

# Mollusc World

Issue 35

July 2014

Separating *Anisus leucostoma* and *Anisus spirorbis*

Arctic marine molluscs

Recording and conservation news

A rare early 'Conchology' for children



**The Conchological Society of Great Britain and Ireland**

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



In this 'bumper summer issue' there are a wide range of articles, including reports on the Conchological Society's conservation work and marine recording. Other articles are more international, relating to such far-flung places as Russia, Finland, New Caledonia and Australia. Closer to home, there is a key to assist recorders to look out for possible specimens of the freshwater ram's horn snail *Anisus spirorbis* in the UK and Ireland.

Our recent collaborative publication of the fold-out *Illustrated guide to the land snails of the British Isles* (sent free to members in the UK and Ireland) and also of the FSC AIDGAP guide *Slugs of Britain and Ireland* (Rowson *et. al.* 2014, ISBN-13: 9781908819130) will hopefully encourage more non-marine recording this season but gaps in modern literature in English for the marine and freshwater faunas remain (however some useful online sources of information continue to build, such as those on our own web site). The publication of the Society's new membership list is also to be welcomed; it is hoped that the simpler format (supplemented by further information about the Society on our web site) will enable easier contact between members and more frequent publication of future lists. The Society also welcomes the appointment of Bri Eastabrook as our new Honorary Membership Liaison Officer, who will be working alongside Circa subscriptions as a point of contact for general membership enquiries. New volunteers are always welcome.

I believe that, time permitting; we should each encourage new interests in molluscs wherever possible. I have been recently involved in a local natural history society 'family day' (picture above) and in giving workshops at a school's Science Week. I was very nervous about doing this, almost a first time for me, but the enthusiasm it generated in the children made the efforts worthwhile. Please think of writing in with any news, perhaps where you have been involved in activities yourself, or more in depth articles for the next magazine, so that it may be another 'bumper issue'!

*Peter Topley*

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No representation is made about the accuracy of information included in any articles, which solely constitute the authors' personal views on the subjects covered, and are not necessarily those of the Hon. Editor or the Conchological Society.

Many thanks go to Vicki Harley for help with copyediting. Printed by Short Run Press, Exeter, EX2 7LW.

**Front cover:** *Anisus leucostoma*, Lough Neagh, Ireland (photo: Roy Anderson) (see page 6)

## 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. Hopefully it will also be of interest to all those enquiring about this subject or the work of the Society.

We include articles, meeting reports, research news, results from the mapping schemes and identification aids. We welcome all contributions in whatever form they arrive (see page 35 for further details).

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# We need a new Logo: design our logo ... and win a bottle of Champagne!

## Why do we need a new logo?

Council of the Conchological Society compared our logos with a number of others, and when reproduced at smaller than postage stamp size, it is not immediately clear to others who we are. We need a logo with our name clearly visible ... currently our name gets lost when reproduced at a small scale. We hope to launch our new logo next year.

## Design a new logo:

This could be just our current logo (right) with our name added clearly against it.

**OR** we could have a new catchy logo imprint. Can you design one?

Requirements:

- Can be reproduced in black & white (as well as colour if you like).
- Looks good large or small (when reduced to say 2cm high and 3cm across or smaller).
- As our logo is not as familiar as those of other organisations, such as the RSPB, we will need our name (*Conchological Society of GB & I*, as a minimum) printed with it.

Look at other logos; get designing and put your ideas to paper.



## Deadline

All entries must reach us by September 31<sup>st</sup> 2014 (any received after this date may not be considered).

## Prize

Your prize will be to see your logo representing the Society on our journal, on our publications and on our website and a bottle of Champagne!

Email to: [president@conchsoc.org](mailto:president@conchsoc.org)

Or send paper copies to Mike Allen, Logo Competition, Redroof, Green Road, Codford, Wiltshire, BA12 0NW

## Molluscs in archaeology

*Janet Ridout Sharpe*

A joint spring meeting of the Conchological Society and the Association for Environmental Archaeology (AEA) was held at the Natural History Museum, London, on 26<sup>th</sup> April 2014. This was a new and exciting venture for the Conchological Society. President Mike Allen worked hard to prepare a conference programme covering many different aspects of archaeomalacology (molluscs in archaeology): he received more offers of talks than a one-day meeting could accommodate and somehow managed to squeeze ten papers into a very busy schedule.

About 40 delegates attended, from as far away as Orkney, Switzerland and Qatar. The conference was held in the Neil Chalmers Lecture Theatre, with tea and coffee served in the nearby Angela Marmont Centre. Each speaker was allowed twenty minutes plus 5 minutes for questions. The morning session was chaired by Jan Light (Vice President, Conchological Society) and the afternoon session by Richard Thomas (Chairman, AEA).

The first speaker was Greg Campbell, an independent researcher from Hampshire, whose paper was entitled, 'Shell-hash to shell-size: reconstructing original shell size from fragmentary archaeological remains'. Using *Mytilus edulis* as an example, he applied a linear regression technique to predict the original shell size from preserved fragments, taking into account the confounding factors of allometric growth and phenotypic plasticity. The size of shells being harvested is a key indicator of the selection criteria applied by people in the past, and can provide information on the habitats being targeted and the effects of harvesting on the targeted population. Mussel shells are particularly prone to fragmentation in archaeological

deposits, and this study shows a possible way towards understanding shellfish exploitation from their remains in ancient middens.

Tom Walker (Conchological Society) (figure 1) followed with a paper on 'Sand at Gwithian, Cornwall: palaeoenvironment, molluscs and archaeology', based on some of his PhD research at the University of Reading. The coastal sand dunes at Gwithian conceal a range of archaeological sites from Mesolithic to Post-Medieval in date. Using a series of core samples taken across the Red River valley, molluscs were used to interpret the ancient environment. Tom showed that this valley basin was once marsh with alder fen and not a marine estuary as formerly assumed. *Vallonia excentrica* was an indicator species for grazed grassland and, interestingly, *Cochlicella acuta* was present at this site (and hence in the UK) from the Early Bronze Age c.2500 BC, much earlier than previously thought.



figure 1: Tom Walker (right) in discussion at the Molluscs in Archaeology conference. (photo: Ron Boyce)

Next, Bri Eastabrook (Conchological Society) presented some work from her Masters thesis at the University of Plymouth: ‘Ancient forests in Malta: fact or fiction? A land snail analysis’ (figure 2). Working on the premise that the island was more densely forested in the past and the present landscape is the result of human activity, she investigated the land snail faunas of various habitats and compared these with snails from archaeological deposits. *Lauria cylindracea* was only found living today in areas of holm oak woodland and this species, together with other species that are well-represented in modern woodland, was absent at four archaeological sites (although present at another, demonstrating that it has been present on Malta since antiquity). It was concluded that the island has not been deforested and that the present-day mosaic of different habitats has been in existence for a long time.



figure 2: Bri Eastabrook giving her presentation. (photo: Ron Boyce)

After coffee, which gave delegates from both Societies a chance to talk and perhaps put faces to names previously known only from papers and emails, Janet Ridout-Sharpe (Conchological Society) presented ‘À la mode: shell jewellery across the Epipalaeolithic-Neolithic transition in northern Syria’, based on her work on the shell assemblage from Tell Abu Hureyra (figure 3). This long-lived site (c.10,500-6500 BC) on the Euphrates began as a hunter-gatherer (Late Epipalaeolithic or Mesolithic) settlement and then became a village of early farmers, spanning the period that saw the development of agriculture in this area. The transition to agriculture was marked by the disappearance of *Nassarius gibbosulus* beads and the appearance of ground-down cowry beads (mostly *Erosaria spurca*) (figure 4). These Mediterranean shells may have been traded as manufactured beads by hunting groups following migrating gazelle. When sheep and goats eventually replaced gazelle as a source of meat at Abu Hureyra, cowry beads disappeared, new trade routes were established, and the range of marine species increased although the overall numbers of shells declined.

Ricardo Fernandes (University of Kiel) then talked about ‘Radiocarbon and isotopic analysis of bivalves in archaeology’, which can provide important information on past environmental conditions and site chronology. Using shells of modern and ancient marine and freshwater bivalves from Germany, it was shown that specimens from different locations have highly variable but significantly lower radiocarbon contents compared with contemporary



figure 3: Janet Ridout Sharpe (right) about to give her talk at the conference, with Jan Light and Mike Allen. (photo: Ron Boyce)



figure 4: Ground and worn *Erosaria spurca* bead from Abu Hureyra, 8000-7500 BC.

terrestrial organisms, in other words they obtain their carbon from a different source or reservoir. Differences were also detected between radiocarbon measurements in different freshwater bivalve fractions (shell and soft tissues) which were linked to species, growth stage and variations in environmental carbon content. These differences present a challenge to the establishment of accurate chronologies, but they can provide a novel dietary proxy that can be used to detect past consumption of aquatic resources, the radiocarbon reservoir of which is reflected in human remains.

After lunch, which presented more opportunities for discussion, Nigel Thew (Section d’Archéologie et Paléontologie, Canton du Jura, Switzerland) presented a study conducted jointly with Matt Law from the University of Cardiff: ‘Archaeological site formation processes and environmental change between the Neolithic and the Norse period in the machair of the Outer Hebrides’. Wind-blown shell sand (machair) on the west coast of the islands started to accumulate during the Neolithic and became a focus of human settlement as it forms fertile soil. Snail assemblages are exceptionally well preserved in archaeological sites on the machair and provide microenvironmental evidence within sites (middens, grazing, ploughing) and macroenvironmental evidence showing how early landscapes with trees and shrubs became replaced by open landscapes with short-turf grassland. Small marine shells suggest the use of seaweed as fertilizer [although the comment was made that at least some of these shells may have been wind-blown] and freshwater species are indicative of flooding episodes and the use of sedge for thatching.

Mike Allen (Conchological Society, Allen Environmental Archaeology) then followed with 'Scale, snails and resolution: land-use reconstruction and re-evaluating the history of the chalklands'. Snail evidence has formerly been considered to support the pollen record which indicates that the chalklands were previously densely forested and were subsequently cleared by the activities of Neolithic and later farmers. However, careful study of local land-use histories derived from molluscs preserved in ditch sequences and colluvium on the chalkland suggests that this scenario is inaccurate. Instead, large areas of chalkland in Wessex were never completely covered by woodland and there were natural openings of grassland 'as large as an English parish'. The woodland edges of these open areas would have supported fruit-bearing trees and shrubs which attracted animals and hence man, and these areas became the foci of some monumental constructions during the Neolithic period. In contrast, the Sussex Downs appear to have been more heavily wooded.

Further afield once more, Emma Tetlow (Qatar Archaeological and Submerged Landscape Project) described 'Neolithic occupation and palaeoenvironmental reconstruction in the State of Qatar' and discussed the exploitation of marine molluscs from a variety of archaeological contexts. Shellfish were clearly an important part of the Neolithic and Pre-Islamic diet, and at several Bronze Age sites there is evidence for the industrial-scale processing of muricids [*Thais savignyi*] to obtain purple dye. In the absence of other palaeoenvironmental indicators such as pollen and insects, marine molluscs were successfully used to extrapolate the wider environment at the time of deposit formation, and have been used to highlight the different resources exploited as a result of changes in sea level.

After tea, Martin Bell (University of Reading) presented 'A land mollusc midden at Taforalt, Morocco', which included the work of PhD student Victoria Taylor. Grotte des Pigeons is a large cave at Taforalt in Northeast Morocco which contains earlier Middle Palaeolithic (Aterian) and later Epipalaeolithic (Iberomaurusian) occupation layers. The later deposits contain vast numbers of edible land snails. A

column of one hundred and thirty mollusc samples was taken contiguously over a depth of 4.8m and it was estimated that the entire midden, dated to between c.14,970 and 12,830 years ago, contains an astounding 61.6 million shells! This works out at about 28,785 snails per year, enough to provide forty days of food per year for one person, although the midden also contains the remains of plants and other animals, and suggests that these hunter-gatherers were exploiting a wide range of food resources. The most frequent land snails were *Dupotetia dupotetiana* and *Alabastrina soluta*, which both have a clustering habit that may have facilitated their collection in large numbers.

The final paper was given by Liz Somerville (Conchological Society, University of Sussex), 'Tales told by oysters', based on her work on material from archaeological sites in Southeast England. Oysters were commonly eaten during the Mesolithic but their consumption declined during the Neolithic and they became rare in later prehistory. Their reappearance is indicative of 'Romanisation' and their use then continued into the Medieval and post-Medieval periods, with oysters becoming a common source of food for the poor in the 19th century. Then over-fishing led to a decline and oyster populations were decimated by disease in the 1920s. The procedure for studying oysters from archaeological sites is to count the valves and record their size and weight. The relative distribution of right (perhaps used to serve oysters in dining areas) and left (kitchen waste) valves could be significant, and the presence of epizootic organisms and shell parasites can provide clues to the source of the oysters. The challenge is to think of new ways in which oyster shells might be used to answer more questions about their exploitation.

The conference was a great success and much enjoyed by both delegates and speakers. Our thanks are due to Mike Allen for conceiving the idea of holding a joint meeting with the AEA, and for all his hard work in seeing it through to fruition. Thanks are also due to the speakers, the session chairs, and the members of both Societies who worked quietly in the background to help with the organisation, assist with registration, and ensure a plentiful supply of tea and coffee when required.



**The two snail pictures above** were coloured by young children who attended the Bedfordshire Natural History Society's Nature Day on May 18<sup>th</sup> 2014 at Jordan's Mill, near Biggleswade. Do these inspire you, or a child you know, to get colouring or drawing yourself? If so, send a good photo of any artwork to the Mollusc World Editor; he would be pleased to hear from you!

# Separation of *Anisus spirorbis* from *Anisus leucostoma* in Britain and Ireland

Roy Anderson & Adrian Norris

The reliable separation of *Anisus spirorbis* (L.) from *Anisus leucostoma* (Millet) (see front cover) has been a long standing problem for British and Irish field workers. For long periods there was a belief that they were forms or varieties of a single taxon. Macan (1977) treated *A. spirorbis* as a synonym of *A. leucostoma*, probably following Hubendick (1951), and this was generally accepted in the British Isles at least until Mike Kerney's (1999) Atlas was published in which *A. spirorbis* was again listed as a form of *A. leucostoma*. On the Continent, a majority opinion held that *A. spirorbis* was a good species, reliably separable from *A. leucostoma* (Falkner *et al.*, 2002).

In making a judgement on this issue British workers found themselves isolated and a little confused, not least because the available keys were mostly in French or German. This article attempts to clarify things in so far as this is possible, by providing a key adapted from various Continental sources and using identified material of both species, from Ireland initially. We intend to do two things at this stage: produce a key based on current European thinking and test this on a questionable Irish population of *A. spirorbis*.

We also assume *a priori* that there are two species, and that they can be reliably separated in Britain and Ireland. So, what do the available keys say? Turner *et al.* (1998) separate the two species using monochrome plates of the shells to show broader and fewer whorls in *A. spirorbis* compared to *A. leucostoma*. Falkner *et al.* (2002) synonymised *A. leucostoma* with *A. septemgyratus* (Rossmässler), a name until then used by Continental malacologists for a variety of *A. leucostoma*, because of perceived problems with the designation and typology of *A. leucostoma*. Hausser (2005) also used the name *A. septemgyratus* with *leucostoma* reduced to a junior synonym. The *Anisus septemgyratus* of this author was separated from *A. spirorbis* on width (size) of the shell in adults and the number of whorls at maturity. Glöer & Meier-Brook (2008) then revised the Falkner *et al.* (2002) typology by proposing a neotype for *A. leucostoma* bringing us back to the original two species in Britain and Ireland with *A. septemgyratus* now recognised not as a variety of *A. leucostoma* but as a species in its own right which is restricted in distribution to central and eastern Europe.

It is hardly surprising given this series of events that confusion has arisen. Fortunately the key in Glöer & Meier-Brook (2008) is solid enough to provide a

starting point for reliable separation. One problem remains, the use of whorl width to separate *A. leucostoma* and *A. spirorbis*. This seems a sensible enough character but Continental keys are difficult to interpret on this issue. After some trial and error we decided to use a ratio which judges the total width of the last whorl against the total width of the penultimate (see figure 1).

Shell width and whorl number may be measured in the field using a hand lens. However, a sample should also be examined at home under a stereomicroscope equipped with an eyepiece graticule, to measure relative whorl widths. Position the shell with the aperture at approximately one o'clock (figure 1). Measure shell width at the mid-point of the shell (width of last whorl), then the distance between the first suture and the last suture going from left to right (width of the penultimate whorl). Divide the shell width by the width of the penultimate whorl to get a measure of the ratio of the last whorl to penultimate whorl. There are other ways to do this but we have found this to give the most reproducible results. What it is really measuring is the rate of increase of whorl size with growth. Differences in rate of increase in whorl width with growth is often quoted as the essential difference between *A. leucostoma* and *A. spirorbis*. A second measure that could well work is the relative breadth of shells. This would compare whorl breadth at the aperture with overall shell size and would be a smaller number for *A. spirorbis* than for *A. leucostoma*.

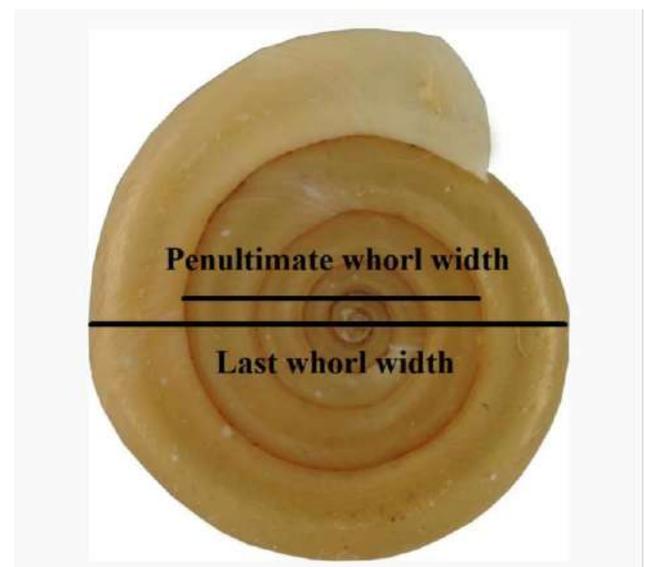


figure 1: Comparison of last whorl width with penultimate whorl width.

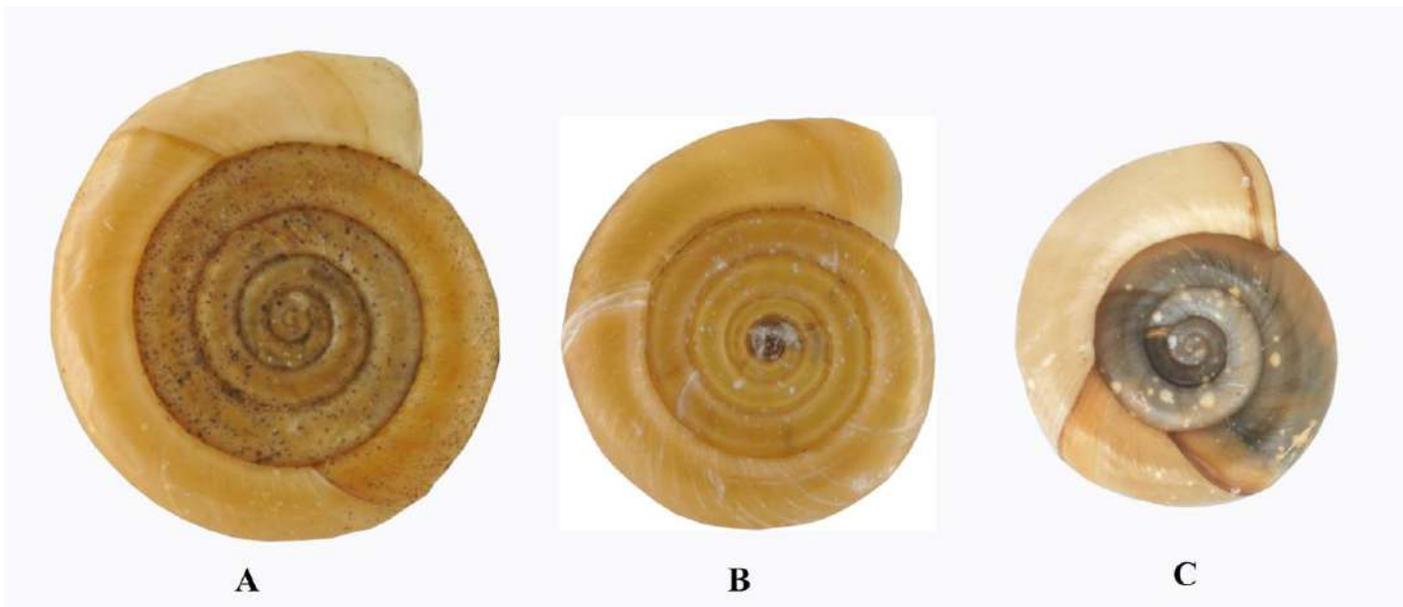


figure 2: **A** *Anisus leucostoma*, Belfast. **B** *Anisus* sp., Brittas Bay, Wicklow. **C** *Anisus spirorbis*, Serbia.

Average shell size and whorl number for the two species (key below) have been adapted from Continental keys (e.g. Glöer & Meier-Brook, 2008). However, both sets of width ratios have been measured independently on trial material in our possession. Sample material of *A. leucostoma* was collected in Ireland, and a small series of *A. spirorbis* from Serbia sent to RA by Peter Glöer was also used.

## Key

### Subgenera

1. Shell not keeled, whorls bluntly angled, rounded.....Subg. *Anisus*  
Shell keeled, strongly angled.....Subg. *Disculifer*

### Subg. *Anisus*

1. 4-4.6 whorls at maturity; 5-6 mm wide; whorl size increasing slowly at first, then more rapidly; the last whorl 1.7-2.0 times as broad as the penultimate whorl.....*spirorbis*  
More than 5.5 whorls at maturity; on average greater than 6 mm wide; the last whorl 1.4-1.6 times as broad as the penultimate whorl.....2
2. 6 to 6.5 whorls at maturity, 5-9 mm wide; the last whorl 1.4-1.6 times as broad as the penultimate whorl.....*leucostoma*  
[7.5 to 8 whorls, 6-9 mm wide; very tightly coiled, the last whorl around 1.3-1.4 times as broad as the penultimate<sup>1</sup> .....*septemgyratus*]

<sup>1</sup> Calculated on two specimens from Mecklenburg-Vorpommern, Germany (coll. P. Glöer).

### Distinguishing the British species in the field:

Here we introduce a third sample of shells from Ireland purporting to be *A. spirorbis* but referred to here as *Anisus* sp. The following measurements are based on 10x *Anisus* sp. collected in a sandy stream at Brittas Bay Co. Wicklow identified as a site for *A. spirorbis* by A.W. Stelfox and listed in the Conchological Society database as such; 10x *Anisus leucostoma* collected in the flood plain of the River Lagan west of Belfast, Co. Antrim (also used in the Key above), and 5x *A. spirorbis* originating from Pešter Plateau, Pešter, Trojan, Serbia (coll. P. Glöer, used in the Key above). These are illustrated for comparison in figure 2.

#### *Anisus leucostoma* [IRE]

whorls (average) 6.0;  
size at maturity, 7.4 mm;  
width ratio last whorl to penultimate 1.53

#### *Anisus spirorbis* [IRE]

whorls 5.0;  
size at maturity 5.21 mm;  
ratio last whorl to penultimate 1.68

#### *Anisus spirorbis* [SERB]

whorls 4.4;  
size at maturity 4.2 mm;  
ratio of last whorl to penultimate 1.91

As can be seen, *Anisus* sp. from the Brittas Bay site, judged historically to be *A. spirorbis*, is not as distinct from ordinary *A. leucostoma* as might be expected both from statistics published in Europe or seen here compared to the Serbian example of *A. spirorbis*. This is only a preliminary run to see if a judgement can be made for the occurrence of *A. spirorbis* in

Ireland (or Britain). It must be said that the results overall, appear inconclusive. Certainly the shells of the Brittas material are demonstrably smaller at maturity than average *A. leucostoma*, as is the whorl number. But these two measures are inextricably tied together and could just reflect differences in environmental conditions. It would be much more convincing if the whorl width ratio was significantly higher as it is in Continental *A. spirorbis*.

### Conclusions

It is always advisable to measure as large a sample as possible (at least 10 individuals) and select only obviously mature specimens i.e. with strong, well-formed lips and no weakly pigmented fragile membranes close to the lip. Mature specimens are commoner in winter and the early part of the year. An average size and whorl number should be calculated for each sample before trying these figures in the key. It is probably important to measure the ratio of widths of the last to penultimate whorls as well, if you have the necessary equipment.

We know remarkably little about the distribution of *A. spirorbis* because of a failure to recognise and record it until comparatively recently. Research in Ireland suggests that it is either a very local native confined to sites close to south and east coasts, or else a fleeting introduction e.g. in 19<sup>th</sup> century flax mill ponds in Belfast. *A. leucostoma* is common across the eastern half of Ireland. The situation in Britain is probably similar with *A. leucostoma* being by far the commonest species

and *A. spirorbis* likely to be very local and restricted to southern and eastern counties.

It would be good to receive feedback on the Key and particularly to receive news and views on any finds of putative *A. spirorbis* in Britain. We are only at the beginning of a learning process on this one. So, good luck and good hunting.

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Breakfast at the Easy Tiger bakery, East 6th Street, Austin, Texas, USA, April 26 2014. (photo: Julie Gardiner)

About 4000 years ago, the arching upper hillside of Perkkoonmäki in SW Finland was at the bottom of a gulf that opened northwards in the salty Littorina Sea phase of the Baltic Sea. Today, a mussel bed dating from this time occurs at Perkkoonmäki in Mynämäki (co-ordinates ET35FIN 67300/2221) and is about 45 metres above sea level (figure 1).

The mussel shell layer has survived for 4000 years by a stroke of fortune. At the time, this layer was in the proximity of the waves coming in and it was considerably thick. It became buried under a layer of rough gravel in anaerobic conditions. The relatively small stones found among the mass of shells are not rounded, as when eroded by water, but irregularly angular. For some reason, gravel suddenly poured over the mussels. This type of event is very rare in Finland.

The mussel soil was found in connection with gravel and sand harvesting. The mussel layer is obvious in the sides of the gravel pit. It is an area of crushed shells about 1 m high and 15 m long. Some of the shells have been removed along with the gravel extraction.

I did a thorough study of 20 litres of the mussel-rich soil. Most of the mussel shell material consists of the nearly floury mass of *Mytilus* shells, where no individual shells remain distinguishable. The purple shade of the soil is due to the sulphurous material that holds the mussel shells together. There were thousands of small chips and fragments of mussel shells (figure 2). There was a surprisingly large occurrence of recognizable sea snail shells, particularly *Peringia ulvae*, which grows to a size of 4-6 mm (figure 3).

### Shells found:

*Peringia* (formerly *Hydrobia*) *ulvae*, 452 individuals.

*Spisula solida*,

6 whole shells + 18 large fragments (figure 4).

*Mytilus edulis/trossulus* 29 shells and fragments.

*Scrobicularia plana*, 1 shell

*Donax vittatus* 3 shells.

*Spisula* sp, two different species, 4 fragments.

*Trochoidea* family, possibly the genera *Gibbula*,

*Calliostoma*, *Jujubinus*, 3 fragments.

The presence of *Littorina littorea*, after which the Littorina Sea was named, cannot be determined for certain from the fragments. Naturally, the shells have faded with time and are brittle. The grooves and stripes are nevertheless fairly well visible.

Today, the land snails *Clausilia bidentata*, *Cochlicopa lubrica*, *Discus ruderatus*, *Nesovitrea petronella*, *Nesovitrea hammonis* and *Euconulus fulvus* thrive in the proximity of the alkaline mussel soil. They are present in relatively large numbers in the otherwise harsh evergreen environment. The dead, empty shells of these land snails can disintegrate very rapidly in the SW Finland soils if the pH is 6.0. The shell of *Cochlicopa lubrica* remains for three to four years and that of the more resilient, large *Fruticicola fruticum* will remain about 6 years.



figure 1: The hillside containing the mussel soil is now forested. An information board has been set up on the site.



figure 2: Various worn shells of young *Mytilus edulis* or *trossulus*, fragments of *Spisula* spp and, on the right, possibly *Donax vittatus*



figure 3: *Peringia ulvae*. This species is still found in the seas of SW Finland. It does not, however, survive in the less saline waters of the more northern Bay of Bothnia. The scale is in mm.



figure 4: *Spisula solida*. Today, the nearest to Finland that *S. solida* is found is on the East coast of the Northern Atlantic, on the coasts of Denmark and Norway.

Jean Baptiste Gassies is probably best known for his work on the land and freshwater molluscs of France (Gassies, 1849, 1858a). However, he also produced a detailed account of the land and freshwater mollusca of the French colony of New Caledonia (Gassies, 1863) and described a number of new taxa both in that publication and in a series of papers published in *Journal de Conchyliologie* (Gassies, 1857, 1858b, 1870, 1878, 1879). They include several small *Clithon* spp. which have smooth, glossy shells without spines and a characteristic arrangement of teeth on the septum edge, all of which could conveniently be included in the subgenus *Pictoneritina* Iredale, 1936 of which the type species is *C. oualaniense* (Lesson, 1831). However Holthuis (1995), considered *C. oualaniense* to be anatomically almost identical to *C. corona* (Linnaeus, 1758), the type species of *Clithon* Montfort, 1810, and accordingly synonymised *Pictoneritina* under *Clithon*. Although Gassies gave a detailed account of each of his new species, they were not, in most cases, accompanied by illustrations and this appears to have led to some confusion.

figure 2: Beach north of Hienghène, New Caledonia, where freshwater flows across the shingle.

A recent holiday in New Caledonia prompted me to look again at Gassies' type material held by the Natural History Museum in London (NHMUK). This includes five syntypes of *Neritina paulucciana* Gassies, 1870 from New Caledonia, one of which is shown here (figure 1a). Tryon (1888) placed *N. paulucciana* in *Smaragdia*, along with *N. suavis* (Gassies, 1879), from the nearby island of Lifou, the holotype of which (figure 1b) is similar to the syntypes of *N. paulucciana* but less elongate in form and with a different colour pattern. Tryon was followed by Okutani (2000) who even accompanied his description with a photograph of a *Smaragdia* despite Komatsu (1986) having, in the meantime, examined the syntypes and concluded that *N. paulucciana* belonged in the subgenus *Pictoneritina* of genus *Clithon*. He commented that "*paulucciana* was quite different from *Smaragdia* in radulae, teeth of columellar edge and opercular connection between a rib and an apophysis". The syntypes of *N. paulucciana* are somewhat similar in size and shape to *C. luctuosum* (Récluz, 1841) (figure 1c) but the teeth on the septum edge are more distinct and the colour pattern is different. Although the colour pattern of *C. luctuosum* is quite variable, I have not seen any specimens with the same patterns as on some of the syntypes of *N. paulucciana*. I found some small nerites (figure 1e) on pebbles where a stream crosses the beach north of Hienghène on the north east coast of New Caledonia (figure 2), which, in the general appearance of the shell, are intermediate between the syntypes of *N. paulucciana* and the holotype of *N. suavis* lending weight to the suggestion that they may be a single species. This is just the sort of habitat where I would not have been surprised to find *C. luctuosum* or *C. chlorostoma* (Sowerby, 1833) (figure 1f). Genetic analysis would probably be required to establish whether *N. paulucciana* and *N. suavis* are separate

species or distinctive local forms of *C. luctuosum*. What is quite clear, however, is that they belong in the genus *Clithon*, not *Smaragdia*, which, of course, begs the question as to the true identity of the *Smaragdia* illustrated by Okutani as "*S. paulucciana*" and regularly sold by dealers under that name (figure 1d). It is similar to *S. souverbiana* (Montrouzier, 1863) and may be a colour form of that species or a separate, as yet undescribed, species. *S. souverbiana* is itself quite variable and it is quite possible that several species are aggregated under this name. Again genetic material is probably required in order to resolve the situation. Incidentally I have changed the ending of the specific names where necessary to reflect the fact that *Clithon*, previously treated as a masculine noun, should properly be regarded as being neuter (Steve Tracey, ICZN Secretariat, pers. com.).

*Neritina nouletiana* Gassies, 1863 (figure 1g) from Ile d'Art, New Caledonia is also similar to *C. luctuosum* but two of the seven syntypes are considerably bigger, the largest being 11 mm in height compared to 6 or 7 mm for *C. luctuosum*, and the teeth on the septum edge are more strongly developed. However the other five syntypes are smaller and black in colour, with or without white markings, and may well be a different species. In fact they are very much like the syntypes of *N. morosa* Gassies, 1870 (figure 1i), also from New Caledonia. This in turn is rather similar to *C. dispar* (Pease, 1867) in the size, shape and colour pattern of the shell but the spire of *N. morosa* is more pronounced and the teeth on the septum edge less developed. Gassies described another small, elongate *Clithon* from New Caledonia as *N. flexuosa* Gassies, 1878 (figure 1h) but unfortunately the name was invalid as it was preoccupied (*Neritina flexuosa* Hombron & Jaquinot, 1845). The aperture is expanded and the main tooth on the columella is broad and rounded in shape, quite different from that of *C. luctuosum*.

Larger taxa described by Gassies include *N. pazi* Gassies, 1858 (figure 1j) which, as noted by von Martens (1879), appears to be a junior synonym of *C. nucleolum* (Morelet, 1857) an endemic species which also occurs in a spineless form (figure 1k). I found this species on and under stones in the tidal section the Hienghène River not far from its mouth (figure 3). *Neritina savesi* Gassies, 1878 (figure 1l), from Thio in the south of New Caledonia, was considered by Tryon (1888) to be a junior synonym of *Neritodryas cornea* (Linnaeus, 1758). The two syntypes are certainly juvenile *Neritodryas* and the colour pattern and other characteristics match that species. The NHMUK also holds syntypes of *N. novo-caledonica* Reeve, 1855 (figure 1n) from New Caledonia and a syntype of *N. (Dostia) lifuensis* Adams & Angas, 1864 (figure 1m) from Lifou. Von Martens regarded the former as a synonym of *Neripteron lecontei* (Récluz, 1841) (figure 1o) and in fact both appear to me to be identical to *N. lecontei*. I found this endemic species in



figure 1: Type specimens and other material (not to scale)

- a. *Neritina paulucciana* Gassies, 1870\* 1 of 5 syntypes. Height 5 mm. NHMUK 1883.11.10. 120-124
- b. *Neritina suavis* Gassies, 1879\* Holotype. Height 6 mm. NHMUK 1883.11.10. 169
- c. *Clithon luctuosum* (Récluz, 1841) Height 5 mm. Matutinao River, Cebu, Philippines.
- d. *Smaragdia* sp. sold as "*Smaragdia paulucciana*" Height 5 mm. Cebu, Philippines.
- e. *Clithon* cf *pauluccianum* (Gassies, 1870) Height 7 mm. River mouth near Hienghène, New Caledonia.
- f. *Neritina chlorostoma* Sowerby, 1833\* 1 of 4 syntypes. Height 11.5 mm. NHMUK 1971043
- g. *Neritina nouletiana* Gassies, 1863\* 1 of 7 syntypes. Height 9 mm. NHMUK 1883.11.10. 92-98
- h. *Neritina flexuosa* Gassies, 1878\* 1 of 2 syntypes. Height 8 mm. NHMUK 1883.11.10. 58-59
- i. *Neritina morosa* Gassies, 1870\*\* 1 of 3 syntypes. Height 6.5 mm. NHMUK 1883.11.10. 60-62
- j. *Neritina pazi* Gassies, 1858\*\* 1 of 2 syntypes. Height 14 mm. NHMUK 1883.11.10.6-7
- k. *Clithon nucleolum* (Morelet, 1857) Height 12 mm. Hienghène River, New Caledonia.
- l. *Neritina savesi* Gassies, 1878\* 1 of 2 syntypes. Height 10 mm. NHMUK 1883.11.10.82-82
- m. *Neritina* (*Dostia*) *lifuensis* Adams & Angas, 1864\*\* Syntype. Height 23 mm. NHMUK 1871.7.8.7
- n. *Neritina novo-caledonica* Reeve, 1855\* 1 of 4 syntypes. Height 16.5 mm. NHMUK 1970032
- o. *Neripteron lecontei* (Récluz, 1841) Height 15 mm. Cascades de Ba, New Caledonia.
- p. *Neripteron holosericum* (Garrett, 1872) Height 8 mm. Stream north of Hienghène, New Caledonia.

\* © NHMUK \*\* Images courtesy of Eddie Hardy, © NHMUK

freshwater pools beside the rapids at Cascades de Ba (figure 4) under stones and not exposed like *Septaria bougainvillei* (Récluz, 1841) which was clinging to the sides and upper surfaces of rocks, often in the full flow of the water.



figure 3: The mouth of the Hienghène River.



figure 4: Cascades de Ba.

Other interesting finds included a small nerite on the underside of a stone in the tidal section of a stream which turned out to be *Neripteron holosericum* (Garrett, 1872) (figure 1p) a Fijian species which also occurs in Papua New Guinea (Eichhorst, in prep.) but this is the first record from New Caledonia. In a similar habitat I also found a juvenile *Neripteron dilatatum* (Broderip, 1833) a species from Vanuatu that has not, as far as I am aware, been recorded previously from New Caledonia. In fast-flowing freshwater on the side of a rock in a river near Oubatche, I found a specimen of *Septaria livida* (Reeve, 1856), a species recorded from Fiji and Vanuatu but not, apparently, from New Caledonia (Haynes, 2001).

I only had just over a week in New Caledonia, sufficient time to appreciate the molluscan wealth of the island but nowhere near long enough to study it in any detail. There are many taxa described by Gassies and others from New Caledonia a high proportion of which have subsequently been considered to be junior synonyms but, in my opinion, some of them may well be valid species. There may also be some undescribed species present. There is certainly plenty of scope for detailed research to establish the status of these nerites.

## Acknowledgments

I am grateful to Kathie Way and Andreia Salvador of NHMUK for assistance with examination and photography of type material; to Eddie Hardy for the use of some of his photos and to Tom Eichhorst for confirmation of the identity of *N. holosericum*.

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I came to live in Murmansk, in the far northwest of Russia, when I was 3 years old. As a child, I was fascinated by the local freshwater molluscs. Early on, I tried to keep some of the freshwater snails in an aquarium, but they died because the water was far too warm. I couldn't identify them either, because of the lack of any information in aquarium guides; so I started to collect information and build up a collection. More recently I have been working also on the marine gastropods of Northern Europe, as part of my work in a research laboratory studying seafloor fauna; so this short article is mainly about the shelled marine gastropods of the Murman Coast, in the southwest Barents Sea.

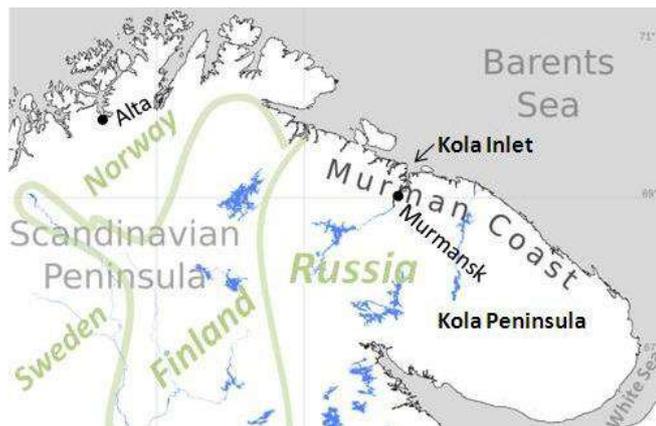


figure 1: Map showing position of the 'Murman Coast'.

The 'Murman Coast' or 'Murman' is the historic Russian name for the 400 km-long northern coast of the Kola peninsula, washed by the Barents Sea to the northeast. To the west is Norway; to the east and south the White Sea or 'Terskiy Bereg' (figure 1). The Murman Coast has bays and inlets, but is relatively low-lying and has no great fjords, unlike the Norwegian coast. Murmansk, where I live, is at the head of the largest inlet, the 60 km-long Kola Inlet (figure 2); it is one of the largest human settlements inside the Arctic Circle. The surrounding area is mostly unsettled tundra and bushy forest; the climate, though cold, is relatively temperate thanks to the North Atlantic Current, even though the northernmost part, the Rybachiy Peninsula, is at about 70°N.

The molluscs of the Murman have been studied since the second half of the 19th century. The most important studies have been those of Solomon Hensenstein, who in 1885 gave the first account of the region's molluscs; and of Tatyana Matveeva, who in 1974 provided detailed descriptions of the ecology and life history of the commoner marine gastropods. But the fauna of Murman coastal waters is still relatively poorly known: only about 120 shell-bearing gastropod species have been recorded as compared with over 230 for neighbouring north Norway. There are practical problems: the coast lacks roads and is covered by snow from November to June, and permits are required to visit it.

Most of the material available to me has been collected during expeditions undertaken to describe coastal benthic communities in the southwest Barents Sea, mostly aimed at biomass and dominant species but not full species composition of particular groups. Bottom samples are mostly collected with a van Veen grab, and sometimes by

SCUBA divers. As the grabs are fairly small (0.1 or 0.06 m<sup>2</sup>), samples mostly contain medium-sized molluscs such as trochids, rissoids, and some limpets and naticids; buccinids and turrids are scarce.



figure 2: Kola Inlet.



figure 3: Lower intertidal of Kola Inlet at -30C, January. *Littorina saxatilis*, *L. obtusata* and *Testudinalia testudinalis* may be found here.

The tidal zone is largely wave-eroded rock with areas of fucoid algae and clusters of barnacles and mussels (figure 2). In the bays and inlets there are sandy beaches, some with pebbles and boulders (figures 4 and 5). The tidal range is usually less than 4 metres. Only about 25 species of shelled gastropod have been recorded from the intertidal zone of the Murman Coast, most of which live only on rocky or stony substrates. The commonest of these are *Littorina saxatilis* (figure 6), *L. obtusata*, *Nucella lapillus* (figure 7), *Skeneopsis planorbis* and *Hydrobia ulvae* (on muddy bottoms); these also occur subtidally, but only rarely. *Testudinalia testudinalis* (figures 8 to 10), *Littorina littorea*, *Lacuna pallidula*, *Hydrobia ulvae*, *Onoba aculeus* and *Rissoa parva* (only the ribless form in spite of environmental conditions) are common both in the intertidal zone and subtidally. *Lacuna pallidula* and *Rissoella globularis* are widely distributed but scarce, as also three other *Littorina* species – *L. arcana*, *L. compressa* and *L. fabalis* - I have only few *L. fabalis* in my collections. The blue-rayed limpet *Helcion pellucidus* (figure 11) and *Gibbula cineraria* were found only on small islands in the western part of the region close to Norway.



figure 4: Sandy beach with *Mytilus edulis*.



figure 5: habitat of *Nucella lapillus*.



figure 6: *L. saxatilis*.



figure 7: *Nucella lapillus* and eggs.



figure 8: *Skeneopsis* and *T. testudinalis* habitat.



figure 9: *T. testudinalis*.



figure 10: *T. testudinalis* on kelp.



figure 11: *Helcion pellucidus* (usually we have light-coloured specimens).

At Murmansk, where the estuary of the Tuloma River opens into the Kola Inlet (figure 12), the water is tidal but salinity is low: in the estuary of the Tuloma salinity is not more than 3%. Few intertidal species are found - the intertidal fauna is mainly freshwater species with some terrestrial species,



figure 12: Intertidal of the estuary of the Tuloma river. Freshwater species may be found here.

e.g. freshwater flatworms, larvae of dragonflies and mayflies, pisidiid bivalves and lumbricid earthworms. The gastropods which occur on sand and stones in the tide pools are *Valvata piscinalis*, *Radix balthica*, *Gyraulus acronicus* and (more rarely) *G. stroemi*; *Stagnicola* sp. and *Oxyloma sarsi* are found on stones and mosses in the upper intertidal zone. This is the only estuary I know of in northern Europe with an intertidal zone with a relatively rich fauna but no brackish-water or marine species.



figure 13: Eggs of *Epheria vincta*.

In the kelp of the upper subtidal and lower tidal zones, *Margarites helicinus* and *Epheria (Lacuna) vincta* (figure 13) are the most abundant gastropods. Other frequent species in the upper subtidal zone include the tiny limpet *Puncturella noachina*, *Margarites striatus* (usually known as *M. groenlandicus*), *Gibbula tumida*, *Onoba semicostata*, *Buccinum undatum*, *Neptunea despecta*, *Boreotrophon truncatus*, *Cryptonatica affinis*, *Lunatia pallida*, *Praephiline finmarchica*, and *Cylichna alba*. Between 10 and 40 m deep, deeper-water species such as *Moelleria costulata* (figure 14) and *Lepeta caeca* increase; but deeper waters are relatively species-poor, usually including only a few cephalaspideans and turrids in addition to species already mentioned. The scaphopods *Siphonodentalium lobatum* and *Dentalium entalis* occur on muddy bottom down at 100–200 m, together with some caudofoveates.



figure 14: *Moelleria costulata*, along the Murman Coast was found from 5 to 220 m. Scale bar = 0.5 mm.

Bivalves are not my primary interest; however I should note that *Macoma balthica*, *Mytilus edulis*, *Cerastoderma edule* and *Mya arenaria* are the most abundant intertidal bivalve species on the Murman Coast, and *Modiolus modiolus*, *Chlamys islandicus*, *Arctica islandica* and *Macoma calcarea* are common subtidally. The empty valves of these species are often commoner than dead gastropods. Among other bottom-living invertebrates, the most exotic is a king crab *Paralithodes camtschaticus*, which was introduced to the

Barents Sea and nowadays is one of the most important commercial species in the area.

During each cruise on our research vessel, we find species new for the region. New shelled gastropods include *Aporrhais pespelicani*, *Alvania punctura*, *Pseudosetia turgida*, *Eulima bilineata*, *Haliella stenostoma* and *Odostomia turrita*. Some are probably recent arrivals as the result of climate change, but I'm sure that most are probably species that were overlooked by previous studies. Also those who study climatic-driven changes in species distribution often ignore native population dynamics which may include local extinction and recolonization of some habitats.

The Murman Coast is at the northeast limit of the ranges of most of the species mentioned, many of which are familiar further south in northwest Europe, because of the influence of the warmer water North Atlantic Current. Further to the east, gastropod faunas are considerably poorer, but include arctic species which are absent or rare in Europe, such as *Menestho truncatula* which is very common in the eastern part of the Barents and Kara Seas, *Frigidoalvania janmajeni*, *F. cruenta*, *Alvania verilli*, *A. moerchi*, *Buccinum glaciale* and some others. The littoral fauna of the White Sea is similar to that of the Murman Coast; but further east and north the littoral gastropod fauna is very poor – usually only *L. saxatilis*.

Like many conchologists I have my favourite species. In my opinion, the most beautiful are the neogastropods *Thesbia nana* (figure 15) and *Boreotrophon clathratus* (figure 16). Others that I like include the predominately arctic trochid *Margarites olivaceus*, and the rissoids *Boreocingula castanea*, *Obtusella tumidula* and *Punctulum wyvillethomsoni* (which is rare in coastal waters) - unfortunately the most attractive species often seem to be rare ones. Contrariwise, I don't find winkles attractive.



figure 15: *Thesbia nana*, found only at 150 m scale bar = 1 mm.



figure 16: *Boreotrophon clathratus*, along Murman Coast was found from 6 to 120 m. Scale bar = 5 mm.

## Conchological Society member profile: Thora Whitehead

*Thora Whitehead, Queensland, Australia*



Thora Whitehead 'Wishing I had more space in my shell room.'

I was born in Valparaiso, Chile to English parents on 27th January 1936. My father was a printer by trade and my mother a very strict and determined schoolteacher. They returned to England when I was very young so that I have no memories of that country. We lived in London, where my father bought a small printery, but when war was declared in 1939 there was no work in that business, so we travelled about war-torn England, to wherever he could find work. The suffering of all the countries involved in World War II is well documented, but there is one very frightening night that is still clear in my memory. We were living in Bristol in a small ground floor flat. The docks at Avonmouth were a prime target for the German bombers. The air raid warnings sounded and all the people in the building were in our blacked-out lounge as it was the safest place in the building. My mother was patiently knitting by candlelight. I heard a bomb falling, and although I was only four at the time I realized that it was the closest bomb I had ever heard and feared our building was about to receive a direct hit. I was the only one to get out to the back door, as all the others got caught up in my mother's knitting wool! In fact, the bomb fell in the middle of the narrow road just outside our house.

Work was difficult for my father to find in England during and after World War II. My first experience of shells was a shoebox full of cowries with which my mother taught me to count. I must have paid so much attention to the treasures that my maths did not progress well; in fact I have dyscalculia. Even simple calculations are a difficulty.

My father finally got a job in Trinidad in the West Indies. In Trinidad I started my education at a girls high school where at age 15 we sat for the General Certificate of Education, with exam papers sent out from the UK. I did well and won a scholarship for further education, but there were no advanced science courses there. My father then packed me off to a very snooty English boarding school where I studied botany, zoology, physics and chemistry at advanced level, and ordinary level Latin. I had no idea how useful it would be in later life! I emerged from this draconian place at age 18 with no academic ambition at all.

I travelled back to Trinidad and got a job as a technician at a Rockefeller-funded virus laboratory. Just as in Australia, the endemic wildlife carried viruses that affected human populations. Animals were trapped, held in a large airy animal house, were bled, and their serum was tested in mice and eggs. It was an interesting job, and the highlight was a friendly porcupine that used to come down to see me to have its chin scratched. I don't think this animal was ever bled due to its very sharp quills!

After some enjoyable years in Trinidad, my father persuaded me to go to Bristol University in the UK where I studied veterinary science. It was a tough course, and I passed all subjects up to the beginning of the final year, but then gave it all up, deciding to marry and go to Tanzania. Conditions were primitive and one had to adapt to a totally different life, but it was all a fun adventure.

In 1962 my husband was posted to the coast in South Tanzania, and in Mtwara my interest in marine molluscs began. I was attracted at first by the amazing colour variation among *Nerita polita* form *rumphii* (Mienis in litt.). Soon there was a wash-in of *Janthina*, and from then on I was a shell collector, and wandered further afield to add to my small collection armed with Mr Justice Spry's 'Seashells of Dar-es-Salaam'. My interest in molluscs has since then never waned.

I collect all marine shells. My favourite groups are *Haliotidae* and *Conidae*. *Haliotis* really puzzled me at first because I thought they were one half of a bivalve! Once back in the UK I purchased part of an old collection in a box labeled 'Cones to be sorted after the war', which started my interest in this family.

We came to Australia in 1965 as 'Ten Pound Poms' and lived in Perth. I soon joined the Western Australian Shell Club and then volunteered for two years for Barry Wilson at the Western Australian Museum (WAM) sorting the cone collection. The highlight was finding a small *Conus gloriamaris* from one of the Mariel King expeditions that Barry had been on. It was a very rare species at that time and I was quick to tell Barry the good news. He happened to be with the WAM public relations officer at the time so it was all in the newspaper the next day, and what I initially thought was a hoax call turned out to be the ABC wanting to visit and photograph my shell collection!

I have never had a paid job in malacology, but have had an interesting career volunteering for some years at the Queensland Museum sorting the bivalve collection, and taking marine enquiries. A highlight was being lent to the Marine Archaeology Department to identify the shells and artefacts found on the wreck of the 'Pandora'; all the species were common Western Pacific species, but it was not possible to tell where they were collected.

I had several secretarial jobs, for a short time as secretary of the Cairns Shell Club and later for some years as secretary for the Brisbane branch of the Malacological Society of Australasia (MSA). Also for some time I was corresponding secretary for Australia for *Hawaiian Shell News*, and I was on the council of the MSA during Richard Willan's term of office.



'Looking for space to add a large *Spondylus pratti* amongst my larger *Spondylus*.'

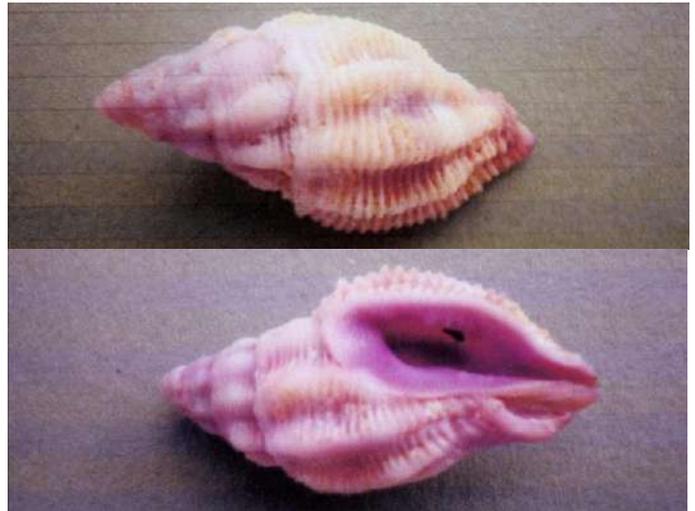
Another interesting job came about when Queensland fisheries officers asked MSA members to a meeting, as shell collecting was classed as a Harvest Fishery that they had to regulate. Subsequently, two officials attended one of our meetings and I ended up being appointed to the Harvest Management Advisory Committee. Not a paid job, but they covered my cab-charge, airfares and accommodation. Most meetings were in Cairns or Townsville. I was the only non-commercially focused person on the committee. My mission was to convince the regulators that shell collectors do not pillage reefs but are students in basic malacology. Four regulatory government bodies were concerned with protecting the Harvest Fisheries. At that time private shell collectors who wanted to exchange with others overseas had to obtain an export permit costing \$150, which included a list of the species of shells to be sent. This had to be submitted to Sustainable Fisheries in Canberra. After a long battle I eventually succeeded in having this requirement removed for private collectors. I also served on 'Harvestmac' for 10 years; it was interesting to learn about the other fisheries, such as Beche-de-Mer, coral and aquarium fish.

The main highlights of my career are the many published articles on molluscs, and, of course, being co-author of *Bivalves of Australia volume 1* (with Kevin Lamprell, Crawford House Press, 1992). This took 11 years of hard work, and finally nine months to edit the text. It was published without errata, but there have been taxonomic changes since the first publication in 1992, so my next project will be to revise the text.

During my sorties with shell club trips I have had some interesting finds, two that specially come to mind are a live specimen of *Phyllocoma convoluta* under a huge round rock half buried in sand on a reef off Cairns, and a fine large *Lotoria armata* on Boulton Reef in the Bunker Group off Central Queensland. It was a dead specimen but in good condition, and is considered to be the rarest of the ranellids.

My days of reef walking are over now, but I still enjoy adding to my collection by exchange, or purchase at shell shows, and in my shell room there is always something to study when new publications arrived in the mail.

Below: two species named in honour of Thora Whitehead.



*Morula whiteheadae* Houart, 2004. Specimens from North Western Australia.



*Nassarius whiteheadae* Cernohorsky, 1984. Specimens from Dingo beach, central Queensland, Australia.

#### Acknowledgments

All photos are by the author's daughter, Trish Bray. A shorter version of this article was first published in the *Malacological Society of Australasia Newsletter*, No. 149, Jan. 2014.

### British Shell Collectors' Club



**Saturday 6<sup>th</sup> September 2014**

#### Chatsworth Shell Fayre

The Club's fourth event on the Chatsworth Estate in Derbyshire. Displays of shells, shell art, fossils and several dealers selling shells from around the world.

Open from 9am to 4pm, admission free.

Cavendish Hall, Chatsworth, Derbyshire, DE45 1PJ

**Saturday 25<sup>th</sup> October 2014**

#### Shell Show

Another opportunity to meet members and to seek advice from experienced collectors. Members are encouraged to create display tables for the prize competitions for categories such as One Species, British Marine, Caribbean or in specialities such as shell art or shell postage stamps. Marine, freshwater and land specimens are shown. Displays can feature marine, land and freshwater species. Five major prizes are awarded. Shell dealers also display and offer for sale shells to suit both beginner's and expert's budgets.

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

Open from 9am to 5pm, admission free.

For further information about the club see:

[www.britishshellclub.org](http://www.britishshellclub.org)

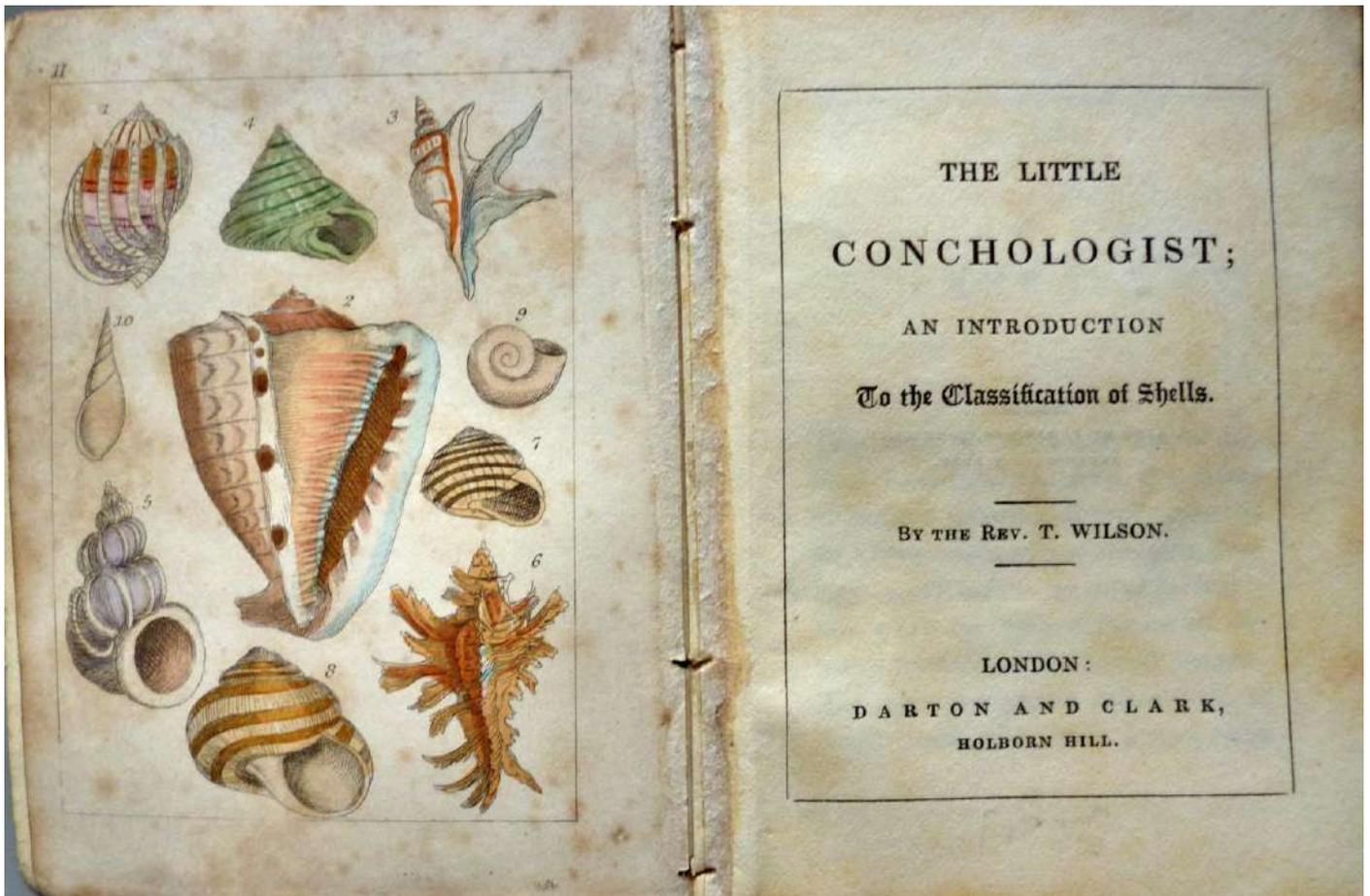


figure 1: Title page and hand-coloured frontispiece (Plate II) of *The Little Conchologist*.

I have just acquired a copy of *The Little Conchologist*, a book I have never seen before. Measuring only 94 mm tall and 71 mm wide, it was not built to last and is showing its age. Little in more ways than its title, its lime-green, thin card covers are worn, but just discernible on the front cover, within a triple-lined frame, is the title: THE LITTLE / CONCHOLOGIST (figure 2). The text occupies a mere 70 gilt-edged pages and there are four steel-engraved plates, one of which, the frontispiece, is hand coloured (figures 1 and 3). Published in London by Darton and Clark, publishers of books for children, it is undated. Sub-titled 'An Introduction to the Classification of Shells', *The Little Conchologist* is said to be 'By Rev. T. Wilson'. Intrigued by this diminutive 12mo book and the man who wrote it, I delved into the byways of children's literature and elementary conchological books. Here is what I found.

It has been established that Rev. T. Wilson was the pseudonym adopted by one Samuel Clark, who was also responsible for a publication entitled *The Little Book of Nature*, a combination volume comprising *The Little Entomologist* and *The Little Marine Botanist* as well as *The Little Conchologist* (Freeman (1980), p. 85, entry 706). Although undated, Freeman says it was issued in 1837. On 31 March 2014 a copy, also undated but with the words SECOND EDITION on the title page, was advertised for sale by a Canterbury bookseller, on the internet site 'Abe Books'. It appears to be otherwise identical to my copy.

Believing the author could be the Clark of Darton and Clark, I checked in *The Concise Dictionary of National Biography* (the 1953 impression) and discovered that publisher and author were, indeed, one and the same. Born in 1810, the son of a Quaker basket-maker from Southampton, Samuel Clark was initially self taught, but went on to pursue a varied and largely successful career.

In 1838 he joined his brother-in-law, John Maw Darton, and became a partner in the publishing firm of Darton and Clark. The commercial world may not have been to Samuel's liking, however, for in 1843 he deserted publishing "to take



figure 2: Cover of *The Little Conchologist*.

Holy Orders and achieve some distinction as a theologian and educational expert' (Darton, 1958, p. 233). In 1846 he was awarded an M.A. at Oxford University and subsequently occupied senior positions in training colleges at Chelsea and Battersea. When his little book about shells was published the young Samuel Clark, alias Rev. T. Wilson, had pretended to be a man of the cloth. In 1863 he dropped the pretence. Using his own name, he became one for real when he was appointed vicar at Bredwardine in Herefordshire, a position he held until 1871. He died in 1875, just two years before the same position was filled by the Rev. Francis Kilvert, the famed diarist. Many years later, incidentally, I lived in a cottage overlooking Bredwardine and its church, so I have a tenuous link with the author of a virtually unknown book about shells and the writer of a world-famous *Diary*!

From the Preface we learn that *The Little Conchologist* is intended 'as a manual for constant reference to those who are learning, till they have acquired a ready habit of discriminating the Genera that are found on the British Coasts'. Brief descriptions of generic characters are followed by notices of 'the most striking or best known Foreign Species; after which is a list of the British Species, with notices of those that are most easily found, or are most remarkable'. The arrangement adopted 'is substantially that of Linnaeus, as being the most simple, and on the whole the best for beginners'. There follow four introductory sections: The inhabitants of shells; Classification of shells; Parts of a shell; Explanation of terms. The rest of the text deals mostly with various genera, grouped into three Classes: Univalves, Bivalves and Multivalves. It ends with an 'Index of the Common Names of Shells'. The book begins with plate II (the hand-coloured Frontispiece) and ends with plates I, III and IV.

Clark's style and his adherence to the Linnaean system, indicate that he was probably influenced by Charles Wodarch's *An Introduction to the Study of Conchology*, first issued in 1820, and still on the market, edited by John Mawe, up to at least 1832. Unlike Wodarch, however, Clark lists mostly 'British' shells as examples of the various genera. Of certain genera, such as *Argonauta* and *Conus*, only exotic species are named because there are no 'British' ones. There are also occasional remarks about certain species. 'Of course such a tiny volume cannot pretend to completeness in regard to particulars,' the Preface states, 'but it is confidently hoped, that it will be found to contain quite as much useful matter as any of the elementary works on the subject, at present before the public, all of which are less portable and much more expensive.' Apart from the plates, which are well drawn and in one instance attractively coloured, that confidence is somewhat misplaced, especially when the book is compared with other portable and less expensive works that were then in circulation. Among elementary pocket guides to the world of shells available then – they are before me even now – may be mentioned William Pinnock's *A Catechism of Conchology* (2nd edition, 1829); Mary Roberts' *The Conchologist's Companion* (1834 edition); and the anonymous *The Book of Shells* (2nd edition, 1837). These guides are all superior to Clark's book – and not just in size.

In one respect, however, *The Little Conchologist* is superior to these and other contemporary pocket guides: its rarity. Its flimsy nature may have ensured that few copies have withstood the ravages of time. Someone who was likely to have owned such a scarce publication was J. R. le B. Tomlin (1864–1954). Renowned for his magnificent collection of shells, Tomlin had also amassed an incomparable conchological library and often published notes on obscure items in it, but it was not until he was 82 – by a curious coincidence the age I am now – that a kind friend produced a copy, enabling him to publish a short note on it. 'This remarkable little book, by the Rev. T. Wilson', he says, 'is unfortunately undated.' After describing it briefly, he continues, 'The only copy that I have ever known I owe to the kindness of Mr Digby Firth: it is incomplete and the four plates which it apparently contained are missing' (Tomlin, 1946). I am pleased I own a complete copy of what must be considered a very rare little book on shells. I would be even more pleased if it was as interesting as the man who wrote it!

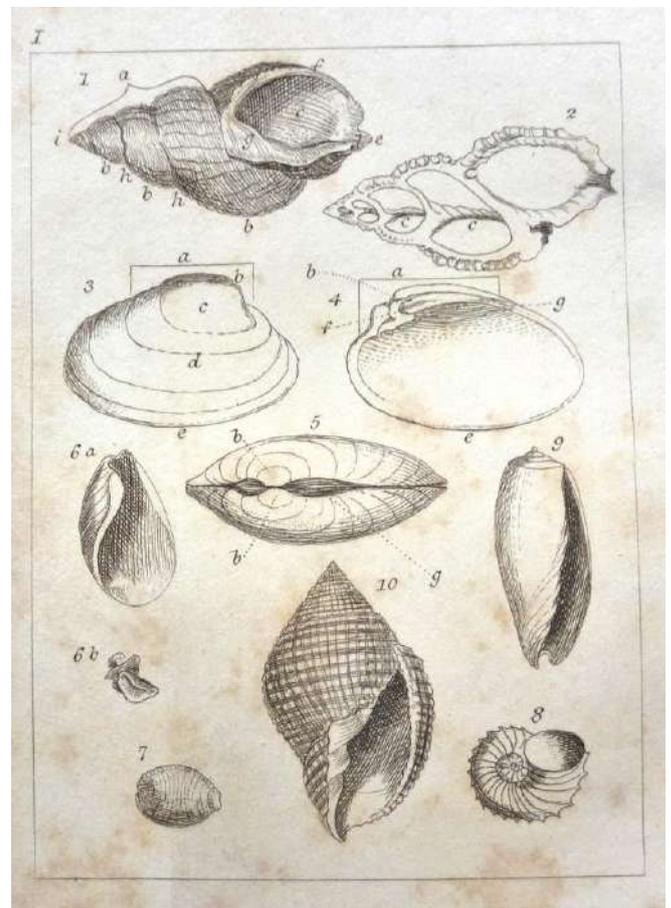


figure 3: Plate I of *The little conchologist*.

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A week's holiday to the Lofoten islands last year allowed me the opportunity to briefly look for shells in this northern part of Norway. Lofoten is an archipelago of islands situated to the west of mainland Norway, north of the Arctic Circle, at the 67<sup>th</sup> and 68<sup>th</sup> degree parallels. A series of road bridges and tunnels, completed in 2007, now joins mainland Norway and impressively links many of the islands north to south via a 180 km road system. The mountains of Lofoten were not formed until the last Ice Age, which ended around 10,000 years ago. When the ice retreated steep mountain peaks and ridges were left behind, the sides of many of these descending steeply into the sea with little evidence of a shoreline, although there are exposed shores of sand and boulders as well as more sheltered areas associated with the small fjords that divide the islands. Surface waters in the fjords can be diluted with freshwater from rainfall and snowmelt. Due to the warming effects of the Gulf Stream, Lofoten has a milder climate than other parts of the world at the same latitude, such as Alaska and Greenland. The islands are also surrounded by strong tidal currents. Part of the interest of these islands for the conchologist is that the Lofoten islands can be regarded as a 'grey area' for marine mollusca, at the borders of the Boreal and Arctic faunal provinces. Thus some Boreal species have their northern limits in this area (and can also be found at shallower depths than further south because of the lower water temperature). Conversely the islands mark the southern limit of Arctic species, some of which have a circumpolar distribution (Herschberg, 1992).

I was interested to see what indications of this mix of species I could find by beachcombing including examining the shore in the area around the cottage where my brother and I were staying at Vågje, west of Lekness on the island of Vestvagoya. I looked at eight sites in all, two on the most northerly island, Austvågøya, two additional sites on Vestvagoya and three on the more southerly island of Flakstadøya. Unfortunately I did not find any areas with suitable weed for washing or of interesting shell sand in the time that was available, so most of my observations were of the shells of larger species. The shoreline of the inlet near the cottage consisted of a shallow area of tidal mud formed by a protective barrier of low-lying rocky platforms, surrounded by boulders of granite. These calmer areas of reflective water produced amazing views at sunset and in early morning (figures 1 and 2). Unfortunately the area was somewhat negatively effected by run-off from the local small cattle and sheep farm.



figure 2: Shore at Vågje, Vestvagoya, Lofoten islands.

Shells of the horse mussel *Modiolus modiolus* were present at three of the locations, with many immature and fresh dead shells present in a sheltered northeast-facing fjord Selfjorden, on Flakstadøya (figure 3), indicating the probable presence of a local colony, although few other species were present, possibly indicating a reduced water salinity.



figure 3: shore of Selfjorden, Flakstadøya

Bivalves with a more 'northern feel' included the scallop *Chlamys islandica* and the very commonly occurring shells of the Astartid *Tridonta borealis*, together with some live individuals of this species on a sheltered sand bar exposed at low tide in Flakstadpollen on Flakstadøya (figure 4). Very thickened sub-fossil shells of a possibly different form or species of *Tridonta* were eroding out of dunes above a south-facing sandy shore at Morfjorden on Austvagoya (figure 5).



figure 1: Sunset view from shore at Vågje, Vestvagoya, Lofoten islands.



figure 4: *T. borealis*, from sand bar at Flakstadpollen, Flakstadøya.



figure 5: Sub-fossil shells eroding from dunes on Austvagoya.

Shells of *Arctica islandica* found on shores in the UK are often old adult shells, some of which may have been part of the beach drift for many years. In contrast *A. islandica* was very common in Lofoten, including many juvenile shells with a characteristic shining golden periostracum, as opposed to the darker adult shells (figure 6).



figure 6: Subadult and adult shells of *Arctica islandica*, Flakstadpollen.

Another species encountered in a different way in this region is *Hiatella arctica*, a species with burrowing habits in the UK. In Lofoten I found specimens attached by the byssus to clumps of detached weed and other substrate on the strandline at Vikspolien Bay near Vik on Vestvagoya. Tellins included the familiar *Macoma balthica* and a smaller form of *Angulus tenuis* but I also found one or two worn shells of the larger northern species *Macoma calcarea*. Herschberg (1992) describes the specimens of *Mya truncata*, the blunt gaper, from this region as being 'more truncated and higher, and the shells are more widely gaping that specimens from the North Sea.' I found several specimens of this species, including double valves, but did not notice any obvious difference with those found in the UK. Shells of the arctic *Thracia myopsis* were found with other beached shell debris at Flakstadpollen (figure 7).



figure 7: *Thracia myopsis* from Flakstadpollen, Flakstadoya,

I did not have time to look closely at the limpets but they were often 'few and far between', most of them appearing to be *Patella vulgata*. Large *Tectura testudinalis* also occurred regularly. Of the top shells (Trochidae) the familiar *Gibula cineraria* and *G. umbilicalis* were both common in the bay near our cottage. Small northern species of *Margarites* are to be expected in these northern latitudes, probably under stones on the shore, but I did not find any on this occasion. Of the Littorinids, variations of the northern form of *Littorina saxatilis* (sometimes known as *Littorina groenlandica*) were common on rocks at Vikspolien Bay (figure 8); large individuals of *Littorina littorea* were very common in suitable habitats.

Of the necklace shells, I found shells of the Naticids *Polinices pulchellus* (formerly *Lunatia alderi*) and *P. montagui*, familiar to collectors in the UK and Ireland, on the shore at Morfjorden in Austvagoya. Less familiar were

shells of *Tectonatica clausa* (figure 9) and the Ampullospirid *Amauropsis islandicus* (figure 10) from the sand bar at Flakstadpollen.



figure 8: *Littorina saxatilis* form *groenlandica*, Vikspolien Bay, Vestvagoya.



figure 9: *Tectonatica clausa*, in beach drift, on sand bar at Flakstadpollen, Flakstadoya.



figure 10: *Amauropsis islandicus*, Flakstadpollen, Flakstadoya.

Other gastropod shells found in beach drift at Flakstadpollen and Morfjorden included the Turrids *Oenopota trevilliana* and *O. turricula*, and a very worn specimen, possibly of *Ariadnaria borealis* (the boreal hairsnail) of the family Capulidae. Shells of the Muricid *Boreotrophon truncatus* were present at Flakstadpollen but I did not find *B. clathratus*. The dog whelk *Nucella lapillus* was very common living intertidally in many suitable locations, as in the UK, but shells were generally coarser and not banded. On the southern shore of Grunterfjorden, Austvagoya, I found an accumulation of fresh dead shells of the purple aperture form of the common whelk (*Buccinum undatum* var. *pulchellum* Sars) which had been eaten, possibly by birds.

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# Habitat description of Archirondel pier, Jersey: An unexpected home of *Truncatella subcyclindrica* and *Paludinella littorina*

Francis Binney, Société Jersiaise



figure 1: *Truncatella subcyclindrica* (left) and *Paludinella littorina* (right) on a Jersey 1 p coin.

*Truncatella subcyclindrica* (L.) and *Paludinella littorina* (Delle Chiaje) have been recorded as sharing the same habitat in only two locations in the British Isles, the first in the Fleet in Dorset (Killeen & Light, 2002) and more recently within the stone walls of Archirondel Pier, Jersey (Light & Chambers 2010) (figure 1). In light of the rarity of this cohabitation the Société Jersiaise has undertaken a small study of the biology of the site to better describe this rather unexpected home of two nationally rare molluscs.

It is hoped that this study may prove useful in identifying other locations in the British Isles where these species may exist, either individually or together.

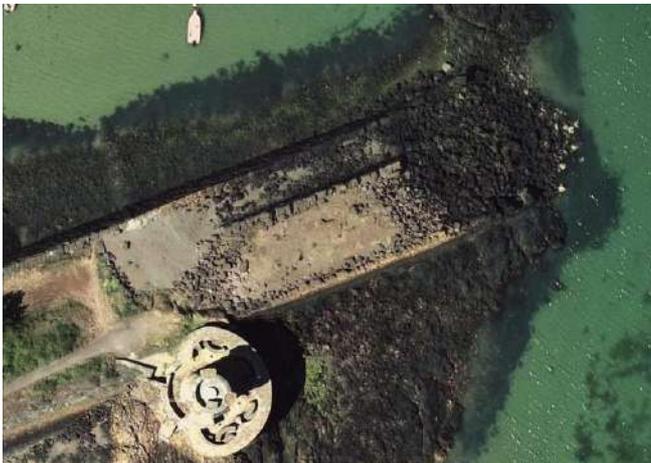


figure 2: Aerial photograph of Archirondel Pier. © States of Jersey 2014 and courtesy of Digimap.

## Study method

As can be seen in figure 2, Archirondel pier is not an extensive site, so the process of mapping the habitat needed to be balanced with the possible impact of the study. It was decided to run three parallel transects from the MHWS (the mean high water spring; the highest level that spring tides reach on the average over a period of time) as far as practically possible down the pier, equally spaced and taking samples every 5 m, as depicted in figure 3.

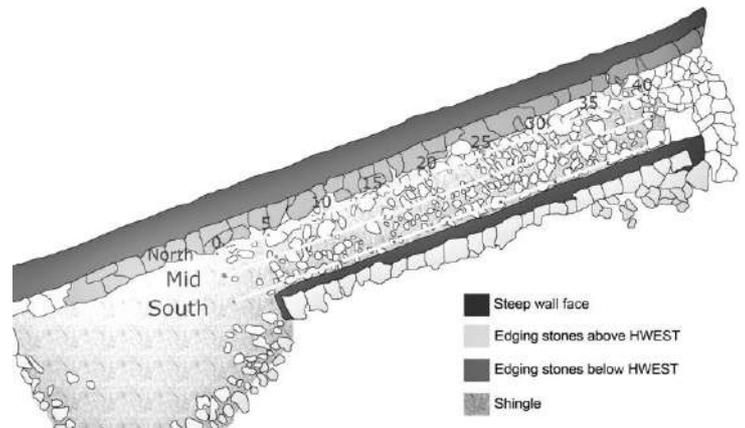


figure 3: Site map showing transect positions. Courtesy of Société Jersiaise.

At each sample point a 0.5 sq m quadrat was laid and records made of the substrate types and percentage cover of lichen and seaweeds (figure 4). A quarter of this area was then explored more thoroughly and all macro-fauna identified and recorded using the MNCR SACFOR abundance scale (The Marine Nature Conservation Review cover/density scales adopted from 1990 to provide a unified system for recording the abundance of marine benthic flora and fauna in biological surveys). A theodolite was used to record the drop in height to each sampling station for later conversion to height above chart datum.



figure 4: Société Jersiaise team recording a quadrat at Archirondel Pier.

## Findings

The site was found to be in exactly the same condition as when last studied and written up (Light & Chambers 2010). Although tourist use of the tower at the end of the pier has increased in recent years, it does not seem to have resulted in a major increase in traffic to the lower, north side of the pier.

The study species were found to occupy tight but overlapping tidal ranges as per figures 5 and 7: *T. subcylindrica* ranged from 8.7 m to 9.7 m above chart datum and was recorded as frequent at 9.38 m. *P. littorina* occurred between 8.6 m and 9.4 m above chart datum and was recorded as Abundant at 9.13 m. As per figure 7 none of the other nine species of molluscs recorded at the site appeared to be confined to the same range – eliminating the possibility of a more visible indicator species in this type of habitat.

Both species were shown to decline as seaweed cover increased (figure 6) although this is more likely to be an indicator of the change in emersion as opposed to a directly influencing factor in the molluscs' distribution. Shingle and rock cover did not change significantly enough along the transect to be examined as influencing habitat factors

Looking at the three parallel transects, while *T. subcylindrica* is evenly distributed across the pier, *P. littorina* is more common on the shaded (southern) side of the pier, this would seem concurrent with its normal preferred habitat.

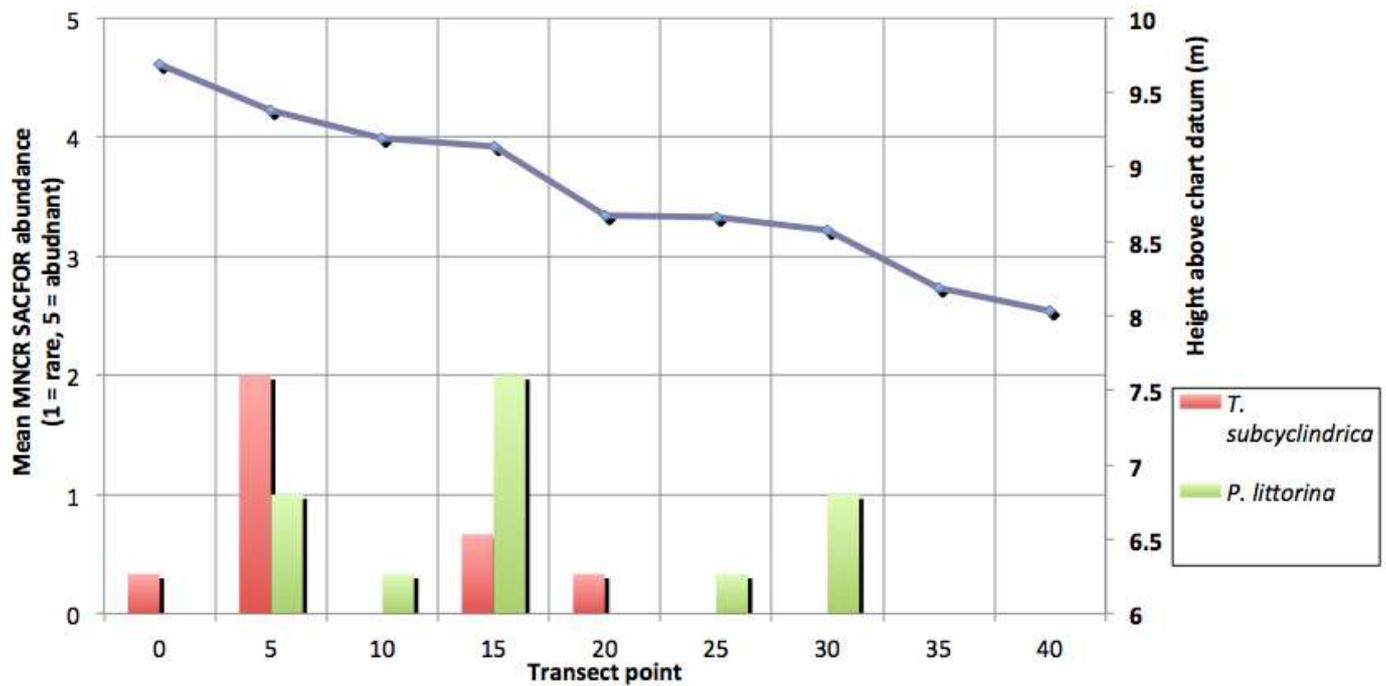


figure 5: Changes in abundance of *T. subcylindrica* and *P. littorina* at Archirondel Pier ,Jersey over tidal height (blue line)

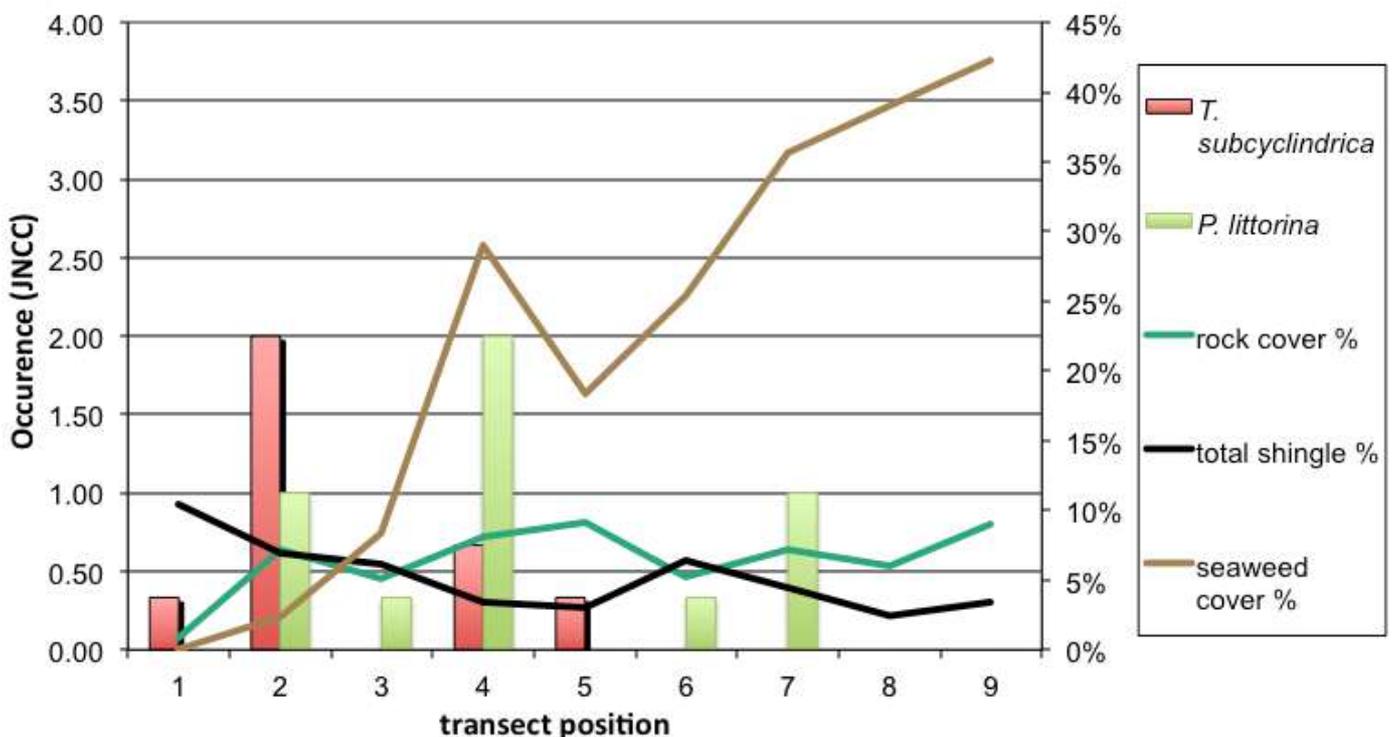


figure 6: Abundance of *T. subcylindrica* and *P. littorina* at Archirondel Pier, Jersey vs. substrate and cover

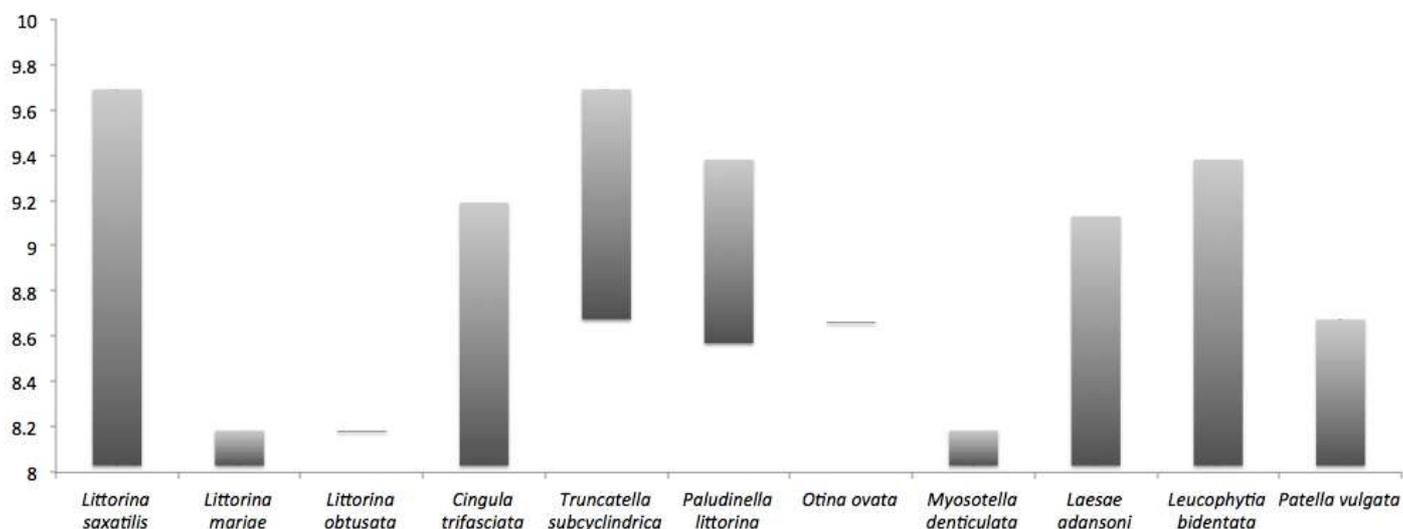


figure 7: Species distribution at Archirondel Pier, Jersey by height above chart datum in metres.

### Conclusions

This study highlights the potential that there may well be several sites throughout the English Channel, not previously considered as potential habitats, where *Truncatella subcylindrica* and *Paludinella littorina* occur together. Archirondel pier is far from unique in its construction method and sedimentation build up.

It would be prudent therefore to examine more of the pre-19<sup>th</sup> century coastal walls, piers, harbours and sea defences in the western English Channel as potential habitats for these two species. Highlighting their potential presence to Environmental Impact Assessment practitioners, who may

be surveying such sites either for redevelopment or renovation, would also be a valuable move to ensure proper identifications are made and appropriate conservation measures taken.

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## Wood Mouse Predation

Graham Long

Returning in April this year to one of our conservation sites in Fordingbridge, in the New Forest District of Hampshire, after a prolonged absence caused by riverine flooding during the past winter, we began clearing the dead grasses that we had intended to tackle in December but failed to do because of the incessant rain. The flooding had covered a considerable area but left a wide margin which, though very wet, was not water-logged. The site had a large population of *Cepaea* and other species, including slugs, many of them thriving in the more moist areas alongside the river. It remains to be seen just how many have survived several weeks under water both standing on and washing and draining through the site. Certainly our colony of foxgloves hasn't.

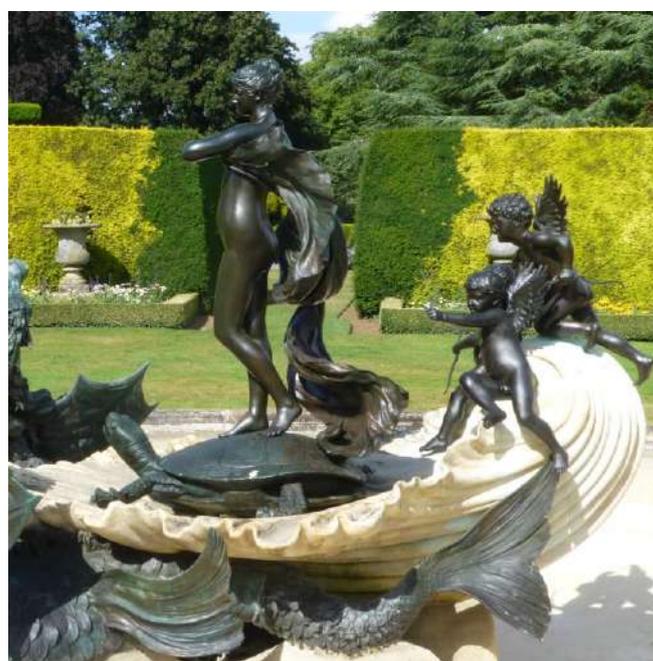
Under the compacted grass in the drier margin, we uncovered a wood mouse larder (pictured right). Quite close is a small grove of bird cherries and, not surprisingly, the larder surrounds held some gnawed cherry stones. At the heart of the larder were the remains of what clearly had been a staple item of the rodent's diet – snails. Six species were included, *Cepaea hortensis* being the most numerous, *Cepaea nemoralis*, *Cornu aspersum*, *Hygromia cinctella*, *Trochulus striolatus* and *Oxyloma elegans*. If *hortensis* was the main course, which the starter and what the dessert?



Ever since Sandro Boticelli produced his exquisite painting, *The Birth of Venus* in 1484–6 which depicts the goddess Venus (or Aphrodite to the Greeks) arising on a shell (possibly a stylised King Scallop, *Pecten maximus*) from the sea foam ‘to bring the divine gift of beauty to the world’ (Thomas, 2007), artists have been inspired to offer their own interpretation of this story. Two late nineteenth century examples are fountains by the English/American sculptor, art critic, poet and literary editor Thomas Waldo Story (1855–1915). Both fountains depict ‘Venus’ or a stylised ‘goddess of love’ atop shells which might easily have their origin in that Boticelli painting.

The first fountain (figure 1) is at Cliveden, former home of the Astors, in Buckinghamshire and also the home of one of the recently discovered colonies of the introduced clausiliid snail *Papillifera papillaris* (Ridout Sharp, 2007). Whilst visiting the gardens in 2007, primarily to search for the snail, I photographed Story’s large fountain ‘The Fountain of Love’ which was installed in 1897 (figure 1). More recently, just across the county border into Bedfordshire, I visited Ascott House. This also has a large fountain by Thomas Waldo Story, with a similar theme, called ‘Bravura Venus’ (figures 2 and 3). This fountain depicts the birth of Venus with three cherubs behind her, this time standing on the back of a turtle in the middle of a large shell, drawn by a triton and two rearing sea horses. The figures are made of two different shades of bronze while the shell is made of yellow Siena marble. Ascott was part of the large amount of land and property in the area owned by the Rothschild financier family and the garden was laid out in the 1880s by Leopold Rothschild as a present to his wife to celebrate their happy marriage, hence the symbols of love and beauty.

What about the shell? Although stylised, I think it is much closer (if unintentionally on the part of the sculptor) to the West African great ribbed cockle, *Cardium costatum* (figure 4) than a Scallop. This species has similar well-developed radial ridges set on broad flat radial ribs, visible as troughs on the inside of the shell. It lives buried offshore in soft substrate, occasionally washing ashore in thousands after a storm (Harasewych and Moretzsohn, 2010). Could this shell, or the similar Western Mediterranean *Cardium indicum*, have also been an inspiration to Boticelli 400 years earlier?



figures 2 and 3: ‘Bravura Venus’ fountain by T.W. Story, Ascott House, Bedfordshire.



figure 4: *Cardium costatum* (L. 1758), Gambia. Length 94 mm..



figure 1: The ‘Fountain of Love’ by T.W. Story, Cliveden, Buckinghamshire.

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Following Jan Light's departure from the Society's Hon. Marine Recorder post there was something of an interregnum, during which Bas Payne ably provided a hub for communication and kept things ticking over, but the role was not being actively promoted for some 18 months or so. Hence, upon being accepted by the Society as the new postholder, I was somewhat concerned that a degree of momentum would have been lost. Fortunately this has proved not to be the case, quite the opposite in fact, and if every year is as active and productive as 2013 then pursuing the role of the Society's marine census recorder is going to be a very interesting challenge indeed.

There were a few items pending from 2012 which are worthy of note, all involving opisthobranchs. Recent advances in underwater digital photography have massively improved the popularity and recording of nudibranchs in particular. It is therefore somewhat ironic that recent new records of the dorid *Geitodoris planata* (Alder & Hancock, 1846), the first for Yorkshire, were actually intertidal in rockpools (Whittaker, D.E. 2013 *The Naturalist* 138: 82-84). This species is common in the Mediterranean, its British distribution being focussed on the southwest; there are few old, disputed Scottish reports but these new confirmed records of a number of individuals now place the species firmly in the North Sea.

While some species are extending their distribution northwards within the UK, others are apparently colonising our islands for the first time. One such, another dorid, is *Cadlina pellucida* (Risso, 1826), a rather attractive little ivory-coloured sea slug with black gills and rhinophores. First recorded in Britain by David Kipling in 2011 from The Lizard it was photographed again off Hilsea Point, South Devon in 2012 by Allen Murray and Alex Jacobs. It will be intriguing to see if further records of the species are reported from the southwest in forthcoming years to develop a picture of the extent and rate of colonisation.

The online Facebook group 'NE Atlantic Nudibranchs' ([www.facebook.com/groups/NE.Atlantic.nudibranchs](http://www.facebook.com/groups/NE.Atlantic.nudibranchs)) is a very successful forum populated principally by underwater photographers and a valuable source of information, and images, relating to species from British and Irish waters as well as further afield. One of its pioneers is Bernard Picton, who will be known to many within the Society. Another leading contributor is Jim Anderson of Linlithgow, Scotland, who also runs the Scottish Nudibranchs website ([www.nudibranch.org/Scottish%20Nudibranchs](http://www.nudibranch.org/Scottish%20Nudibranchs)) and kindly shares his records with the Society. Personal first records for him in Scotland in 2012 were: *Cuthona nana* (Alder & Hancock, 1842), an elusive species which specialises in grazing the hydroid *Hydractinia* growing on shells inhabited by hermit crabs; *Doto hystrix* Picton & Brown, 1981, also a first record for the Society's dataset; *Aegires punctilucens* (d'Orbigny, 1837), almost certainly under-recorded as its primary host, the sponge *Leucosolenia*, is common but the slug is very well camouflaged; and *Philine pruinosa* (Clark, 1827), another very infrequently recorded species, a cephalaspid rather than a nudibranch.

Moving into 2013, the nudibranch theme continues as yet another coloniser from the south was discovered and reported in March by regular contributor and prolific wildlife photographer David Fenwick (with Rosemarie Caroline Tucker). This time it was a first British record for

the small and relatively recently described aeolidian *Calma gobioophaga* Calado & Urgorri, 2002, from Carnsew Pool in Hayle, Cornwall (see also *Mollusc World* issue 34, March 2014). Carnsew Pool is a rather unusual site, being a large (550m x 250m) shallow body of water fed solely by tidal marine water. It may be that the shallow nature of the pool means it tends to be slightly warmer than the water temperature out at sea and so presents an opportunity for potential immigrants from the warmer south. The mollusc was found amongst goby eggs under a stone and photographed in situ then, still on site, photographed in a small container of water against wrack. Not sure of the identification or its significance at the time, David and Rosemarie did not collect and preserve the specimen, but later online consultation using their excellent images enabled one of the species' original describers, Gonçalo Calado, to confirm the identification. David suspects the eggs on which the specimen was found were those of the Rock Goby, which is interesting in itself as some sources suggest *C. gobioophaga* feeds exclusively on the eggs of Black Goby (also recorded from Carnsew Pool), potentially adding to the known biology of the species.

Particularly of note in 2013 was the description of three species new to science, based on specimens from British and Irish waters in the area of Rockall Bank (from where a number of new mollusc species - mainly micros - have been described in recent years). David McKay, of Portnockie on the southern coast of the Moray Firth, is a very active worker on British and Irish mollusca who has a number of connections within the fishery industry. David maintains close links with the Marine Scotland Science Laboratory in Aberdeen, who have been conducting an ongoing survey of fishing grounds around Rockall with their research vessel FRV Scotia. Periodically, David inspects samples of mollusca collected essentially as by-catch by the Scotia during these surveys and was intrigued by specimens of *Volutopsis* which seemed to show consistent differences from the usual *V. norvegicus* (Gmelin, 1791). Further research resulted in the description, in the Society's own journal, of *V. scotiae* Fraussen, McKay & Drewery, 2013 (*J. Conch. Lond.* 41(4): 453-460), characterised by spiral sculpture and a pattern of axially orientated bands or blotches.

Evidently not satisfied with the discovery of one new macrospecies, David then came across two species of bivalve, both well over 10mm in length, from a further Rockall sample taken by FRV Scotia, neither of which he recognised. Again suspecting they were something very noteworthy, David consulted Graham Oliver at Cardiff and they were found to be new chemosymbiotic species providing the first direct evidence of hydrocarbon seeps in the vicinity of Rockall, making the discovery particularly significant from an environmental perspective. The new species are the vesicomid *Isorropodon mackayi* Oliver & Drewery, 2013 and a thyasirid, *Thyasira scotiae* Oliver & Drewery, 2013 (*J. Mar. Biol. Ass. UK* 94(2): 389-403).

David's work is quite fascinating and he fully deserves the accolade of having a species named after him in recognition of his efforts. During 2013 he has very kindly shared with the Society a large number of marine records, obtained utilising a variety of methods. He has described in detail

(McKay, D.W. 2012 *Pallidula* 42(2): 20-23) his experimentation in recording *ex pisce* in British waters, most particularly from the guts of haddock caught in deep water. The gut material he gathers, from both working trawlers and the FRV Scotia, is generally frozen quite fresh, so processing it is perhaps not quite as malodorous as may be imagined and is hugely worthwhile as the shelled species found are often very noteworthy and in surprisingly good condition. Haddock are bottom-feeders and tend to gulp their invertebrate food whole, hence their suitability as a source of material. Another notable source of records, though not strictly *ex pisce*, is the mud often found in the mouths and gill pouches of monkfish when trawled.

In August 2013 several Society members participated in the Strangford Lough bioblitz, very ably organised by Julia Nunn. The nature of the bioblitz, to record as many taxa as possible from the Lough in the week available, brought together a multidisciplinary team with a variety of expertise and experience in different taxonomic groups and included SCUBA divers, representatives of the Northern Ireland Department of the Environment and students and staff of the Queen's University Marine Laboratory, whose Portaferry premises were used as the headquarters for the event. It provided a fantastic opportunity for the Society members present to investigate the rich biodiversity of the Lough in the company of very enthusiastic and likeminded colleagues, many of whom had expertise in groups other than the mollusca, providing a fertile mix of inspiration and fascination for all. Through a variety of recording methods, with the input of different specialisms and visiting a selection of habitats, a very wide range of species records was amassed throughout the week, although a relative sparsity of turrids was noticed. Incidentally, some participants (Rosemary Hill, Ron Boyce, John Llewellyn-Jones and Celia Pain) had spent the previous week taking littoral samples from numerous sites around the coast of Northern Ireland, providing a further series of useful records.

At the end of the bioblitz week several samples were taken away for analysis at home. The team from the Department

of the Environment had provided four samples taken from the offshore bed of the Lough by a grab, which had yielded some interesting records during the week itself, and some of the SCUBA divers had also collected offshore substrate samples. John Fisher later analysed some of this material in great detail, revealing some particularly noteworthy results. The tiny gastropod *Tjaernoia [Tornus] unisulcata* (Chaster, 1897) is another species likely to be far more widespread than current records suggest, due to its very small size and completely sublittoral habitat, but John found a number of specimens in one of the grab samples, a couple of which looked fresh, suggesting a living population in the Lough, just the second record of the species from Ireland.

Particularly when doing microscopic analysis of shelly grit samples, the presence and identity of juvenile specimens, especially those of bivalves, can be a source of much frustration. Fortunately John persisted in investigating some very small bivalves from one of the grab samples which he was struggling to identify and, like David McKay, enlisted the assistance of Graham Oliver, who confirmed them as adults of the tiny yoldiid *Microgloma pusilla* (Jeffreys, 1879). The specimens had obviously been alive when taken by the grab, which interested Graham as the species is normally regarded as an inhabitant of deep water (200m+) on the continental slope and beyond, whereas these specimens were taken at just 27.5m depth in Strangford Lough.

Returning to the nudibranchs, on 2<sup>nd</sup> August local diver Sue Daly was exploring the sublittoral shore of the islet of L'Etac off the south coast of Sark when she noticed something she didn't recognise. Thinking it was a sponge covered in silt she wafted at it to clear the sediment only for it to detach from the wall of rock, revealing itself as a mollusc. Sue's excellent photographs allowed subsequent identification of the rare species *Atagema gibba* Pruvot-Fol, 1951 (figure 1). Despite the aforementioned increase in underwater photography, records of this species remain elusive; it is neither small nor from inaccessibly deep water, but is well camouflaged and Britain is undoubtedly at the northern limits of its range.



figure 1: *Atagema gibba*, L'Etac, Sark, Channel Islands.

(photo: Sue Daly)

Sue is a new contributor to the Society's marine dataset and it is encouraging to welcome new recorders. Another new contributor in 2013 was Society member Paul Evans, of Stafford. Paul took the time to write regarding a number of interesting bivalve finds he has made on his beachcombing around Britain, including a possible *Astarte montagui* (Dillwyn, 1817) from Harlech which, although beach worn, was subsequently confirmed and became only the second Welsh record of the species in the Society's dataset. Paul has subsequently provided a number of further beachcombing records and demonstrates that this still very much has a place in the Society's recording scheme.

Many will be aware that the Society makes its dataset openly available via the National Biodiversity Network ([www.nbn.org.uk](http://www.nbn.org.uk)), a very useful resource utilised by many; our own Bas Payne has used it extensively in preparing lectures on changes in species distributions (such as his Presidential address after the 2012 AGM). As an example of the value of this, and also to demonstrate how common species records can potentially be overlooked if one focusses only on scarcities, subsequent to one of Bas' talks in Devon the Society received a number of records including what is surprisingly the first North Devon record for *Crepidula fornicata* (L., 1758), from Westward Ho!, recorded by Janice Whittington of Bideford.

As Bas demonstrated, the flexibility of the NBN online facility is such that it makes tracking changes in distribution very accessible. The saltmarsh specialist *Assiminea grayana* Fleming, 1828 has significantly extended its range in Britain and Ireland in recent years and new records continue to be accepted with interest. Regular contributor and exceptional molluscan photographer Ian Smith (many of his excellent images can be viewed on the Society's website) conducted a detailed survey of the Mersey, Dee, Conwy and Clwyd estuaries and provided a large number of new records for the species, demonstrating some well-established populations of what was, until recently, considered an exclusively east coast inhabitant. Interestingly, the survey found no *A. grayana* records in the Conwy estuary and tidal river – but for how long?

Finally, it is interesting to note how frequently reports are made of unusual finds which turn out to be foreign seashells which have evidently found their way onto our beaches via a human vector: a *Conus* from Northumberland; a Caribbean *Chione* from mid Wales; an Indian Ocean *Atys* on the beach at Weymouth; even an Asian *Meretrix* mistaken for a fossil in Essex. These are all thought to arrive dead perhaps via the aquarium trade, in beach bags after a foreign trip, maybe as part of a piece of surfer's jewellery. One can only speculate, but with increasing foreign travel and trade such reports seem to be on the increase and recorders have to be careful not to be duped.

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## An American in Paphos

Janet Ridout Sharpe

Islands have always attracted visitors, invaders and colonists, human and otherwise. In this country alone, a significant proportion of our land snail fauna is formed of relatively recent immigrant species, including several from the Mediterranean region, which have hitched lifts with human travellers and their baggage. Beginning in prehistory, some notable introductions have been the large helicids *Cornu aspersum* and *Helix pomatia* which probably arrived in Roman times, and most recently *Helix lucorum* appears to have established itself at several localities and has been found as far north as South Lancashire (Norris, 2013).

So it is in Cyprus where the now ubiquitous *Cornu aspersum* and *Eobania vermiculata*, neither of which has been found in undisturbed archaeological deposits predating the Roman period, have largely replaced the indigenous *Helix chassyana*. After many years of acquaintance with the Cypriot land snail fauna through studying archaeological material and collecting their shells on the occasional visit to Cyprus, I was therefore surprised to find a snail that I did not recognise in the hotel gardens at Paphos in May 2014 (figure 1).

When I first saw a group of these small snails on the soil surface in a plant pot, and noted their discoidal shape and densely ribbed whorls, I hoped I had at last found the endemic *Pleurodiscus cyprius*. But when I flipped a snail over, I was puzzled to see a broad, almost inside-out-looking umbilicus and a triangular tooth in the aperture. I had not previously seen anything like it and was at first unable to assign it to a family. It is not included in the 'bible' on

European land snails (Welter-Schultes, 2012), neither was it in the on-line checklist of Cypriot land snails (Bank, 2011) nor the supplement to this (Mienis *et al.*, 2012). I eventually found a look-alike in the classic *Compendium of landshells* (Tucker Abbott, 1989, p. 134): *Polygyra plana* (Dunker, 1843), the Bahama flatcoil snail (family Polygyridae).

The natural distribution of this species is in the Bahamas and Bermuda. Elsewhere an internet search showed just one record from Florida and two from Mexico; there are no on-line records from the Old World. Nevertheless, there was a large thriving population of *Polygyra plana* in hotel gardens along a 3-km stretch of coastline to the south-east of Paphos, where casual observation suggested that in places it is almost as frequent as the dominant *Eobania vermiculata*. Somehow this small snail (approx. 8 mm in diameter) has hitched a lift to Cyprus and found a habitat much to its liking. It is possible that it is a recent introduction undergoing an initial population 'explosion' before indigenous predators, parasites and diseases adapt to the newcomer and begin to take their toll. It may then decline or even disappear completely - or it might become 'invasive' and have an adverse effect on the indigenous fauna. At present it appears to be restricted to the well-watered coastal hotel belt; a search on the inland and more arid side of the coast road, where *Theba pisana* was aestivating on the vegetation, failed to reveal any.

Readers planning to visit Cyprus, especially the Paphos area, might care to look out for this distinctive little snail.



figure 1: *Polygyra plana* from a hotel garden in Paphos, Cyprus (collected May 2014), scale in mm.

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## Cockles, laverbread and Dylan Thomas

June Chatfield

Swansea, Dylan Thomas's home town, is well known for its local culinary fare of cockles and laverbread (made from seaweed or Dulse): this blackboard at the cafe outside Swansea railway station immediately announced two of the town's features. The cockle industry is based on the muddy sands of the Lougher estuary between the north coast of Gower, West Glamorgan and Llanelli, Dyfed, the river being the divide between the counties. Cockles were, and still are, harvested both for sale (pickled or fresh) in local markets and outside the region. They featured as a ready source of free food in Welsh homes in this area when local people would collect for the pot and hence entered the local cuisine. One of the other features of Swansea is as the home of the Welsh poet Dylan Thomas, born and brought up in Swansea and who did nearly all of his creative writing in south Wales using local inspiration. On several occasions he lived a little further west in Laugharne, Dyfed, finally in the famous Boat House (now open to the public), another estuary where cockles abound. He married in his early twenties and he and his wife Caitlin were domestically disorganised and always short of money: about 1938 writing on his poverty at Laugharne he says '*The sun is shining on the mud, my wife is out cockling....*'

Swansea land molluscs came into his early writings too, remembering Cwmdonkin Park of his childhood:

*'Who are his friends? The wind is his friend,  
 The glow-worm lights his darkness and  
 The snail tells of coming rain.'*

(published in *Herald of Wales*, June 1935, written circa 1933)

Glow-worms eat snails and it would be interesting one day to visit Thomas's old haunt to see which snails inhabit Cwmdonkin Park and whether the glow-worm still shines there at night. It was certainly windy over my visit at New Year 2014 as exceptional gales and rough seas lashed Wales and the West Country.

Swansea then, and now, has a gritty side from its industrial past and varied economic levels of its inhabitants with unemployment part of the mix, but it would have been much murkier in Thomas's childhood from the coal mining industry and docking. In one of his last radio broadcasts *Quite Early One Morning* (published 1954) he refers to "*the blackened monuments of civic pride and the museum, which*

*should have been in a museum....*". In spite of this disparaging remark, the Swansea Museum is hosting a new exhibition on Dylan Thomas for the centenary of his birth in 2014 while another newer museum, the Dylan Thomas Centre, has opened nearby, together with a bronze statue of Swansea's most famous son looking out to sea from Swansea's Waterfront heritage area. The muddy sands of Swansea Bay are good for collecting marine shells and a number of Conch. Soc. field meetings were held on Gower in the 1970s, reported in back issues of *The Conchologist's Newsletter*.



## ADVICE & HELP:

### 1. Roman snails:

Numerous assistance requests were dealt with concerning *Helix pomatia* the Roman snail. These included:

- Assistance with or confirmation of correct Roman snail identification;
- Advice on survey options and guidance and help for those engaged in conservation work to obtain Natural England licences (*H. pomatia* is protected under Schedule 5 of the Wildlife & Countryside Act).
- Suggestions to explain the sudden deaths of Roman snails including for a North Downs population where mortality was noted as occurring between dawn and dusk. Various suggestions were made for this unusual observation including one from David Heaver of Natural England who suggested, "I would not discount sciomyzids - the adult flies parasitise adult snails and the larvae develop within either the mantle or body of the snail. When the grown larvae leave the snail to pupate, which the evidence often suggests may be overnight, the snail succumbs and will be found in the morning, the larvae having moved off and pupated in litter".

### 2. Identification issues:

A number of conservation linked identification issues were undertaken. These included clarification of two incorrect identifications of *Pisidium tenuilineatum* from different parts of Sussex, confusion arising from separation of *Valvata piscinalis* and *V. macrostoma*, and several incidents where help was needed to identify large unionid mussels with certainty.

## ROMAN SNAILS THREATENED BY DEVELOPMENT PLAN:

A long and sometimes acrimonious planning dispute had been running for at least nine years between some residents of Harpenden, Hertfordshire and Harpenden Town Council (HTC). This concerns a relatively small area of former allotments and adjacent Westfield Recreation Ground known both to local residents and the council to support a population of Roman snails *Helix pomatia* (figure 1). Potential risks to the snails come from the long-standing desire by HTC to obtain permission to construct an access road, supposedly to allow easier entry for maintenance vehicles. Many local residents consider, however, there to be 'another agenda', with the road being a first step to development of the area. In January 2013 HTC put in a planning application to construct the road. In addition to numerous local objections both the Conchological Society and Buglife also lodged concerns. We believed that the scheme had the potential to cause damage, or possible loss, of the Roman snails due to waste soil being dumped onto areas where they are living. Both organisations suggested that before any planning application could be considered there should have been a licensed ecological study to assess the snail's status on the site to produce mitigation plans to minimise Roman snail losses. It was therefore with surprise that a planning officer for St Albans District Council (SADC) recommended that the road plans be approved at a forthcoming SADC planning committee meeting without

any snail survey data. Surprisingly shortly before the planning committee were due to discuss the proposals it was announced (following last minute reminder of the legal protection afforded to the snails) that they had been shelved to allow further consideration of various matters especially the Roman snails. It would seem that the consequences of approving potentially damaging permissions impacting on a legally protected species led to worries of the negative publicity and legal embarrassment! On 21<sup>st</sup> February the Herts Advertiser ran an article entitled 'Wildlife charity claims first victory in battle against Westfield access road'. Alice Farr of Buglife was quoted as saying: 'This is a great victory for the Roman snails. They're legally protected. Protecting this population is very significant.' It still remains for HTC to organise a licensed Roman snail survey of the site but for the moment it seems that the snails have been saved.



figure 1 Roman snail *H. pomatia* photographed at the threatened Harpenden site. (photo: Carol Hedges)

## STATE OF NATURE INITIATIVE

In my last annual report (MW 32: 4) I described how a consortium of conservation organisations led by the RSPB had produced a 'state of nature in the UK' report, which had reached a partial draft stage by the end of 2012. Further work by all participant organisations continued into early 2013. The Conchological Society contributed by providing feedback comments and suggestions on a series of drafts together with supplying images of molluscs and habitats for possible inclusion. No mollusc was used in the report in relation to specific numerical decline data but it was nevertheless possible to get pearl mussels *Margaritifera margaritifera* included as a case study example of an endangered and declining species where 'good quality' information was available to demonstrate significant national losses. Specific mention was also made of the glutinous snail *Myxas glutinosa*, a freshwater species that has become virtually extinct in the UK in about the last 100 years and one now restricted to a single UK mainland site. The State of Nature report was released on 22<sup>nd</sup> May 2013 with a launch held at the Natural History Museum in London. This included speeches delivered by Sir David Attenborough and a Government minister followed by a carousel of themed talks. The Conchological Society was extremely fortunate to secure the help of Dr Peter Cosgrove, who has undertaken extensive conservation work on freshwater pearl mussels in Scotland. Peter delivering a talk titled "Mollusc of the Glen", an excellent presentation giving a very well received account of the plight of this internationally endangered and iconic species (figures 2-4).



figure 2: State of Nature: image of Peter Cosgrove delivering his pearl mussel presentation at the State of Nature launch event. (photo: Peter Topley)



figure 3: State of Nature: Peter Cosgrove at a site in the North West Highlands by a pile of dead pearl mussels – evidence of damaging illegal poaching. (photo: Peter Cosgrove)



figure 4: State of Nature: Pearl mussels sampled from a Scottish stream; a seemingly healthy population as all age classes of mussel are represented. (photo: Peter Cosgrove)

The State of Nature was presented by a consortium of 25 UK conservation and research partner organisations<sup>1</sup>. The report is made up of five components. The main report provides a summary overview and also explains how the status of the chosen species have been measured. Population trends for chosen species appear within report sections giving the main habitat for that species: farmland, lowland semi-natural grassland, uplands, woodlands, coastal, freshwater and wetlands, urban, marine and finally British Overseas Territories. Four smaller reports then deal with selected habitats in each of England, Scotland, Wales and Northern Ireland. The State of Nature reports provides analysis and comment on the abundance and distributional data of about 59,000 species (assessing trends over a variety

<sup>1</sup> Amphibian & Reptile Conservation, Association of British Fungus Groups, Bat Conservation Trust, Biological Records Centre/ Centre for Ecology & Hydrology, Botanical Society of the British Isles, British Bryological Society, British Dragonfly Society, British Lichen Society, British Mycological Society, British Trust for Ornithology, Buglife, Bumblebee Conservation Trust, The Conchological Society of Great Britain & Ireland, Kew, The Mammal Society, Marine Biological Society, Marine Conservation Society, People's Trust for Endangered Species, Plantlife, Pond Conservation, Rothamsted Research, RSPB, Wildfowl & Wetlands Trust, The Wildlife Trusts.

of periods starting in the 1960s) and includes gains as well as losses. Predictably the overall message is one of species decline or even total loss. Causes of species decline are summarised as:

- Loss of semi-natural habitats; Urbanisation;
- Climate change; Afforestation; Fishing practices;
- Illegal persecution; Agricultural intensification;
- Upland management; Introduced, invasive species.

On the plus-side some species recovery has been due to: Conservation initiatives (including farming 'stewardship' and other payments); Wetland creation; Improved water quality.

One of the main problems in gaining an objective assessment of the state of nature is the need for reliable data; in short there is a 'knowledge gap'. As the main report states (p 9), "A recurring theme is that, despite a rich resource of data collected over recent decades, and the existence of data bases holding millions of wildlife records, we are unable to assess population trends for more than a small percentage of species. Birds, butterflies and mammals often steal the limelight, while the many thousands of invertebrates, fungi, lichens and mosses that make up so much of the UK's biodiversity receive less attention".

It is intended to produce more State of Nature reports in the future and with more analysis time the immense (and rapidly growing!) data sets managed the Conch Soc will hopefully contribute quantitative data to allow us to use selected molluscan species to illustrate the state of some of habitats that they depend upon especially vulnerable and declining ones such as wetlands.

The State of Nature report can be accessed at: [www.rspb.org.uk/stateofnature](http://www.rspb.org.uk/stateofnature) .

### GOVERNMENT USE OF 'STATE OF NATURE' FINDINGS

On 24<sup>th</sup> October 2013 Wildlife organisations welcomed the publication of new official statistics charting the state of a range of threatened species in the UK. This DEFRA index uses statistics that largely echo (and partially use) the findings of the State of Nature report and include 210 native species including birds, bats, moths, butterflies, hares and dormice. Many conservationists have described the list as "the FTSE Index for threatened wildlife". Although no molluscs were included, determined action by the Conchological Society was able to influence the contents of the short press release put out by the State of Nature partnership. Thus one sentence in the release reads, "There is a great deal of wildlife not included in this list including endangered species like the freshwater pearl mussel. We will be working with the Government to ensure data for these species are included in future to build a full picture of the state of our wildlife". Clearly the Society may need to assemble data that is suitable to ensure that some molluscan species appear in future lists.

The newly released DEFRA list (C4. Status of threatened species) can be viewed at: <http://jncc.defra.gov.uk/page-4238> .

### The 6<sup>th</sup> QUINQUENNIAL REVIEW OF THE WILDLIFE & COUNTRYSIDE ACT 1981

Invertebrate Link member organisations continued discussions in early 2013 concerning invertebrate responses to the 6<sup>th</sup> QQR consultation and in March agreed upon a

recommendation to be submitted to JNCC (which then processes recommendations before submission to DEFRA who make the final QQR decisions). Molluscan recommendations repeated those forwarded but shelved by the 5<sup>th</sup> QQR. Thus the molluscan recommendations or actions to be submitted for QQR consideration were:

Species	6 <sup>th</sup> Quinquennial Review recommendation or other action.
3. De Folin's lagoon snail <i>Caecum armoricum</i>	Downgrade from Full Protection to Section 9(4)(a) only*
4. Lagoon sea slug <i>Tenellia adspersa</i>	Downgrade from Full Protection to Section 9(4)(a) only*
5. Northern hatchet shell <i>Thyasira gouldi</i>	Final decisions are still awaited in relation to QQR5 Scotland. Invertebrate Link participated in the relevant consultation process, submissions to which were published by the Scottish Government in March 2012 and are not repeated here.
6. Little Whirlpool Ram's-horn Snail <i>Anisus vorticulus</i>	Recommendations to include this species on the WWA were dropped as it is already fully protected by inclusion on EU Article 17 (i.e. it is a 'European Protected Species')

The downgrade of *C. armoricum* and *T. adspersa* to 9(4)a was made because we believe that Full Protection hinders the recording and study of these species; they are not at risk from collection. We do, however consider that these species are at risk of extinction in Great Britain and a significant cause of that risk is the loss of their habitat ('places of shelter etc') by deliberate or reckless activities, including built development; protection from these risks is covered by Section 9(4)(a).

### SAC (SPECIAL AREA OF CONSERVATION) SPECIES SITE INTEGRITY SPREADSHEETS

In August 2013 the Society was able to assist Natural England (NE) by 'peer reviewing' a series of SAC species site integrity spreadsheets. These are to be the foundations for SAC site improvement plans for England's Natura 2000 sites. This EU funded project allowed NE to examine all aspects of site improvement for a range of molluscs requiring SAC designation for England; these include *Anisus vorticulus*, *Vertigo angustior*, *V. geyeri*, *V. genesii*, and *V. moulinsiana* (figure 5).



figure 5: *Vertigo moulinsiana* habitat by a catchment stream in the River Avon SAC.

### BRITISH WILDLIFE

Three molluscan 'wildlife reports' were published during 2013. These were able to cover a range of molluscan issues and to promote the Conchological Society. As such, features included digests and discussion of the marine and non-marine reports and other topical newsworthy items including development of selected items from *Mollusc World* and *Journal of Conchology*. Examples include

several reports relating to *Helix pomatia* and *H. lucorum*, many reports relating to slugs and regular reports of new nudibranch finds.

### CONSERVATION & LINKS WITH VARIOUS PUBLICATIONS:

**Going, Going, Gone:** The Society was able to gain a double page entry (including our distinctive Society logo) in the third edition of *Going, Going, Gone* (Think Publishing, 2013: ISBN 978140818630-5) with a revised entry for the endangered *Anisus vorticulus* the little whirlpool ram's-horn snail. The book invited 100 conservation groups from around the world to nominate one organism that gave them cause for concern, a species possibly under the threat of extinction. The book contains two other threatened molluscs; the freshwater pearl mussel *Margaritifera margaritifera*, nominated by the Freshwater Biological Association and the Blue-grey Taildropper Slug *Prophysaon coeruleum* included by the Habitat Acquisition Trust (a Canadian organisation).

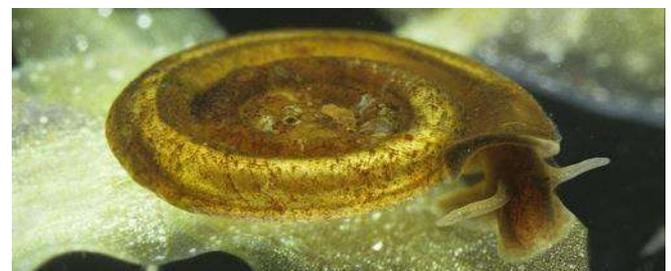


figure 6: The little whirlpool ram's-horn snail *Anisus vorticulus* from Amberley Wild Brooks (in the Arun Valley SAC).

(photo: Paul Sterry)

### Buglife Species Management Sheet: The Pond Mud Snail *Omphiscola glabra* (figure 7):

Assistance was given to Buglife in the formulation of this Species Management Sheet, one of a series also including *Segmentina nitida*. The sheet includes details of ecology, life cycle, UK distribution, reasons for decline and habitat management advice (of particular value to land managers and farmers entering various environmental stewardship options. The sheet, which bears the Conchological Society logo, can be accessed at [www.buglife.org.uk](http://www.buglife.org.uk). There is also a mud snail study group: [www.mudsnailstudygroup.org.uk](http://www.mudsnailstudygroup.org.uk).



figure 7: *Omphiscola glabra*, the mud snail. (photo: Roger Key)

**Isles of Scilly:** An illustrated report was published in *The Isles of Scilly Bird & Natural History Review* describing molluscan observations made in two different habitats during a week's visit to the islands. The article includes notes on the extreme diversity observed on St Martin's Flats during two day visits coinciding with extremely low tides. By contrast a further section introduces the often overlooked supra-littoral specialists that abound on the extreme

upper rocky shores that are so well represented on Scilly (figure 8). The article, which was accompanied by colour figures of the described species, provided an opportunity to advertise the activities of the Society to a wide-ranging natural history audience. (Willing, M.J. 2013. Marine Molluscs and more! Observations from a week on Scilly in September 2012. *Isles of Scilly Bird and Natural History Review 2012*. Isles of Scilly Bird Group. BTO Books).



figure 8: A sheltered, boulder-strewn upper shore habitat on St Agnes, Isles of Scilly – typical *Paludimella littorina* habitat (inset: *P. littorina* taken from rocky upper shore habitat on the Isles of Scilly (size of shell 1.8mm)).

## AN INTRODUCTION TO RIVERS TRUSTS - MOLLUSCS IN ACTION

In 2011 I became a trustee of the Arun and Rother Rivers Trust (ARRT). This is one of many separate trusts each dealing with different catchments throughout the country. Rivers Trusts are charitable organisations that seek to bring together all parties interested in the use and health of a river catchment. This involves farmers, fishermen, conservationists, those seeking recreational pleasure from rivers and streams, people living in communities within the catchment and more! To find out a bit more about Rivers Trusts in general visit

[http://www.theriverstrust.org/riverstrusts/trust\\_movement.html](http://www.theriverstrust.org/riverstrusts/trust_movement.html)

The ARRT objectives pretty much mirrored those of other Trusts. These are:

- Protect, conserve, and enhance the rivers, streams, watercourses and water impoundments in the Arun and Rother catchments.
- Preserve and improve the biodiversity within our catchments.
- Through education increase the knowledge of the public of the need and importance of a healthy river environment.
- Recruit volunteers to assist in the conservation, improvement and monitoring of our catchments habitats.
- Work closely with all interested parties to highlight the need for proper water management.

In ARRT I consider my role as very much one associated with conservation and biodiversity management. It is especially useful to be able to see how malacology (and invertebrate ecology in general) can be used both as a tool and also a source of education, interest and public engagement in a rivers context. It is also extremely useful to try to understand how others view and value the ‘services of a river’.

Molluscs were able to play their part in a recent ARRT initiative. As part of the ARRT ‘Western Rother Fishery

Habitat Enhancement Project’, works were undertaken (creation of fish refuges and gravel ‘riffle’ stretches) at various locations on a stretch of the River Rother and two tributary streams near Shopham Bridge, Petworth. Prior to and following this work various surveys were undertaken to assess biological changes (electro fishing, general

BNWP invertebrate surveys and Mollusca) and in August 2013 led to the unexpected discovery of ‘good numbers’ of *P. tenuilineatum* at the lower end of the Sutton End Stream. This tiny English BAP priority species had only been recorded once previously in West Sussex, in 1970 by Michael Kerney from Harting Pond, near South Harting. Repeat surveys there in 2000 failed to relocate specimens; it was believed that pond management work in the mid-1970s had caused its loss and so also the only known population in the county. This discovery reconfirms the presence of *P. tenuilineatum* in West Sussex. The discovery of such a tiny bivalve caused quite a lot of interest and surprise from ARRT members who were previously unaware that our freshwaters supported a whole range of tiny bivalves, each with its own favoured habitat (figure 9).

Two reports on the ARRT molluscan surveys associated with the Shopham fishery initiative can be found at <http://www.rrt.org.uk>.



figure 9: Tiny, tributary chalk stream feeding into the Rother and supporting a strong population of the fine-lined pea mussel *Pisidium tenuilineatum*.

## ASSOCIATIONS WITH OTHER ORGANISATIONS:

The Society has active associations with many other conservation organisations. For example we have worked with Buglife ([www.buglife.org.uk/](http://www.buglife.org.uk/)) to assist in the development of species conservation management leaflets, to respond to planning applications with potentially negative impacts on protected molluscs and in developing responses to quinquennial reviews of The Wildlife and Countryside Act. Invertebrate Link (IL)

([www.royensoc.co.uk/InvLink/Index.html](http://www.royensoc.co.uk/InvLink/Index.html)), which meets biannually, gives us links with representatives from NGOs and governmental conservation bodies and also allows us to advertise our work to these bodies through the distribution of an annual report summarising our recording and conservation activities. Other key partners included the RSPB and the Wildlife Trusts. As a member of the Sussex Wildlife Trust’s Conservation Committee I have been able to represent molluscan interests and contribute an annual records report to *Adastra*, the annual review of wildlife recording in the county ([www.sxbrc.org.uk](http://www.sxbrc.org.uk)).

# Hon. Treasurer's Report on the Financial Statements to 31/12/2013 *Nick Light*

The relevant Financial Statements to which these comments refer are available to view online at <http://www.conchsoc.org/sites/default/files/MolluscWorld/AGM%20Apr%202014/Treasurer2013.pdf>.

The Society remains in a good financial position. Subscription income was very much the same in 2013 as it was in the previous year and the membership management service provided by Circa is working very smoothly and pulling more of the income to the start of the year which helps cash flow and reduces workload. Investment and interest income has continued at its modest level. Included in donations and legacies is £900 from the sale of books given to the Society by Stella Turk, together with a number of smaller donations by members. I would like to thank all of our generous donors and also Bas Payne who has organised the book sales.

Our expenses in the year were £500 higher than in the previous year and the major reason was an increase of £980 in membership service costs as we paid our first full year to the agency who handle our membership subscriptions, offset by a reduction in grants approved.

Our results before revaluing investments was a loss of £897 compared to a loss of £1,011 in 2012. Our investments gained £1,348 in value against £4,285 in 2012. Our holding in funds invested in Bonds was losing value in the first six months of 2013 so in the third quarter we transferred £22,000 to funds invested in shares. Total investments at the end of the year were £108,284.

Looking at our balance sheet at the year-end it would appear we are short of cash. In reality we have a large inflow of cash on the first working day of 2014 when many members pay their subscriptions so we do not face a problem. We can raise cash within weeks from the sale of investments should that ever be necessary. However I would like to thank all our members who pay promptly.

The Society objective is to continue operating at around break even. We continue to research the digitisation of both the Journal and Mollusc World which could involve a significant initial cost, to achieve both a benefit for many members and long term expense savings. We could also finance help towards the further digitisation of our extensive mollusc records. Our financial reserves would enable us to do both of these things if we can find the right route forward. On a cheerful note we anticipate continuing for a few years without the need to consider a change in subscription rates.

## A separate note of thanks

We would like to thank Liz Platts for her sterling work as Honorary Examiner of the accounts over the years; she has recently relinquished this role. Our new member Jian Fan has very kindly offered to take on this work during the time of his Phd studies in the UK. His longer term appointment will be proposed at the 2015 AGM.



figure 1: members listening to Mike Allen's Presidential Address at the April 2014 AGM, Angela Marmont Centre, NHM, London. (photo: Peter Topley)

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## A request for help: The shell collections of George Maxwell of Albany, Western Australia

I am researching the shell collections of George Maxwell of Albany, Western Australia. Maxwell was born in the UK in 1804 and lived in Albany from 1840 to 1879 during which time he dredged for shells and we believe that he sold the collections world wide. We have a letter dated 1859 stating that it was a much more lucrative occupation than collecting and selling botanical specimens. My chief objective is to find where shell collections of around this time were located.

I would be grateful for any help in this area from both members and subscribing institutions of the Conchological Society.

Thank you,

Donald Viol, BSc.  
E mail: [kdviol@westnet.com.au](mailto:kdviol@westnet.com.au)

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## Bill Bailey

The Society has only recently been informed of the death of our member Bill Bailey, Archivist of the Malacological Society of London, who died on Christmas Day last year. Unfortunately, because of the delay in receiving this sad news, his details appeared in the recently issued Conchological Society membership list.

## 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. For a full list of who to contact please see the Society's web site (<http://www.conchsoc.org/pages/contacts.php>) or the Membership List issued in May 2014.

## How to become a member

Subscriptions are payable in January each year, and run for the period 1st January to 31st December.

- 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 overseas postage, members living in 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, 13-17 Sturton Street, Cambridge, CB1 2SN,

(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, Peter Topley, 7 Fairfax Close, Clifton, Shefford, Bedfordshire, SG17 5RH ([magazine@conchsoc.org](mailto:magazine@conchsoc.org)). 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-1.5Mb (JPEG preferred) be sent with your submission. All originals will be treated with care and returned by post. Authors should note that issues of the magazine may be posted retrospectively on the Conchological Society's web site. The general copy deadline for the November 2014 issue is 3rd October 2014; inclusion in that issue 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.

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## Conchological Society **Diary of Meetings (continued from back cover)**

**Saturday 8th November 2014 REGIONAL INDOOR MEETING** – to be announced: please see website.

### **Saturday 29th November 2014: WORKSHOP MEETING**

10:00 – 17:00: by kind invitation of Judith Nelson at Hilbre House, Pembroke Road, Woking, Surrey GU22 7ED. The annual Woking workshop offers members the opportunity to receive tuition on identifying difficult groups. Those who wish to come should ring Judith (01483 761210) in advance for more details and to reserve a place. A fee of £5 will be charged to cover expenses. Please note that Hilbre House is a non-smoking property. Will include discussion of identification of *Spisula* spp.

### **Saturday 6th December 2014: INDOOR MEETING: A Christmas miscellany**

14:00 – 17:30: Angela Marmont Centre, Natural History Museum.

As last year, another meeting made up of a series of short presentations (5-20 minutes) by members: these can be anything mollusc-related, with or without exhibits. 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 the Hon Meetings Secretary (contact details below).

(Council members please note that there will be a Council meeting before this meeting.)

Please note the following dates in 2015 for your diary:

Saturday 25 January 2015: INDOOR MEETING (and Council meeting).

Saturday 28 February 2015: INDOOR MEETING (from 11:00; talk at 14:00 by Peter Dance).

Saturday 18<sup>th</sup> April 2015: ANNUAL GENERAL MEETING (and Council meeting).

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**Indoor meetings** at the Natural History Museum take place in the Angela Marmont Centre for UK Biodiversity, Darwin Building. From the main entrance hall, turn left at the tail of the *Diplodocus*, go past the dinosaur exhibition, then down the stairs, and then turn left. The door of the Centre will be locked; please ring the bell and someone will come to open it. **Please bring plenty of exhibits and demonstration material.** If you intend to attend a **field meeting**, please remember to inform the leader beforehand, and if, on the day, you are held up in traffic or your public transport is delayed, please try to contact the meeting leader if possible.

**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, The Mill House, Clifford Bridge, Drewsteignton, Exeter EX6 6QE; 01647 24515, [programme@conchsoc.org](mailto:programme@conchsoc.org)

# Conchological Society of Great Britain and Ireland

## Diary of Meetings

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



### **Saturday 12th July 2014: FIELD MEETING (non-marine): Moss Valley Woods, Sheffield, West Yorkshire** (joint with Sorby NHS).

Contribution to the Sheffield Bioblitz.

Organiser: Robert Cameron ([radc@blueyonder.co.uk](mailto:radc@blueyonder.co.uk), 0114 268 6675 (home))

Rich, wet clough woodland with remains of early industrial workings. 38 species are known, and it is the only site within Sheffield city limits in which *Merdigera obscura* and *Clausilia bidentata* are recorded. Meet at 10.30 by the Bridge Inn at Ford (Grid ref SK 402 803), where there is a public car park near that of the inn.

### **Sunday 13th July 2014: FIELD MEETING (marine): Chimney Rocks, Penzance, Cornwall.**

Organiser: David Fenwick (01736 448 392, [davidfenwicksnr@googlemail.com](mailto:davidfenwicksnr@googlemail.com)).

Rocky shore with good small gastropods, piddocks and *Doris ocelligera* (LT 12:40 +0.5).

Meet 10:30 at top of slipway on W side of Jubilee Pool, SW 475 299.

### **Monday 14th July 2014: FIELD MEETING (marine): Hannafore Point, Cornwall.**

Organiser: Bas Payne (01647 24515, [bas.payne@gmail.com](mailto:bas.payne@gmail.com))

Rocky shore; also patches of sand with small bivalves, including *Spisula elliptica*, *Gari* and *Moerella* (LT 13:30 +0.4).

Meet 11:00 on Marine Drive at the kiosk at Hannafore Point, SX 255 523.

### **Saturday 19th July: FIELD MEETING (non-marine): Thatcham Reedbeds, Berkshire.**

Organiser: Rosemary Hill (0118 966 5160, [rosemaryhi@lineone.net](mailto:rosemaryhi@lineone.net)).

One of the largest reedbeds in Southern England, along with ex-gravel pits, streams and the Kennet and Avon canal, providing a wide range of water bodies and wetlands to survey.

Meet at 10:30 at the Nature Discovery Centre building, Thatcham, adjacent to the Main Car Park grid ref. SU506670.

### **Saturday 6th and Sunday 7th September 2014: WORKSHOP (marine): Scarborough, North Yorkshire.** (joint with Yorkshire Naturalists' Union and Seasearch)

Organiser: Paula Lightfoot (01904 449675, [p.lightfoot@btinternet.com](mailto:p.lightfoot@btinternet.com))

A two-day course on the ecology, life cycle and identification of nudibranchs by Jim Anderson ([www.nudibranch.org](http://www.nudibranch.org)). Cost £70 per person which includes course materials. The course is a mixture of theory and practical sessions and will include a visit to a local shore on Sunday morning.

### **Monday 8th to Saturday 13th September 2014: FIELD MEETING (marine and non-marine), Yorkshire.** (joint with Yorkshire Naturalists' Union and Seasearch)

Organisers: David Lindley, Adrian Norris and Paula Lightfoot. Enquiries to Paula Lightfoot (01904 449675, [p.lightfoot@btinternet.com](mailto:p.lightfoot@btinternet.com)).

A week of intertidal recording on a range of rocky and sediment shores along the Yorkshire coast, based in Scarborough where laboratory facilities will be available at the University of Hull's Scarborough campus. If sea conditions permit, there will be diving and dredging to provide further specimens for everyone to study. (LT 10:20 +0.7 (8<sup>th</sup>); lowest 11:50 +0.4 (10<sup>th</sup>); 14:00 + 1.1 (13<sup>th</sup>)). Visits to terrestrial and freshwater sites will also be arranged.

### **Thursday 18th September 2014: FIELD MEETING (non-marine): Wrest Park, Silsoe, Bedfordshire, MK45 4HR.**

Organiser: Peter Topley (01462 615499, [magazine@conchsoc.org](mailto:magazine@conchsoc.org)).

A weekday joint meeting with the Bedfordshire Invertebrate Group.

Land/ freshwater mollusc and other invertebrate recording in this English Heritage landscaped park with wooded areas, ornamental ponds and waterways.

Meet at 10:30am at English Heritage car park (TL 09116 35582). The adult entrance charge of £9.00 is likely to be waived for those attending this meeting; it will therefore be necessary to let the organiser know you are coming in advance of the meeting and for us to enter the site from the free car park as a group.

### **Saturday 11 October 2014 INDOOR MEETING: Demonstrations, exhibits, and lecture.**

**Guest Speaker: Anna Holmes, on her work on Anomiid DNA and taxonomy** (aided by CS research grant).

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 18th October 2014: FIELD MEETING (non-marine): Wyre Forest, Worcester / Shropshire** (joint with Wyre Forest Study Group).

Organisers: Rosemary Winnall (01299 266 489, 07732 203 393, [rosemary@wyreforest.net](mailto:rosemary@wyreforest.net)) and John Bingham.

Slugs, fungi and harvestmen.

Meet at 10:30 at Uncllys Farm, SO 760 753 (postcode. DY12 2LR).