore (Stazione Zoologica Anton Dohrn)

£256 for the 'Annual Meeting of the Society for Neuroscience.' San Diego, USA.

##### December Travel Awards

Eduardo Sampaio (Marine Environmental and Sciences Centre Portugal)

£225 for the 'Molluscan Colour and Vision symposium.' NHM, London

Francisco Borges (Marine Environmental and Sciences Centre Portugal)

£250 for the 'Molluscan Colour and Vision symposium.' NHM, London

In total, £1,031 was allocated by The Society for Travel Awards. All applicants have been notified of the outcome. Note that this amount does not necessarily reflect actual 'spend' as occasionally students withdraw from the intended visit.

#### Research Grants for 2016 - Senior Research Grants & Early Career Research Grants

The MSL council decided to restructure the research grants from 2016 by awarding Senior Research Grants and Early Career Research Grant. Early Career Research Grants are conferred on students and researchers without professional positions, but without regard to nationality or membership of The Society. Senior Research Awards are aimed at established researchers in professional positions, but without regard to nationality. Applicants for Senior Research Awards must be members of The Society. Early Career Research Grants will be reviewed by MSL council members and Senior Research Grants will be reviewed by a Reviewers Panel including both council and non-council members invited for that purpose.

#### Early Career Research Grants

By the closing date of 15<sup>th</sup> December 2016 the Society had received 13 applications from workers from 12 institutions in 9 different countries. In general, the scientific quality of the research projects submitted was excellent.

On behalf of the Society, I would like to formally thank the members of the Grants Review Panel for their hard work in reviewing all applications. The Panel has agreed the following awards, in alphabetical order.

Tanya J. Compton (NIOZ, Royal Netherlands Institute for Sea Research, Netherlands)

£1428 'Is burrowing depth in *Lirnecola baithica* a behavioural indicator of environmental conditions?'

Kasper Hendriks (GELIFES, Groningen University, Netherlands)

£1475 'Understanding micro-snail demography to aid biodiversity conservation'

Alexandra Németh (Bangor University, UK)

£1400 'Sclerochronology of recent and Holocene *Glycymeris* shells from Madeira and Atlantic Iberia'

Annegret Nicolai (Université Rennes, France)

£1500 'Recent shift and genetic structure of the gastropod community on the southwestern Lake Erie islands in Canada'

Trond R. Oskars (University Museum of Bergen, Norway)

£1500 'Fieldwork for sampling of *Halio* Gastropods'

Rodrigo Salvador (Staatliches Museum für Naturkunde Stuttgart, Germany)

£1500 'Palaeogene land snails of the United Kingdom: faunal links across Laurasia'

Rachel Sommer (University of Hawaii, USA)

£1205. 'Comparative Life Histories of two invasive Veronicellid Slugs'

Oliver Tills (Plymouth University, UK)

£1500. 'Nutritional effects during development: A test of the Barker Hypothesis in a freshwater gastropod'

Thus eight Research Grants have been funded at a total cost of £11,508. The success rate was 62%. The Grants Review Panel would like to emphasise that the quality of all applications was high and that it funded as many excellent projects as possible. Applicants will be formally notified of the outcome of their application within three weeks of the AGM.

### Senior Research Grants

By the closing date of 15<sup>th</sup> June 2016 the Society had received 5 applications from workers from 5 institutions in 5 different countries. On behalf of the Society, I would again like to formally thank the members of the Grants Review Panel for their hard work in reviewing all applications. The Panel has agreed the following awards, in alphabetical order.

Ferrari Silvia Mariel, Centro Nacional Patagónico (CENPAT-CONICET), Argentina.

£1500 'Systematics of new Jurassic marine gastropods from the Cleveland Basin'

Menno Schilthuizen, Naturalis Biodiversity Center and Leiden University, the Netherlands.

£1500 'Niche structure in tropical land snails'

### The Annual Award

The Society received two nominations for the 2017 Annual Award. The Judging Panel elected to offer the Annual Award to Dr Juan E. Uribe (Museo Nacional de Ciencias Naturales, Madrid Spain) for a thesis entitled '*Mitogenómica y filogenia de linajes de gasterópodos altamente diversificados (Vetigastropoda, Neritimorpha y Conoidea)*'. The Society sends its best wishes and congratulations to Dr Uribe.

### The Oxford Prize for Malacology

The Oxford Prize for Malacology is awarded annually for the best presentation at the Molluscan Forum, is generously supported by Oxford University Press, publisher of the Society's journal. The 2016 winner is Aidan O'Hanlon (NUI Galway, Ireland) for his talk entitled '*Phenotype-environment matching in the Kerry spotted slug *Geomalacus maculosus* (Allman): exposure to UV radiation induces colour change resulting in camouflage*'

### World Congress for Malacology – student prizes

The Society awarded two student prizes at the 2016 World Congress for Malacology. The winner of the best student poster was Geraldine Chang for their poster, entitled: '*An attempt to cryopreserve tropical oyster, *Crassostrea iredalei* spermatozoa in Malaysia.*' The winner of the best student oral presentation was Fernando Aneiros for their talk entitled '*Dynamics of corallivorous *Drupella* snails on coral reefs with the diving-related tourism (Koh Tao, Gulf of Thailand)*'.

### Officers and Council

This is my second year as President of the Society and once again, it has been an absolute pleasure to work with all Society's Officers and Councillors. As in previous years, they have worked exceptionally hard towards the continued success of the Society. This is no small undertaking; the Society is responsible for two excellent publications, maintains a healthy membership, has an active website, a Facebook account, provides significant numbers of grants and awards, organizes stimulating meetings and has also managed to maintain good financial health. I therefore wish to sincerely thank all Officers and Councillors for their continued efforts, which is all the more notable given that each voluntarily gives their time and talents in support of the Society's objectives.

This year the Council has nominated Elizabeth Platts for Honorary Membership of the Society. Honorary Membership is limited to only five members, and is given to people who have made a significant contribution to the Society. Liz has been closely associated with the Society for 40 years, having joined in 1976. She has served on the MSL Council for 30 years, of which seven years were as Vice President (1990-1993 and 1996-2000) and ten years as Treasurer (2000-2009) and most recently as a Council Officer (2009-2016). She steps down from Council at this AGM, but as a mark of our thanks, esteem and appreciation for her dedication and enthusiasm, the Council has elected her as an Honorary Life Member. In particular, her hard work put the Society's finances on a sound footing, she helped to organize meetings, edited the *Journal of Molluscan Studies*, encouraged students, raised funds for the Centenary Appeal and has done so much to guide and encourage us all. A small article about her long association with the Society is being prepared for publication in *The Malacologist*. \*

I am extremely proud of the work of the Officers and Councillors of the Society. It is through their hard work and dedication that the Society has continued to positively impact malacology globally achieving its stated goals to "advance education, research and learning for the public benefit in the study of Mollusca from both pure and applied aspects".

Next year will be our 125<sup>th</sup> AGM. We will have an anniversary symposium at the Natural History Museum on 21<sup>st</sup> March 2018.

\* Editor's note - Unfortunately between the AGM and the publication of this issue of *The Malacologist*, Elizabeth Platts passed away. As the President's Report to Council is a minuted item of the AGM, notice of Liz's death could not have been included.

### Members of Council for 2017-18

President	Suzanne Williams
Vice Presidents	Richard Preece John Grahame
Councillors	Adrian Emery Phillip Fenburg Harriet Wood Deborah Wall-Palmer Robert Cameron Simon Cragg
Coopted	Andreia Salvador
Hon. Secretary	Rowan Whittle
Hon. Treasurer	Katrin Linse
Membership Secretary	Tom White
Editor - <i>Journal of Molluscan Studies</i>	David Reid
Editor - <i>The Malacologist</i>	Georges Dussart
Awards Officer	Jon Ablett
Web manager	Tom White
Facebook manager	Chong Chen



The Council at work in the basement of the Natural History Museum. Left to right- Katrin Linse Andreia Salvador Jon Ablett Rowan Whittle Simon Cragg Deborah Wall-Palmer John Grahame Tom White Phillip Fen- burg David Reid (Photo—Georges Dussart)



## Annual General Meeting— associated scientific meeting

Meeting following the AGM of the Malacological Society of London

Talks were given by an international team of malacologists and were followed by a wine reception. The meeting was free with no need to register.

### *Symposium on Molluscan Colour and Vision*

**27 April 2017**

**Flett Theatre, Natural History Museum, London**

The Natural History Museum together with the Malacological Society of London is hosting a symposium, "*Molluscan Colour and Vision*" along with its annual general meeting. The meeting is to be held on the 27<sup>th</sup> of April 2017 at the Natural History Museum.

The phylum Mollusca is highly speciose and is the largest phylum in the marine realm. Many species are brightly coloured and patterned and yet nearly all molluscs are thought to be colour blind. Despite their limitations with colour vision, molluscs showcase a myriad of different eye types, many of which are unique in the animal kingdom. In this symposium speakers will cover a range of topics that highlight the extraordinary nature of colour and vision in molluscs.



### **Schedule**

**1100-1110:** Introduction and welcome.

**1110-1130: Jakob Vinther:** Fossil colour and molluscan evolution.

**1130-1220: Daniel Speiser:** The function and evolution of highly-dispersed visual systems in molluscs.

**1220-1240: Trevor Wardill:** Neural control of squid skin iridescence and its potential role for communication.

**1240-1400:** MSL AGM

**1400-1450: Sönke Johnsen:** Tricks of light, mirror, and color: The beautiful camouflage of pelagic cephalopods.

**1450-1510: Lauren Sumner-Rooney:** The repeated evolution of eye loss in deep-sea solariellid gastropods.

**1510-1530: Marcel Koken:** New lights on biodiversity: natural fluorescence.

**1530-1600:** Tea and coffee.

**1600-1620: Suzanne Williams:** Identification of pigments and genes contributing to shell colour in a marine snail.

**1620-1640: Nick Roberts:** Seeing the world in a different light - polarization vision in cephalopods.

**1640-1700: Angus Davison:** *Cepaea* colour polymorphism - why and how do snails vary in their shell colour and banding?

**1700-1720: Alexander Arkhipkin:** Coevolution in body coloration and camouflage in cephalopods and fish.

**1720-1730:** Wrap up and thanks.

**1730-1900:** Wine reception.

### **Speakers**

Daniel Speiser, University of South Carolina

<http://www.biol.sc.edu/daniel-speiser>

Sönke Johnsen, Duke University

<http://sites.biology.duke.edu/johnsenlab/>

Jakob Vinther, University of Bristol

[http://www.jakobvinther.com/Front\\_page.html](http://www.jakobvinther.com/Front_page.html)

Lauren Sumner-Rooney, Museum für Naturkunde, Berlin

[https://www.researchgate.net/profile/Lauren\\_Sumner-Rooney](https://www.researchgate.net/profile/Lauren_Sumner-Rooney)

Nick Roberts, Bristol University

<http://www.ecologyofvision.com/>

Trevor Wardill, University of Cambridge

<http://www.pdn.cam.ac.uk/directory/trevor-wardill>

Angus Davison, University of Nottingham

<http://www.angusdavison.org/>

Alexander Arkhipkin, Falkland Islands Fisheries Department

<http://south-atlantic-research.org/our-people/research-fellows/66-sashaarkhipkin>

Marcel Koken, Centre National de la Recherche Scientifique

[https://www.researchgate.net/profile/Marcel\\_Koken](https://www.researchgate.net/profile/Marcel_Koken)

Suzanne Williams, Natural History Museum

<http://www.nhm.ac.uk/our-science/departments-and-staff/staff-directory/suzanne-williams.html>

**The function and evolution of highly-dispersed visual systems in molluscs**

Daniel I. Speiser

*Department of Biological Sciences, University of South Carolina, Columbia, SC, USA*

The eyes of animals vary widely in form and function. Many of the most unusual designs are found in certain types of molluscs. As a first example, scallops – a family of swimming bivalves – have dozens to hundreds of eyes arrayed along the edges of their valves. These eyes are single-chambered like the camera eyes of vertebrates and cephalopods, but they form images by the reflection of light off a concave mirror instead of the refraction of light by a lens or cornea. As a second example, certain species of chiton – a class of multi-shelled, crawling molluscs – have hundreds to thousands of tiny (< 100 micron), image-forming eyes embedded in their protective shell plates. These are the first eyes known to form images using lenses made of the mineral aragonite ( $\text{CaCO}_3$ ). By working within a phylogenetic context and applying comparative methods, we are using the diversity of visual systems present in these lineages to understand why and how eyes evolve. To do so, we are estimating how the eyes of scallops and chiton perform under different conditions using information about their morphology and physiology. We are then testing these prediction using behavioural experiments. The molecular components of eyes are well-characterized, so we can also make predictions about how changes in genotype may influence changes in phenotype during eye evolution. Finally, we are studying the neurobiology of scallops and chitons to ask 1) if these animals integrate the dozens to hundreds of images gathered separately by their eyes to form single, coherent reconstructions of their visual environments and 2) if separate cases of eye evolution in molluscs may inform us about how eyes and brains co-evolve.

**Identification of pigments and genes contributing to shell colour in a marine snail.**

Suzanne Williams

*Natural History Museum, Cromwell Rd., South Kensington, London*

Colour and pattern are key traits with important roles in camouflage, warning and attraction and the phylum Mollusca includes some of the most beautiful exemplars of biological pigmentation. In order to better understand the evolution of molluscan shell colour we need to know more about how shell colour is distributed across taxonomic groups, identify shell pigments and link pigments to biochemical pathways. In this talk I discuss several projects that use Natural History Museum, London (NHM) molluscan collections to address these issues. The first looks at the distribution of shell colour in bivalves, by recording 24 shell characters for the NHM dry bivalve collection (almost 45,000 lots) and plotting the results onto a molecular phylogeny. In the second project high performance liquid chromatography was used to identify two porphyrin pigments and eumelanin in the shell and coloured foot tissue of marine snails *Clanculus pharaonius* and *C. margaritarius*. Evidence from confocal microscopy analyses shows that the distribution of porphyrin pigments corresponds to the striking pink-red of *C. pharaonius* shells, as well as pink-red dots and lines on the early whorls of *C. margaritarius* and yellow-brown colour of later whorls. Since the same pigments occur in the shell and coloured foot tissue, the third project hypothesised that the same colour-related genes may be simultaneously expressed in both mantle (which produces the shell) and foot tissue. Transcriptomes of the two *Clanculus* species and a negative control, *Calliostoma zizyphinum*, were sequenced to identify genes associated with the synthesis of porphyrins. As expected, genes necessary for the production of uroporphyrin I and III were found in all three species, but gene expression levels results were consistent with synthesis of uroporphyrins in mantle and coloured foot tissue only in *Clanculus*.

**Seeing the world in a different light - polarization vision in cephalopods**

Nick Roberts

*Bristol University Life Sciences Building, 24 Tyndall Avenue, Bristol BS8 1TQ*

Many animals see the world very differently from us. What would it be like to see the ultraviolet patterns that dominate the worlds of insects and fish? What do nocturnal or deep-sea animals see with their ultra-low light vision? Cephalopods are no less remarkable. Their vision is unusual, unlike many other animals, they have not evolved colour vision despite having high acuity camera type eyes. They have instead, however, several remarkable visual adaptations including being sensitive to the polarization of light.

Many animals including insects, cephalopods, fish and crustaceans, are sensitive to the polarization of light and these animals use this visual information for tasks such as navigation, contrast enhancement, communication, and habitat localisation. However, cephalopods are able to distinguish between different forms of polarization better than any other animals current known. In this talk, I will outline what we currently know about this ability and the data we have on the polarization information they broadcast as a visual signal.





Field work - Open-ocean research cruises using SCUBA and deep-sea submersibles.

### Tricks of light, mirror, and color: The beautiful camouflage of pelagic cephalopods

*Sönke Johnsen*

*Professor of Biology, Duke University, Durham, NC USA*

The water column of the ocean, with its complex light field, intense predation, and astonishing diversity of molluscs, is a natural laboratory for studying how this phylum interacts with light. This talk discusses the various tricks that pelagic molluscs play to hide in an environment with no natural hiding places, first describing the physical principles involved and then delving into how these animals exploit them. These tricks are divided into four major groups, based on the four ways that light can interact with matter: transparency, mirrors, colors, and bioluminescence. While most of the talk focuses on cephalopods, which are masters of disguise in any habitat, various other pelagic molluscs are discussed, including heteropods, pteropods, and pelagic nudibranchs. We also discuss some of the methods that molluscs and other pelagic predators use to break these special forms of camouflage. Overall, the presentation is meant to be an overview that highlights the diversity of what these animals can do with light and shows how much remains to be discovered.



Sönke Johnsen





### The repeated evolution of eye loss in deep-sea solariellid gastropods

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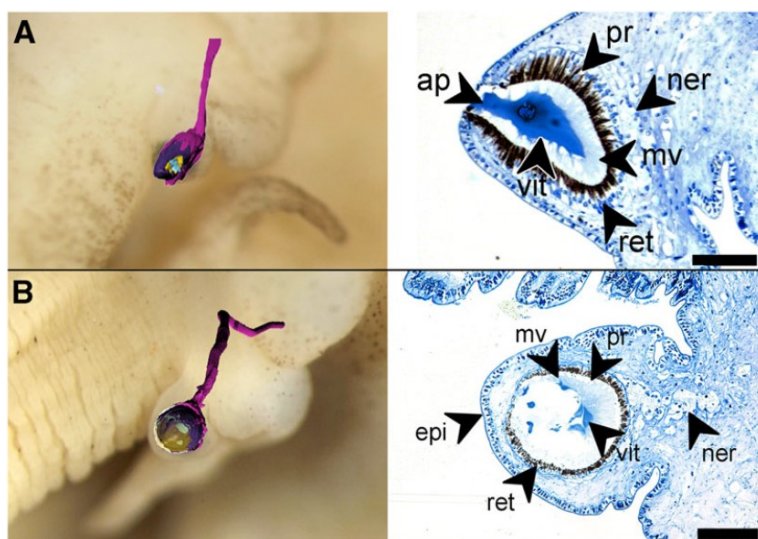
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Vision and colour have fascinated biologists for centuries, and represent some of the most impressive and complex evolutionary innovations. But eye reduction and loss are also highly important evolutionary phenomena. Eye loss occurs in many troglobitic, fossorial and deep-sea animals but there is no clear consensus on its evolutionary mechanism. Given the highly conserved and pleiotropic nature of many genes instrumental to eye development, degeneration might be expected to follow consistent evolutionary trajectories in closely-related animals. However, most studies to date have focussed on a handful of troglobitic vertebrate and arthropod species. Molluscs are renowned for the enormous diversity of eye designs they exhibit, and they occupy a wide variety of light environments. Eyeless deep-sea gastropods could offer a much larger study system, both taxonomically and biogeographically, for examining broader evolutionary processes involved in loss and regression. We conducted a comparative study of ocular anatomy in solariellid snails from deep and shallow marine habitats

using morphological, histological and tomographic techniques, contextualised phylogenetically. Of 67 species studied, fifteen lack retinal pigmentation and at least seven have eyes enveloped by surrounding epithelium. Independent instances of reduction follow numerous different morphological trajectories. We estimate eye loss has evolved at least seven times within Solariellidae, in at least three different ways: characters such as pigmentation loss, obstruction of eye aperture and 'lens' degeneration can occur in any order. In one instance, two morphologically distinct reduction pathways appear within a single genus, *Bathymophila*. Even amongst closely related animals living at similar depths and presumably with similar selective pressures, the processes leading to eye loss have more evolutionary plasticity than previously realised. Although there is selective pressure driving eye reduction, it is clearly not morphologically or developmentally constrained as has been suggested by previous studies.



### Coevolution in body coloration and camouflage in cephalopods and fish

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The skin of fish and cephalopods is coloured and usually displays numerous colour patterns. Conspicuous colouration is essential for body display to distract potential predators, as well to communicate with conspecifics for example during spawning. The cryptic colouration and body camouflage are used for either protection or ambush predation or both. Colouration is due to the presence of pigment cells (chromatophores) and light-reflecting cells and microstructures (iridophores and leucophores) within the skin. Skin colouration changes with time, with two main types identified.

(1) Slow 'morphological' changes can be attributed to increased or decreased density of chromatophores with age or ontogenetic phase, as well as changes in the amount and composition of pigment in them. (2) Fast 'physiological' colour changes are caused by the motile activities of pigmentary and light reflecting cells. Comparing to most advanced teleost fishes, coleoid cephalopods have mastered the ability to quick and profound change of their colour body patterns. In fish, both light absorbing and light reflecting pigment cells are called as 'chromatophores', whereas in cephalopods they are usually subdivided into three different types, i.e. chromatophores (light absorbing cells of all colours), iridophores (cells reflecting the light of a certain wave length) and leucophores (cells scattering light of all visible wave lengths). The microstructure, location and function of pigment cells is compared in cephalopods and fish to show the co-evolution in skin colour production, body patterns and camouflage in both groups of aquatic animals.



## In Memoriam

## Elizabeth Anne Platts (1937-2017)

Elizabeth Platts, who was a long-standing member of the Malacological Society of London, died in Winchester on 18<sup>th</sup> May, aged 79. She joined the Malacological Society in 1975 and in 1987 was first elected to Council. The same year she was also appointed for a brief period as an Associate Editor of the *Journal of Molluscan Studies*. She was a member of Council for 30 years, Vice President for two terms (1990-1993 and 1996-2000) and Treasurer for nearly 10 years (2000-2009). As Treasurer she was instrumental in dragging the Society into the age of credit cards and charities' investment accounts, and she was always keen to spend Society money on worthwhile causes, such as grants for student projects and travel, and Society meetings. One of her great projects was the centenary of the Society, for which she arranged printing of publicity folders to send to likely donors, Society ties, tea towels, tee shirts and sweat shirts, paperweights and postcards. To the surprise of a sceptical Council, two production runs of the ties quickly sold out, and a whole generation of malacologists' offspring was kitted out in themed shirts. The tea towels appeared in the Christmas gifts of distant relatives of Society members for some years and are still in use in many parts of the world. At the last AGM, Elizabeth was made an Honorary Life Member for her distinguished service to the Society, an honour that gave her enormous pleasure.



Elizabeth Platts drawn by Raymond Piper in 1992.

Elizabeth Anne Platts was born on 16<sup>th</sup> December 1937 in London, the daughter of Paul and Doris Williams. For most of her childhood and early life she was called Lilla, the name recently given to her grand-daughter. She went to school in Putney and studied a wide range of subjects including French, Latin and Art, before focusing on science for her A-levels. Biology was always her favourite subject, which stemmed from her childhood interest in various aspects of natural history. At the University of Nottingham she developed a particular interest in marine biology and molluscs, especially nudibranch sea slugs. She became heavily involved with various activities at Nottingham, becoming Secretary and then President of the University Biological Society and Vice President of the University Mountaineering Club. She participated in biological expeditions to the Alpes Maritimes and on a pharmaceutical expedition to Spitzbergen, where she volunteered to have her normal diurnal rhythms temporarily reversed as part of a pioneering study. She had embarked on a Joint Honours BSc course in Botany and Zoology, with subsidiary Chemistry and Microbiology, but was unable to complete the degree because of an undiagnosed thyroid condition, which was finally treated in 1964.

After leaving university, she taught for several years at various schools in London. She married her husband Richard and in 1965 they had their first daughter Victoria. Richard did not share Elizabeth's intense interest in natural history but he was a gifted amateur photographer who was able to photograph many of her beloved sea slugs. Many of these photographs were eventually archived in the Ulster Museum and at the Natural History Museum in London, where she had become a familiar face. In 1970, the family moved to Belfast where Richard had taken up a post in the Economics Department of Queen's University. She continued to teach Biology at different schools in Belfast until her second daughter, Sarah, was born in 1981. Once established in Belfast, Elizabeth quickly became engaged with the natural history community in Ireland. She joined the Belfast Naturalists' Field Club and became closely involved with the Botany and Zoology Department of the Ulster Museum, where she subsequently became an honorary member of staff. She produced the first checklist of marine Mollusca for Sea Area 28 (Belfast) for the Conchological Society's Marine Recording Scheme and became the Society's Marine Recorder for Sea Areas 33 and 34 (Donegal). She also produced *An Annotated Checklist of North Atlantic Opisthobranchia* as a tribute to the renowned Danish zoologist Dr Henning Lemche, who had worked in County Galway between 1971 and 1976. She also became a member of the Praeger Committee that administered small grants for fieldwork on behalf of the Royal Irish Academy. In 1976 she succeeded Pat Kertland as Editor of the *Irish Naturalists' Journal*, a position that she held with distinction until 1988, when Richard retired and the family moved back to England. The family lived in Winchester during the 1990s but in 2002 Elizabeth, now divorced, moved to Cambridge, where she formed new friendships and became involved with local societies. During her final few years, as her health worsened, she returned to Winchester to be close to her daughters.

Despite being essentially a marine biologist, it is ironic that perhaps her best known work relates to two terrestrial species. The first concerns her work with Martin Speight that sought to clarify the taxonomic status and geographical distribution of the Kerry slug *Geomalacus maculosus* throughout its European range. The second, and perhaps her best known work, relates to her discovery in 1976 of a thriving population of the land winkle *Pomatias elegans* at a site on the Burren in County Clare. She co-authored several papers about the significance of this discovery and subsequently wrote an MPhil thesis (University of Southampton) about this colony, which remains the only living population of this species known in Ireland. She had a personal, even intimate, affinity with her subject, and kept large numbers of the 'terrestrial winkles' in her home, carefully segregated by origin. She travelled to the Fifth International Symposium on Littorinid Biology in Cork in 1996 to present a talk on the results of her studies. Summarising the adaptations of this snail to life on land, she announced that it

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## Elizabeth Platts - In Memoriam

was well known that it produced a copious and dilute urine - "It's true; it's not at all salty to the taste". She was quite puzzled by the startled looks and giggles in the audience. The period when the Platts family lived in Northern Ireland coincided with one of the most troubled episodes of that region's history. She was very matter-of-fact about the difficulties arising from the political turmoil but she loved her time there and the people whom she met, and looked back on it with great affection.

Elizabeth belonged to several other learned societies and played an active role in their work. She was also a long-standing member of the Conchological Society of Great Britain and Ireland and Unitas Malacologia, helping that organization to produce a marine molluscan database for the North Atlantic and Mediterranean (CLEMAM). Her membership of other societies and associations not yet mentioned included the Linnean Society (from 1975), Society for the History of Natural History (from 1976), Jeffrey's Association (1977-1982), Ray Society (from 1993) and a member (later succeeding Max Walters as Chair) of the Editorial Board of *Nature in Cambridgeshire* (2003-2015). She served on the Council of the Ray Society (founded in 1844) and during the period 2010-2013 was elected its first female President, another accolade that gave her particular delight.

Her main influence, however, was not through her research or written work but as the result of the way that she actively encouraged others. Through her membership of all these societies (the list is certainly not comprehensive) she had formed a useful network of contacts and she was always keen to introduce people from these different spheres. It is no coincidence that several of these societies have now held joint meetings, nor that members of the Malacological Society of London and Board Members of *Nature in Cambridgeshire* have published Ray Society monographs. She was also instrumental in championing the exquisite botanical artwork of the late Raymond Piper, a family friend from Ireland, who was eventually persuaded to exhibit at the Botanical Society of the British Isles, the Linnean Society and the Royal Horticultural Society, where in recognition of the quality of his work he was awarded the Linley Medal in 1975. Elizabeth was a great facilitator and problem-solver and really quite an inspirational person with a wonderful sense of fun. Throughout her life, Elizabeth suffered from a whole series of auto-immune problems and she never really enjoyed 'good health'. However, for most of her life her health problems seemed to have been more of a spur than an impediment and she never let them interfere with her plans to travel (for example, to Hong Kong, Thailand, Burma and Sri Lanka) or undertake other activities. She was always smiling and keen to become involved with whatever activity was at hand. It was typical of her to nominate the Malacological Society as one of her chosen charities at her funeral. The Society has lost a dear friend and someone really special.

Richard Preece

### Publications (in chronological order)

- Platts, E. 1973. Notes on some Irish intertidal nudibranchs collected off the coast of Co Down. *Irish Naturalists' Journal* **17**: 382-386.
- Platts, E. 1974. *Alderia modesta* (Loven) and *Limopontia depressa* Alder and Hancock in Down and Antrim; the latter species new to Ireland. *Irish Naturalists' Journal* **18**: 123.
- Platts, E. 1977. The land winkle *Pomatias elegans* (Müller) confirmed as an Irish species. *Irish Naturalists' Journal* **19**: 10-12.
- Platts, E. 1978. The first record of the copepod *Doridicola agilis* Leydig on the nudibranch *Aeolidiella sanguinea* (Norman). *Irish Naturalists' Journal* **19**: 252.
- Platts, E. 1985. An annotated list of the North Atlantic Opisthobranchia. *Ophelia Supplement* **2**: 150-170.
- Platts, E. & Speight, M.C.D. 1988. The taxonomy and distribution of the Kerry slug *Geomalacus maculosus* Allman, 1843 (Mollusca: Arionidae) with a discussion of its status as a threatened species. *Irish Naturalists' Journal*, **22**: 417-430.
- Platts, E. 1989/1991. *Geomalacus maculosus*. European Invertebrate Survey; data sheets on status of endangered invertebrates, for the Berne Convention.
- Platts, E. 1991. Out of the slime. *BBC Wildlife* **9**: 420-423.
- Platts, E. 1994. *In celebration of the Ray Society, established 1844, and its founder George Johnston (1797-1855)*. Ray Society publication no 163.
- Platts, E.A. 2000. A survey of the land winkle *Pomatias elegans* (Müller, 1774). Unpublished report. Royal Irish Academy.
- Jordaens, K., Platts, E. & Backeljau, T. 2001. Genetic and morphological variation in the land winkle *Pomatias elegans* (Müller, 1774) (Caenogastropoda: Pomatiidae). *Journal of Molluscan Studies* **67**: 145-152.
- Platts, E., Bailey, S., McGrath, D. & McGeogh, G. 2003. A survey of the land winkle *Pomatias elegans* (Müller, 1774) in the Burren, Co. Clare. *Biology and Environment: Proceedings of the Royal Irish Academy* **103B**: 197-201.
- Platts, E.A. 2006. The Post-glacial history and intraspecific relationships of the land prosobranch *Pomatias elegans* (Müller, 1774), with particular reference to its occurrence in Ireland. MPhil thesis, University of Southampton.
- Naggs, F., Raheem, D. & Platts, E. 2005. Some observations on Sri Lankan land snails including the impact of the Indian Ocean tsunami on lowland snail faunas and its importance as a major fossilization event. *The Malacologist* **45**: 3-7.
- Platts, E. & Preece, R.C. 2009. Stella Madeline Davies, 1927-2008 [Obituary]. *Journal of Conchology* **40**, 111-112.

### Memorial event for Elizabeth Platts

In order to do proper justice to our mother's memory we are hosting a Celebration event on Saturday 25th November 2017 (12 noon to 5pm, Littleton Memorial Hall, Winchester), to which we hope everyone who knew and loved her will come.

Please register to attend this free event using the following link:

<https://www.eventbrite.co.uk/e/elizabeth-platts-celebration-of-life-tickets-35003273734>

Victoria O'Hara and Sarah Bradbury  
Daughters



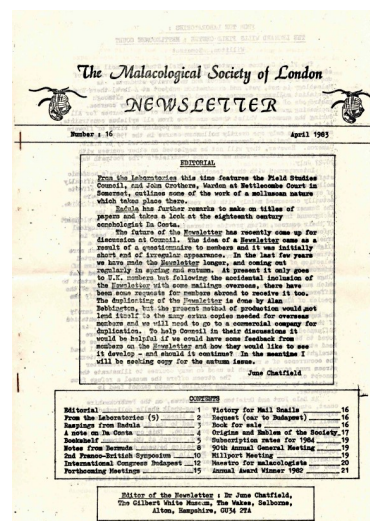


# A cavalcade of excellence

## Past Award Winners of the Malacological Society of London

### Introduction

For a small, taxon-based academic society, the Malacological Society of London has been unusually pro-active in annually supporting young researchers with both research and travel awards. Since there are always more applicants than funds, awards are competitive and submissions are carefully considered by a board convened by the Society. Recompense to the Society has come in a number of ways. As well as generally advancing the field, awards have led to outcomes including oral presentations at the meetings of the Society, participation at the young malacologists annual Forum publications in the *Journal of Molluscan Studies* and publications in *The Malacologist*, which is the official bulletin of the Society. The latter route to publication has been most commonly used by award winners. Past-President Tony Walker offers an excellent review of what makes a good award application in 'Research Funding in Focus' in *The Malacologist* 51 (August 2008).



Information on recipients of awards is presented to the membership via the *The Malacologist*. Before computerisation, the bulletin (unsurprisingly called 'The Bulletin of The Malacological Society of London' or before that the *Newsletter*) was circulated on cyclostyled paper but eventually changed to a digital publication with volume 45 in February 2005 at which point there was also a name change to *The Malacologist*. The name change reflected an emphasis on researchers as much as molluscs. Back issues from volume 28 (Feb 1997), are archived on The Society's website. Here, I offer a list of the awards that have been presented since the inception of the process in the Centenary year (1973). As well as being intrinsically interesting, this list may indicate growth points in the field of malacology over the forty one years of the awards, and could be worthy of further analysis. In the meantime, what we have here is a list of malacological excellence.

Travel awards are not reported here. They can be followed by consulting the President's Report of Council which is published in each August issue of *The Malacologist*. Where possible, the awards noted here have been traced to a publication in *The Malacologist*. However, award winners may have published reports of their work elsewhere. Up to and including issue 54 (February 2010), *The Malacologist* on-line operated by hyperlinks, some of which are broken; where the problem has been identified, I have so indicated and hopefully these links will be repaired. Issues from, and including 55 (August 2010) were presented as printable pdf files. Paper copies of these are lodged with official libraries in the UK (for example the Bodleian and the British Library) and around the world (for example the Randall Library in the USA and the Blacker-Wood Library in Canada).

The information here has been culled from my digital records. In some cases, the published title of a paper is worded differently from title in the award application, though the theme will be the same. Paper records have yet to be investigated. There are certain to be errors and omissions which will be rectified as they come to light. Please advise me of any such anomaly, especially if you are an award winner.

Georges Dussart [georges.dussart@canterbury.ac.uk](mailto:georges.dussart@canterbury.ac.uk)

### ANNUAL AWARD WINNERS (started in 1976)

- 1976 K.B. Clark, Florida Institute of Technology
- 1977 K. Partridge, National Science Council, Dublin
- 1978 C.D. Todd, Wellcome Marine Laboratory, University of Leeds
- 1979 G.H. Brown, Department of Zoology, University of Bristol
- 1980 G.B. Picken, Department of Zoology, University of Aberdeen
- 1981 M. Denning, Department of Zoology, University of British Columbia
- 1982 R.H. Cowie, Department of Zoology, University of Liverpool Studies on the ecology and ecogenetics of the helioid land snail *Theba pisana* (Müller)". Report in *Journal of Molluscan Studies* 58(2): 229-231 and issue 16 (1985) of the Newsletter
- 1983 P.G. Williamson, Department of Geology, University of Bristol
- 1984 D.G. Reid James Cook University of North Queensland *The systematics and ecology of the mangrove-dwelling Littoraria species (Gastropoda: Littorinidae) in the Indo-Pacific*. Reported as Reid, D.G. (1992) Predation by crabs on Littoraria species (Littorinidae) in a Queensland mangrove forest. In: *Proceedings of the Third International Symposium on Littorinid Biology* (J. Grahame, P.J. Mill & D.G. Reid, eds, 1992): 141-151. Malacological Society of London.
- 1985 J.M. Healy, Department of Zoology, University of Queensland
- 1986 No award
- 1987 J G Colman, Oceanography. UC Wales, Swansea
- 1988 Leslie Noble, Dep Genetics, UC London
- 1989 Heike Wägele, Universität Oldenburg, FRG
- 1990 Mark Davies, Department of Zoology, University of Manchester *Studies on mucus from intertidal gastropods with reference to energy budgets*

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- 1991 Elizabeth Harper, Open University, U.K. *The evolution of the cemented habit in the Bivalvia.*  
 1992 No award  
 1993 Mark Norman, Museum of Victoria, Australia *Australian octopus* (unconfirmed title)  
 1994 Stephen Ridgway, Queen Mary & Westfield College, University of London *The systematics, phylogeny and biogeography of the limpet genus Patella (Mollusca: Gastropoda) in the northern Atlantic and Mediterranean Sea.*  
 1995 Tan Koh Siang, National University of Singapore *Taxonomy of Thais and Morula (Mollusca: Gastropoda: Muricidae) in Singapore and vicinity*  
 1996 Bernadette Holthuis, University of Washington *Evolution between Marine and Fresh Water Habitats - A Case Study of the Gastropod Sub-order Neritopsina* Report in The Malacologist 29 (August 1997)

#### Bulletins not available on-line

#### Bulletins available on-line

- 1997 Hans de Wolf, University of Antwerp *Morphological and genetic population structure in the Macaronesian, planktonic developing periwinkle, Littorina striata, King & Broderip, 1832 (Mollusca, Gastropoda)* Report in The Malacologist 31 (August 1998) (but hyperlink doesn't work)  
 1998 Mikael Tholleson of Göteborg University, *Nudibranch Systematics and Molecular Data* Report in The Malacologist 33 (August 1999)  
 1999 Richard Meyrick, Cambridge University *Biostratigraphy and dating of Holocene tufa successions in NW Europe* Report in The Malacologist 35 (August 2000)  
 2000 Daniel Geiger Natural History Museum of Los Angeles County *A total-evidence cladistic analysis of the Haliotidae* Report in The Malacologist 37 (August 2001)  
 2001 No award  
 2002 Rachel Collin, Smithsonian Tropical Research Institute, Panama *Evolution of mode of development in Crepidula – causes and consequences* Report in The Malacologist 41 (August 2003)  
 2003 Stefan Müller, Cambridge University *Effects of the Asian Clam Corbicula fluminea in Lake Constance* Report by Bill Bailey in The Malacologist 43 (August 2004)  
 2004 Anna McIvor, Cambridge University *Freshwater mussels as biofilters* Report in The Malacologist 45 (August 2005)  
 2005 Jürgen Geist, Technical University of München *Conservation Genetics and Ecology of European Pearl Mussels* Report in The Malacologist 47 (August 2006)  
 2006 Adriaan Gittenberger, Leiden, Netherlands *The evolutionary history of parasitic gastropods and their coral hosts in the Indo-Pacific* Report in The Malacologist 50 (August 2008)  
 2007 Manuel Malaquias *Systematics, evolution and ecology of Bullidae (Mollusca: Gastropoda) with a molecular phylogeny of the order Cepalaspidea* Report in The Malacologist 51 (February 2008)  
 2008 Regina Oliveira Lopes da Cunha of the Autonomous University of Madrid *Tempo and mode of evolution of the genus Conus (Gastropoda: Neogastropoda) in the Cape Verde islands* Report in The Malacologist 54 (February 2010) (N.b. webpage issue mis-titled 2009)  
 2009 André F. Sartori, Emmanuel College, Cambridge University *Comparative morphology and phylogeny of anomalodesmatan bivalves* Report in The Malacologist 55 (August 2010)  
 2010 Alexandra Zieritz, Cambridge University *Variability, function and phylogenetic significance of unionoid shell characters* Report in The Malacologist 57 (August 2011)  
 2011 Martine Claremont *Diversification of carnivorous marine snails (Muricidae: Rapaninae and Ergalataxinae): phylogeny, biogeography and dietary specialization* Report in The Malacologist 59 (August 2012)  
 2013 Terence P. T. Ng (University of Hong Kong) *Reproductive traits and sexual selection in the mangrove littorinid snails Littoraria ardouiniana and L. melanostoma.* Report in The Malacologist 61 (August 2013)  
 2014 Whelan (University of Alabama) *Conservation, life history and systematics of Leptoxis Rafinesque 1819 (Gastropoda: Cerithioidea: Pleuroceridae)* Report in The Malacologist 63 (August 2014)  
 2015 Gregor Christa (University of Bonn) *Evolution of chloroplast sequestration in Sacoglossa (Mollusca, Gastropoda)* Report in The Malacologist 65 (August 2015)  
 2016 Chong Chen (Japan Agency for Marine-Earth Science and Technology (JAMSTEC), Yokosuka, Japan) *Systematics, ecology, and evolution of hydrothermal vent endemic peltospirids (Mollusca: Gastropoda) from the Indian and Southern oceans.* Report in The Malacologist 68 (February 2017)  
 2017 Juan E. Uribe (Museo Nacional de Ciencias Naturales, Madrid Spain) *Mitogenómica y filogenia de linajes de gasterópodos altamente diversificados (Vetigastropoda, Neritimorpha y Conoidea)*

#### CENTENARY RESEARCH GRANTS (Renamed RESEARCH GRANTS from 2005)

- 1995 Hywell Stone, Earth Sciences, Cambridge University *In vivo spine formation in marine spondylids in Eilat (Bivalvia: Pinnidae) when cultured in bottom cages.* Report in The Malacologist 28 (February 1997)  
 1996 F. Cardoza Velasco, Centre for Biological Research, La Paz BCS, Mexico £322 *Effect of population density on growth and survival of the penshell Atrina maura* Report in The Malacologist 31 (February 1998) – not accessible on-line  
 Jonathan Richard Stone, University of Toronto £400 *Computer graphical studies of shell growth in Lambis* Report in The Malacologist 30 (February 1998)  
 1997 Colin Beasley, Para, Brazil £500 *Gametogenesis in the genus Prisodon* Report in The Malacologist 33 August 1999)  
 Paul Craze, Manchester Metropolitan University £458 *RAPD Analysis in a Madeiran Land snail Heterostoma paupercula* Report in The Malacologist 32 (February 1999) (online links not working)  
 1998 Dinarzarde Raheem, Natural History Museum, London £500 *Land snail diversity in Sri Lankan rain forest remnants* Report in the Malacologist 33 (August 1999)  
 1999 Eunice Pinn, Southampton University *Larval settlement and recruitment in boring bivalve populations*  
 Marco Oliveira, Rome 3 University *Molecular phylogenetics of coral eating gastropods.*  
 2000 Purba Pal, Rhodes University, S. Africa 2000 £300 *Oogenesis and vitellogenesis in Siphonariid limpets* Report in The Malacologist 37 (August 2001) (online links not working)  
 Erika Iyengar, Cornell University £300 *Evolutionary ecology of kleptoparasitism and suspension feeding in Trichotropis cancellata* Report in The Malacologist 37 (August 2001)

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- 2000 Purba Pal, Rhodes University, S. Africa £300 *Oogenesis and vitellogenesis in Siphonariid limpets* Report in The Malacologist 37 (August 2001) (online links not working)  
Erika Iyengar, Cornell University £300 *Evolutionary ecology of kleptoparasitism and suspension feeding in *Trichotropis cancellata** Report in The Malacologist 37 (August 2001)
- 2001 Fiona Gowland, Aberdeen University £217 *Mechanisms of growth in embryonic squid* Report in The Malacologist 40 (February 2003)
- 2002 Karen Perez, University of Alabama £504 *Systematic relationships within the genus *Praticolella* (Polygyridae) from Southern US and Mexico* Report in The Malacologist 42 (February 2004)
- 2003 Samuel Stanton, University of Portsmouth £476 *Combining modern light microscope technique with electron microscopy to investigate the nature, distribution and ontogeny of cilia-bearing cells in the mantle of a larval bivalve* Report in The Malacologist 43 (August 2004)  
Rachel Przeslawski, University of Wollongong £500 *The effects of ultraviolet radiation and algal fouling on molluscan embryonic development* Report in The Malacologist 43 (August 2004)  
Louise Puslednik (University of Wollongong): £256 *Taxonomy of *Austropeplea tomentosa* (Pfeiffer, 1855), an intermediate host of liver fluke* Report in The Malacologist 43 (August 2004)
- 2004 Naolejela Andreev, Chisinau, Moldavian Republic £435 *Growth patterns of *Helix pomatia* in relation to mineral dietary supplements* Report in The Malacologist 46 (February 2006)  
Julian Finn, Science Museum, Melbourne £500 *Argonauts: systematics and biology* Report in The Malacologist 46 (February 2006)
- 2005 Josh Auld, University of Pittsburgh £1000 *The reciprocal effects of plasticity in defensive and mating-system phenotypes in freshwater snails.* Report in The Malacologist 47 (August 2006)  
Maria Campbell, Marine Biological Association, Plymouth £300 *The impact of oestrogens and xeno-oestrogens on the reproductive biology of *Hinia reticulata**  
Jason Hoverman, University of Pittsburgh £1,000 *The evolution of phenotype plasticity in freshwater snails.* Report in The Malacologist 48 (February 2007)  
Heike Reise, Staatliches Museum für Naturkunde Göttingen £465 *Digital video study of the mating behaviour of *Deroceras** Report in The Malacologist 49 (August 2007)  
George Speller, University Museum of Zoology, Cambridge £930 *Spatial variability and dating of molluscan successions from the early Holocene of Ireland* Report in The Malacologist 50 (February 2008)  
Samuel Stanton, University of Portsmouth £989 *Combining confocal laser scanning microscopy with SEM to investigate the nature, function and ontogeny of the mantle ciliation of bivalve larvae.* Report in The Malacologist 48 (February 2007)  
Jann Vendetti, Museum of Palaeontology, University of California £478 *Protoconch comparative morphology in extinct and extant buccinid gastropods and its utility in palaeobiogeography, systematics and inferring larval mode.* Report in The Malacologist 48 (February 2007)
- 2006 Timothy Edgell, University of New Brunswick, Canada £1,000 *The evolution of phenotypic plasticity in a marine gastropod* Final report in The Malacologist 50 (February 2008)  
Yolanda Carmacho-Garcia, University of Costa Rica £1,000 *Morphological and molecular study of the geminate species of opisthobranch molluscs from the Central American isthmus* Report in The Malacologist 49 (August 2007)  
Adele Grindon, University of Nottingham, UK £1,000 *Genetic evidence for a Scandinavian origin of land snails in Iceland and Canada* Report in The Malacologist 55 (August 2010)  
Dinarzade Raheem, Natural History Museum, London £1,000 *Persistence and conservation of Sri Lankan rainforest snails in a landscape of fragmented forest and modified habitats* Report in The Malacologist 50 (February 2008)  
Jose Rueda, University of Malaga Spain £595 *Biology and ecology of *Smaragdia viridis* and its link with seagrasses* Report in The Malacologist 50 (February 2008)  
Roland Schultheiss, University of Göttingen, Germany £1,000 *Systematics and character evolution of *Pisidium* (Bivalvia) in ancient lakes Ohrid and Prespa* Report in The Malacologist 49 (August 2007)  
Lucy Turner, Marine Biological Association, Plymouth £500 *A molecular phylogeny of the family Chromodorididae based on COX1, 16S rDNA and 18S rDNA data* Report in The Malacologist 50 (August 2007)  
Becky Williams, University of California, Berkeley £960 *Evaluating tetrodotoxin production by symbiotic bacteria in blue-ringed octopuses* Report in The Malacologist 52 (February 2009)
- 2007 Rachel Przeslawski, Stony Brook University £1000 *Antioxidant potential and stress in molluscan larvae* Report in The Malacologist 51 (August 2008)  
Cendrine Hudelot, Nottingham University £1000 *Phylogeography of *Cepaea hortensis*: its spread across Europe and colonization of North America*  
Manuel Malaquias, Natural History Museum, London £1000 *Diversity and phylogeography of Atlantic and Eastern Pacific Bulloidean Gastropods (*Bullidae* and *Haminoeidae*)* Report in The Malacologist 51 (August 2008)  
Prem Budha, Centre for Biological Conservation, Nepal £1000 *Biogeography of terrestrial land snail assemblages in Central Nepal* Report in The Malacologist 50 (February 2008)  
Russell Wyeth, Dalhousie University, USA £995 *Mechanoreceptors and their role in behavioural control in the pond snail *Lymnaea stagnalis** Report in The Malacologist 52 (February 2009)  
Aurélien Terrier, University of Geneva, Switzerland £1000 *Assessing the value of threatened snails as 'umbrella species' in wetland conservation* Report in The Malacologist 50 (February 2008)  
Jakob Vinther, Yale University £1000 *Determining the systematic position of the *Aculifera* within molluscs using data from seven nuclear housekeeping genes* Report in The Malacologist 51 (August 2008)  
Florescia Arrighetti, Museo Argentino de Ciencias Naturales, Argentina £1000 *Population dynamics of the giant snail *Adeiomelon Beckii*: inference from stable isotope analysis* Report in The Malacologist 53 (August 2009)  
Kathrin Bolstad, Auckland University of Technology, New Zealand £1000 *Systematics of the squid family *Onychoteuthidae* Gray, 1849 (Cephalopoda: Oegopsida)* Report in The Malacologist 50 (February 2008)
- 2008 Ellinor Michel, Natural History Museum London, UK £1000 *The Tanganyika Problem: Molecular Tests of Hypothesis of Origin for Lacustrine and Fluvial Endemic Gastropods in the East African Rift.*  
Ursula Smith, Cornell University, USA £844 *Identification of heterochronic mode in the New Zealand turrillid genus *Stiracolpus*.* Report in The Malacologist 57 (August 2011)

CONTINUED &gt;



- Marina Zieger, University of Michigan, USA £1000 *The functional organisation of retina and optic nerve in gastropod snail *Lymnaea stagnalis**. [Report in The Malacologist 53 \(August 2010\)](#)
- Rachel Walton, University of Manchester, UK £890 *The Impact of Aluminium and Silicon on the Shell Strength of *Lymnaea stagnalis**. [Report in The Malacologist 53 \(August 2010\)](#)
- Francesco Pilotto, University of Insubria of Varese, Italy £445 *Impacts of the Invasive Zebra Mussel on Native Unionid Bivalves*. [Report in The Malacologist 53 \(August 2010\)](#)
- Steven Brady, Yale University, USA £1000 *Urbanisation and rapid evolution of the Marsh Pond Snail (*Stagnicola elodes*)*. [Report in The Malacologist 53 \(August 2009\)](#)
- Stephanie Aktipis, Harvard University, USA £988 *Phylogenetic patterns of evolution and diversification of the *Archaeogastropoda**. [Report in The Malacologist 53 \(August 2010\)](#)
- Janine Arruda, Pontificia Universidade Catolica do Rio Grande do Sul £968 *Cladistic analysis of *Omalonyx d' Orbigny**. [Report in The Malacologist 53 \(August 2009\)](#)
- Juan Cueto, University of Cuyo, Argentina £957 *Haemopoiesis in the freshwater gastropod *Pomacea canaliculata* and bioindication of environmental pollutants*. [Report in The Malacologist 54 \(February 2010\)](#) (N.b. webpage issue mis-titled 2009)
- Kevin Kocot, Auburn University, USA £806 *Investigation of the phylogeny of the Mollusca using multiple nuclear protein coding genes*. [Report in The Malacologist 53 \(August 2010\)](#)
- 2009 Frederico Batista, University of Bangor (Wales) £994 *Relative quantification of F and M types in the mussels *Mytilus edulis*, *M. galloprovincialis* and their F1 hybrids*. [Report in The Malacologist 57 \(August 2011\)](#)
- Ronaldo Gomes de Sousa, University of Porto £1000 **Corbicula fluminea* as ecosystem engineer – functional importance*. [Report in The Malacologist 55 \(August 2010\)](#)
- Ian Hendy, University of Portsmouth £980 *Niche creation for crypto fauna by terebratulid bivalves in mangrove ecosystems*. [Report in The Malacologist 56 \(February 2011\)](#)
- Sheila Langosch, University of Illinois at Chicago £1000 *Assessing effects of dams on population genetic structure of *Lepetodea fragilis* and its larval host*. [Report in The Malacologist 59 \(August 2012\)](#)
- Nina Mikkelsen, University of Bergen, Norway £1000 *Molecular phylogeny of *Chaetodermomorpha* (=Caudofoveata) (*Mollusca*)*. [Report in The Malacologist 65 \(August 2015\)](#)
- Maria Modica, La Sapienza, University of Roma £1000 *A multigene molecular approach to the phylogeny of nutmeg shells (*Cancellariidae*)*. [Report in The Malacologist 57 \(August 2011\)](#)
- Nicole Spann, Cambridge University £1000 *Reconstructing the pollution history of freshwater habitats using Unionid shells*. [Report in The Malacologist 55 \(August 2010\)](#)
- 2010 Adrienne Jochum, Goethe University, Germany £918 *Evolution and diversity of the trogloditic Carychiidae – A morphological and phylogenetic investigation of the terrestrial ellobiid genera, *Carychium* and *Zospeum**. [Report in The Malacologist 57 \(August 2011\)](#)
- Max Maliska, University of Washington, USA - £1421 *The evolution of larval forms in *Littorina* phylogeny*. [Report in The Malacologist 58 \(February 2012\)](#)
- Magdalena Marzec, Magdalena Marzec, Museum of Natural History, Wroclaw, Poland - £750 *Microhabitat preferences of co-existing forest *Clausiliidae**. [Report in The Malacologist 58 \(February 2012\)](#)
- Cleo Oliveira, Universidade Federal do Rio de Janeiro - £1500 *Systematics of the cryptic species complex *Olivella minuta**. [Report in The Malacologist 57 \(August 2011\)](#)
- Dinarzarde Raheem, Natural History Museum, London, UK - £1500 *Species Diversification in Rainforest Land Snails*. [Report in The Malacologist 59 \(August 2012\)](#)
- Reuben Shipway, University of Portsmouth, UK - £1461. *Maternal feeding of larvae during brooding, in the wood boring bivalves of the *Teredinidae**. [Report in The Malacologist 63 \(August 2014\)](#)
- Conor Wilson, Quercus, Queens University Belfast, UK - £849 *An experimental approach to investigate group living in freshwater mussels*. [Report in The Malacologist 58 \(February 2012\)](#)
- Miranda Wilson, Georgia Institute of Technology, USA - £1000. *The formation and impact of hard clam (*M. mercenaria*) spatial distributions with respect to predation*. [Report in The Malacologist 57 \(August 2011\)](#)
- 2011 Gregory McCullagh, St Francis Xavier University, Canada - £1,465. *Sensory integration during odour-based navigation in the nudibranch mollusc, *Tritonia diomedea**
- Kathryn Smith, University of Southampton, UK - £1,500. *Ontogenetic impacts of a high-CO2 future ocean in Icelandic common whelks *Buccinum undatum**. [Report in The Malacologist 59 \(August 2012\)](#)
- Vainora Zukaite, Kingston University, UK - £1,500. *Protein kinase C signalling during *Lymnaea stagnalis* embryonic development*
- Thomas Kunze, Ludwig-Maximilians University, Germany - £1500. *Molecular phylogeny and anatomy of the vetigastropod genera *Skenea* and *Margarites* (*Trochoidea*)*
- Halime Arican, Brunel University, UK - £1000. *Presence and function of nuclear structures in molluscs*. [Report in The Malacologist 59 \(August 2012\)](#)
- Evgenia Vekhova, A V Zhirmunsky Institute of Marine Biology, Russia, and Ilya Temkin, National Museum of Natural History, Washington, USA - £1,000. *Comparative morphology and evolutionary significance of the byssus in *Pterioidea**. [Report in The Malacologist 62 \(August 2014\)](#)
- 2012 Alice Burridge University of Amsterdam, The Netherlands £1500 *Tempo and mode of evolution in *Cuvierina* and *Diacavolinia* (*Gastropoda*, *Thecosomata*)*
- Robert Forsyth Royal BC Museum, Victoria, Canada £1500 *Annotated catalogue and bibliography of the recent terrestrial Mollusca of Canada*. [Report in The Malacologist 60 \(February 2013\)](#)
- Kevin Kocot Auburn University, Auburn, USA £600 *Molecular phylogeny of *Aplacophora**. [Report in The Malacologist 61 \(August 2013\)](#)
- Robert Mansfield University of Manchester, Manchester, UK £730 *Population dynamics of the zebra mussel *Dreissena polymorpha* in a redeveloped freshwater dock and the ecological consequences*. [Report in The Malacologist 61 \(August 2013\)](#)

- Autum Pairett Iowa State University, Ames, USA £1500 *Identifying the molecular link between photosensitive tissues and the eye of the sea scallop* [Report in The Malacologist 59 \(August 2012\)](#)
- Maria Pio Museum of Natural Sciences, Buenos Aires, Argentina £1500 *Mechanical behaviour of the muricid radula* [Report in The Malacologist 62 \(August 2014\)](#)
- Taryn Takebayashi University of Hawaii at Manoa, Honolulu, Hawaii £1500 *Morphology, evolution and phylogenetics of corpuscles, unique apple snail endosymbionts* [Report in The Malacologist 61 \(August 2013\)](#)
- Yurena Yanez-Lopez University of Granada, Grenada, Spain £1300 *Holocene shell middens from the Canary Islands as seasonal retrospective environmental archive* [Report in The Malacologist 61 \(August 2013\)](#)
- 2013 Martin Smith Cambridge University, UK £1250 *A redescription of Burgess Shale hyoliths and their implications for early conchiferan evolution*
- Lauren Sumner Rooney Queen's University Marine Laboratory, Northern Ireland £1500 *The transparent tusk shell: a tomographic model of Scaphopod anatomy?* [Report in The Malacologist 63 \(August 2014\)](#)
- Mark Phuong University of California Los Angeles, USA £1330 *Does diet drive diversification in cone snails? )?* [Report in The Malacologist 66 \(February 2016\)](#)
- Leila Carmona Barnosi Universidad de Cádiz, Spain £1500 *What is Aeolidia papillosa (Lineaus, 1791)?* [Report in The Malacologist 63 \(August 2014\)](#)
- Suzanne Jennions University of Bristol, UK £1500 *Investigating the effect of ocean acidification on Mytilus californianus biomineralisation*
- Kentaro Inoue (£1499) Miami University, USA *Utilization of environmental DNA to detect endangered mussel populations in the southwest US*
- Tereza Korinkova Senckenberg Museum für Naturkunde Görlitz, Germany £1477 *The use of molecular cytogenetics to investigate potential hybridization of slug species* [Report in The Malacologist 63 \(August 2014\)](#)
- James Burgon Natural History Museum, London £1494 *Species diversity of Paramelania from Lake Tanganyika, East Africa – unifying molecular, conchological, radular and distribution data* [Report in The Malacologist 63 \(August 2014\)](#)
- 2014 Chong Chen Oxford University, UK £1500 *Characterisation of the extraordinary circulatory system of the scaly-foot gastropod*
- Nico Malchus Spain £1500 *Larval to juvenile shells and novel characters of Mediterranean, Atlantic, and Australian bivalves*
- Carmel McDougall The University of Queensland, Australia £1216 *Sequencing the chiton mantle transcriptome to shed light on molluscan shell evolution*
- Edine Pape University of Leeds, UK £1500 *Chemosymbiosis in methane seep fossil bivalves from Japan* [Report in The Malacologist 64 \(February 2015\)](#)
- Davide Faggionato Iowa State University, USA £1221 *Molecular and biochemical characterization of three Gq opsins from Argopecten irradians*
- Clara Mackenzie Heriot-Watt University, UK £1500 *Vulnerability of Modiolus reefs to climate change: from mechanisms to management strategies*
- Yaron Malkowsky Stuttgart State Museum of Natural History, Germany £1100 *Species delineation and distribution pattern in the stygobiont genus Bythiospeum*
- 2015 Bergmeier, Franziska, Ludwig-Maximilians-University, Germany £684 *Challenge accepted! New approaches to Solenogastres taxonomy* [Report in The Malacologist 66 \(February 2016\)](#)
- Coppock, Rachel Plymouth University, UK £1500 *The effects of parental exposure to stress on offspring behaviour and its molecular basis*
- Foster, William, Plymouth University/NHM, UK £1500 *The recovery of benthic mollusc communities following a major climate change event*
- Hale, Rachel, University of Southampton, UK £1467 *Habitat heterogeneity and burrowing behaviour in an intertidal gastropod*
- Kohnert, Peter, Bavarian State Collection of Zoology, Germany £1500 *Who is Limacina helicina? Molecular and 3D-microanatomical taxonomy of a pelagic keystone species.*
- Skala, Vladimir, Charles University in Prague, Czech Republic £1500 *Haemocyte extracellular traps as a defence response in the pond snail Lymnaea stagnalis (Lymnaeidae)*
- Wort, Edward, University of Southampton, UK £1500 *Assessing the effect of habitat gaps on population connectivity: a phylogeographic study of a Trochidae species* [Report in The Malacologist 68 \(February 2017\)](#)
- Zieritz, Alexandra, £1500, University of Nottingham Malaysia Campus, Malaysia *Ecosystem functions of freshwater mussels (Unionida) in Malaysian streams: the effects of land-use on unionoid health and functionality*
- 2016 Jorge Alves Audino, £700 University of São Paulo, Brazil. *Comparative detailed anatomy and evolution of the mantle margin in pteriomorphian bivalves.* [Report in The Malacologist 69 \(August 2017\)](#)
- Alciatore Giacomo, £1400, University of Groningen, Germany. *Evolution of endemic snails in tropical lowlands of borneo.* [Report in The Malacologist 68 \(February 2017\)](#)
- Carola Greve, Zoologisches Forschungsmuseum A. Koenig, Germany £1500 *Towards the first completed genome of a "solar-powered" sacoglossan sea slug.*
- Lisette Mekkes, University of Washington, U.S.A. £1500 *Adaptive potential of Limacina helicina in the California Current Ecosystem.*

- Yumi Nakadera, Bielefeld University, Germany £1300 *Identify female sperm storage organ of freshwater snails using immuno-labelling approach.*
- Iva Njunjie, Naturalis Biodiversity Center, the Netherlands £1360 *Cave snail endemism and biodiversity conservation in Sabah, Malaysian Borneo.*
- Autumn Pugh, University of Leeds, UK £1500 *The severity, timing and causality of the early Toarcian mass extinction event in Bulgaria.*
- Louise Roberts, £1400, University of Hull, UK. *Effects of substrate-borne vibration upon benthic marine molluscs, with focus upon *Mytilus edulis*.* [Report in The Malacologist 67 \(February 2016\)](#)
- Philipp Vogt, £1472, Leibniz Institut for Evolution and Biodiversity Science, Germany. *Comparative phylogeography of the hyperdiverse gastropod *Conus* in Indonesia.*

## 2017 Early Career Research Awards

- Tanya J. Compton, NIOZ, Royal Netherlands Institute for Sea Research, Netherlands £1428 *Is burrowing depth in *Lir-necola baithica* a behavioural indicator of environmental conditions?*
- Kasper Hendriks, GELIFES, Groningen University, Netherlands £1475 *Understanding micro-snail demography to aid biodiversity conservation*
- Alexandra Németh Bangor University, UK £1400 *Sclerochronology of recent and Holocene *Glycymeris* shells from Madeira and Atlantic Iberia Iberia* [Report in The Malacologist 69 \(August 2017\)](#)
- Annegret Nicolai Université Rennes, France £1500 *Recent shift and genetic structure of the gastropod community on the southwestern Lake Erie islands in Canada*
- Trond R. Oskars, University Museum of Bergen, Norway £1500 *Fieldwork for sampling of *Haloa* Gastropo*
- Rodrigo Salvador, Staatliches Museum für Naturkunde Stuttgart, Germany) £1500 *Palaeogene land snails of the United Kingdom: faunal links across Laurasia*
- Rachel Sommer, University of Hawaii, USA £1205. *Comparative Life Histories of two invasive *Veronicellid* Slugs*
- Oliver Tills, Plymouth University, UK £1500. *Nutritional effects during development: A test of the Barker Hypothesis in a freshwater gastropod*

## Senior Research Awards

- Ferrari Silvia Mariel, Centro Nacional Patagónico (CENPAT-CONICET) Argentina £1500 *Systematics of new Jurassic marine gastropods from the Cleveland Basin*
- Menno Schilthuizen, Naturalis Biodiversity Center and Leiden University, the Netherlands £1500 *Niche structure in tropical land snails*

## SIR CHARLES MAURICE YONGE AWARD WINNERS

- 1993 Elizabeth B Andrews and Kevin H Jennings, Royal Holloway & Bedford New College *Anatomy and ultrastructure of urine formation in bivalves*
- 1996 Rafael Araujo, Maria Angeles Ramos and Jose Bedoya, Museo Nacional de Ciencias Naturales, Madrid Galinou-Misoudi & A.I. Sinis (1995) Age and growth of *Lithophaga lithophaga* (Linnaeus, 1758) (Bivalvia: Mytilidae), based on annual growth lines in the shell. *Journal of Molluscan Studies*, **61** 435-453.
- 1997 Karl-Otto Nagel, Guido Badino and Bruno Alessandria, 1996, Population genetics of European Anodontidae Bivalvia: Unionidae), *Journal of Molluscan Studies* **62**, 343-357
- 1998 Cheka, A.S. & Cadee, G.C. (1997) Hydraulic burrowing in the bivalve *Mya arenaria* L. (MYOIDEA) and associated ligamental adaptations. *Journal of Molluscan Studies* **63** (2), 157-172.
- 1999 Soares, A., Callahan P. & A.M.C. de Ruyck (1998) Microevolution and phenotypic plasticity in *Donax serra* Röding (Bivalvia: Donacidae) on high energy sandy beaches. *Journal of Molluscan Studies* **64** 407-421.
- Marcel Mouëza, Olivier Gros and Liliane Frenkiel, of the Université des Antilles et la Guyane in Guadeloupe Embryonic, larval and postlarval development of the tropical clam, *Anomalocardia brasiliensis* (Bivalvia, Veneridae)<sup>1</sup>, published in *Journal of Molluscan Studies* **65**, pages 73-88.
- 2000 D.L. Graph & D.O. Foighill; (2000) The evolution of brooding characters among the freshwater pearly mussels (Bivalvia: Unionoidea) of North America. *Journal of Molluscan Studies* **66** 157-170.
- 2001 S M Baker, S.M. & D J Hornbach Seasonal metabolism and biochemical composition of two unionid mussels, *Actinonais ligamentina* and *Amblema plicata*. **6** (November 2001).

After 2001, the CM Yonge Award was made for research on bivalves, not for a paper in *Journal of Molluscan Studies*

- 2005 Ilya Temkin American Museum of Natural History
- 2008 André F. Sartori Department of Earth Sciences, Cambridge University *Are morphological and molecular perspectives of anomalodesmatan phylogeny reconcilable?*

## EDUCATION AWARD

- 2006 Portway Junior School, Andover £200 *All snails eat cabbage don't they?*
- 2007 No award
- 2008 Three Education awards of £200 each were given as follows:-
- Year 6, The Minster School, Deangate, York for their work entitled *What stimuli cause a Giant African Land snail to retract its tentacle?*
- Clongowes Wood College, Naas, County Kildare, Ireland for work by Henry Glass entitled *How the slug *Limax pseudo-flavus* detects and locates food?*
- Debden Church of England, Primary School, High Street, Debden, Saffron Walden, Essex for their work entitled *Why do snails climb?*

No entries in 2009, discontinued in 2010





## Forthcoming meetings

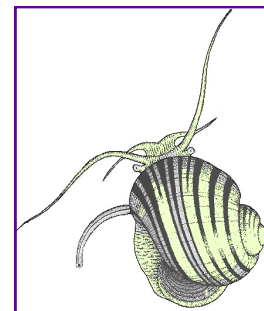
### The Malacological Society of London

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

## *Molluscan Forum*

Thursday 24<sup>th</sup> November 2016  
9:30 am – 6.30 pm  
Flett Lecture Theatre  
Natural History Museum, London

**CALL FOR REGISTRATIONS AND PAPERS  
DEADLINE 15 OCTOBER 2016**



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. **Again, the Forum will be held the day before the Young Systematists' Forum ([www.systass.org/ysf](http://www.systass.org/ysf))**, also at the Natural History Museum. This has been arranged so both meetings can be attended. However, you will have to register for both meetings separately.

Attendance to the Molluscan Forum is open to all, but speakers and poster 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.

Short talks (~15 min) 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.

In addition to talks and posters there may be opportunities to acquire books and other items contributed by members of the Society. Lunch will be provided and The Forum will end with a wine reception, both sponsored by The Malacological Society of London.

There is **NO** registration fee and a limited amount of help with travel costs may be available for presenters who cannot claim such expenses from elsewhere.

#### **Enquiries and registrations to:**

Andreia Salvador, Curator of Marine Mollusca, Natural History Museum  
Department of Life Sciences, Natural History Museum, Cromwell Road  
London SW7 5BD  
UK  
[a.salvador@nhm.ac.uk](mailto:a.salvador@nhm.ac.uk)  
Tel: 0044 207942 5115

**Non-presenters:** please let us know you will be coming so that we may estimate numbers.

For more information see: <http://www.malacsoc.org.uk/MolluscanForum.htm>

CONTINUED >

## The Malacological Society of London

**Molluscan Forum, Thursday 30<sup>th</sup> November 2017**

**9:00 am – 6.30 pm**

**Flett Lecture Theatre, Natural History Museum, London**

### REGISTRATION FORM

**Return before 15th October 2017, by email to:**

Andreia Salvador, Curator of Marine Mollusca, Natural History Museum ([a.salvador@nhm.ac.uk](mailto:a.salvador@nhm.ac.uk))

Name.....

Address.....

.....

Tel. No.....

Email.....

**Status:** Research Student / Undergraduate / Post-doctoral researcher / amateur (delete as appropriate)

'Other' (please state) .....

Will you attend the Young Systematists' Forum on 26<sup>th</sup> November 2016? .....

I wish to give a paper / poster (delete as appropriate) entitled:

.....

.....

**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 ISSN bulletin, *The Malacologist*, and on its website.

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 and confirmation of registration will be sent out late October.

It is expected that all oral presentations will be made using Powerpoint. If you wish to make any other form of oral presentation you **MUST** contact Tony Walker in advance.

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 shall 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 and confirmation of registration will be sent out late October.

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**Abstract submission**

Abstracts submitted for the Molluscan Forum should be sent as Microsoft Word files.

**Abstract submission**

Please use the following format:

Title (12pt, left justified)

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Authors (10 pt, left justified, presenting author underlined; use superscript numbers to indicate institutional affiliation)

<blank line>

Institutions (10pt, left justified; in this order: Number (superscript), Department, Institution, City, Country)

Presenting Author email

<blank line>

Abstract (11pt, no indentation, left justified, 350 words maximum)

**EXAMPLE ABSTRACT****The geographic scale of speciation in *Stramonita* (Neogastropoda: Muricidae)**

**Martine Claremont<sup>1,2</sup>, Suzanne T. Williams<sup>1</sup>, Timothy G. Barraclough<sup>2</sup>, and David G. Reid<sup>1</sup>**

<sup>1</sup>Department of Zoology, Natural History Museum, London, UK

<sup>2</sup>Department 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 taxon. 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**





## The Ninth Meeting of Florida United Malacologists (FUM 2018)

Saturday, January 27, 2018, at the Bailey-Matthews National Shell Museum on Sanibel Island, Florida. The one-day gathering will bring together researchers, collectors, citizen scientists, and students interested in a broad swath of mollusk-related topics. Register at

<http://events.constantcontact.com/register/event?llr=5nrxzagab&oeidk=a07eefu8he0feca5fa0>

FUM follows the pattern set by similar short meetings such as BAM (Bay Area Malacologists), SCUM (Southern California United Malacologists), MAM (Mid-Atlantic Malacologists), and OVUM (Ohio Valley United Malacologists). There is no formal membership and there are no dues, officers, nor publications. Presentations are limited to 15 minutes plus 5 minutes for questions. Presenters are required to submit a simple abstract limited to 150 words or less. Seating is limited and registration is free, but mandatory. Deadline for registrations and abstract submissions will be December 31, 2017.

José H. Leal, Ph.D., Science Director & Curator



Dr. A. C. van Bruggen (1929-2016). Photo: A.J. de Winter

*Dit symposium is mede mogelijk door een financiële bijdrage van Naturalis Biodiversity Center*  
*This symposium has been made possible by a financial contribution from Naturalis Biodiversity Center*

Het bestuur van de Nederlandse Malacologische vereniging (NMV) nodigt u van harte uit voor het internationaal symposium

### Bijdragen aan de Afrikaanse Malacologie

#### Symposium ter ere van

Dr. A.C. van Bruggen

Datum: zaterdag 3 februari 2018

Locatie: Muzee, Neptunusstraat 90-92, 2586 GT Den Haag

Voorlopig programma:  
 09:30-10:00 Binnenkomst met koffie/thee en cake  
 10:00-10:15 Opening door Prof. dr. Edi Gittenberger (dagvoorzitter)  
 10:15-10:50 Landslakken in de inheemse bossen van KwaZulu-Natal, Zuid Afrika: van strand tot berg, door Dr. Peter Tattersfield  
 10:50-11:05 Pauze met koffie/thee  
 11:05-11:40 Arthur Morelet (1809-1892) en zijn bijdrage aan de Afrikaanse malacologie, door Dr. Bram Breure  
 11:40-12:15 Landslakken van "luchteilanden" boven een equatoriale woestijn: landslakken op vier geïsoleerde gebergten in Noord Kenia, door Dr. Ben Rowson  
 12:15-13:15 Lunch, aangeboden door de NMV  
 13:15-13:50 Afrikaanse malacologie: 1960 – heden, door Dr. David G. Herbert  
 13:50-14:25 Punctum and Punctum-achtige minuscule landslakjes in en buiten Afrika, door Dr. ir. Ton de Winter  
 14:25-14:40 Pauze met koffie/thee  
 14:40-15:15 Het beoordelen van de beschermingsstatus van niet-marine mollusken in Afrika: voortgang en uitdagingen voor de toekomst, door Dr. Mary Seddon  
 15:15-15:50 Mollusken en evolutie-biologie, door Prof. dr. Edi Gittenberger  
 15:50-16:05 Afsluiting door mw. W. van Bruggen  
 16:15-17:30 Receptie, aangeboden door de NMV  
 18:00 Malacologisch diner (kosten voor eigen rekening, prijs en locatie volgt)

De voertaal van het symposium is Engels, maar er komen Nederlandse samenvattingen beschikbaar. I.v.m. lunch en receptie graag voor 15 januari 2018 aanmelden bij Sylvia van Leeuwen, [NMV-secretaris@spirula.nl](mailto:NMV-secretaris@spirula.nl). Idem voor het diner. Als u dieetwensen heeft, neem dan vooraf contact op dan gaan wij na of de cateraar daar rekening mee kan houden. Voor uitgebreidere informatie en het definitieve programma: zie [www.spirula.nl/van-bruggen](http://www.spirula.nl/van-bruggen).



### Contributions to African Malacology Symposium in honour of Dr. A.C. van Bruggen 3 February 2018



*Plekocheilus (Eurytus) bruggeni* Breure, 1978.

#### Invitation - Uitnodiging

The board of the Netherlands Malacological Society (NMV) invites you to attend the international symposium

### Contributions to African Malacology

#### Symposium in honour of

Dr. A.C. van Bruggen

Date: Saturday, 3 February 2018

Location: Muzee, Neptunusstraat 90-92, 2586 GT The Hague, The Netherlands

Preliminary programme:  
 09:30-10:00 Welcome event, with coffee, tea and cake  
 10:00-10:15 Opening remarks by Prof. dr. Edi Gittenberger (chair of the day)  
 10:15-10:50 Land Snails of the Indigenous Forests of KwaZulu-Natal, South Africa: from Beach to Berg, by Dr. Peter Tattersfield  
 10:50-11:05 Break, with coffee and tea  
 11:05-11:40 Arthur Morelet (1809-1892) and his Contribution to African Malacology, by Dr. Bram Breure  
 11:40-12:15 Snails of "Sky Islands" above an Equatorial Desert: Terrestrial Molluscs on Four Isolated Mountain Ranges in Northern Kenya, by Dr. Ben Rowson  
 12:15-13:15 Lunch, provided by the NMV  
 13:15-13:50 African Malacology: 1960 – present, by Dr. David G. Herbert  
 13:50-14:25 Punctum and Punctum-like minute land snails in and out of Africa, by Dr. ir. Ton de Winter  
 14:25-14:40 Break, with coffee and tea  
 14:40-15:15 Assessing the Conservation Status of Non Marine Molluscs in Africa: Current Progress and Future Challenges, by Dr. Mary Seddon  
 15:15-15:50 Molluscs and Evolutionary Biology, by Prof. dr. Edi Gittenberger  
 15:50-16:05 Closing remarks by Mrs. W. van Bruggen  
 16:15-17:30 Reception, provided by the NMV  
 18:00 Malacological dinner (at your own expense, location and price not known yet)

The symposium will be in English. Please RSVP before 15 January, 2018 to Sylvia van Leeuwen, [NMV-secretaris@spirula.nl](mailto:NMV-secretaris@spirula.nl). The caterers need to know how many are attending, and whether anyone has special dietary requirements. If you have questions about the symposium, ask Sylvia. Please also register for the dinner if you want to join. For more information and the final programme please consult [www.spirula.nl/van-bruggen/](http://www.spirula.nl/van-bruggen/).



## AGM and Conference

### ***New perspectives on evolution in molluscs: from fossils to next generation sequencing***

**21 March 2018**

**Flett Theatre, Natural History Museum, London**

The Malacological Society of London together with the Natural History Museum is hosting a symposium, "*New perspectives on evolution in molluscs: from fossils to next generation sequencing*" along with the 125th annual general meeting of the Society. The meeting is to be held on the 21st of March at the Natural History Museum.

The phylum Mollusca is species rich and highly diverse in terms of species and body plans and habitats. Talks from world renowned experts will cover aspects of their life history and evolution ranging from pharmacology, palaeontology and chemosymbiosis to larval development and shell structure. Although focused on molluscs, these talks will be of interest to evolutionary biologists, biogeographers, marine biologists and palaeontologists.

Please feel free to circulate among colleagues at other institutions.

#### **Tentative Schedule**

10.00-10.30h Registration and tea and coffee

10.30-10.40h Welcome

10.40-11.25h Prof. Geerat Vermeij: Shell Function and the History of Life: An Arena and Bedrock of Evolution

11.25-12.10h Prof. Sarah Samadi: TBC

12.10-13.30h Lunch (provided by MSL)

13.30-14.15h Prof. Toto Olivera: Venomous Fish-Hunting Conus From Behaviour and Phylogeny to Drug Development

14.15-15.00h Prof. Yasunori Kano: Larval ecology matters: macroevolution and spatiotemporal distributions of neritimorph gastropods

15.00-15.30h Tea & coffee & AGM

15.30-16.15h Prof. Dan Distel: Kuphus polythalamia: uncovering the biology of a giant shipworm

16.15-17.00h Dr Carmel McDougall: The molecular basis of molluscan biomineralisation

17.00-17.10h Wrap up

17.10-18.45h Wine reception

#### **Registration**

The meeting is free but registration is necessary.

Please register by sending an email to the automated account [MSL-events@nhm.ac.uk](mailto:MSL-events@nhm.ac.uk). You will receive a bounce back message to say that you have successfully registered. Please do not send queries to this account. Each participant must register in a separate email.

#### **Speakers**

Prof. Dan Distel, Ocean Genome Legacy

<http://www.northeastern.edu/cos/marinescience/daniel-l-distel/>

Prof. Yasunori Kano, Atmosphere and Ocean Research Institute, University of Tokyo

<http://www.ecosystem.aori.u-tokyo.ac.jp/benthos/yasunorikano/publication.html>

Dr Carmel McDougall, Griffith University, Australia

<https://experts.griffith.edu.au/academic/c.mcdougall>

Prof. Toto Olivera, University of Utah, US

<http://www.bioscience.utah.edu/faculty/olivera/olivera.php>

Prof. Sarah Samadi, Muséum National d'Histoire Naturelle, Paris

<http://isyeb.mnhn.fr/annuaire-et-pages-personnelles/pages-personnelles/article/samadi-sarah?lang=fr>

Prof. Geerat Vermeij, UC David, US

<http://geology.ucdavis.edu/people/faculty/vermeij.php>



## Grants and Awards

# Malacological Society of London Awards and Grants

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 likely 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

### 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, by a member of the Society to attend 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

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 likely 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, 30th June for travel starting between 1st September of the current year and 28th February of the following year, and 15th December for travel starting between 1st March and 31st August of the following year.

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 1st November. 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, Jonathan Ablett, Division of Invertebrates, Department of Life Sciences, Natural History Museum, London, SW7 5BD. For further information, guidance notes and to access the grant application form see <http://malacsoc.org.uk/awards-and-grants/research-grants>. Please note that all applications must be sent by email to [MSL\\_awards@nhm.ac.uk](mailto:MSL_awards@nhm.ac.uk).





## Malacological Society of London—Membership notices

### 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 &/ or paper copies of the *Journal of Molluscan Studies* and such circulars as may be issued during their membership. The society's Web Site 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. A paper copy of the *Journal* is available for ordinary members who are willing to pay a hard-copy premium. Members also receive access to *The Malacologist*, which is the bulletin of the Society, issued twice a year, in February and August.

### Meetings

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 fee structure

Ordinary Members: Journal on-line only £45  
Ordinary Members: Journal on line and printed £70  
Student Members: Journal on-line only £25

#### Methods of Payment

- (1) Sterling cheque to "The Malacological Society of London".
- (2) Banker's standing order to: HSBC (Sort code 40-16-08 Account no. 54268210) 63-64 St Andrew's Street, Cambridge CB2 3BZ
- (3) Overseas members wishing to pay electronically should use  
IBAN GB54MIDL4016084268210  
SWIFT/BIC MIDLGB22
- (4) Credit card: Overseas members ONLY may pay by credit card: the Society can accept VISA and MasterCard payments only. Please provide the Membership Secretary with your card number and expiry date, card type (VISA or MasterCard.), the name on the card, and the cardholder's address (if this differs from your institutional address). Receipts will only be sent if specifically requested.

#### Institutional Subscriptions to the Journal

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

#### Change of Member's Address

**Please inform the Membership Secretary of a change of postal or email address**

### APPLICATION FOR MEMBERSHIP OF THE MALCOLOGICAL SOCIETY OF LONDON

I wish to apply for (please mark your choice) :-

Ordinary Members: Journal on-line only £45

Ordinary Members: Journal on line and printed £70

Student Members: Journal on-line only £25

I enclose a cheque payable to "The Malacological Society of London" for my first annual subscription.

Title .... Name .....

Department ..... Institution .....

Street ..... City .....

Post /Zip Code ..... Country ..... Email .....

Malacological Interests .....

Signature ..... Date .....