

# Mollusc World

November 2019 • Issue 51



The  
Conchological  
Society  
of Great Britain & Ireland

## *Steromphala umbilicalis*

Identification and biology

International Mollusc Conferences

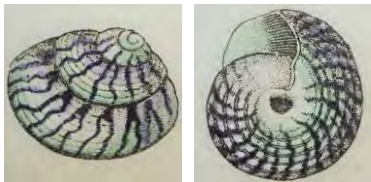
A shell shop in Devon

*Helping to understand, identify, record and conserve molluscs*

## From the Hon. Editor

To reiterate my words from the same time last year, hopefully many of our members will have enjoyed some time either away or in the local area looking for and recording molluscs during the summer/autumn period. A number of us attended a successful marine field meeting to the Isles of Scilly at the end of September with the weather ranging from sunshine to driving rain! Hopefully an account of this meeting will feature in a subsequent issue of this magazine. One of our readers wrote to me: 'I always look forward to each issue, there is always something of special interest...that [the magazine] goes from strength to strength is a credit to everyone concerned...'. 'Everyone' can include you: don't forget to help make the next issue even better by sending in something. Details of how to submit material to the magazine can be found on page 31.

In this issue, in addition to reports on two major international mollusc conferences, there are two contributions by Ian Smith, one (with Simon Taylor, see opposite) on the presence of a 'hidden' species of *Tritia* dog whelk, and the second a detailed account of the purple or flat top shell *Steromphala umbilicalis*. The latter is part of an aim to present versions of some of Ian's excellent Flickr accounts of UK marine species in printed format.



*Steromphala umbilicalis*: original illustrations from Emmanuel da Costa's *British Conchology* of 1778

I don't generally follow Twitter feeds, but Imogen Cavadino does and she sent me one originating from Deborah Meaden (of Dragon's Den fame) who had somehow obtained a copy of the last issue of this magazine, posted a picture of it and commented: 'do you think I need to get out more?'. Various humorous comments (such as 'wait until you see the centre-fold spread, your eyes will be on stalks!') followed, but Chris Packham said he would read it (Chris – you're always welcome to join!) and someone commented 'Nope. People getting out are now wishing they were inside with a fresh copy. Seriously though, nature is never dull :)'.

Amongst other mollusc news, Kevin Brown brought to my attention Chester Zoo's work in the breeding and rehabilitation of the endemic greater Bermuda land snail (*Poecilozonites bermudensis*), once thought extinct and rediscovered in an alleyway in Bermuda's capital Hamilton in 2014. You can read more about this successful project on the Chester Zoo web site ([www.chesterzoo.org/news/thousands-of-rare-snails-return-to-the-wild/](http://www.chesterzoo.org/news/thousands-of-rare-snails-return-to-the-wild/)) and the recovery plan for it and the closely related *P. circumfirmatus* at [www.researchgate.net](http://www.researchgate.net). Also, back in June, the Sunday Telegraph reported that a slug found lodged inside equipment next to the rail tracks on the Japanese island of Kyushu triggered a power cut that brought 30 trains to a halt, affecting the journeys of 12,000 people!

Peter Topley

## Mollusc World

This magazine is intended as a medium for communication between Conchological Society members (and subscribers) on all aspects of molluscs, in addition to the material found on our web site where a number of back copies are available for viewing. Mollusc World will also be of interest to all those enquiring about this subject or the work of the Society. We welcome all contributions in whatever form they arrive (see page 31 for further details).



The  
Conchological  
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# Recognition of *Tritia nitida* (Jeffreys, 1867) in Britain and Ireland

Ian F. Smith (text) and Simon Taylor (fieldwork)

A more detailed version of this article is available at <https://flic.kr/s/aHsmHvjqNk>

*Tritia nitida* was first described by Jeffreys (1867) from the muddy estuaries of south-east England. For long, it has been regarded in Britain and Ireland as a variety of *T. reticulata* (Linnaeus, 1758), but the World Register of Marine Species (WoRMS) accepts *T. nitida* as a valid species, supported by chromotology (Collyer, 1961), comparative morphology (Rolan & Luque, 1994), allozymes (Sanjuan et al., 1997) and DNA (Couceiro et al., 2012). At the time of writing, NBN Atlas does not have a U.K. distribution map for *T. nitida*, but the UK Species Inventory, on which the NBN Atlas Species Dictionary is based, is to be altered to encapsulate the

current concept of *T. reticulata* into a sensu lato concept for all the pre-split records and to create the two new concepts of *T. reticulata* sensu stricto and *T. nitida* (Jeffreys, 1867), (C. Raper, [the Natural History Museum] 2019, pers.comm. 27<sup>th</sup> September 2019). Sympatric populations of the two species living in the Ria de Vigo, Spain, have been described in detail by Rolan and Luque (1994). Some of the differentiating features that they listed, and which are visible in figure 1, are listed below and have been labelled by odd numbers for *T. nitida* and even numbers for *T. reticulata*.

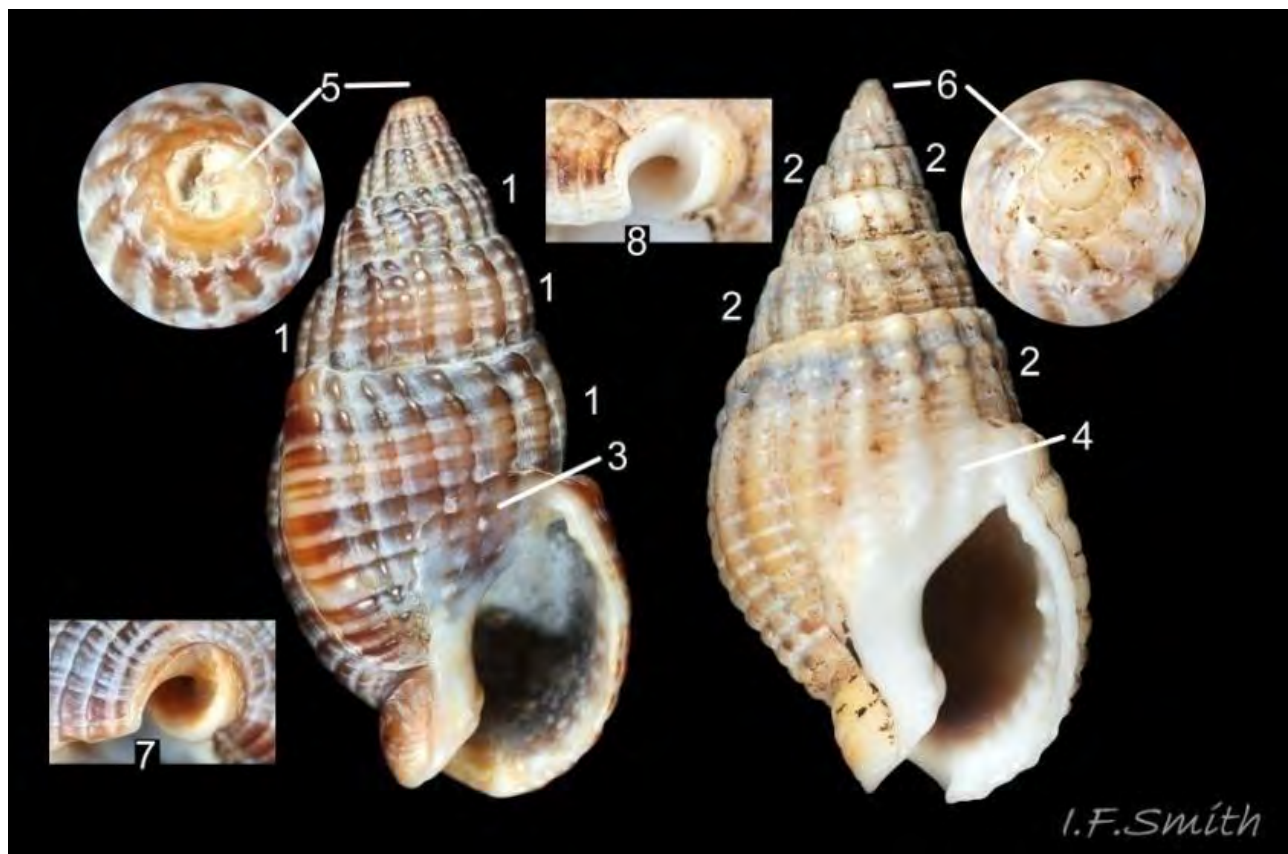


figure 1: Comparison of (on left) *Tritia nitida*, height 26.3mm, with *T. reticulata*, height 27.2mm. Beached shells from Blackwater Estuary, Essex, September 2019. Leg. S. Taylor. (photo: Ian Smith)

- 1: spire whorls convex. (Tumidity of *T. nitida* varies in Mediterranean.)
- 2: spire whorls almost flat.
- 3: translucent parietal lip exposes colour of underlying body whorl. (Occasionally opaque in Mediterranean.)
- 4: opaque white parietal lip, semicircular, conceals colour of body whorl.
- 5: protoconch eroded on this one and nearly all *T. nitida* in sample of 119. (Generally eroded in Ria de Vigo.)
- 6: protoconch intact. (Generally intact on *T. reticulata* in Ria de Vigo.)
- 7: siphonal canal meets palatal lip at obtuse angle (120° in this case).
- 8: siphonal canal meets palatal lip at acute or right angle (80° in this case). (Angle on both species alters if eroded; fresh unworn shells required.)

There are no on-line available records of it in Ireland, but its distinctive egg capsules, in the proximity of adults, have been photographed at Aughrus Pier, Galway, and in Killary Fjord, Connemara (figure 2). *T. nitida* egg capsules have also been photographed in the Oosterschelde (figure 3) on the Dutch coast facing the Essex coast. All these sites are sheltered waters, like the Essex estuaries and Ria de Vigo.

With the help of several contributors, an illustrated account is being created which will compare the two species in more detail. In the meantime, we hope this will raise awareness of the situation and prompt close examination of *Tritia*

specimens, especially from sheltered waters such as the rias of south-west England. We have many specimens of beached *T. nitida* shells, but the colours are faded and most are partially eroded. We would be very grateful to receive recently live-collected *T. nitida* shells from Britain or Ireland for photography for the account. (We have generous contributions of live-collected shell images in standard postures from the Adriatic.)

#### Acknowledgements

We are most grateful to Mark Thomas and Bas van der Sanden for use of their images in this article.



figure 2:

Ovoid egg capsules, taller than wide, of *Tritia nitida* on sublittoral *Zostera* leaf. Killary Fjord, Connemara, Ireland.

(photo: © Mark Thomas)



figure 3: Egg capsules.

Left: *T. reticulata*, Anglesey, Wales, May 2016.

(photos: Ian Smith)

Right: *T. nitida*, Oosterschelde, Netherlands. August 2019.

(photo: © B. van der Sanden)

*T. reticulata* initially has a circular chamber, and ova fill c.50% of it (top left). Later it broadens and ova grow to fill it (bottom left).

Mean height 4.07mm, width 3.25mm.

Chambers in *T. nitida* capsules are ovoid, taller than broad.

Mean height 2.65mm, width 1.72mm (Roland & Luque, 1994).

#### Links and references

Collyer, D.M. (1961) Differences revealed by paper partition chromatography between the gastropod *Nassarius reticulatus* (L.) and specimens believed to be *N. nitida* (Jeffreys). *J. Mar. Biol. Ass.* **41**(3): 683 – 693.

Couceiro, L., López, L., Sotka, E.E., Ruiz, J.M. & Barreiro, R. (2012) Molecular data delineate cryptic *Nassarius* species and characterize spatial genetic structure of *N. nitidus*. *J. Mar. Biol. Ass.* **92**(5): 1175 – 1182.

Jeffreys, J.G. (1862-69). *British conchology*. vol. 4 (1867). London, van Voorst. (As *Nassa reticulata*) p346 in pdf <https://archive.org/stream/britishconcholog04jeffr#page/346/mode/2up> . Original description of *T. nitida* (as *Nassa nitida*) on p349 at <https://archive.org/stream/britishconcholog04jeffr#page/348/mode/2up>.

Rolan, E. and Luque, A.A. (1994) *Nassarius reticulatus* (Linnaeus, 1758) and *Nassarius nitidus* (Jeffreys, 1867) (Gastropoda, Nassariidae), dos especies válidas de los mares de Europa. *Iberus*, **12** (2): 59-76.

Sanjuan, A., Pérez-Losada, M. & Rolan, E. (1997) Allozyme evidence for cryptic speciation in sympatric populations of *Nassarius* spp. (Mollusca: Gastropoda). *J. Mar. Biol. Ass.* **77**(3): 773 –784.

**Current taxonomy:** World Register of Marine Species (WoRMS) <http://www.marinespecies.org/aphia.php?p=taxdetails&id=89005>

This is a ‘sister’ article to that in the previous issue (Mollusc World 50) by Brian Goodwin giving what he called ‘The Volunteer’s View’ and in which Brian mentions having seen large batches of paper-based records in the Society’s archive held by the West Yorkshire Archive Service. For my part, I was made aware of the significant volume of marine mollusc records still held solely on paper (i.e. not entered onto the Society’s computerised dataset and hence ‘undigitised’) during the handover process from my predecessor Jan Light when she produced 5 large boxes (figure 1) containing amongst other Recorder-related ephemera many batches of paper record cards, most of which still required digitisation (or ‘keying’ as it is often called, due to the keyboard work involved). This is in no way a criticism of Jan; she was the first Marine Recorder to be concerned with maintaining a digital database of records, previous efforts being focused on compiling Sea Area master lists and national/regional paper atlases (hence the old references to ‘Census’ recording, which is now rather misleading), backed up by banks of retained record cards, before computing became much more accessible. Starting from scratch, with assistance from a group of volunteers, Jan had overseen the digitisation of some 120,000 marine records which could then be accurately plotted on maps and digitally interrogated, as well as shared openly via the internet.

of Mike Weideli I gradually got to grips with it and after a period of time began to realise that the keying method which Jan and her volunteers had been using was not as easy, for me at least, as uploading data that had been entered into spreadsheets using Microsoft Excel. Interestingly, I had experienced something along these lines a few years earlier when, having approached Adrian Norris, then the Society’s Non Marine Recorder, for some non-marine record data local to me, Adrian had said it was still in paper-based format and if he sent me scans of the relevant record cards would I be good enough to key the data into an Excel spreadsheet and send it back to him. At the time I was a little bemused (naively I had thought he would send me the actual record cards) but agreed and found the task rather interesting. Little did I know that less than a decade into the future not only would all become clear but I would actually be seeking and encouraging people to carry out much the same task myself.

It is difficult to quantify just how much of the Society’s marine data remains undigitised, though it would seem safe to say that full digitisation of just the existing paper cards passed to me by Jan would more than double the size of the original dataset I inherited (which has itself grown by some 47% in the intervening period). How best to tackle this backlog has been the subject of much casual discussion at Society events and I had suggested the method utilised by Adrian on the non-marine data. Then, most unexpectedly, at the British Shell Collectors’ Club event at Chatsworth in 2018 Brian Goodwin approached me suggesting he would be interested in volunteering for the project and agreed to be my ‘guinea pig’. This was hugely welcome news.



figure 1: Completed Conchological Society marine mollusc record cards etc.

There were, however, still plenty more records to ‘key’. Understandably, Jan had acted to ensure all new records were digitised immediately, some even being received in digital rather than paper form (more on that later), while some keen volunteers had focused on keying the paper-based data for certain geographical areas. There had been a workshop where those involved had been initiated into using the software – an earlier version of the current Recorder 6 – and shown how to key records into it. The volunteer group had waned over time though and the digitisation project had lost impetus as a result, so this was clearly an area on which I needed to focus.

On adopting the Marine Recorder role, I faced the task of familiarisation with the Recorder 6, which I had never used before. With the kind (and continued) assistance and support



figure 2: A ‘traditional’ marine record card.

From my perspective, all that was needed was to select some paper data cards which required digitisation, scan them and then send the scan and an Excel template to Brian, along with instructions on how to complete the spreadsheet. The instructions had already evolved through encouraging new data submissions to be made as spreadsheets rather than the traditional and familiar recording cards (figure 2), originally introduced in partnership with Biological Records Centre,

with the Excel template widely circulated and also available to download on Facebook. Brian then keyed the records from the scans into the spreadsheets, as he describes in his article in *Mollusc World* 50, and emailed the resulting spreadsheet to me. If he had any queries (perhaps something on one of the sheets was unclear) then he either contacted me about it or, as we have tended to settle on, he highlighted any queries on his spreadsheet and mentioned them when emailing it to me. All I then have to do is upload his spreadsheet into Recorder 6, which is a relatively simple and automated process, and *hey presto* the records are digitised. The paper cards are filed and can still be accessed, though eventually they will find their way to the archive, at which point the archive itself can then be searched for further undigitised data.

Brian and I agree that even just a modicum of familiarity with marine molluscs, rather than any great expertise, is useful to those doing this task, helping to avoid obvious mistakes. **We would therefore like to encourage further members of the Society to become involved** and anybody interested in doing so is asked to contact me (full contact details are inside the back cover of the magazine). There will be absolutely no pressure on volunteers and work is

entirely at your own pace. All you need is a computer, an email address and use of Excel. As Brian described in his article, the work is not difficult, can be tackled in spells of just a few minutes at a time or as long as you wish (and can become, as Brian puts it, 'hard to put down'; there is that temptation to just do one more sheet) and gives a degree of satisfaction when completed, or even just when small milestones are reached.

If a number of volunteers are forthcoming then a workshop will be organised where the task can be demonstrated and all can work through some sheets together to get the hang of it. Digitisation of these records, which are mainly in the 1960s-1990s date range, will provide an important baseline particularly in reviewing the impact of climate change and other environmental factors on the marine molluscan fauna of Britain, Ireland and the wider northeast Atlantic, hence it is a significant piece of work, hugely relevant to the Society's Aims and Objectives, to which anybody can contribute through this project.

To close, I would just like to record my thanks to Brian Goodwin for volunteering and his continued efforts to help this project.

## BioBlitz at Southill Church and Park, Bedfordshire

*Peter Topley*

On 12<sup>th</sup> May 2019 the Conchological Society joined with members of the Bedfordshire Natural History Society (BNHS), other visiting naturalists and members of the congregation of All Saints Southill to carry out a wildlife survey in the churchyard and nearby areas of the private Southill Park.

Southill Church has its origins in the thirteenth century but the present building is largely the result of a vast repair scheme in 1814. It is well known as the burial place of Admiral John Byng (1704 – 1757) who was notoriously court-martialed and executed by firing squad. The churchyard is partly surrounded by old brick and lime mortar walls, has many old tombstones and is a site for hibernating great crested newts (*Triturus cristatus*). Southill Park has been the private home of the Whitbread family since 1795 with the main house updated by Henry Holland in 1800 and the park set out by 'Capability' Brown. The estate includes 'Southill Lake and Woods', a 25.3-hectare Site of Special Scientific Interest consisting of a lake with a heronry and a wet valley of alder, fed by springs. The area has an underlying geology of greensand called the Woburn Sands formation with overlying areas of Oxford Clay and a mid-Pleistocene glacial till deposit of sand and gravel. We were fortunate that permits were issued for those involved to access the nearby parts of Southill Park to which the public is normally not admitted. BNHS brought their nature table to the churchyard, which added interest and gave a focal point to gather prior to the start of the BioBlitz (figure 1).

Weather conditions on the day were dry, which suited those who were sweep-netting for insects, and finds included only the third record in the county since 1978 of the snakefly *Phaeostigma notata* (figure 2), however rain during the previous night meant that a moth trap yielded nothing, but some interesting moths were found during the day.

The base of an ornamental wall and the grassy slope in front of Southill Park House (figure 3) yielded molluscs, some of which are indicative of high levels of calcium in dry open



figure 1: BioBlitz participants at a briefing by co-organiser Alan Outen prior to the start of the event, Southill Churchyard, Bedfordshire.



figure 2: *Phaeostigma notata*, found by Andy Banthorpe in Southill Park. (photo: Alan Outen)



figure 3: low wall in front of Southill Park House, Bedfordshire.

places, such as *Candidula intersecta*, *Vallonia costata* and *Vallonia excentrica*, but there were other common species more associated with damp and/or disturbed environments: *Aegopinella nitidula*, *Cochlicopa* cf. *lubricella*, *Oxychilus draparnaudi*, *Trochulus hispidus* and *Vitrina pellucida*.

Just to the northwest of the house is a circular pond largely surrounded by trees and lower vegetation (figure 4). Graham Warnes, a leading freshwater biologist from Northants. (figure 6), was concentrating on freshwater recording, including molluscs, so I was focusing on terrestrial species; however stones and pieces of rotting wood here yielded many lake limpets *Acroloxus lacustris* (figure 5) and there were a few *Succinea putris* and *Deroceras invadens* crawling on the mud.



figure 4: Pond near Southill Park house, Beds.



figure 5: *Acroloxus lacustris*, Pond near Southill Park house.



figure 6: Graham Warnes returning from recording freshwater life, Southill Park.

The previous night's rain had obviously encouraged some tree-climbing molluscs and on the trees in the Park adjacent to the church (figure 7) there were a number of *Merdigera obscura* and *Cepaea hortensis* (figure 8) quite high up on the tree trunks. In the rather sparse leaf litter and grass beneath the trees were *Trochulus striolatus* and *Lauria cylindracea* under the bark of a log.

Underneath some half-submerged bricks at the northeastern edge of Southill Lake (figure 9) were many *Zonitoides nitidus* featuring a pale-yellow spot, rather than the typical orange one, behind the mantle (figure 10). In the same place in an environment typical for the species was the small Carabid beetle *Paranchus albipes* (figure 11).



figure 7: Trees along a driveway next to Southill church.



figure 8: *Cepaea nemoralis* on tree trunk.



figure 9: Southill Lake.



figure 10: *Zonitoides nitidus*, (c. 6 mm), by Southill Lake.



figure 11: *Paranchus albipes*, (c. 6 mm), by Southill Lake.

In a small wooded area at the Eastern end of the lake was a small 'midden' of *Unio pictorum* mussel shells which had been predated (possibly by a mustelid as both mink and otter have been recorded in the Ivel Valley about 1 mile away),

the shells being attacked at the posterior ventral margin where the shell material is thinner (figure 12). A few shells of *Dreissena polymorpha* were also present.



figure 12: 'Midden' of Predated *Unio pictorum*. near Southill Lake.

Overall, all those recording wildlife had a really superb day as well as enjoying the opportunity to explore the beautiful Southill Park. Large numbers of interesting records were made from plants to birds whilst the invertebrates were generally excellent. As well as the molluscs there was a good variety of sawflies and 'Parasitica', as well as interesting Diptera and Hemiptera.

#### **Acknowledgements**

Grateful thanks are due to Charles Whitbread and Revd. Caren Topley for permission for us to record in Southill Park and All Saints' Southill churchyard. I would also like to thank my co-leader Alan Outen for his big part in organising this event and Dave Buckingham for suggesting the identity of *Paranchus albipes*.

## **Euromal 2020 first announcement**

The last Mollusc World (50: 32 – 33) reported on EUROMAL 2017 and encouraged members to consider attending the following conference, EUROMAL 2020. The Conchological Society has now received the first announcement details of this event from Dr. Karel Douda of the Czech University of Life Sciences Prague. This is the announcement received from the Euromal organising committee (*Karel Douda, Lucie Juříčková, Michal Horsák, Barbora Vodáková, Felipe Escobar, Iva Langrová*).



The EUROMAL triennial series of conferences started in 2000 and since then has visited 8 different venues all over the Europe.

It is our great honor to invite you to  
**Prague, Czech Republic, for 9th European Congress of Malacological Societies**  
**from September 6th to 10th 2020.**

The congress will bring together experienced scientists as well as students and practitioners in malacology and related research fields from across Europe and beyond. The recent and most important findings from the hottest topics will be presented:

- Invasive mollusks – impact on ecosystems, biodiversity and economy
- Taxonomy and evolutionary systematics of mollusks
- Interspecific relationships and behavior of mollusks
- Ecotoxicology of bivalves and gastropods
- Mollusk conservation, status and distribution
- Molecular methods in malacology
- The role of mollusks in biosecurity and global food security
- Mollusks as a model system in paleontology
- Bivalves as ecosystem engineers
- Mollusk diversity in understudied regions
- Mollusks aquaculture and synthetic ecology
- Evolution, ecology and host-parasite relationships
- Conservation methods, guidelines and techniques
- Mollusks collections
- Citizen science & popularization of molluscan research
- New sampling techniques – eDNA

Conference website: <https://www.euromal.cz> Facebook: <https://www.facebook.com/euromal2020>

## **Announcement of an International scientific conference** **Non-marine snails and slugs: from extinction to invasion**

**25th to 28th of August 2020 — in Riga, Latvia. First announcement**

This Conference will be hosted by Institute of Horticulture, Latvia University of Life Sciences and Technologies in cooperation with Latvian Malacological Society. The aim of the meeting is to bring together the latest advances in research on the non-marine snails and slugs, and to provide an opportunity for exchange of information & ideas and stimulate joint research and collaboration.

The official language of the conference will be English.

**Biodiversity** • Distribution • Conservation • Biogeography • Phylogeography • **Natural enemies and parasites** • Nematodes and other parasites • Biological control • **Snail farming** • **Fossil diversity** • **Invasive species and pests** • Emerging invasive species • Problems with invasions and pests • Quarantine species • Restriction and management

**Citizen Science & gastropod research** • Citizen involvement • Quality of Citizen Science

More information and latest updates are available at the conference website:

<http://www.darzkopibasinstituts.lv/en/international-scientific-conference-non-marine-snails-and-slugs-from-extinction-to-invasion>

With hope to see you in Latvia!

Arturs Stalažs, Researcher; secretary of conference, Institute of Horticulture,



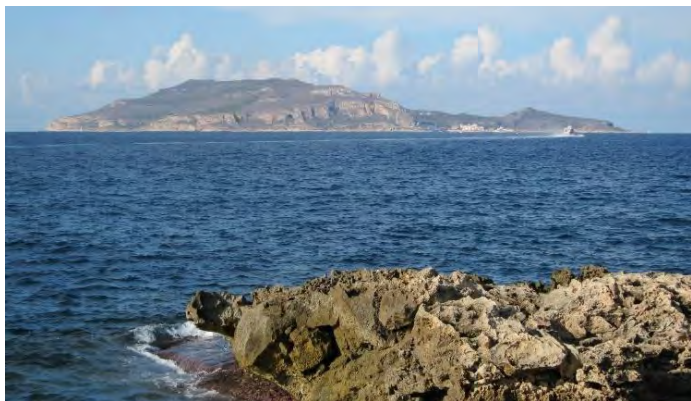


figure 1: The marine protected waters - looking across from Favignana to Isola Lévanzo, Égadi Islands. Égadi.

## A blanket ban in Sardinia

If you are visiting Sardinia (or possibly elsewhere in Italy) take care! As a conchologist you'll probably head down to the shore to check out local shell presence and you'll perhaps collect a few. You might consider restricting your 'take' to dead shells and feel happier as a conservation-minded person that this responsible approach will have a minimal ecological impact. These seemingly benign and apparently inconsequential actions could, however, lead to trouble; a hefty fine or even an unwelcome spell behind bars! What's going on?

When scanning through a BBC news website recently my attention was drawn to the headline, 'Sardinian sand theft: French tourists face jail term' (<https://www.bbc.com/news/world-europe-49394828>). This related to an incident in August 2019 when two people were stopped from embarking on a France-bound ferry in Porto Torres and discovered by Italy's Guardia di Finanza to be in possession of 14 bottles of sand taken from a beach at Chia. The tourists claimed that they were just taking back a souvenir and didn't realise that they'd broken the law. Unfortunately, they were unaware of legislation that took effect from 1st August 2017 making it illegal to take sand, pebbles and seashells from Sardinian beaches. This law was passed following persistent complaints and concerns from locals that sand and other beach objects including seashells were being removed by tourists. They had even set up a Facebook group 'Sardinia robbed and plundered' (<https://www.facebook.com/sardegnaarubataedepredata/>) calling upon the government to stop the theft of Sardinia's natural assets and ensure 'protection and safeguarding of our natural heritage'.

The obvious threat felt by local Sardinians for their environment may be a symptom of the increasing phenomenon sometimes described as 'over-tourism'; residents simply feeling overwhelmed and sometimes threatened by hordes of visitors. Taking away a small bottle of sand, a few pebbles or bag of shells may not seem like a 'big deal', but if such actions were replicated by millions of tourists then the combined effects might be profound. The worry about sand loss has reached a point where some Sardinian towns such as Stintino have proposed banning beach-towels and large bags in a bid to stop holidaymakers inadvertently removing sand!

## Italian Marine Protected areas

In the UK we are rolling out marine protected areas with a burst of new designations coming into effect for England in

May 2019 (making 91 Marine Conservation Zones for the country – different names and designation timetables apply to the rest of the UK\*). At present there is typically nothing by way of interpretation notices on adjacent shores to inform people of the presence of the zone, why it's there and how it affects them. The protection of marine areas in Italy developed more widely and at an earlier point than in the UK including a gradation of protections with protected areas. Until recently Italy had the largest network of MPAS (Marine Protected Areas) in Europe (surprisingly Wales may now have more!); in 2016 this included 32 areas (27 marine reserves, 1 sanctuary, 2 archaeological marine parks and 2 national parks with attached marine areas (figure 2).



figure 2: Marine protected areas in Italy (2016).

(Extract from: Donati, S. (2016))

There were plans to finally establish 54 MPAS (details of the latest situation are unclear but will be updated in a later MW). I have experience of two Italian MPAS; the Égadi Islands (Isole Égadi) and Santa Maria di Castellabate. The first of these consists of an area of sea surrounding a group of islands (including the inhabited Favignana, Lévanzo and Maréttimo) lying directly off the north-west coast of Sicily (figure 3).



figure 3: Location of the Égadi Islands, Sicily.

(Extract from: Donati, S. (2016))

The Égadi MPAS was designated in 1991 and with 54,000 ha, is the largest marine reserve in Europe. As with other Italian MPAS the protected area is divided up into different zones (figure 4) each with different levels of protection; in this area 4 zones exist ranging from 'Zona A' with the highest protection level to 'Zona D' with the least (figure 5). An interpretation board photographed by a crowded beach on Favignana (figure 6) shows what activities are permitted in each zone; the 3<sup>rd</sup> row from the bottom notes collection prohibition of marine organisms (including molluscs) in all of these, something that is believed to apply in other MPAS in Italy.

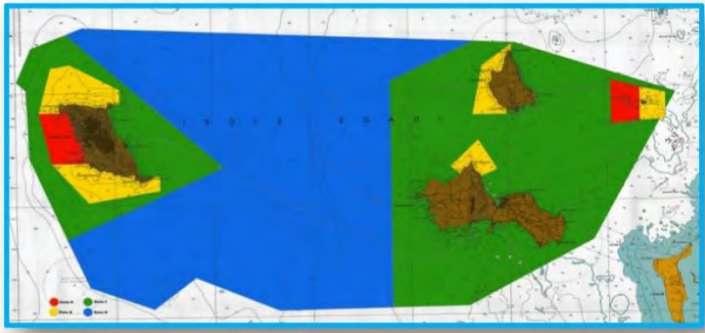


figure 4 (above): Égadi MPA showing protection zones.

**A zone** (no take zone)  
**B zone** (general protection zone)  
**C zone** (partial protection zone)  
**D zone** (protection zone – few limitations)

figure 5 (below): Égadi MPA: summary of protection zone statuses. (Extracts from: Donati, S. (2016))

**Attività Consentite- Permitted Activities**

SIMBOLO SYMBOLS	ATTIVITA' ACTIVITIES	ZONA A A ZONE	ZONA B B ZONE	ZONA C C ZONE	ZONA D D ZONE
	BALNEAZIONE SWIMMING BATHING	●	●	●	●
	IMMERSIONI SUB PRIVATE DIVING	●	●	●	●
	VISITE GUIDATE SUB GUIDED DIVING	●	●	●	●
	SCI NAUTICO E ACQUASCOOTER WATER SKIING AND JETSKI	●	●	●	●
	NAVIGAZIONE A VELA SAILING	●	●	●	●
	NAVIGAZIONE A MOTORE RESIDENTI SAILING MOTOR RESIDENTS	●	●	●	●
	NAVIGAZIONE A MOTORE NON RESIDENTI SAILING MOTOR NON- RESIDENTS	●	●	●	●
	ANCORAGGIO ANCHORING	●	●	●	●
	ORMEGGIO MOORING	●	●	●	●
	PESCA SPORTIVA RECREATIONAL FISHING	●	●	●	●
	PESCA SUBACQUEA SPEARFISHING	●	●	●	●
	PRELIEVO ORGANISMI MARINI TAKING MARINE ORGANISMS	●	●	●	●
	PICCOLA PESCA PROFESSIONALE COASTAL FISHING	●	●	●	●
	PESCA A STRASCICO PROFESSIONAL TRAWLING	●	●	●	●

● ATTIVITA' CONSENTITA LIBERAMENTE  
Freely permitted activities

● ATTIVITA' DISCIPLINATA PREVIA AUTORIZZAZIONE  
Regulated Activities

● ATTIVITA' NON CONSENTITA  
Restricted Activities

**NOTE-NOTES**

- residenti frazione di Marettimo nella A di Marettimo / Residents in Marettimo Island, exclusively in the Marettimo A
- 40 natanti al giorno nella sola Zona B di Marettimo / For 40 boat <10mt exclus the Marettimo B Zone
- residenti Comune di Favignana / Resident Municipality of Favignana
- Nelle aree sensibili / Sensitive areas :  
-Libero per natanti / Free for boat <10mt  
-Previo autorizzazione per imbarcazioni e na diperto / Regulated for boat and ship > 10mt  
-Non consentito di notte / Not allowed at night

PERIMETRAZIONE

figure 6: MPA protection zone interpretation notice on Favignana.

Despite being a relatively remote location, I observed intense tourist pressure ('over-tourism'?) on Favignana (figure 7) even in early October, supposedly a quieter off-season time. With such numbers of tourists visiting the island and its beaches one can appreciate the need to manage and control the collection of marine organisms; a delicate and finite resource.



figure 7: Day-tourist queues waiting to board ferry from Favignana to Scilly – taken in October 2014, the 'low-season'!

Things don't seem quite as well organised in some other MPAS. Thus, I didn't spot any interpretation or advisory notices adjacent to the often very busy shores of the Santa Maria di Castellabate MPAS (adjacent to the Cilento National Park about 80 miles south of Naples (<http://www.portodiagropoli.com/en/marine-protected-areas/>)).

If I hadn't checked on the website, I wouldn't have known that much of the shore (and adjacent inshore waters: figure 8) were protected by three tiers of protection. It is all too easy to collect molluscs in a protected or restricted area in Italy without appreciating it and so inadvertently risk getting into trouble.



figure 8: A view from Castellabate down to the beach and shore at San Marco (June 2018) lying in the Santa Maria di Castellabate MPA.

The message is clear: the unplanned and ad-hoc collection of shells (even if dead) in Sardinia, elsewhere in Italy and now in many other countries, needs forethought and careful consideration. If collection is for some scientific purpose, then obtaining a relevant permit is to be recommended - having a conchological / malacological contact in the country will usually be of considerable assistance in negotiating and fulfilling the inevitable bureaucratic steps. So, beware; if the casual, unplanned collection of shells is not to land you into some trouble then it increasingly requires some advance detective work and planning.

\*Footnote

**Marine protected areas elsewhere in the UK:** Wales currently has 133 'Marine Protected Areas'; Scotland 18 'Nature Conservation Marine Protected Areas' and Northern Ireland 5 'Marine Conservation Zones'. A detailed review of marine protected areas in the UK is planned for inclusion into a future issue of Mollusc World.

**Reference**

Donati, Stefano (2016) *Conference on Marine Protected Areas: An urgent imperative a dialogue between Scientists and policymakers Rome 7 – 9, 2016 (Presentation of successful examples: How to start a protected area and make it self-sustaining: The Égadi Islands Marine Protected Area, Italy.)* (Conference proceedings) (<https://www.eesc.europa.eu/resources/docs/2016-03-Égadi-mpa-10x20-initiative-conference.pdf> accessed 4.10.201)

## Raining snails in Docklands

Jonty Denton<sup>1</sup>

On the 7<sup>th</sup> February 2019 I visited Silvertown Quays, a derelict site amidst the seemingly endless redevelopment of Docklands in East London (South Essex: VC18). The site is huge and the southern boundary encompasses a linear wooded strip alongside. Adjacent to this runs a wide brick-paved footway (circa 15 years old) running east to west at TQ412801. This is flanked to the south by an avenue of London Planes planted (as well grown trees) at the same time.

The eastern end of the pathway was strewn with *Hygromia cinctella* (mostly of adult size), in places with up to ten per 1m<sup>2</sup>, and over 1000 in total. A few had been crushed but most just sat there, indicating that they had only recently been deposited. Initially I thought they may have been disturbed from the shrubs and ivy clad retaining walls to the north (from which the previous year's growth had been cleared) but the scattering coincided with the canopies of the plane trees. A theory was taking shape: the previous night had seen the passage of *Storm Eric*, the tail of which was still blowing hard. The count topped a thousand along an avenue of approximately 100m. A small gap and then only one or two more were found under the next row of planes – theory dashed! – or perhaps not, for the path was now in the shelter of high buildings on the south side of the road. My inference was therefore that the trees exposed to the storm had been so violently shaken as to dislodge the snails and scatter them beneath. Girdled snails are good climbers, often ascending walls and buildings, but I was not aware of them tree climbing on such a scale.

My next visit was on the unseasonably warm and calm 22<sup>nd</sup> February 2019, when the same stretch yielded seven live and eight crushed snails in total. The path is little used and it is possible (indeed likely) that these were remnants of those disturbed on the 6–7<sup>th</sup> Feb.

<sup>1</sup> 31 Thorn Lanes, Four Marks, Hants, GU34 5BX

### British Shell Collectors' Club

**Saturday 25<sup>th</sup> April 2020**  
Shell Convention

**Saturday 24<sup>th</sup> October 2020**  
Shell Show

Theydon Bois Community Centre,  
Coppice Row, Theydon Bois, CM16 7ER.

**Saturday 15<sup>th</sup> August 2020**  
Chatsworth Shell Fayre

Cavendish Hall, Chatsworth House,  
Derbyshire, DE45 1PJ

Open from 9am to 5pm. Admission free.

Please check web site for up to date and further information: [www.britishshellclub.org](http://www.britishshellclub.org)



### Membership update

Please note that to be included here members must sign a data protection consent form. If you have not been included and now wish to be please contact CIRCA subscriptions (details on page 31).

#### Changes of address

Ms V. Gilbey,

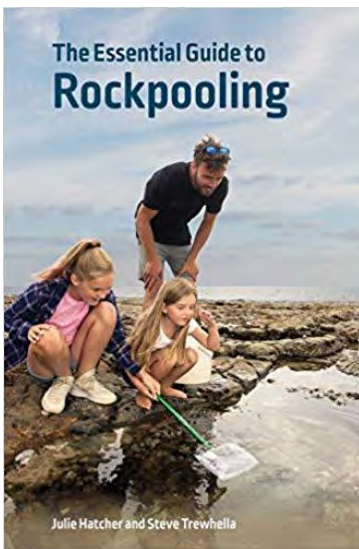
Dr J.D. Nunn,

Dr B. Rowson,

(for non-marine recording matters please continue to use Ben's contact details given on page 31)



The  
Conchological  
Society  
of Great Britain & Ireland



## Book review: The Essential Guide to Rockpooling by Julie Hatcher and Steve Trehwella

ISBN: 9780995567313 Paperback, May 2019, Wild Nature Press, c.£16.99

This book follows on from the authors' popular *The Essential Guide to Beachcombing and the Strandline* (Wild Nature Press, 2015; reviewed in *Mollusc World* 40:22) and is in the same format, being a guide to both identification and possible activities to enhance the appreciation of life on the seashore. Living in Bedfordshire I naturally don't get to the coast with great regularity, but where possible try to at least attend the Conchological Society's long marine field meeting and the occasional coastal Bioblitz event. Exploring a rocky shore can be a tricky business (some of the hazards and preparations necessary are outlined in sections entitled 'Keeping Safe' and a 'Kit List'), but the rewards in a sheltered bay on a spring tide can be immense as a whole new world is revealed at your feet. The book outlines the range of environment and types of rock pools that may be encountered including the different zones from the splash zone with its upper shore lichens and crevice fauna down to the beds of kelp exposed at low tide.

As with the authors' earlier publication there are pages of suggestions for activities on the shore which are placed within the main 'identification' part of the guide. These include advice on recording, photography, seaweed washing for invertebrates, seaweed pressing, the use of an 'aquascope' where viewing of rockpools is difficult because of reflections etc, and the use of a pooter to capture invertebrates such as marine insects. There are also sections with advice on cleaning up plastics found on the shore, searching the shore at night, 'eco-crabbing' and organising a mini Bioblitz.

In a book that covers pretty much the full range of life that might be observed on the rocky shore, it is of necessity not a complete guide, but it does include many of the species that one is likely to encounter, and some of the less likely ones as well. The book is illustrated with generally excellent colour photographs, mostly (apart from, for example, some of the smaller isopods and molluscs) photographed 'in situ'. This method has the advantage of showing seaweeds and animals as they will appear to the observer on the shore (a few of them, such as ascidians and anemones, are illustrated both covered with water and exposed to the air), and where occasionally this means that some of the identification features are less visible than might be the case against a plain background, an insert photograph of the animal against a black background is included (e.g. in the case of the sea slug *Aleolidiella alderi* or the hermit crab *Anapagurus hyndmanni*).

A good selection (around 88 species) of the larger gastropods, sea slugs, bivalves, cephalopods and chitons (as well as some of the smaller ones) likely to be encountered on the rocky shore are illustrated and descriptions (as elsewhere in the book) emphasise the main distinguishing features. There are also a couple of small sections that go into some greater detail (eg predation methods of Dog Whelks (*Nucella lapillus*) or behaviour in Sea Hares (*Aplysia*)). A section on 'The Secret Life of Limpets' reveals some fascinating facts, such as that they are 'transgender', being male for the first two years of their life before mostly switching over to becoming females after four years; that they can have a lifespan of 17 years and have a vital role in maintaining seashore biodiversity by creating a balance between seaweed cover and bare rock through their grazing behaviour. The book emphasises the importance of not removing limpets from the rocks to which they are attached. It therefore means that in the descriptions of limpets that follow, the identification of *Patella vulgata*, *P. ulysiponensis* and *P. depressa* is based entirely on external shell characteristics and unfortunately does not mention the more reliable distinguishing anatomical features such as foot and tentacle colouration etc.



It is a common problem as one gets older to find it more difficult to get used to changes in nomenclature! From reading this book I am reminded that two of the common top shells that were in the genus *Gibbula* are now *Steromphala* (*S. cineraria* and *S. umbilicalis* – see also the detailed article on the latter species that follows this review) – although another large trochid that remains in this genus, sometimes found at ELWST on rocky shores, *Gibbula magus*, is not included here – and that the two featured dog whelks are now *Tritia reticulata* (rather than *Nassarius reticulatus* etc) and *Tritia incrassata* (rather than *Hinia incrassata* etc). Another name change is that of the Pacific oyster, which is named *Magallana gigas* instead of *Crassostrea gigas*; the latter name now being an 'alternate representation', according to the World Register of Marine Species (see [www.marinespecies.org/aphia.php?p=taxdetails&id=140656](http://www.marinespecies.org/aphia.php?p=taxdetails&id=140656)).

The book has a clearly printed contents page so that one is guided quickly to pages dealing with specific groups. There is also an index and a short Glossary as well as a list of references and websites, amongst which I was pleased to see included that of the Conchological Society. As with its predecessor, this book is sensibly bound with a durable card cover which has flaps that can be used to bookmark a particular page; the front flap including a list of the 'activity' pages for easy reference.

The cover of this book may suggest that it is aimed particularly at families; however, I am sure that the book will have a wide appeal to anyone, no matter their experience, who wants to broaden their knowledge of this fascinating world.

Peter Topley

# *Steromphala umbilicalis* (da Costa, 1778): identification and biology Ian F. Smith

Key features on page 17. Online version with fuller captions at <https://flic.kr/s/aHsjJxzs5u>

**Synonyms:** *Trochus umbilicalis* Da Costa, 1778; *Trochus umbilicatus* Montagu, 1803 in Jeffreys, and Forbes & Hanley; *Gibbula umbilicalis* (da Costa, 1778).

**Vernacular:** Flat top shell, Purple top shell, Top môr porffor (Welsh), Genavelde tolhoren (Dutch), Troque ombliqué gibbule (French).

**Glossary:** see below.

## Shell Description

Breadth to 22mm, height to 16mm. Conoidal; height frequently about 60% of breadth (figure 1), varies 45% to 85% (figures 2 and 3). Sutures distinct. Spire small, body whorl about 80% of height.

The shell has a small blunt apex, often eroded exposing the silver nacre layer and, sometimes, the upper end of the hollow columella (figure 29). There are up to eleven raised spiral lines on the body whorl below an angulated periphery on the base of the shell (figure 4). There is a large, circular, white-bordered umbilicus at all sizes. The height of the approximately semi-circular aperture is about 60% of shell-height (figure 2). The parietal lip is reflected as a glaze onto the body whorl (figure 4); white columellar lip by umbilicus; adapical angle about 90° (figure 2). The interior of the shell is thickened by shiny, silvery-white layers of aragonite crystals (nacre), except for the border just within the outer lip which is coloured as the exterior of the shell (figure 4). The ground colour of the shell is whitish, opaque, almost lustreless, often, partly greenish or stained brownish by environmental factors (figure 5). Broad, slightly wavy, transverse, red-purple bands radiate from the apex across the whorls when viewed apically, increasing in number on each subsequent whorl. Gaps between the bands change little as the shell grows (figure 5) so appear relatively large on juveniles.

The protoconch (first two turns of spire) is cream and unbanded (figure 3) but often stained or eroded on older shells. Beach-worn shells with the nacre layer exposed by erosion share with other top shells the vernacular name 'Silver Tommy'. The circular, spiral, transparent, horn-coloured **operculum** has many narrow coils; pale opercular disc and blackish flesh visible through it (figure 6).



figure 1: Heights 7mm to 12mm; 54% to 67% of breadth.



figure 2: Largest: height 13mm, 83% of breadth.

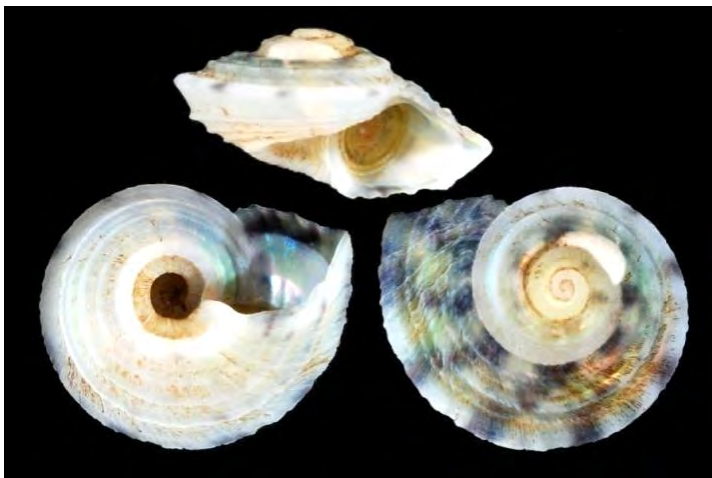


figure 3: Early juvenile, height 45% of 4mm breadth. Cream and unbanded protoconch often stained or eroded on older shells.

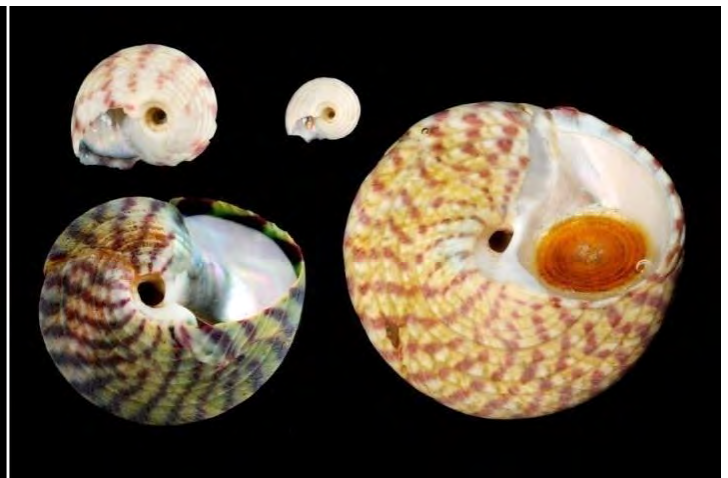


figure 4: Breadths and spiral ridges: 3.5mm: 5 ridges. 7mm: 7 ridges. 12mm: 8 ridges. 16mm: 11 ridges.

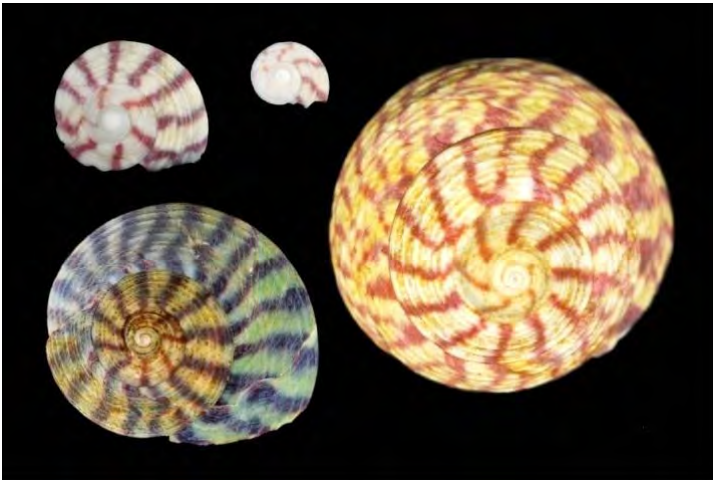


figure 5: Ground colour white. With growth, bands multiply, gaps change little and often stained green or brown.



figure 6: Dark body and pale opercular disc seen through operculum. Angled view, so round umbilicus appears oval.

### Body Description

The ground colour of the flesh is yellowish or greenish, often heavily marked black-purple on adults, but early juveniles lack dark pigment (figure 7). The short **snout** is yellowish or greenish with dense, transverse, dark-purple lines (figure 9), except a pinkish ventral surface (figure 8). The dorsum of the snout has a pair of yellow, white and grey, crenate cephalic lobes; transverse when snout is contracted (figure 9), longitudinal when snout extended (figure 10). The dorsal and lateral rim of the snout tip is circular and crenate (figure 8).



figure 7: Early juveniles lack dark body pigment. Ctenidium behind head. Pink buccal mass visible.



figure 8: Snout has crenulate rim and is pink ventrally.



figure 9: Crenate cephalic lobes between setose cephalic tentacles; transverse when snout contracted.



figure 10: The cephalic lobes are longitudinal when the snout is extended. The radula teeth are seen curling back with food.



figure 11: Vertical mouth opening with diagonal extensions at each end that open as the mouth expands.



figure 12: Radula emerging. Eye in translucent peduncle with a black exposed tip.

The **Cephalic tentacles** are long, densely setose (figure 14), whitish, tinted pale purple basally, with encircling black-purple rings. The **Eye** is on a stout yellowish or greenish peduncle at the base of each cephalic tentacle (figure 14); the small black 'pupil' is exposed, surrounded by the grey ring of the rest of the eye showing through the translucent peduncle (figure 13).



figure 13: Central and lateral cutting teeth erect on the odontophore. Long, soft, marginal teeth are fanning out to brush up scraped particles.



figure 14: Left eye-peduncle. Setae on cephalic tentacle.

There is a small tentacle at the base of the right eye peduncle (figure 15) (none on left). There is a large **neck-lobe** (lappet) behind each eye which is translucent white and yellow (sometimes greenish) with fine dark purple freckling in parts; left one strongly fringed (figure 16); right one, sub-rectangular with smooth edges, which guides voided faeces away from the mantle cavity containing the ctenidium (figure 17), curled at the edge (figure 15) or rolled to form the exhalent respiratory siphon (figure 18).



figure 15: Small tentacle at the base of the right (only) eye peduncle. Faeces expelled via right neck-lobe.



figure 16: Microscopic cilia on the fringed left neck-lobe create an inhalent current.



figure 17: Operculum resting on the yellow epipodium. Faeces are slipping off the right neck-lobe.

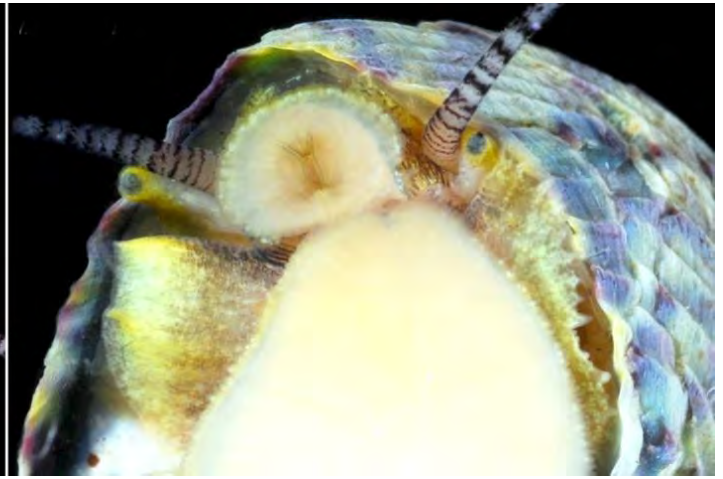


figure 18: Right neck-lobe, rolled to form an exhalent siphon. Fringed, inhalent, left neck-lobe.

The dorsal surface of the **foot** is densely covered in tubercles arranged in rows parallel to perimeter (figure 19); the ground colour is yellowish, mostly covered with dense brown or dark purple, except peripherally.



figure 19: Longitudinal rows of tubercles on the fringed foot.

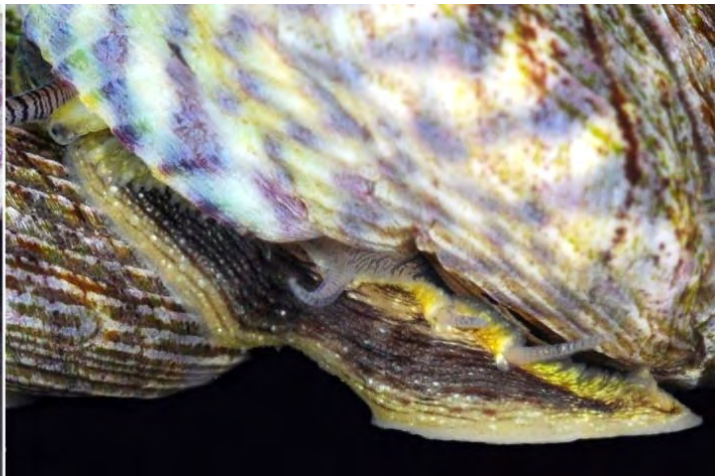


figure 20: Epipodium with three tentacles on the side of the foot.

A well-developed epipodium, greyish dorsally and yellowish or greenish ventrally, runs along each side of foot (figure 20); it bears three white, transversely lined with dark purple, setose, epipodial tentacles arising from a white jagged sheath bearing a tubercle (figure 21). The opercular disc is not expanded into the lobe enclosing any of operculum edge (figures 17 and 21), visible as a pale patch through the transparent operculum when the animal is retracted into the shell (figure 6). The sole is tawny white, short, approximately oval, divided longitudinally by a slight furrow (figure 22); the periphery is finely fringed (figure 19).



figure 21: Three epipodial tentacles have jagged basal sheath. The operculum rests on the epipodium.

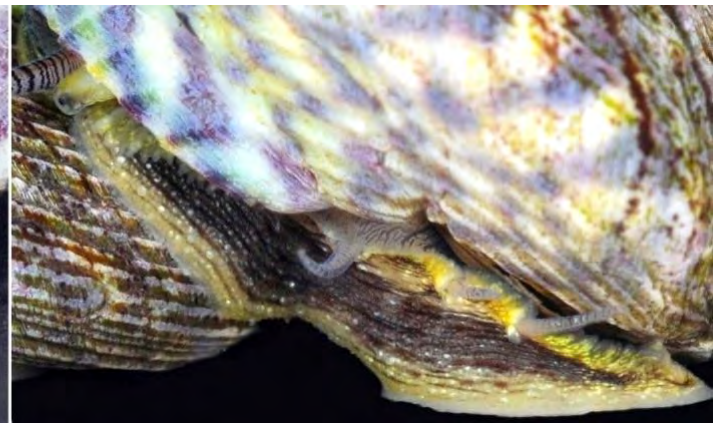


figure 22: The sole is tawny white, short, approximately oval. A slight medial furrow divides the foot.

Fertilization is external, so there is no **penis** on males. Sometimes the comb-like **ctenidium** can be seen in the mantle cavity behind the head, and the pink internal buccal mass is visible inside the pigmentless body of juveniles (figure 7).



## Habits and ecology

On brown fucoid seaweeds, or under stones even if devoid of fucoids, on rocky shores MHWN to MLWS. Rarely sublittoral; distribution controlled by winter air temperature (not below about 4.4°C Feb. mean) and/or surface water temperature (not below about 6°C Feb. mean). Also in rock pools, extending above MHWN. Cilia on the fringed left neck-lobe wave to create an inhalent current to the ctenidium within the mantle cavity (figure 16). Cilia on the smooth-edged right neck-lobe create an exhalent current for respiratory water (figure 18), ova or sperm (figure 30), and excreta (figure 17). Locomotion is enabled by direct, ditaxic waves on the sole of the foot (figure 23); turning is caused by different rates of wave flow on either side of the central furrow, or even reversal of direction to retrograde on one side. The animal feeds on brushings from seaweeds and on algal debris. The faecal string from the stomach has a U shape cross-section; a thinner cylindrical string from the kidney is deposited along the groove (figure 24).

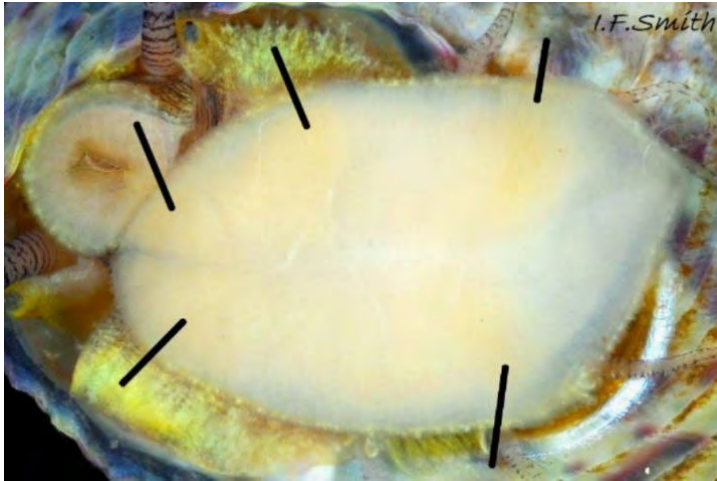


figure 23: Direct locomotory waves (slightly darker) on either side of central furrow.

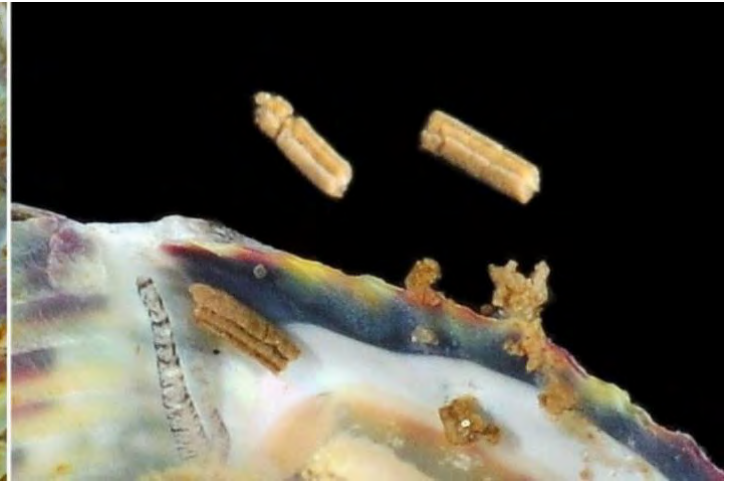


figure 24: grooved faecal strings from the stomach with a thin string from the kidney in groove.

Spawning is triggered by rise in temperature; dates vary within the period May – September at different locations. External fertilization occurs as non-buoyant yellowish-green ova released singly via the right neck-lobe from the mantle cavity (figure 30). Ova hatch as trochophore larvae, which quickly metamorphose into veliger larvae that semi swim/crawl on or near the bottom. As there is little or no planktonic phase, distant transport will be a rare occurrence, and the remote establishment of a reproducing population is unlikely as external fertilization requires a dense population for success.

## Distribution and status

Gibraltar to the west coast of Orkney. Not North Sea, N.E. Irish Sea or Baltic, all too cold; many erroneous records on GBIF and NBN. World map, GBIF <https://www.gbif.org/species/search>. U.K. map, NBN <https://nbnatlas.org/>. *S. umbilicalis* is used as a text book example of temperature control of distribution (Lewis, 1964). It is important that the distribution is not confused by inaccurate identification, and that any range extension because of climate warming is reliably documented.

## Key identification features

The principal source of misidentification by both novice and experienced workers is that young small shells of *S. cineraria*, with a low profile and (relative to shell size) widely spaced bands, are mistaken for *S. umbilicalis*.

In a sample of 71 shells of *S. umbilicalis* and *S. cineraria*, collected from sites between north coast Scotland and south coast England, the average number of bands within each width category on *S. cineraria* was approximately double the average on *S. umbilicalis*, with no overlap in the ranges. Bands were counted around the periphery of the body whorl, including part of the outer lip to complete the circuit. Examples:

### **Width 14mm to 15.9mm**

*S. umbilicalis* mean 22 bands (range 18–31 bands).

*S. cineraria* mean 52 bands (range 35–68 bands).

### **Width 12mm to 12.9mm** (figure 25)

*S. umbilicalis* mean 17 bands (range 13–23 bands).

*S. cineraria* mean 41 bands (range 34–49 bands).

### **Width 5mm to 8.9mm** (figure 26)

*S. umbilicalis* mean 10 bands (range 7–13 bands).

*S. cineraria* mean 25 bands (range 19–29 bands).



figure 25: Left: *S. umbilicalis* breadth 12.3mm; 23 bands; umbilicus round. Right: *S. cineraria* breadth 12.5mm, 48 bands; umbilicus oval.  
 figure 26: Left: *S. umbilicalis*, breadth 6.5mm; 11 bands. Right: *S. cineraria*, breadth 6.5mm; 26 bands.

***Steromphala umbilicalis*,**

1. Shell has broad red to reddish-purple bands radiating from the apex across the whorls (figure 5). Maximum shell width 22mm.
2. The number of bands within each width category is approximately half the average found on *S. cineraria*, with no overlap in the ranges. (figures 25 & 26 and data above).
3. The bands and gaps on *S. umbilicalis* are wider than those on *S. cineraria*.
4. The shell always has a large circular umbilicus (figure 4).
5. the shell profile is usually low, but variable (figure 2).
6. In Britain, adults are found littorally but rarely, if ever, sublittorally, from Kent along south and up west coasts round to Loch Eriboll on the north coast of Scotland (figure 28), with a few records on the west coast of Orkney (recent small move eastwards in the islands and N. coast). NBN records in the North Sea, especially divers' records, are probably misidentifications of *S. cineraria*. It is advisable to keep live-taken specimens or clear photographs with scale/measurement (not an estimate) to support any claimed *S. umbilicalis* record from this area; it may move into the N. Sea with warmer winters.



figure 27: *S. umbilicalis*, umbilicus circle B. 6.5mm. Rt: *S. cineraria*, umbilicus nearly circle B. 6.5mm.



figure 28: *S. umbilicalis* from Loch Eriboll; furthest east live records in 1970s on the north coast of Scotland.



figure 29: Adult *S. umbilicalis* (left) and juv. *Phorcus lineatus* (right). Hollow columella and nacre exposed.



figure 30: Non-buoyant ova spilling off the exhalant right neck-lobe.

## Similar species

### *Steromphala cineraria* (Linnaeus, 1758)

1. Narrow, greyish bands (bluish-purple-grey, brown-grey or dark brown-grey, but not reddish-purple) on yellowish or light grey ground colour radiate from apex of shell across the whorls (figure 31). Maximum shell width 16mm.
2. The number of bands within each width category on *S. cineraria* is approximately double the average on *S. umbilicalis*, with no overlap in the ranges (figures 25 & 26 and data above).
3. The bands and gaps on *S. cineraria* are narrower than those on *S. umbilicalis*. But beware; bands on both species increase only slightly in width with shell growth, so they look proportionately wider on very small shells, leading sometimes to small *S. cineraria* being mistaken for *S. umbilicalis* because of “wide” bands and gaps (figure 26).
4. The umbilicus progressively narrows with age (figure 31). The adult shell may have a very restricted or completely closed umbilicus, but juveniles may have a large round umbilicus resembling that of *G. umbilicalis* (figure 27).
5. The shell profile is higher than *S. umbilicalis* on average, but there is a large overlap; only use the profile to distinguish *S. cineraria* if the shell is like a straw bee-hive (skep) with height over 86% of breadth (figure 32).
6. Adults are found littorally and sublittorally all around UK, including North Sea.



figure 31: *S. cineraria*; greyish bands. The umbilicus narrows with growth and is closed when fully grown.



figure 32: *S. cineraria*; shell profile is higher than *S. umbilicalis* when adult, but low when young.

### *Phorcus lineatus* (da Costa, 1778) [= *Osilinus lineatus*, *Monodonta lineata*].

1. Many short zig-zag streaks of brown, red, purple or green transversely across whorls, only arranged into clear bands radiating from apex on early whorls (figure 33). Beware small shells under 15mm width, dominated by early whorls; in apical view can resemble *S. umbilicalis* of similar size (figure 29). Maximum width 25mm, height 30mm.
4. Umbilicus is open on juveniles up to 5mm high, larger shells usually have the umbilicus covered by the inner lip of the aperture folded over it, leaving an umbilical depression and occasionally a minute hole. There is a rounded tooth on the columella.
5. Shells up to about 16mm height have a moderately low profile; larger ones can be very tall.
6. Adults live near high water mark in SW Britain from Isle of Wight to Anglesey, and around most of Ireland except part of east coast (more frost sensitive than *S. umbilicalis*).

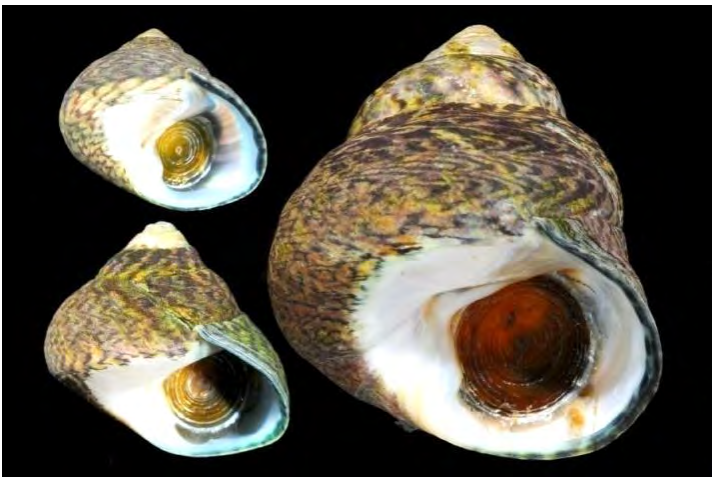


figure 33: *Phorcus lineatus*; short zig-zag streaks. Radiating bands only on early whorl.



figure 34: *Gibbula tumida*; brown bands/spots. The umbilicus is narrow or closed. Stepped profile. (photo: David Fenwick)

***Gibbula tumida*** (Montagu, 1803) (figure 34)

1. Brownish bands and/or spots on the shell. Maximum shell width 10mm.
4. A comma shaped umbilicus narrows and closes with age.
5. Sharply pointed cone with stepped profile and flat body whorl.
6. Most British coasts, usually sublittoral, rarely live on shore, but dead shells sometimes on strandline. Iceland to Spain.

***Steromphala pennanti*** (Philippi, 1851) 35Su

1. Shell colour and banding very similar to *S. umbilicalis*, but bands tend to break into chequers on base and sometimes on rest of shell.
4. There is a small constricted umbilicus on juveniles, closed on full grown adults.
6. Littoral and sublittoral, Channel Islands and Cherbourg to Spain; not British mainland.

figure 35 (right): *S. pennanti*. Bands break into spots on base. There is a very small or closed umbilicus. (photo: David Fenwick)



**Acknowledgements**

I am grateful to David Fenwick [www.aphotomarine.com](http://www.aphotomarine.com) for use of two of his images for figures 34 and 35.

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**Glossary**

abapical – away from the apex of the shell.

adapical – towards the apex of the shell.

adapical angle – angle at top of aperture where outer (palatal) lip meets inner (parietal) lip.

aperture – mouth of gastropod shell; outlet for head and foot.

cephalic – (adj.) of or on the head.

cilia – (sing. cilium) microscopic linear extensions of membrane that rhythmically wave to move particles and liquids.

columella – rotational axis of gastropod. Hidden inside shell, except next to columellar lip of aperture. If hollow, end may show as umbilicus by aperture, or at apex if eroded.

columellar lip – lower (abapical) part of inner lip of aperture.

conoidal – nearly conical

conchiolin – horny flexible protein that forms the operculum.

ctenidium – comb-like molluscan gill.

direct – (of locomotory waves on foot) waves travel from posterior to anterior.

ditaxic – (of locomotory waves on foot) double series of waves, out of phase with each other, one series on each side of central furrow on sole.

ELWS – extreme low water spring tide (usually near equinoxes).

epipodial – (adj.) of the epipodium.

epipodium – circling around sides of foot, often with epipodial tentacles.

height – (of gastropod shells) distance from apex of spire to base of aperture.

mantle – sheet of tissue that secretes the shell and forms a cavity for the gill.

odontophore – cartilaginous “tongue” that supports and protracts the radula.

opercular – (adj.) of the operculum.

opercular disc – pad on posterior dorsum of foot that secretes, and is attached to, operculum.

operculum – plate of horny conchiolin used to close shell aperture.

parietal lip – upper part of inner lip of gastropod aperture.

plankton – animals and plants that drift in pelagic zone (main body of water).

protoconch – apical whorls produced during embryonic and larval stages of gastropod; often different in form from other whorls (teleoconch).

retrograde – (adj.) of locomotory waves on foot that travel from anterior to posterior.

setose – bearing many setae.

seta – (pl. setae) stiff hair or bristle.

suture – groove or line where whorls of gastropod shell adjoin.

trochophore – spherical or pear-shaped larva that swims with girdle of cilia. Stage preceding veliger, passed within gastropod egg in most spp. but free in plankton for Trochidae.

umbilicus – cavity up axis of some gastropod shells. Sometimes open as a hole next to columellar lip or at apex if eroded.

veliger – shelled larva of marine gastropod or bivalve which swims by waves of cilia on a velum (bilobed flap).

I own a copy of volume 13 of the second series of the *Manual of Conchology* (Pilsbry, 1900), the mammoth publication begun in 1879 by George Tryon and continued by Henry Pilsbry until the project was abandoned after the 45<sup>th</sup> volume was published in 1935. Planned as a comprehensive guide to all known molluscs, Peter Dance comments ‘...the *Manual* may well be the last of the few attempts to provide a comprehensive, illustrated account of every known mollusc’ (Dance, 1986).

This particular copy was formerly in the library of Tom Pain, a past Hon. President of this Society (Verdcourt *et al.*, 2004). One of his conchological interests was in the larger species of tropical land snails, as demonstrated by his large collection that contained a number of type specimens, and which is now incorporated into the collections of the National Museum of Wales. At the time of publication of vol.13 of the *Manual* the sub-family *Placostylinae* (with which the volume is partly concerned) (figure 1) was placed in the family Bulimulidae, but it is now recognised as belonging to a related family bearing the even more ‘difficult’ name of Bothriembryontidae<sup>1</sup>. In 1955 and 1958 Tom published two papers describing one new species and four subspecies of *Placostylus* from New Caledonia (Pain, 1955,1958). In doing so, he was in a long line of authors, dating back to the mid nineteenth century, who described many varieties and subspecies within this highly varied group of large land snails. They left a legacy of bewildering taxonomic confusion and an attempt at rationalisation has only more recently been made (Neubert *et al.*, 2009). These authors concluded that from an original number of 141 names at the rank of species, subspecies or variety, there are only six valid *Placostylus* species in New Caledonia, ‘albeit with discreet geographical sub-species’. Due to habitat degradation and other factors, the future of many of these taxa is now in doubt and some have suffered extinction.



figure 1: *Manual of Conchology* vol.13 (2nd series) plate 16, showing *Placostylus fibratus souvilleii* (Morelet, 1857) (fig. 20) and *Placostylus fibratus fibratus* (Martyn, 1784) (figs. 21–22, 24–25); species from New Caledonia (height from 80–120 mm). (Author’s copy, ex Tom Pain)

Tom Pain often annotated copies of his books because for him their value was as an aid to identification and reference to shells in his own collection, not merely as objects of antiquarian value. Thus, the present book is annotated with updates on classification, indications of the presence of a species in his own collection (rather as I used to do when I ticked off observations in the ‘I-Spy books’ of my childhood!) and the insertion of various items. These loose and taped insertions include maps, notes, papers from journals, photographs and drawings. Of the latter are several original very fine ink drawings. There is a related note in Tom’s handwriting to the effect that these are ‘original drawings by G. L. Wilkins of specimen[s] in the] Pain collection’ (figure 2).

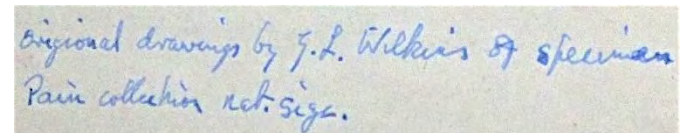


figure 2: Note by Tom Pain regarding the name of the artist of the inserted *Placostylus* drawings.

I first came across the work of Guy Lawrence Wilkins (1905–1957) as the author of a posthumously published paper (Wilkins, 1957b) when researching the history of Martin Lister’s pioneering 17<sup>th</sup> century *Historia Conchyliorum* (Topley, 2016). He is also known for his important series of publications on the historical shell collections of Sloane, Banks and Cracherode (Wilkins, 1953, 1955 and 1957a). The cover of each of these papers features a sketched portrait by him. Guy Wilkins was born on November 5<sup>th</sup>, 1905 in Stoke Newington, London. He began his working life as a commercial artist, was a keen amateur conchologist from his youth (figure 3) and held various offices in both the Conchological (including that of Hon. President) and Malacological Societies. He joined the staff of the British Museum (Natural History) on a professional basis in 1949, where he worked on the shell collection and also used his artistic skills to illustrate papers and to produce exquisite wax models of molluscs including those for the National Museum of Scotland (search [www.nms.ac.uk/explore-our-collections/](http://www.nms.ac.uk/explore-our-collections/)) (Rees, 1957). Wilkins died at the relatively young age of 52 from ‘granular eruptive tuberculosis’. One writer at the time also speculated that ‘it is likely that the confining habits and close long hours of the drawing board impaired his health’ (Ewan, 1957).

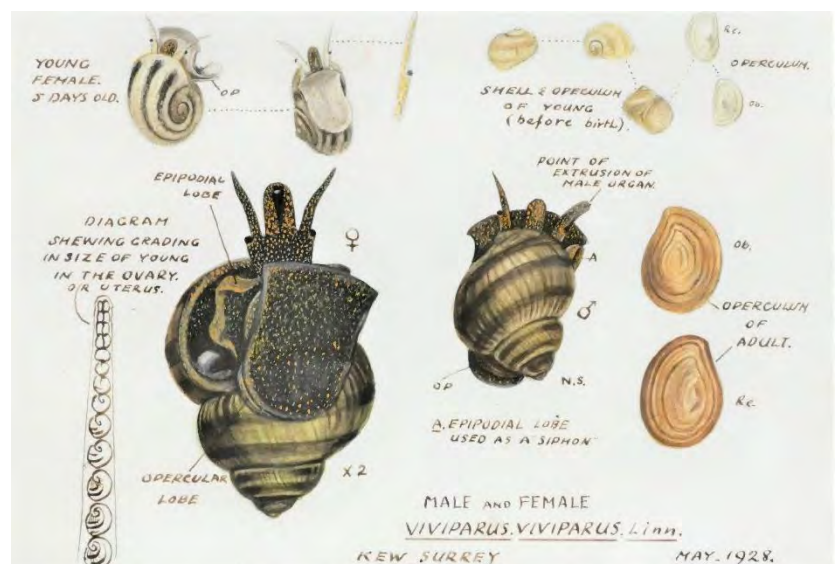


figure 3: Drawings by Guy Wilkins of living *Viviparus viviparus* from Kew, Surrey, 1928. (Conchological Society archive, Leeds)

One further anecdote relates to the logo of the Malacological Society of London, the current version of which is a drawing of *Pomacea canaliculata* (Lamarck) by Dr David Reid. Its predecessor had origins in a figure in a book from 1835 by Alcide d'Orbigny (*Voyage dans l'Amerique Meridionale*, 9: plate 50, figure 5)<sup>2</sup>. Guy Wilkins worked on a version of this logo that was almost lost, as Charles Pettitt (1937–2009), a former Zoological Curator at Manchester Museum, relates: 'I found these in a common-place album of drawings and early photos assembled by Guy Wilkins. This album I rescued from a waste-paper basket in the Mollusca Section of the British Museum (Natural History) - as it was then called - in 1962, during my sojourn there for a year as a Research Associate, immediately after graduating. It had been thrown away as part of a clear-out the then Head of Section was pursuing. Having been told it was 'rubbish' I placed the album in my personal library...'<sup>3</sup>.

### Ink drawings of *Placostylus* by Guy Wilkins (with annotations by Tom Pain)

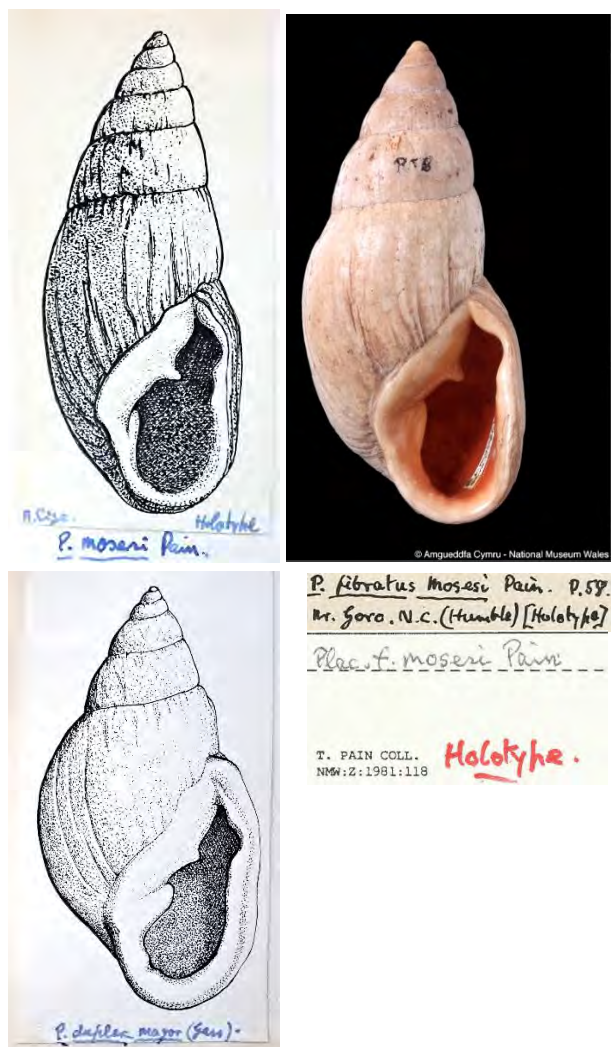


figure 4: Above: (left) Drawing of the holotype of *Placostylus fibratus mosesi* Pain, 1955 with (right) an image of the same specimen and label in the collection of the National Museum of Wales\*<sup>4</sup> and (below) *Placostylus duplex* Gassies, 1871. Both names are now accepted as *Placostylus porphyrostomus porphyrostomus* (L. Pfeiffer, 1851).

\* 'According to Pain, his specimen still showed remnants of orange colour on the columella and parietal callus, and the interior of the aperture is a deep blood-red. This apertural coloration strongly suggests its position in the *P. porphyrostomus* group.' (Neubert et al., 2009).

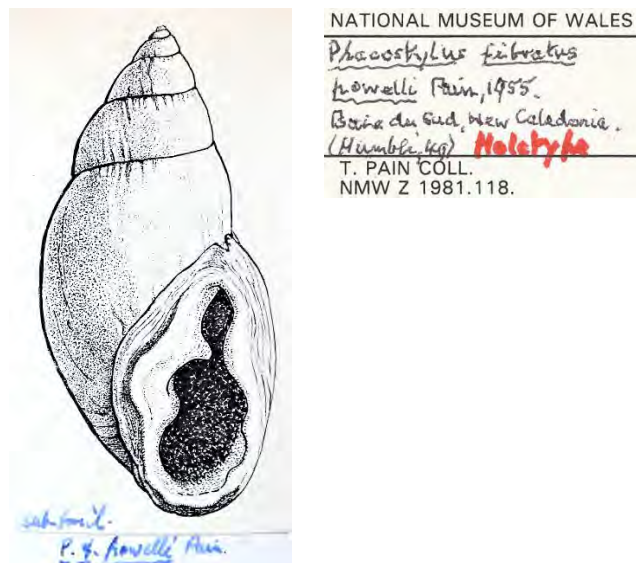


figure 5: Above: (left) Drawing of the holotype of *Placostylus fibratus powelli* Pain, 1955 with (right) an image of the same specimen and label in the collection of the National Museum of Wales and (below) a drawing of a second sub-fossil specimen. The name is now considered a synonym of *Placostylus fibratus fibratus* (Martyn, 1784).



figure 6: Above: Drawing of *Placostylus falculica* (Gassies, 1871). The accepted name is now *Placostylus fibratus fibratus* (Martyn, 1784).



figure 7: Above: Drawing of *Placostylus fibratus* var. *peculiaris* Kobelt, 1891 in the Tom Pain collection (left), with (right) image of another specimen (holotype) from the Melvill–Tomlin collection, National Museum of Wales. The name is now accepted as *Placostylus fibratus fibratus* (Martyn, 1784).



figure 8: Above: (left) Drawing of the holotype of *Placostylus fibratus verdis* Pain, 1955 with (right) an image of the same specimen in the collection of the National Museum of Wales. The holotype is a sub-adult specimen and was tentatively accepted as *Placostylus caledonicus* (Petit, 1845) but might also be a *P. scarabus* (Neubert et al, 2009).

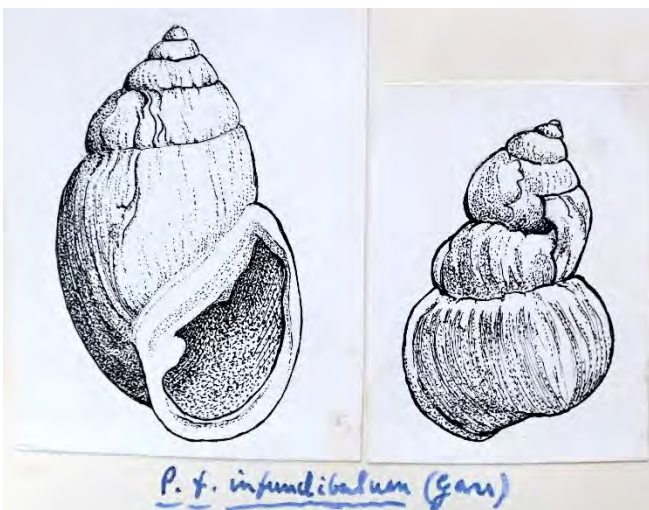


figure 9: Drawings of two specimens labelled as *Placostylus infundibulum* Gassies, 1871, however, like these, the holotype of this species is an abnormal specimen and is now accepted as *Placostylus fibratus guestieri* (Gassies, 1869).

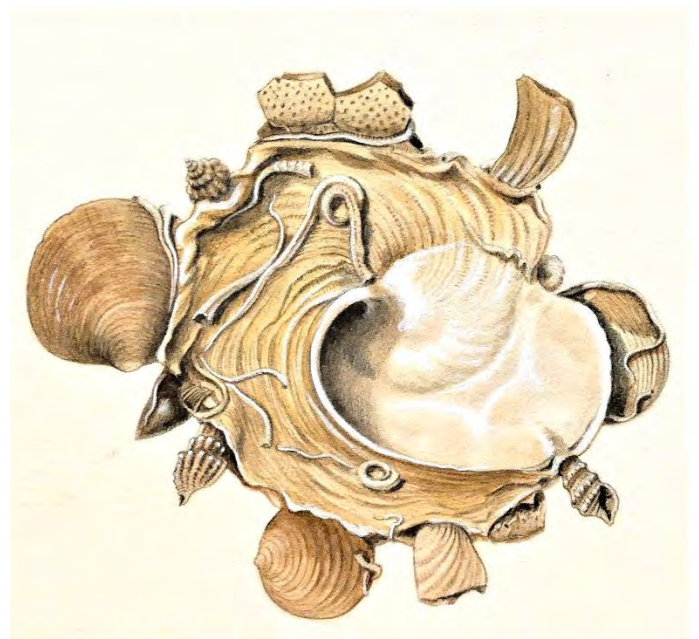


figure 10: A reminder that Guy Wilkins' gift of illustration extended to all types of molluscs: watercolour of a *Xenophora* species (probably *Xenophora conchyliophora* (von Born, 1780) (Robin, 2008). (Conchological Society archive, Leeds)

#### Acknowledgements

I thank Dr Ben Rowson and Amgueddfa Cymru/National Museum of Wales for permission to include, for comparison purposes, their images of the relevant type specimens. All these images remain their copyright. Thanks are also due to Dr Tom Walker for provision of a copy of the obituary of Guy Wilkins from the *Journal of Conchology*.

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- <sup>1</sup> World Register of Marine Species (WoRMS) [www.marinespecies.org](http://www.marinespecies.org)
- <sup>2</sup> The [Malacological] Society's logo <http://malacsoc.org.uk/about/the-societys-logo/>
- <sup>3</sup> Petitt, C. (1999) *Society's Original Logo Recovered*. [http://malacsoc.org.uk/malacological\\_bulletin/BULL33/NEWS.htm](http://malacsoc.org.uk/malacological_bulletin/BULL33/NEWS.htm)
- <sup>4</sup> Wood, H. & Turner, J. A. (2012). Mollusca Types Catalogue. Amgueddfa Cymru - National Museum Wales. <http://naturalhistory.museumwales.ac.uk/molluscatypes> (also in <https://gbmolluscatypes.ac.uk/>).



The Shell Shop, at 9 The Quay, Brixham is a classic seaside curio shop. One of a kind now rare in the UK, it has been selling seashells for nearly 70 years, making the most of its prime location and contributing to the character of the town. I have known it for many years, and in May 2016 at last took the opportunity to ask proprietor Chris Sturrock, then 76, about his work and the shop's history. My intention, as I told him, was to write this up for Mollusc World. I later discovered something that made me hesitate to do so until now, but have done because such shops may not last much longer. Some of us at least would miss them.

Brixham, in Torbay, south Devon, remains England's leading fishing port by catch value, while being immensely popular with tourists thanks to its picturesque harbour. The 2011 Sky Atlantic docu-series "Fish Town" showed the importance of both aspects to Brixham's community. Brixham scallopers were among those involved in an altercation off France in August 2018, and the Trawler Race is an annual holidaymakers' highlight. Torbay attracts several million mainly British visitors every year, from all backgrounds and over a long season. (Just don't call us 'grockles'). The coast is well-known to naturalists for its red sand beaches and limestone headlands, with Philip and Edmund Gosse among those to spend their summers there.

This particular Shell Shop loomed large in my childhood, as it must have for many others. My Mum is from Brixham, so we stayed with my grandparents there several times a year. Most of the best trips (in my opinion then) were when the Shell Shop was open to reward the long walk into town. From early morning, baskets of starfish and scallop shells from Brixham's nets were put out to crowd the shop's pavement, and a giant clam loomed from its window, heaped with shark's jaws, seahorses and Nautilus shells. Inside the ceiling hung thick with oyster mobiles, urchin chimes and porcupine fish. Entry was not for the faint-hearted. Movement within was so restricted that time seem to have to slow down. The atmosphere was magical but the contents tangible, and for a child affordable too. I could spend ages rummaging through trays of a huge range of well-labelled species, finding the best among the shells too small or cheap for grown-ups to pay attention to.



Among the lamps, jewellery and other shellcraft were the raw materials to make one's own, the larger and more expensive shells furthest out of reach. (Fossils, meanwhile, were never a big focus of the shop, unlike elsewhere on the South coast). High up in the heart of the shop was a small locked cabinet of rarer or more fragile shells, like *Tibia fusus*, *Xenophora pallidula* and *Murex pecten*. My Dad would lift me up to peer into this, or ask the owner to fetch the key. It was the antithesis of the Apple Store aesthetic, and remains that way today. Apart from a few recently trending toys, very little has changed. Even more remarkably, I still recognised the owner behind the counter, over 30 years since I first became a customer.

Chris kindly agreed to talk to me, for over an hour as it turned out, one evening after the day's business died down. The shop is open late in high season, when Chris works over 100 hours a week. A civil engineer by training, he has run the shop for over 55 years since he took over from his mother. The family arrived from Leicestershire soon after the War, when she converted the shop from two tiny snack bars that served sailors at the covered Fish Market then directly opposite. Having lived all his life in Brixham, Chris always took an interest in shells and was soon selling them, beginning with surplus King Scallops (*Pecten maximus*) from the trawlers, at 6d a dozen to local guesthouses and caterers. They would also sell crafts by a local maker by the name of Mrs. Shelley (sic). Eager to work in the shop whenever he was home from University, Chris took over in the early 1960s, when the curio business was growing annually with the post-war boom in holiday parks around Torbay.





It was easy to acquire exotic stock, much of which came from Millicent Rich of London and Brighton, an importer of shells from Zanzibar and the Philippines (Mrs Rich, now 99, still runs a website). The abraded shells of Commercial Trochus (*Tectus niloticus*), abalone, and other nacreous species, were always big sellers. Part of the customer appeal of shells, and of the shop itself, was the sheer strangeness of the objects in the era before underwater film and TV. A keen memory and an eye for quality led Chris to an annual rapport with several holidaymakers who went on to become lifelong collectors. They included Conchological Society members (whose names now escape Chris) but he recalls hearing of the sale of the A. E. Salisbury collection (much of which went to the National Museums of Scotland). The “reserve” portion of the collection was so large much of it entered the trade when sold by Salisbury’s relatives at their farm gate. Chris helped another customer, an antique dealer from Bath, to acquire one example of every species in the shop. He recalls the Golden Cowrie (*Lyncina aurantium*) becoming a ‘fad’ at one time, knowing the market would soon be flooded, while one of the few sales he regrets is that of some rare Australian cowries that came into his hands. Conservation restrictions, although a good thing, Chris said, meant that many taxa could no longer be obtained, with choice and prices affected accordingly. As a young customer through the 1980s, I was scarcely aware of such changes, and recall thinking that certain centrepieces remained in place for years on end. Or did they? A small *Spondylus* attached to a Hammer Oyster that I coveted eventually became mine (I was 10 or 11), only to be replaced by an almost identical pairing. Some of the *Argonauta* and *Epitonium* there in 2016 had been there since 1986, I’m sure, though the *Tridacna gigas* valve no longer occupied the front window. Was the Shell Shop slowly running out of shells?

At the peak of his business, in the 1990s, Chris employed 8 staff on a rota. A marina development further boosted Brixham’s tourism offer, and customers were frequently turned away as late as at 11:00 pm (occasional losses through shoplifting also rose). Unlike the early days, locally-made crafts barely feature, though remain the province of other local shops. Some of them sell a few shells, but the Shell Shop’s depth of focus on natural objects over other holiday gewgaws made it increasingly unusual. Small Columbelloidea and Cancellarioidea still start from as little as 2p each. Things began to wane a little as the era of cheap flights saw domestic tourism decline, and when online retail affected general shell supplies as well as collectors’

items. Public attitudes to collecting started shifting, as did the source of stock, with many imports now coming direct from the Philippines (including of species fished elsewhere in the world, but cleaned there). Chris feels that young girls have taken over from boys as those most often captivated by the Shell Shop’s wares, which he said in 2016 actually included more shells than in previous years.

Now the only member of staff, Chris remains fully occupied. The shop was too busy to film for Fish Town, though he would like it to have been, he said - the place is a ready-made film set. As his own children are unlikely to take over the business in its current form, its future is not certain. Yet while he ruefully wonders whether engineering would have paid better, he feels lucky to have been doing something he loves for a living. I too feel fortunate to have grown up with the shop, and am agreed with Chris about the online and modern retail experience – for all its benefits it does not compare to the heyday of shops like his. Once a staple of every British town, the specialist shop (models, books, hardware, even the greengrocer) now only seems to thrive in the most forgiving circumstances.

A couple of days later – this was a family holiday – I had the chance to type up my notes, and resorted to Google to check some facts about the shop. I was presented, quite unexpectedly, with an article in the Mail Online, July 2015. The Devon and Cornwall Police’s Wildlife Crime Unit had recently raided a shop in Brixham, tipped off and aided by the Seahorse Trust, a Devon-based conservation charity. A stock of 10,000 dried seahorses, sharks, some shells and a crocodile were seized, with the seahorses being confiscated from the owner, who received a police caution and a £70.00 fine. Photos meant there could be no mistaking which shop this had been. Things fell into place – the missing clam, the lack (now I came to think of it) of seahorses, and Chris’ claim that shells now made up a greater proportion of sales. He had not brought up the incident, yet had still been happy to be interviewed (though of course if he had suspected I was an agent, I may have learnt less than I could have done). It seems that conservation efforts, perhaps above any of the other issues, will see the days of shell shops numbered. The Seahorse Trust runs campaigns to Stop the Marine Curio Trade, and to regulate the Traditional Medicine trade in dried seahorses; the scale of harvesting is now unsustainable, if it ever was. Local protections are improving, and the trade in all seahorse species has been regulated since 2004 by CITES Appendix II. The same Appendix includes the molluscs *Strombus gigas*, all Tridacnidae, and since 2017, all Nautilidae. Of course, these are only a fraction of the taxa to which collecting could pose a risk, or which should no longer be harvested. Today’s seas simply produce fewer curios to sell, and we may never see the like of some prize specimens again. But I hope future generations are not completely deprived of places like this one, or of experiences like mine.



# World Congress of Malacology 2019, Pacific Grove, California

*Imogen Cavadino, Anna Holmes and Harriet Wood*



figure 1: WCM2019 attendees.

(photo: Imogen Cavadino)

The World Congress of Malacology 2019 took place at Asilomar Conference Grounds in Pacific Grove, California from Sunday 11<sup>th</sup> to Friday 16<sup>th</sup> August. The congress was organised by Unitas Malacologia, with support from the American Malacological Society, the Western Society of Malacologists, the Malacological Society of London and California Academy of Sciences among others. The conference was attended by over 260 delegates (figure 1), with over 220 papers and 65 posters presented. At least four members of the Conchological Society were present; Imogen Cavadino, Anna Holmes, Tom White and Harriet Wood. Imogen attended as a PhD student, supported by funding from the RHS Gurney Wilson Bursary Fund and the Malacological Society of London Travel Grant.

Presentations involving Conchological Society Members (presenting author in bold):

**Imogen C N Cavadino**, Gerard R G Clover, Hayley B C Jones, Gordon Port, Helen E Roy '*Slugs Count*' *Mapping Slug Diversity in UK Gardens*

**Anna M. Holmes** *Trans-Atlantic Rafting – American Bivalves on British Shores*

**Andreia Salvador**, Anna Holmes, and Harriet Wood *Mollusca Types in Great Britain: A Union Database for the UK* (see figure 8)

**Tom S. White** *Advances in Quaternary Non-Marine Molluscan Research: The View from Britain and NW Europe*

**Harriet Wood**, Ben Rowson, Jon Ablett, Andreia Salvador, and Anna Holmes *Mollusca Types of Britain and Ireland: A Union Database* (Poster)

The setting of this conference at Asilomar Conference Grounds in Pacific Grove was particularly beautiful, surrounded by Redwood forests and just a few minutes' walk from a state beach (figure 2). The conference centre itself consists of a series of rustic stone and wooden buildings constructed between 1913 and 1929 (figure 3). It was declared a National Historic Landmark in 1987. The unusually cool climate saw most days starting surrounded with an eerie damp mist and cool breezes, before burning off into hot, bright sunshine most afternoons. Many of the buildings had wood fires lit on cool days and evenings, giving the place a cosy feel and a beautiful aroma.

The Monterey Bay area is famous for whale watching and the Monterey Bay Aquarium. Most of the Conchological

Society members attending the conference went on a whale watching trip, seeing a wide range of marine wildlife including; Southern sea otter (*Enhydra lutris nereis*), Californian sea lions (*Zalophus californianus*) (figure 4), ocean sunfish (*Mola mola*), humpback whale (*Megaptera novaeangliae*), harbour seal (*Phoca vitulina*) and many species of seabird.

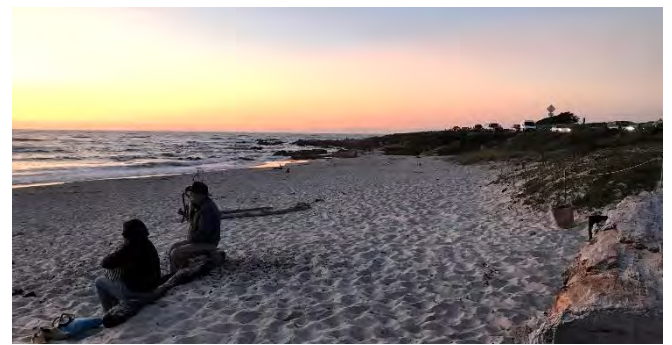


figure 2: Asilomar beach.

(photo: Harriet Wood)



figure 3: Attendees in Conference Centre. (photo: Harriet Wood)



figure 4: Californian sea lions at Monterey Bay.

(photo: Imogen Cavadino)

Harriet Wood and Anna Holmes (figure 5) chose to visit the world-famous Monterey Bay Aquarium. With a range of themed tanks from Kelp forests and Sea Otters (both local to that area of California) to Penguins and the Open Ocean.

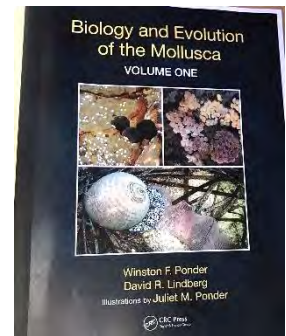


figure 5: (above) Harriet Wood and Anna Holmes at the Monterey Bay Aquarium and (below) part of the Cephalopod exhibition. (photos: Harriet Wood)

It also includes a range of touch pools where you can come face to face with and stroke starfish, snails, seaweed and more. Two exhibitions at our time of visit were ‘Viva Baja!’ Featuring the fauna of the Baja California peninsula and ‘Tentacles: The Astounding Lives of Octopuses, Squid and Cuttlefishes’ (figure 5). We chose to visit the latter and were not disappointed. Mixing art, mythology and science it provides a well-rounded view of cephalopods. It begins with artwork in the form of pottery, paintings and Blashka models followed by mythology and popular culture. A tv screen plays the classic black and white movie of 1955 ‘It came from beneath the Sea’ in which a giant radioactive octopus terrorises the folks of the American Pacific coast. After all this excitement comes the even more fun part – the science bit. Huge screens show the simplified anatomy of squid, octopus and cuttlefish followed by tanks of live cephalopods including the beautiful flamboyant cuttlefish. There are even messages on marine pollution next to the tanks to persuade people to keep our oceans pollution-free.

The first day of the conference on Monday consisted of plenary speakers from around the USA, covering a diverse range of topics. These included the importance in understanding genomics in the future of tropical marine ecosystems, understanding dead shell assemblages, evolution of molluscan shells in response to a predatory arms race, and investigating and developing molluscan venom for use in human medicine.

David Lindberg also provided an update on *Biology and Evolution of the Mollusca* (publication due late October 2019, figure 6 below) which will provide a general account of all molluscs. This will cover overviews of evolution, phylogeny, and classification as well as more specific and detailed coverage of their biology, fossil record, and their natural history for different groups of mollusc. Volume 1 is currently due to retail at £185 and is available from CRC press. Volume 2 is due for release in the future.



The evening ended with a slightly cramped poster session (figure 7), with a good range of topics and experiences presented, which also acted as an icebreaker for delegates.

The second day of the conference consisted of parallel sessions, with symposiums on molluscs as key ecological players, systematics, molluscan collections, physiology, and biogeography. There was also an informal lunch time tutorial on the formation of species names for malacologists, explaining the conventions and rules for creating new scientific names for a species.



figure 7: Harriet with her poster. (photo: Harriet Wood)

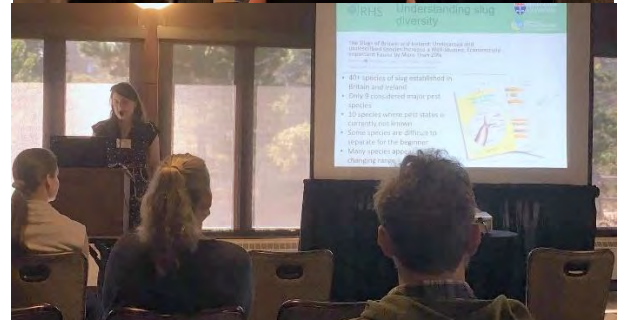


figure 8: Andrea Salvador (above) and Imogen Cavadino (below) giving their presentations. (photos: Harriet Wood and Anna Holmes)

The third day of the conference gave delegates the opportunity to explore the area through tours; following in the footsteps of John Steinbeck, exploring the Big Sur coastline, wine tasting, explore marine fossils, viewing marine mammals, or exploring the slugs and snails of Monterey County.

Harriet Wood and Anna Holmes chose to explore the famous Big Sur coastline. Big Sur is a beautifully rugged section of the California coastline that runs from Carmel Highlands to San Simeon. Famed for its dramatic scenery it passes Redwood forests, cliffs and bridges over crevasses. The trip allowed participants to walk through Redwood forests at the national park, break for coffee at the stunning Nepenthe cliff-top restaurant and stop along the way at scenic viewpoints such as Bixby Creek Bridge (figure 9) for photography opportunities. Admittedly, this was not a mollusc-based trip!



figure 10: Slug and snail trip participants. Back row left to right: Nozomu Sato, John Slapcinsky, Jochen Gerber, Erik L'Heureux, Michael Nash, Imogen Cavadino, Stephanie Clark, Amy Blair. Front row left to right: Mary Cole, Tim Pearce, Katrina Dickens, Brenda Peters. (photo: Imogen Cavadino)



figure 9: Andreia, Harriet and Anna on the Big Sur trip (above) and Bixby Creek Bridge (below). (photos: Harriet Wood)



figure 11: Reticulate tailldropper (*Prophysaon* cf. *andersoni*). (photo: Imogen Cavadino)



figure 12: Californian lancetooth (*Haplotrema minimum*). (photo: Imogen Cavadino)

Imogen Cavadino joined the trip exploring the slugs and snails of Monterey County led by Tim Pearce and John Slapcinsky (figure 10). This trip took participants to several different locations around the area exploring different habitats. Unfortunately, conditions were very hot and dry so relatively few species were found; 2 slug species, and 11 species of snail (figures 11 to 14). Interestingly two of these species were familiar ones that had established from Europe; *Deroceras reticulatum* and *Oxychilus alliarius*. Among the many interesting finds were tailldropper slugs (*Prophysaon* cf. *andersoni*), carnivorous snail Californian lancetooth (*Haplotrema minimum*) and a tiny species of *Pristiloma* possibly new to science. Despite best efforts, no banana slugs (*Ariolimax columbianus*) were found.



figure 13: Shoulderband snail (*Helminthoglypta* sp.).  
(photo: Imogen Cavadino)

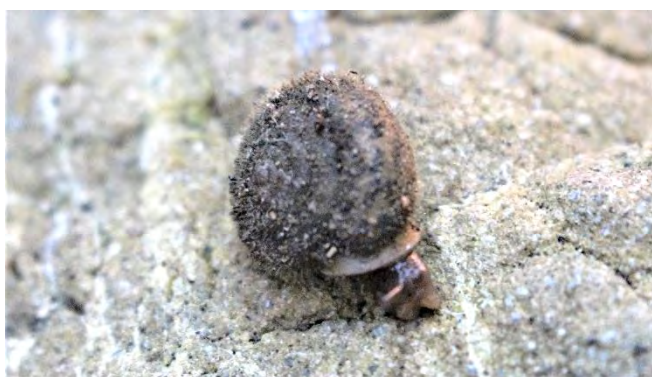


figure 14: Monterey hesperian (*Vespericola pinicola*).  
(photo: Imogen Cavadino)

Wednesday evening included a panel session run for students, where students from undergraduate to postgraduate level were encouraged to ask questions to a panel of established researchers. This brought together students from around the world studying molluscs to share experiences and discuss crossovers in research interests.

Thursday's conference symposiums covered evolution of molluscan weirdness, systematics and biogeography of continental molluscs, systematics, molluscs in citizen science, utility of molluscan genomics, evolution of toxins in molluscs, and novel approaches to managing invasive and pest molluscs. Thursday evening ended with a very exciting and sociable event involving much hilarity – the famous American Malacological Society (AMS) auction hosted by Paul Callomon from the Academy of Natural Sciences Philadelphia. On auction were donated items sold to raise money for the AMS student grant scheme. Items ranged from beautiful rare sets of books on molluscs, to kitsch mollusc themed items such as shower curtains, watering cans, pyjamas, trinkets and games. Even the punchline to a Tim Pearce joke was put into the mix and achieved quite a surprising sum!

The final day of the conference started with the showing of a mesmerising film based on Elizabeth Tova Bailey's book 'The Sound of a Wild Snail Eating'. It was followed by the Malacological Society of London's symposium on colour and vision in molluscs, biogeography sessions, utility of molluscan genomics symposium, molluscs as model paleontological systems symposium, and molluscs as key ecological players symposium. The conference closed with a Mexican themed banquet including margarita cocktails. The student awards nominated by the awarding bodies were also handed out:

#### Outstanding posters:

Christopher Hobbs, Canterbury Christ Church University, *Extraction of Shell DNA to Inform Conservation Biology* (Spanish Malacological Society, Unitas Malacologia (UM), American Malacological Society (AMS))

Gabriela Schäfer, Johannes Gutenberg Universität Mainz *Molecular Evolution of Hemocyanin Genes: Adaptations to New Ways of Life That Help to Elucidate the Disarranged Systematics of Heterobranchia?* (Western Society of Malacologists (WSM), UM, AMS)

Jenny Neuhaus, University of Bergen *The Nudibranch Genus *Jorunna* in Europe with a Focus on the *J. tomentosa* Complex* (Malacological Society London, UM, AMS)

#### Outstanding talks:

Jorge Alves Audino, University of São Paulo *Evolution of Mantle Sensory Organs in Bivalves: What Pteriomorphians Tell Us About Convergence and Adaptive Innovations* (UM, AMS)

Thomas Mason-Linscott, University of Idaho *Recognizing and Predicting Global Patterns of Marine Mollusk Ornamentation Expression through Machine Learning* (WSM, UM, AMS)

Samuel Abalde Lago, Museo Nacional de Ciencias Naturales *Venom Evolution of West African Cone Snails (Gastropoda: Conidae)* (Spanish Malacological Society, UM, AMS)

Rebecca Varney, University of Alabama *The Genome of the Chiton *Acanthopleura granulata*: An Aculiferan Perspective of Molluscan Biomineralization* (Mal Soc London, UM, AMS)

Gizelle Batomalaque, Academy of Natural Sciences and Drexel University *Neogene Diversification of the Crown *Helicostyline* Land Snails (Gastropoda: *Stylommatophora: Camaenidae*) in the Philippines* (UM, AMS)

Full details of the symposia, conference schedule and abstracts book can be found online at:  
<https://www.calacademy.org/world-congress-of-malacology-2019>.

**The next World Congress of Malacology** will take place in 2022, much closer to home for us as it will be hosted in Munich, Germany. These conferences are a great opportunity to meet researchers, students, curators and collections managers from around the world and gain an insight into the wide variety of research and projects taking place.

# 50 years ago: from *The Conchologists' Newsletter* (no. 30, September 1969)

The *Conchologists' Newsletter* was this publication's predecessor and ran from January 1961 to December 2002.

## The effect of the exceptionally severe winter of 1962/63 on the mollusca of a Cheshire Pond. *Nora F. McMillan*

We all remember only too vividly the length and severity of the winter of 1962/3. I am told it was the worst since that of 1739/40 and I can well believe it.

In my part of Cheshire (a relatively mild and sheltered area, too) there were a few preliminary skirmishes during December 1962, just samples as it were, and then it froze without intermission from Christmas Eve until March 5<sup>th</sup>, when it began – very slowly – to thaw. That is, it froze continuously for 72 days and was also very cold before and after this period.

It occurred to me during somewhat difficult daily walks with a dog in the frozen fields that it might be interesting to see what effect these abnormally severe conditions had on the freshwater Mollusca...

Fortunately, within a few minutes' walk of where I live in Bromborough in the Wirral peninsula of Cheshire there is a half-acre pond pleasantly easy of access, more fortunately still, I had copious notes on the Mollusca of this pond from 1942 to 1962...

Woodslee pond [now part of the Brotherton Park and Dibbinsdale Local Nature Reserve. (figure 1) (Ed.)]...is in boulder clay in a fairly open position, about 100ft above sea level. It is surrounded by abandoned pasture, fast reverting to scrub (mostly birch and oak). In its present condition the pond covers about half an acre and a shallow bar across it suggests that it has evolved from two adjacent marl-pits. It is quite shallow and its greatest depth now is thought to be only about 4ft... There is a good deal of *Elodea* [water weed] and *Callitriche* [water-starwort]... It may be mentioned that the severe winter did not kill off *Elodea* although I have read that it is a frequent casualty in really hard weather.



figure 1: Woodslee pond (in 2019, now a fishing pond), Brotherton Park and Dibbinsdale Local Nature Reserve, Bromborough, Wirral, Cheshire. (photo: © Wirral Council, used with permission.)

...The pond was completely frozen over on Christmas Eve and remained thus with people skating, etc. on it until March 5<sup>th</sup> when it began to thaw and in two days a 10-foot wide belt all

round the margin was ice free. The big floes in the middle, however, did not finally disappear until nearly three weeks later, and on several nights the temperature was sufficiently low for the margins, to a width of some feet, to freeze again.

...By March 10<sup>th</sup> the ice had shrunk sufficiently to show a bank a foot or more across and several inches deep composed of dead *Planorbarius corneus* and *Lymnaea stagnalis*, the animals still in their shells, and this extended almost all round the pond. The numbers of dead snails must have run into hundreds of thousands. I did not find any *Lymnaea peregra* [*Radix balthica*] at the spots where I sampled this bank of dead molluscs and if any were present, they must have been few in number. Or possibly, being much smaller, they disintegrated more rapidly than the other species.

No living snails of any sort were taken on this date (March 10<sup>th</sup>). Subsequent weekly counts (number of snails taken in an hour by hand-scoop) showed that *Planorbarius corneus* had best survived and Dr. H.B.N. Hynes has suggested that this may be due to *P. corneus* having haemoglobin in its blood and being therefore more tolerant of lack of oxygen when the pond was iced over...I have not known it to die out in any of the ponds [in the Wirral Peninsula] I have studied for twenty years. *P. corneus* recovered quickly from the effects of the winter and by April 27<sup>th</sup> young specimens were abundant, forming nearly 50% of the total catch of the species.

*Lymnaea stagnalis* was very hard hit and recovered much more slowly than did *P. corneus*; it did not begin to breed until much later (July-August) but by March 1964 seemed to have regained its former numbers.

Of other species *Radix balthica*, formerly plentiful in the pond, was taken on six occasions in 1963, a total of 17 specimens only. *R. balthica* is usually a hardy species and its near-annihilation is noteworthy and difficult to understand. *Lymnaea* [*Radix auricularia* var. *acuta* (the typical form does not occur in the district) was abundant in 1956 since when its numbers have diminished yearly and by 1962 none could be found. Nor has it been found since.

One *Planorbis* [*Gyraulus*] *albus* was taken on May 12<sup>th</sup>, four on July 4<sup>th</sup>, one on July 12<sup>th</sup> and fourteen on August 12<sup>th</sup>. The species has survived but is obviously making a very slow comeback. Of the other planorbid which formerly lived in the pond, *Segmentina complanata* [*Hippeutis complanatus*], no examples have been taken since the winter of 1962/3.

Among the bivalves *Sphaerium corneum* survived in fair numbers and was breeding in May (12<sup>th</sup>); young of all sizes were abundant until August (at least)...*Pisidium* species have vanished from the pond but this may be due partly to the increasing muddiness and general deterioration of the pond as a habitat...

The extra-British range of the two species most affected by the 1962/3 winter in my pond, that is *L. stagnalis* and *P. corneus*, includes northern Asia from Kashmir to Siberia in the former species and Sweden, Finland, Siberia and Central Asia in the latter. Both species must live through far more severe conditions in Siberia yet suffered such heavy losses in our abnormal winter. *R. balthica* flourishes in Iceland, yet was almost exterminated in my Cheshire pond.

## About the Conchological Society

The Conchological Society of Great Britain and Ireland is one of the oldest societies devoted to the study of molluscs. It was founded in 1876 and has around 300 members and subscribers worldwide. Members receive two publications: Journal of Conchology which specialises in Molluscan Biogeography, Taxonomy and Conservation and this magazine. New members are always welcome to attend field meetings and indoor meetings before joining.

**Some key contacts** (see web site [<http://www.conchsoc.org/pages/contacts.php>] and 2016 membership list for additional contact details)

HON. PRESIDENT: Martin Willing

HON. GENERAL SECRETARY: Rosemary Hill

HON. TREASURER: Nick Light

HON. EDITOR OF THE JOURNAL OF CONCHOLOGY  
Anna Holmes

HON. EDITOR OF MOLLUSC WORLD: Peter Topley

**FOR BACK NUMBERS OF CONCH. SOC.  
PUBLICATIONS** please apply to:  
Tom Walker,

### RECORDING AND CONSERVATION

HON. CONSERVATION OFFICER: Martin Willing

HON. MARINE CENSUS RECORDER: Simon Taylor

HON. NON-MARINE CENSUS RECORDER: Ben Rowson

### SUBSCRIPTIONS and MEMBERSHIP

Please send subscriptions or directly related enquiries to

Email: [shellmember@gmail.com](mailto:shellmember@gmail.com)

For general membership enquiries please contact: -  
HON. MEMBERSHIP LIAISON OFFICER:

### How to become a member

Subscriptions are payable in January each year, and run for the period 1st January to 31st December. Members joining later in the year will receive all publications issued during the relevant calendar year. • Ordinary membership £33 • Family/Joint membership £35 • Under 18 (receiving Mollusc World only) £5 • Student membership £15 • Institutional subscriptions £47

In view of the high cost of postage for distribution from the UK, members living in the Republic of Ireland and Europe will be asked to pay an additional postage charge of £8, and members living in the Rest of the World an additional postage charge of £17.

See website for further details. Payments in sterling only, to Carolyn Postgate, CIRCA Subscriptions, 14 St Barnabas Court, Cambridge CB1 2BZ, ([shellmember@gmail.com](mailto:shellmember@gmail.com)).

For UK residents we suggest payment by standing order, and if a UK tax payer, please sign a short statement indicating that you wish the subscription to be treated as Gift Aid. Another simple and secure way of paying for both UK and overseas members is by credit card online via PayPal from <http://www.conchsoc.org/join>. Overseas members may also pay using Western Union, but a named person has to be nominated, so please use the Hon Treasurer's name, Nick Light.

### How to submit articles to Mollusc World

Copy (via e mail, typed or handwritten) should be sent to the Hon. Magazine Editor (contact details above). If sending copy using e-mail please include a subject line 'Mollusc World submission'. When emailing several large file attachments, such as photos, please divide your submission up into separate emails referencing the original article to ensure receipt. Electronic submission is preferred in Microsoft Word. Images and Artwork may be digitised, but we recommend that a digital image size 200Kb- 1Mb (JPEG preferred) be sent with your submission. All originals will be treated with care and returned by post if requested. Authors should note that issues of the magazine may be posted retrospectively on the Conchological Society's web site. **Copy intended for the March 2020 issue should be with the Hon. Editor prior to 31<sup>st</sup> January 2020**; inclusion in a particular issue is at the Hon. Editor's discretion and depends upon the space available but contributions are always welcome at any time.

### Advertisements in Mollusc World

We are pleased to invite advertisements, provided they are in line with the Conchological Society's charitable objectives and responsibilities. Advertisements of shells for sale from commercial shell dealers will generally not be accepted. Please contact the magazine Editor for further details.



# Conchological Society of Great Britain and Ireland

## Diary of Meetings

Please check website ([www.conchsoc.org](http://www.conchsoc.org)) for further details/updates, including other meetings arranged at shorter notice.

### **Saturday 14<sup>th</sup> November 2019: REGIONAL INDOOR MEETING: National Museum Cardiff**

A day of talks, exhibits, and discussion, including a tour of the mollusc collection. Full details will be posted on the website. Organiser: Anna Holmes ([Anna.Holmes@museumwales.ac.uk](mailto:Anna.Holmes@museumwales.ac.uk)) and Ben Rowson ([Ben.Rowson@museumwales.ac.uk](mailto:Ben.Rowson@museumwales.ac.uk)). (A meeting of the Conservation and Recording Committee will be held on the day before (Friday 15 November), followed by a workshop on NBN and molluscan records led by Sophie Ratcliffe. If members who are not members of CRC are interested in attending this workshop, please contact Martin Willing ([martinjwilling@gmail.com](mailto:martinjwilling@gmail.com)).

### **Saturday 14<sup>th</sup> December 2019: INDOOR MEETING: A Christmas miscellany**

14:00 – 17:30: Angela Marmont Centre, Natural History Museum.  
The usual short presentations (5-20 minutes) by members, which can be anything mollusc-related, with or without exhibits; and also a quiz (with prizes!). This will be followed by a glass of Christmas wine (free!); and then by supper at a nearby restaurant (pay your share ...). If you would like to make a presentation, or want a place at the restaurant, please get in touch with Bas. (Council members please note that there will be a Council meeting before this meeting.)

### **Saturday 25<sup>th</sup> January 2020: INDOOR MEETING: Demonstrations, exhibits, and lecture.**

**Guest speaker: John Llewellyn-Jones, 'Pearls and jewellery made with pearls through the ages'.**

14:00 – 17:00: Angela Marmont Centre, Natural History Museum, London SW7 5BD.  
(Council members please note that there will be a Council meeting before this meeting.)

### **Saturday 22<sup>nd</sup> February 2020: FULL DAY INDOOR MEETING: Demonstrations, exhibits, and lecture.**

**Guest speaker: Amy-Jane Beer, 'Slugs, snails and saving the planet'.**

11:00 – 17:00: Angela Marmont Centre, Natural History Museum, Cromwell Rd., London SW7 5BD.  
The lecture will start shortly after 14:00.  
(Council members please note that there will be no Council meeting before this meeting.)

### **Saturday 28th March 2020: ANNUAL GENERAL MEETING AND ADDRESS.**

**Guest speaker: Robert Cameron: 'At a snail's pace: how a New Naturalist got written.'**

14:00 – 17:30: Angela Marmont Centre, Natural History Museum, Cromwell Rd., London SW7 5BD.  
(Council members please note that there will be a Council meeting before this meeting.)

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**Indoor meetings** at the Natural History Museum take place in the Angela Marmont Centre for UK Biodiversity, Darwin Building. *Please bring plenty of exhibits and demonstration material.*

*We are always happy to receive any suggestions for speakers for indoor meetings, or offers to lead field meetings, and also any suggestions about Society participation in the meetings of local and other societies.*

Programme Secretary: *Bas Payne*

## Conchological Society Book Sale 2020

Another book sale will be held this winter, with the usual good range of books, and with substantial reductions in estimate for books unsold in the last sale. The catalogue will be posted on the website by mid-January; bids must be received by midnight on Sunday 15 March 2020, and books can be collected at the AGM if wanted.

The rules of the sale are available on the website; in particular, preference will be given to bids from members – non-members may bid, but their bids will only be considered in the absence of bids from members.

If you do not have web access and would like paper copies of the catalogue, bid form and rules, please send a stamped addressed envelope (A4 envelope, large letter rate stamp) to Bas Payne. If you have any queries, please feel free to e-mail Bas.

*Bas Payne*