

Mollusc World

Issue 38

July 2015



Molluscs in Northumberland, Scotland, New Zealand and the Solomons

Conservation and marine recording news
Dennis Seaward 1928 – 2014: an appreciation



The Conchological Society of Great Britain and Ireland

Helping to understand, identify, record, and conserve molluscs

From the Hon. Editor

In this issue of Mollusc World there are reports from our Hon. Marine Recorder and our Hon. Conservation Officer, both of which update us on some of the Conchological Society's activities during 2014. As a voice for mollusc conservation we continue to 'punch above our weight' as far as our involvement in various areas is concerned. Much of this is down to the hard work of Adrian Norris, Simon Taylor, Martin Willing and other members in a voluntary capacity on behalf of our Society. Members may not be aware that the Society's **Conservation and Recording Committee** carries out important work in co-ordinating our efforts in this area. We thank Robert Cameron for chairing this committee for a number of years and now welcome Martin (who will be continuing as Hon. Conservation Officer), as chair of this committee.

On May 23rd this year the Conchological Society once again participated in 'Big Nature Day' at the Natural History Museum in London. There was a great deal of interest by members of the public at our stand and I hope to include some photos of the event in the November issue. The Conchological Society is a partner organisation with Buglife (the Invertebrate Conservation Trust) and we were pleased that Buglife was able to advertise our Society at two recent meetings in Scotland. If you would like some leaflets (or perhaps a poster) to advertise our Society at any event or field meeting you are involved with, please contact our Publications Officer, Tom Walker (details page 31).

Peter Topley

The Conchological Society
Of Great Britain and Ireland
Founded 1876 Registered charity 209265

Helping to identify, record, understand and conserve molluscs

With increasing concern about human impacts on the environment, it is vital to understand the natural world so that we can conserve it better.

The Conchological Society has contributed hundreds of thousands of British and Irish land, freshwater and marine mollusc records to the UK National Biodiversity Network and the Irish National Biodiversity Data Centre.

The Society's members range from amateur shell collectors to professional malacologists. We are a national society with an international membership interested in worldwide living and fossil molluscs.

We publish papers and articles on subjects including shells, anatomy, ecology, distribution, taxonomy and cultural aspects of molluscs. Regular opportunities are organised to meet together, learn about molluscs and record them in the field.

Field meetings: in different parts of the UK and Ireland, mainly in the warmer months, to record molluscs in diverse habitats, including a week-long marine field meeting each year in the autumn.

Indoor meetings, talks and workshops: mainly over the winter months.

Publications: include the *Journal of Conchology*, *Mollusc World* colour magazine, and a website (www.conchsoc.org) full of information about molluscs and about the Society's activities.

Research grants: emphasis on supporting projects carried out by younger scientists and by amateurs.

To join us and for more information go to:
www.conchsoc.org

New Conchological Society leaflet/poster (see above)

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 31 for further details).

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Printed by Short Run Press, Exeter, EX2 7LW.

A letter to members from the Conchological Society's new Hon. President



Outgoing Conchological Society Hon. President, Mike Allen (right) introducing Peter Topley as the newly elected Honorary President at the AGM, 18th April 2015. (photo: Caren Topley)

Dear Conchological Society members,

Presidents of the Conchological Society are elected by members to serve in an honorary capacity for three years. For the last three years Mike Allen has fulfilled this role with great energy and enthusiasm, continuing to take this Society forward. One of our ongoing aims is to ensure a firm future for the *Journal of Conchology* in its role as an essential and respected publication in the fields of molluscan taxonomy, ecology and biogeography. I am very grateful that Mike has agreed to provide continuity in continuing to progress this, building on his hard work so far, in collaboration with the Journal's Hon. Editor, Dr. Graham Oliver.

Having been elected by you to serve as Hon. President, I am humbled as I look back on the long and distinguished history of the Conchological Society from its beginnings in Leeds. Like many natural history societies established to focus on and promote the awareness and recording of a specific faunal group, our Society has made changes over time in order to hopefully remain relevant to members and

those groups with whom we collaborate, and to be viable for the future. When I joined as a child back in 1970, there was a thriving 'Junior Section' which held its own meetings, there was less of a focus on mollusc conservation and the indoor meetings were pretty formal compared to the lively and friendly events that they are today. Some of these changes reflect an alteration in society in general and how we spend our time, but I believe that small specialised natural history societies like ours will continue to be valuable organisations in the future. They provide, amongst many other things, foci of interest, pools of expertise that may be drawn upon and grown as members learn together and resources for specialist publication.

This Society is for those interested in molluscs, be it their shells or their biology, distribution, use by humans or the many other aspects of this fascinating subject. Whatever aspect of molluscs you are interested in, I encourage you to be actively involved and help expand the 'resource base' of people and ideas. Please make your views known so that we know we are providing the right kinds of meetings and activities for members. If there is nothing for you in the area where you live, think about suggesting or organising (you don't have to be an 'expert') a local meeting or recording excursion. If you can offer any ideas in this area, please contact our Hon. Programme Secretary, Bas Payne (contact details on page 31).

The Conchological Society's recording schemes, publications and interactions with conservation organisations remain at the heart of what the Conchological Society does and should be ensured and strengthened where resources allow. An important aspect our Society is that of continuing to support the interests of new and existing members, whether we are shell collectors, scientists, ecologists, beginners or experts. Much of this is up to each one of us as we share our discoveries and questions, using our gifts when and where we can.

Peter Topley

On the front Cover: a painting by Brian Goodwin – 'An homage to Matisse, and others'

Brian has provided the following explanation of his painting:-

Centrally is a version of **Henri Matisse's** collage 'The Snail' or '*L'Escargot*', the original of which is in the Tate Gallery, London. This is surrounded by a number of pastiches, representing molluscs, in the style of famous artists.

Starting at 12 o'clock we have:

Salvador Dali – a slightly 'molluscified' version of his '*Das Rätsel der Begierde*'.

Andy Warhol – he did several versions of 'Lips', which seem to me almost identical to the ventral surface of certain cowries.

Joan Miró – a generalized Miró surrealist piece, with two snails, one cephalopod, and an operculum!

Piet Mondrian – somewhat like Matisse's snail but in typical Mondrian style with coloured blocks and black dividing lines.

René Magritte – based on his '*La Trahison des Images*' (The Treachery of Images) – a picture of a pipe with the caption '*Ceci, n'est pas une pipe*' (This is not a pipe). Here my caption translates as 'In fact, this is a snail'.

Georges Seurat – Seurat never painted any snails as far as I am aware but this is a conch shell in 'pointillist' style.

Bridget Reilly – A cone shell – the best I could manage in imitation of one of the foremost exponents of 'op-art'. Her style is technically difficult to imitate.

Pablo Picasso – Another artist whose work is much harder to pastiche than you might think. Loosely based on '*Glass and Jug*' ('*Verre et Pichet*') with the lemon (centre front) transposed into another operculum!

This story begins some 20 years ago when I led a marine and non-marine field meeting to Northumberland. At that stage, my knowledge of marine mollusca was confined to the macrofauna and my first few weed washings. So on the first day I was completely out of my depth when I met the late Ted Phorson for the first time, enthusiastically waving about a piece of paper with pictures of his latest shell sand discoveries and asking us to look out for them. This sheet detailed three species including a small gastropod *Tornus unisulcatus* which I learned was about 1 mm across. At this point I decided I had better explain the extent of my ignorance and Ted very kindly spent some time assisting me with the identification of larger species. Fortunately, he and Rosalind Holt tackled the shell sand, or the mollusc list for the meeting would have been very impoverished. On reaching home, I filed his piece of paper, glanced at it in passing but even when I became interested in shell sand, I did not find the species on it.

When John Fisher chanced upon *T. unisulcatus* in samples from the Strangford Lough marine meeting in 2013, Jan Light circulated an image of the shell which Ted had drawn using a camera lucida. At this point I recognised the piece of paper from 20 years ago. It so happened that I had already booked a holiday trip to Northumberland for June of the following year that fortunately coincided with the low tides. So the idea of a field meeting in Northumberland to check the *T. unisulcatus* sites was hatched. In the meantime, the winter from hell scoured the Northumberland coastline with a tidal surge, and when I contacted Natural England to seek permission to visit Sandham Bay in the Lindisfarne National Nature Reserve, they had their doubts that I would find much shell sand. They were also concerned that the Little Terns would desert their young as they nest on the strandline of that particular bay. Permission was obtained on the basis that one of their staff would accompany us to ensure the safety of the Little Terns and there was also a restriction on how much shell sand we were allowed to remove. The other site for *T. unisulcatus* was at the north end of Low Newton Bay on the mainland, so I also sought permission from the National Trust to visit this site, in case none or insufficient shell sand was obtained.



figure 1: Bucket Rocks, Berwick-upon-Tweed.

On reaching Northumberland in June, the first of the low tides was fairly early the next day so it was decided to

revisit Bucket Rocks at Berwick-upon-Tweed as this was the nearest site (figure 1). This site consists of low limestone rock reefs and sand and is fairly exposed and eastward-facing. Ron and I set off on foot with our equipment and only when we got to the shore, remembered that wellingtons would have been useful! Ron worked the strandline for shell sand in shoes and I set off for the lower shore in camping sandals. Small samples of shell sand from deposits with black particulate matter and of seaweed were obtained.

The following day we set off to Lindisfarne for the advertised field meeting and as suspected there were no additional members. Nor was there any sign of Natural England staff and as time was pressing we set off across the island to Sandham Bay, enjoying the orchids in the dunes and distant views of Lindisfarne Castle in the sunshine. We approached the bay with caution and scanned it with binoculars. Not a Little Tern to be seen, which was to our advantage but obviously not that of the birds! Sandham Bay is a small enclosed bay with folded limestone and sandstone reefs giving it some shelter. After an examination of the lower shore (figure 2), shell sand was collected from two promising accumulations with plenty of the black particulate matter. However there was not a lot of shell sand present.



figure 2: Ron Boyce searching through seaweed in the *Laminaria digitata* zone at Sandham Bay.

A conflict of interest meant that it was not possible to sample the lower shore on the following day at Low Newton but the site could be visited later to obtain shellsand. The north end of the bay has interlaminated sandstone and siltstone reefs, tilted at an angle as a result of tectonic action, which had trapped an ample supply of shell sand for collection. We now had samples from three of the sites of the original field meeting for comparison. However any attempt at comparison is complicated by a number of factors. These include a different time of year, June vs. October, different weather conditions in 1994 and 2014, and samples taken and analysed by different people. Consequently, any comparison may be only satisfy curiosity rather than indicate any meaningful change. In some cases, I may have failed to record some minute bivalves in June that were too immature to recognise but which were successfully recorded 20 years previously. This year, 26 species were found at Bucket Rocks including new records of *Caecum glabrum*, *Ammonicerina rota* (figure 3) and *Mya truncata*. A further 13 species were not found but the sample taken was fairly small.



figure 3: *Ammonicerina rota* (size <1 mm) from Bucket rocks.

At Sandham Bay, the small but reasonable quantity of shell sand presented a problem when put under the microscope. The black particulate matter that had been thought to be decaying seaweed turned out to be minute pieces of sea coal, and its properties for absorbing and throwing back light from one's microscope lamp meant that only tiny samples could be searched through at a time. The bay had looked entirely pristine when visited so I asked Ron where the nearest coalmine was to Lindisfarne and he suggested Scremerston, just south of the Tweed Estuary. I was depressed by the thought that we might be looking at shell sand dragged some distance down the coast by the winter storms and with dubious relevance to its locality. However when seeking geological information I came upon a doctoral thesis (Bower 1990) that most helpfully gave details and diagrams for all the coastal sites and which detailed a thin seam of coal just offshore at Sandham Bay which explained the deposit. Unfortunately, *T. unisulcatus*, *Eulima bilineata* and another seven species were not found but there were 11 other new species including *Capulus ungaricus*, *Ebala nitidissima* (figure 4) and a tiny transparent scallop which I thought might just be *Delectopecten vitreus* and which was sent to the National Museum of Wales Cardiff for examination. Anna Holmes kindly sent an image of the scallop on to Henk Dijkstra who identified it as a very juvenile *Pecten maximus* (figure 5)! This is on the basis that in the pre-radial stage (before the ribs have developed), it has an active ctenolium (comb-like structure) on the suture, which is lacking in the adult stage. It is still a new record for the site and why have I not seen it before at other localities? Compared with an actual specimen of *D. vitreus* (which is not necessarily spiny) you will be able to see how the confusion arose (figure 6). A total of 42 records were found for Sandham Bay.



figure 4: *Ebala nitidissima* (1.7mm X 0.7mm) from Sandham Bay.

Low Newton produced in some ways the biggest surprise of the sites visited (figure 7). There was no shortage of shell sand and Ron and I both selected a decent amount each



figure 5: Very early juvenile of *Pecten maximus*. (Image kindly supplied by Anna Holmes of the National Museum Wales / Amgueddfa Cymru, Cardiff .)



figure 6: *Delectopecten vitreus* (imaged by Ron Boyce).



figure 7: Low Newton Bay. Shell sand accumulated in the dip on the far left of the photo.

before the rising tide intervened. This was by far the largest sample collected and plagued again by the sea coal it took a long time to pick. Forty-two species were found but only two new ones, *Lacuna crassior* (figure 8) and *Cingula cingillus*. However, a staggering 29 species were not found compared with what was there 20 years ago, including *T. unisulcatus*. How could this be? A quick search of the internet revealed no obvious pollution incident. I looked back through the collection of records Ron had put together for the sites 20 years ago and worked out that they included what was known at the time, not just the records obtained at the field meeting. Notably shell sand at the sites was worked either by Rosalind, or by Ted, and he had been responsible for much of the species list for Low Newton. So why was he not responsible for more records from Sandham Bay or for any at Bucket Rocks? It appears that Low Newton was a preferred site for him to visit, and that he could have visited



figure 8: *Lacuna crassior* found live at Sandham Bay.

on several occasions. But then the trip to Berwick-upon-Tweed would be a long journey from his home in Durham, and Lindisfarne is not a lot less far. Sandham Bay takes a while to walk to and there is the added complication of getting favourable tides for crossing the causeway to the island and back again on the same day. So it would make sense that he would be most likely to work Low Newton. So maybe the conclusion from this is that I have found out more about Ted's collecting habits than about the species composition of the shell sand! Jan Light advised that Ted was really more interested in producing growth series slides

for micro molluscs than in recording new sites and would go back to one site looking for the sizes he was missing for a species. Otherwise one could always blame that bad winter for the differences, or say that without sampling a site many times one does not really know what is actually there. So was the study worthwhile? Yes, because although *T. unisulcatus* was not found, a lot of other interesting things were, in spite of the previous stormy winter. And there would have been no opportunity to speculate if the lists from the sites had been identical 20 years apart.

Many thanks to Natural England and the National Trust for site permissions, to Ron Boyce for his help on the shores, for sorting some of the samples and imaging specimens, to Anna Holmes for looking at the mystery scallop, imaging it and sending it to Henk Dijkstra who kindly identified it.

Reference

Bower, S.L.(1990) *Inversion tectonics in the carboniferous basins of Northern England: with special reference to Northumberland*. PhD Thesis, University of Leeds.
<http://etheses.whiterose.ac.uk/5373/1/511982.pdf>

Honorary Treasurer's Report on the Financial Statements to 31st December 2014

The Society has ended 2014 in a healthy financial position with total funds of £109,819, an increase of £1,832 in the year.

Income in the year fell by £1,306 with falls in subscriptions, investment income and donations. This has been offset by a reduction in publishing costs, down by £2,256 when compared with 2013. Council decided to award research grants of £3,000 in 2014, up from £900 in 2013. This resulted in a loss of £2,665, compared with a loss of £897 in the previous year.

Our investments generated £466 less income than in 2013 but we were delighted that on revaluation at the year-end we had a gain of £4,497 to add to our reserves.

On income we owe particular thanks to Mike Allen for handling sales of our publications and Bas Payne for administering our book sales which both generated significant income. CIRCA also managed our subscriptions very effectively, improving our cash flow by encouraging members to pay promptly and maximising our gift aid entitlement and recovery. We are also now able to control our mailing lists for publications very precisely which helps us control costs. I would also thank all our members who pay promptly, and those who have made donations to the Society.

On expenses a major saving arose from a change of printer for *Mollusc World*, organised by our editor, Peter Topley. We were also delighted by the reception by members and the public of a terrestrial snail identification card produced by the Natural History Museum with funding from us and the Malacological Society of London. We had provided £2,000 to support this project, but in the event, our share of the printing costs was recovered by the proceeds from sales, so the provision has been reversed. We have agreed to pay a £1,000 grant to support the publication of a book on molluscs in archaeology in 2015 and this has been provided for in publishing costs. We continue to discuss ways to produce the Journal in digital form but are not yet sufficiently advanced to forecast the financial implications of such a change. Printing the Journal continues to be the Society's largest single expense

Research grants were awarded in 2014 to three deserving candidates. Each grant is for £1,000 and will be paid early in 2015. We still have a provision of £1,000 for a grant awarded on a conditional basis in 2013, where the conditions have yet to be met.

We have probably more in investments than is prudent with net current liabilities of £2962. I will keep this under review but we

might consider a small investment sale later in 2015 to ensure we can meet our obligations as they fall due.

I can end on a cheerful note as we anticipate continuing for a few years without the need to consider a change in membership subscription rates.

Nick Light Hon. Treasurer

The financial statements for 2014 are available online at:
<http://www.conchsoc.org/sites/default/files/MolluscWorld/AGM%202015/FINANCIAL%20STATEMENTS2014.pdf>

Membership Secretary's Report for 2014

In 2014 we had 260 members of all types (detailed below) and 76 subscribers to the journal. Of these, 18 are new members (including 4 students, 4 overseas members, one family member and two junior members). There were 4 new institutional subscribers.

	2014	2013
Members	205	207
Family	17	16
Life	17	18
Students	13	11
Honorary	5	6
Junior	3	2
TOTAL	260	260
Institutional subscribers	17	21
Overseas Institutional subscribers	59	62
TOTAL	76	83

During 2014, two members died, and four members and two students resigned or moved away before 2015. As of mid-February 2015, 160 members of all types have already renewed their memberships (not including the 22 honorary and life members), as have 55 institutional subscribers; we have 7 new members, including one student.

Briony Eastbrook Hon. Membership Liaison Officer

During the Conchological Society’s field trip to the Purbeck coast of Dorset on 31st May 2014, led by Chris Gleed-Owen, a visit was made at low tide to the Kimmeridge ledges (figure 1).

Pholadidea loscombiana Turton, 1819 came from a loose hunk of Kimmeridge shale. Part of the siphonoplax* was still attached but came loose on cleaning (figures 2 and 3). With the siphonoplax it would have been about 24 mm, a small adult. Bas Payne suggested it had not been dead for long but having never seen one *in situ* before we were uncertain. The siphonal ‘tunnel’ was about six times the length of the shell, quite narrow and set at a 45° angle to the axis of the shell. The tunnel must have been created when the animal was less than two years old.

From a much harder rock sample I extracted an *Irus irus* (L., 1758) which was still alive (figure 4). Hard rock does not yield those attractively frilled sculptures.



figure 4: *Irus irus* from a harder rock sample.

*One of several calcareous plates behind the valves of certain pholads, which combine to form a tube around the siphons [Ed.].



figure 1: Kimmeridge ledges, Dorset.



figures 2 – 3: *Pholadidea loscombiana* from the Kimmeridge shale.

**Graham Saunders
1944 – 2015**



Graham Saunders died suddenly shortly before the publication of his article on *Calliostoma* in the previous issue of this magazine. He also wrote a final short item for *Mollusc World*, published on this page.

Graham (shown above on the right at the Shell Club Show in 2006, receiving the Scotia Shield from their President, the late Terry Wimbleton) was a familiar face in conchology in the UK, perhaps best known for his book, the *Usborne Spotter’s Guide to Shells* (Usborne Publishing) which was aimed as an introductory ‘I-Spy’ guide to worldwide shells for young people. More recently he also wrote *Shell Collecting Made Simple* (Melrose, Books, 2008), intended as an introductory guide to British marine molluscs. In the book he wrote presciently of his intentions: ‘Ideally this is the first phase of a project to [eventually] cover...a more comprehensive reference tool for the dedicated British and European collector’ followed by ‘an identification guide covering the entire eastern Atlantic, but will I live long enough to complete them? Probably not!’

Graham was born in Essex and became familiar with shells on the beaches of Walton-on-the-Naze, but his serious interest was sparked by the gift of some beached shells from Sharjah and visiting Herm in the Channel Islands. He joined the Conchological Society and the British Shell Collector’s Club (where he served as Secretary and President) in the 1970’s. He also lived for a time on the east coast of the USA and therefore collected on both sides of the Atlantic. Graham became involved with this Society again more recently, delivering a talk on British marine molluscs at a regional meeting in Bournemouth in 2012.

Peter Topley

Mangroves and Oysters

Ron Boyce

Whangarei Harbour in the Northland province of New Zealand is a long inlet dominated at its seaward end by Bream Head and the spectacularly jagged Mount Manaia which is visible from many miles away. At the far end is Whangarei, a major town and seaport. One of the joys of such a place is its tourist information centre, full of leaflets detailing every item of interest in the district and maps showing how to get there. Without one of these, we would never have found Boswell's Track in the outer suburb of Onerahi, a path between a few houses along what remains of the track of an old railway line (figure 1). We first went there in November 1998 when on a shelling holiday and were looking for somewhere with insects as a change from beachcombing. The vegetation to start with is largely secondary but full of flowers, and the insects seen then included the New Zealand common copper butterfly, a Chinese paper wasp, a hoverfly that seemed to have its abdominal markings upside-down, a couple of sawflies and a monarch butterfly.



figure 1: Boswell's Track, Onerahi, New Zealand.

After about a mile the track changes character as it approaches the northern edge of Whangarei harbour and then runs along a length of mud flats colonised by mangroves (figure 2). At this point you can have a good view of the cargo terminal on the opposite bank.



figure 2: Mangroves by Boswell's Track, 1998.

In 1998 at this point there were few molluscs present: the pulmonate *Amphibola crenata* (figure 3) and the two mud creepers *Zeacumantus lutulentus* (figure 4) and *Z. subcarinatus*, also a few bivalve shells, probably *Paphies australis* brought in by birds. The mangrove roots had no shells on as far as we could tell.



figure 3: *Amphibola crenata* (height (h.) c.22–30 mm).



figure 4: *Zeacumantus lutulentus* (h. 24–29 mm).

Mangroves are a group of not necessarily related trees or shrubs that can grow and thrive in tidal marine environments on sandy or muddy substrates, and they have a special adaptation that enables them to do this. Marine sediments are notoriously anaerobic, so these trees have roots that grow down into the mud and then up again so that at low tide they project 8 or so inches into the air and are then known as pneumatophores. In this way the plant is able to channel gaseous oxygen into the at-risk parts of the root system. The pneumatophores help to reduce the speed of water flow and enable the deposition of more mud and silt.

There is only one species of mangrove present in NZ and that is *Avicennia marina* subsp. *australasica*. This subspecies also grows in SE Australia and on Lord Howe Island. It has the most southerly distribution of all the mangroves and is found down to 38° South.

The Pacific oyster *Crassostrea gigas* is a very aggressive coloniser of rocky shore substrates in New Zealand and is taking over many sites formerly occupied by similar native species. At one site we visited in 2013 at Opito bay near Kerikeri on our second shelling expedition to Northland, the entire upper shore was coated with live and dead shells of this species, so much so that you needed stout footwear to make any progress at all, particularly when the tide was up (figure 5).



figure 5: Pacific oysters opposite a cargo terminal in Opito Bay.

When we were in Whangarei again in February 2013 we decided to take a day off from beachcombing and re-visit Boswells track. This visit was just as visually exciting as the first, with a different range of wildlife present. Plants in flower included lots of morning glory and the lovely South American climber *Passiflora mixta* which is now banned from the local garden centres on account of its invasiveness. The commonest butterfly was the introduced long-tailed blue which looks as though it has two heads!

When we reached the mangroves, they didn't look at all the same. Most of the pneumatophores had been colonised by Pacific oysters, some of which were quite large. The oysters were concentrated at the bases of the pneumatophores except in a small portion of the mangrove stand where they were concentrated at the tips instead (figure 6), suggesting that oyster spat had been present for a relatively short time when settlement took place.

One plausible reason for the oyster invasion could be the increasing use of seawater ballast by the shipping using the cargo terminal on the other side of the harbour. It was also noticeable that the massive oyster colony on the rocks at Opito Bay was again opposite a cargo terminal.



figure 6: Pacific oysters attached to the tips of mangrove pneumatophores.



figure 7: Oyster shell with snakeskin chiton (length (l.) 32–42 mm) and several sea slugs.

A closer look at the oyster shells revealed that there were rocky shore animals living on them, not quite what would have been expected on an expanse of mud flats. The commonest was the snakeskin chiton *Sypharochiton pelliserpentis* followed by the pulmonate seaslug *Onchidella nigricans* (figure 7). Other molluscs present among the mangroves on our 2013 visit were *Diloma subrostrata* (figure 8a) *Zeacumantus subcarinatus*, *Z. lutulentus*, *Turbo smaragdus* (figure 8b), and dead shells of *Xymene pusilla* (figure 9) *X. huttoni* (figure 10), *Limnoperna securis* (figure 11), *Cominella virgata brookesi* (figure 12), *Amphibola crenata*, *Austrovenus stutchburyi* (figure 13), *Maoricrypta costata* (figure 14), *Dosina crebra*, *Maoricolpus roseus* (figure 15), *Pecten novaezelandiae* which was probably washed in, and *Ostrea chilensis* which might have been a discard from shipboard catering.



figure 8: (a) left: *Diloma subrostrata* (h.15–35 mm) (b) right: live *Turbo smaragdus* (h. 40–70 mm) among mangroves.



figure 9: *Xymene pusilla* (h. 6–10 mm).



figure 10: *Xymene huttoni* (h. c.7 mm).



figure 11: *Limnoperna securis* (l. 32–40 mm).



figure 12: *Cominella virgata brookesi* (h. c. 26 mm).



figure 14: *Maoricrypta costata* (l. 35–60 mm)



figure 13: *Austrovenus stutchburyi* (w. 50–60 mm)



figure 15: *Maoricolpus roseus* (h. 53–86 mm)

Conservation Officer's Report 2014

Martin Willing

Important Freshwater Areas

On 23rd April 2014 I attended a workshop in Oxford organised by the Freshwater Habitats Trust (FHT: an organisation that changed its name from 'Pond Conservation' in 2013) (figure 1). This event set out to discuss 'Important Freshwater Areas' (IFAs), with a wide ranging partnership of interested NGOs and governmental bodies.



figure 1- Freshwater Habitats Trust workshop, April 2014.

Background: There is now abundant evidence that freshwater biodiversity is supported by a wide variety of waterbody types (flushes, springs, ponds, lakes, ditches, streams and rivers) and these often lie outside well-designated areas such as WFD (Water Framework Directive) water bodies, SACs (Special Areas of Conservation) or SSSIs (Sites of Special Scientific

Interest). Although freshwater species including Mollusca often make use of a wide variety of water bodies, some are restricted to a particular type.

The concept behind IFAs is to bring together, as a single data source, information on the location of all areas in England, which are important for freshwater biodiversity. At present this is often not available for planners and land use managers to (1) develop protection for important freshwater sites and species as well as (2) to work from these to create networks of high quality freshwater habitats across the landscape. The workshop focussed on:

- Which species, habitat and environmental data should be used to identify IFAs?
- How should data be analysed and mapped?
- How should IFAs be geographically defined?

Work on this project is at an early stage and the FHT will be further developing it with partner organisations during 2015. This is an important initiative for the Conchological Society as there are Mollusca in virtually all freshwater bodies; association with this project may have many benefits for us such as:

- Gathering more distributional data on freshwater molluscan assemblages across the wider countryside.
- Allowing us to provide conservation advice where important Mollusca are discovered.
- Giving us contact with a wide range of people who have an interest in freshwater matters who might wish to develop links with the Conchological Society.

I will provide updates on this important initiative as the IFA project develops. To find out more about the FHT visit: www.freshwaterhabitats.org.uk.

‘State of Nature’ response workshop

In my last Annual Report I wrote about the launch of the State of Nature Report (Mollusc World 35: 30 – 31), which demonstrated that nature is under threat, but left many asking what do we do now? On March 24th 2014 I attended a workshop in London that introduced the ‘State of Nature Response Project’. In the words of Pippa Richards, the RSPB Nature Project Officer for this initiative, *‘This is a partnership of conservation NGOs that are aiming to answer this question by systematically assessing what nature needs in order to thrive. This includes what we are doing well, what we could improve on and, importantly, what we are not yet doing at all. This has been done by asking conservationists from a wide range of backgrounds what they think needs to be done to meet a set of ecological and social requirements, the results of which will provide priority actions in each of the UK countries for government, businesses, NGOs and the public sector. Essentially, this project will continue the work carried out with the State of Nature partnership of some 25 conservation organisations and ultimately, it will provide the nature conservation sectors collective view on what society should prioritize to reverse the decline in nature across the UK’*. Towards the end of 2014 all 25 State of Nature partner organisations (for list see Mollusc World 35:31) were asked to complete a questionnaire; the Society duly responded. This was designed to get a generalised idea about various organisations expertise and ‘what is and is not working’ in maintaining populations of different groups of organisms. Questionnaire analysis feedback and other actions are expected in 2015.

New Non-marine molluscan status review for Great Britain

March 2015 saw the web release of a new status review, the latest ‘red list and more’ of the entire British non-marine molluscan fauna. The development of this important new publication goes back a few years, but before providing further details a quick recap of British molluscan red list history puts matters into perspective.

The first provisional ‘red list’ review of UK non-marine Mollusca was released in 1983 with the Invertebrate Site Register No 14 (Foster 1983). This limited circulation ‘confidential’ report, comprehensively reviewed the British fauna using data gathered by the Conchological Society. The red data criteria applied were adapted from those used for insects and included 23 species assessed as either ‘endangered’, ‘vulnerable’ or ‘rare’ together with ‘notable’ and regionally notable species with restricted national or regional distributions. Eight years later saw the publication of British Red Data Book 3 (Bratton 1991), the first widely available British molluscan red data list. This included 33 mollusc species: 10 endangered, 7 vulnerable, 13 rare and 3 insufficiently known.

Following the release of this second red data list, knowledge of non-marine species distribution and threats increased considerably with work leading up to the publication of the second national non-marine molluscan atlas in 1999 (Kerney 1999). Additionally, from about the mid-1990s, the launch of both UK BAP ‘priority species’ and the EU Habitat & Species Directive resulted

in generous funding directed at certain rare or threatened species.

In 2009 with a clear need for a non-marine molluscan red-list revision, JNCC approached the Conchological Society to suggest that a new review be undertaken. The Society’s Conservation and Recording Committee agreed that Mary Seddon and Ian Killeen take the lead on this initiative and by about 2010 an early draft was produced (chiefly using the Conchological Society data base and inputs from a group of interested members with extensive experience of UK non-marine molluscs). Unfortunately JNCC had by then ceased publishing further ‘red list reviews’. Following a short hiatus, in early 2012, the Countryside Council for Wales (CCW) helpfully stepped in to take the matters forward. They commissioned Mary Seddon (working together with Ian Killeen and again further extensive input from a group of Society members) to undertake the completion of a more detailed Species Status Review to provide a conservation assessment for all British non-marine Mollusca. NGOs such as the Conchological Society can be supported by statutory Nature Conservation Agencies (like CCW) to produce either limited focus ‘red lists’ or, as in this case, full all-species status reviews. A first draft, completed by April 2013, was further refined and expanded throughout the rest of the year by Adrian Fowles (Senior Invertebrate Ecologist with CCW / NRW) in consultation with Ian Killeen, Robert Cameron and myself. The review was finally completed by April 2014 (Seddon *et al* 2014) and uploaded onto the NRW (Natural Resources Wales) website in March 2015. It can now be accessed at <http://naturalresourceswales.gov.uk/content/docs/pdfs/our-work/Policy-advice-and-guidance/protected-species/species-status-review-of-the-non-marine-mollusca-of-great-britain-report-17.pdf?lang=en>. A link to the report is already posted on the Conchological Society’s website.

The review covers 215 species including all free-living (including non-natives) non-marine molluscs from Great Britain except Northern Ireland, which is included with the rest of Ireland in the Irish Red Data Book (Byrne *et al* 2009). It makes assessments based upon the IUCN criteria applied at a regional level. There are many more categories than in the 1991 Red Data Book. The nineteen species at imminent or possible risk of extinction consist of 4 Critically Endangered, 2 Endangered, 13 Vulnerable and additionally 10 species are classed as Near Threatened. Further categories include 11 Data Deficient (a mix of species newly recognised from Britain and about 4 probable introductions), 152 Least Threat and finally 23 Not Applicable (all non-native introductions). There is not space to undertake a full analysis of the review here, but a more detailed discussion on red lists is planned for a forthcoming Mollusc World. This publication will act both as a benchmark resource and stimulus and focus for further non-marine molluscan work in coming years.

A meeting to discuss iRECORD

On 29th November several members of Conchological Society met with others from the Sussex Biodiversity Records Centre (SxBRC) at their headquarters in Henfield to discuss the use of iRECORD (figure 2).



figure 2: Attendees at the iRECORD meeting. Clockwise from lower left: Martin Willing (Conch Soc); Bob Foreman (SxBRC); David Roy (CEH / NBN); Charles Roper (SxBRC); Bas Payne (Conch Soc); Simon Taylor (Conch Soc); Adrian Norris (Conch Soc); then centre, Penny Green (SxBRC).

Before summarising the meeting a brief outline of this recording system may be helpful. iRECORD is a free website that is being actively developed on behalf of the National Biodiversity Network (NBN) through HLF funding OPAL and the NERC's Centre for Ecology and Hydrology (CEH). The scheme has additionally received advice from JNCC (Joint Nature Conservation Committee) and Natural England. iRECORD allows users to add biological records for others to see and for experts to check, verify or provide identification help and guidance on. All records for non-sensitive species are shared and can be incorporated (after verification by an iRECORD approved verifier) into National Recording Schemes, Local Record Centres or used by Vice-County Recorders. For a more detailed look visit: www.brc.ac.uk/irecord/about.

Those attending this informal meeting from the Conchological Society included Adrian Norris, Bas Payne, Simon Taylor and myself together with SxBRC colleagues Bob Foreman, Penny Green, Charles Roper and additionally David Roy from CEH / BRC visiting for the day. The need for iRECORD clarification arose because many Conchological Society members had, for a variety of reasons, been increasingly involved with the scheme and it had become clear that we needed to sort out our different understanding of its use. Simon and Adrian had both become national iRECORD verifiers as Society recorders whilst Martin had been encouraged as Sussex county recorder, to become a local verifier by SxBRC. Bas, as a member of NBN's User Group (and something of a Society 'expert' on matters NBN!) was naturally interested in seeing how iRECORD works as a source of NBN input. We felt that there was a need to get together to discuss some of the issues, challenges and opportunities facing the Conchological Society in the use of this rapidly developing scheme. Martin's links with SxBRC (a leading iRECORD user organisation) led to their generous offer to host the meeting and provide staff

back-up and expertise. There is not space here to fully explore and discuss iRECORD and a more detailed user introduction and discussion will appear in a future Mollusc World. What is clear is that iRECORD is a dynamic and exciting resource that attracts and engages people from beginners to advanced experts, encouraging them to observe nature and record their observations. iRECORD is still in need of further refinement but, if the Society can positively engage with this scheme, it may help us to engage with a vast network of interested people from across the country who might otherwise not know about us and the exciting possibilities of an active conchological involvement.

ADVICE AND HELP

Roman Snails (*Helix pomatia*)

1. A student studying a population of *H. pomatia* behaviour in a Cotswolds estate was given advice and ecological information on this species.
2. An ecologist at Suffolk County Council was given assistance in obtaining a NE licence to work on this species and then provided with help and advice in relation to analysis of plans to expand a quarry potentially impacting upon *H. pomatia* populations living in marginal areas. In gratitude for the help the Council made a financial donation to the Conchological Society.

Threat to a chalk grassland site

In early summer I contributed a molluscan survey of an area of old chalk grassland known as Vale Meadows lying on the margins of Ovingdean in East Sussex (figure 3). The area was subject to plans to develop the area for housing. Unfortunately the site lay just outside the boundaries of the South Downs National Park. Other workers studied the rich chalk flora and diverse insect assemblages. The site is one of few supporting the scarce Red Star-thistle *Centaurea calcitrapa* and the rare Cut-leaved Self-heal *Prunella laciniata* was recorded during the survey. Although the site does not support any major molluscan rarities, a diverse assemblage including abundant *Pupilla muscorum*, *Cochlicella acuta*, *Vallonia* ssp and *Vertigo pygmea* suggested a long period free from scrub intrusion or arable damage.

Post script: In early 2015 it was learnt that the plans had been rejected. The grounds for refusal were landscape, air quality and biodiversity (botanical, entomological and molluscan evidence). The County Ecologist said the applicant had underestimated the ecological value of the site.



figure 3: Chalk grassland at Vale Meadows.

River mussels and RSPB reserves

An RSPB land management advisor (wetlands) was provided with information on the locations of the three freshwater mussels *Pseudanodonta complanata*, *Sphaerium solidum* and *Margaritifera margaritifera* living in or adjacent to various RSPB reserves.

Anisus vorticulus locations highlighted before management work

Natural England (Norfolk team) was provided with information on the distribution of the European Protected *Anisus vorticulus* in ditches at Damgate near Acle in Norfolk in advance of planned ditch management plans. In early 2014 Natural England released a revamped version of the *Anisus vorticulus* management protocol (Annex B of CL 14) titled '*A management protocol for the maintenance of drainage ditches and other water-bodies inhabited by the Little Whirlpool Ramshorn Snail, Anisus vorticulus*':

(http://www.naturalengland.org.uk/Images/wml-cl14-annex-b_tcm6-35774.pdf). This now gives Conchological Society acknowledgements and society logo.

Loch Spynie – Molluscan survey of RSPB reserve

Loch Spynie (figure 4) is one of the largest eutrophic water bodies in northern Scotland. Help was given to Richard Mariott working for the RSPB and undertaking an assessment of the molluscan community in the loch. Assistance was given with *Pisidium* identifications and feedback provided on a draft survey report.



figure 4 Loch Spynie. (photo: Richard Mariott)

Askham Bog, York

The Yorkshire Wildlife Trust were given advice on possible records of the two S41 species *Omphiscola glabra* and *Segmentina nitida* reported from or close to Askham Bog, near York. This site was threatened with development and the Trust wanted assistance on the possible use of these species records in planning negotiations. Unfortunately verification of the records was not established as some were old and referee verification unclear. This case demonstrates the need to carefully investigate historic records of rare or 'conservation-significant' species and highlights the value of the carefully scrutinised and often refereed records of the Conchological Society.

S41 Species survey method sheets *Segmentina nitida*

In early 2014 Natural England required help from a number of invertebrate specialists to write a series of 'Section 41 Species of Principle Importance' (S41

replaced the UK BAP priority lists in 2006) species survey method sheets. Only one mollusc *Segmentina nitida* was chosen (figure 5). The sheets are designed to allow non-specialists to undertake surveys for the target species on National Nature Reserves and possibly SSSIs. Each sheet contains information on how to select potentially suitable habitat and then undertake collection and identification (avoiding confusion with similar species). Finally a standard form of data recording is included using the iRECORD system. Users are invited to contact the Conchological Society both to seek additional identification help, but also to provide their survey records. If this sheet proves to be successful then they might form the basis for additional Conchological Society sheets (possibly in partnership with Buglife) for other selected species to encourage wider public participation in our recording activities. The *S. nitida* sheet can be viewed on the Conchological Society website.



figure 5: *Segmentina nitida*. (photo: Roger Key)

Conservation links with various publications: British Wildlife

Three molluscan 'wildlife reports' were published during 2014 (British Wildlife 25:4, 25:6 & 26:2). As in previous years these were able to cover a range of molluscan news, issues and discussions partly drawing upon and discussing the Society's non-marine and marine reports as well as a selection of reports and papers from Mollusc World and The Journal of Conchology. Additionally, during the year I was able to review and therefore publicise two important new publications; the new land snail identification guide (Naggs *et al* 2014) and the Field Studies Council's new British and Irish slug guide (Rowson *et al* 2014).

The Isles of Scilly Bird & Natural History Review: An illustrated report was again published in covering a series of topics (Willing 2014). One was able to draw attention to many very small marine gastropods (e.g. *Rissoa* spp) that abound in the shallow waters around the islands, but are easily overlooked. The article then concentrated on non-marine matters including news of several newly recorded species to the islands and additionally publicised the new FSC slug identification guide.

Rivers Trusts – molluscs in action

In my last annual report I described the work of Rivers Trusts and a specific example of 'molluscs in action' during a stream modification exercise. 2014 saw a further example of molluscs being used as part of a stream

assessment prior to improvement works. In May 2014 I joined two botanists to survey Duncton Stream, a small chalk stream in the grounds of Seaford College, near Petworth (figure 6). The section of the stream under investigation had been substantially disrupted in the past by fish-farm operations leaving many concrete dams and other obstructions. In advance of plans to restore the water way to a more natural state, the surveys were undertaken to ensure actions would have no significant negative impact on any sensitive plants or molluscs. Although a good molluscan fauna was found no species of conservation importance were located. Later in 2014 work was undertaken and the stream is now restored to a near 'natural state' and already free movement of trout has been observed.



figure 6: Duncton Stream, near Petworth.

Associations with other organisations:

The Conchological Society has active associations with many other conservation organisations. Some examples of particular collaborations with our key partners are given below.

Buglife

Buglife are an especially useful associate who are always ready to provide help and advice (Conchological Society is a Buglife member).

Three examples:

(1) The Bouchout Declaration: In summer 2014 Buglife consulted all its Member Organisations regarding the Bouchout Declaration (see <http://www.bouchoutdeclaration.org/declaration/>). This Declaration is currently available for signing by organisations to demonstrate their commitment to sharing biodiversity data openly. Following detailed discussions within Council it was decided that, although in principle we support free and open access for information, there are a few situations where this is not desirable. Species where we would not wish to provide precise locations details for include Roman snails *Helix pomatia* and pearl mussels *Margaritifera margaritifera*. Additionally a Council member gave an example of where a population of a scarce snail may have been severely impacted by collecting, something that may not have happened if the precise location had been less easily available. There are other species (such as a number of relatively scarce and 'showy' cockles popular with some collectors) that are considered to be at risk if the precise whereabouts of a number of large, but accessible populations are publicised.

(2) Species at risk of extinction in England by 2020: Buglife have been working with the Natural England

Species Taxon Group on a Section 41 species exercise - including risk analysis, reporting progress on actions and developing various species-action strategies. One of their jobs has been in identifying species at greatest risk of extinction in England (not UK) by 2020. In terms of Mollusca eight species were presented for consideration these being: the marine species *Caecum armoricum*, *Paludinella littorina*, *Tenellia adspersa* and *Atrina pectinata*; the brackish species *Heleobia stagnorum* and freshwater taxa *Sphaerium solidum*, *Margaritifera margaritifera* and *Myxas glutinosa*. Advice was given that *M. glutinosa* had already been declared extinct by Natural England in the country in 2010 (although who knows if it isn't hanging on in some over-looked corner!). Of the others the only two that seemed to be at genuine risk of imminent extinction were *H. stagnorum* and *S. solidum* (figure 7) both occurring in very small restricted populations each faced with a range of serious environmental threats. Both of these species are considered to be 'Critically Endangered' in the new non-marine status review (Seddon *et al* 2014). Additionally a further species was suggested as a candidate for the potential extinction list this being *Marstoniopsis insubrica* a species considered 'Endangered' in the status review is down, in England, to at best, a few small populations all easily lost due to engineering works, dredging, and water pollution.



figure 7: *Sphaerium solidum*.

(3) Non-marine species English names: Buglife have been working on developing a definitive list of English names for all British non-marine species. Help was given to develop a draft version, which will be further developed in 2015. Many disapprove of the use of vernacular names, preferring to adopt scientific Latin on every occasion. There are, however, many occasions where the use of English names performs a valuable role in informing, publicising and educating those who might otherwise fail to engage. Take for example Roman Snails, Ghost Slugs, Cheese Snails and Depressed River Mussels. In all of these cases the names are frequently used in newspapers and general accounts; the Latin names mean little to the non-specialist.

Invertebrate Link (IL)

IL (www.royensoc.co.uk/InvLink/Index.html) meets biannually and gives us links with representatives from NGOs and governmental conservation bodies. It also allows us to advertise our work to these bodies through the distribution of an annual report summarising our recording and conservation activities. An example of a

joint initiative produced by IL members (including the Conch Soc) was a guidance document for field workers to avoid the spread of ‘problem’ invasive species.

“Invertebrate Link (JCCBI) Guidance to Minimise the Accidental Transfer of Organisms Between Sites” has been published appearing in the Dec 2014 issue of BENHS journal Br. J. Ent. Nat. Hist 27(4): 253 – 254.

Sussex Wildlife Trust’s Conservation & Biological Recording Committees

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). For 2014 this was able to highlight important new finds of populations of *Vertigo moulinsiana* and *Monacha cartusiana* (figure 8) in the county.



figure 8: *Monacha cartusiana* from Sussex.

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Book review: *Spirals in Time: The Secret Life and Curious Afterlife of Seashells* by Helen Scales. Bloomsbury 2015. 304pp Hardback £16.99 ISBN 978-1-4729-1136-0



In the introduction to this book the author writes ‘This is not a shell guide, or a book on how to find and identify them...(it is) my choice of shell stories’. The result is an eclectic mix brought together in a chatty, easy to read, style. It is scientifically accurate yet accessible to anyone without scientific training.

Where else could you read of; the shell trumpet used in

the soundtrack of the film ‘Alien’, the deep water snail named after Joe Strummer (lead vocalist and guitarist in the punk band ‘The Clash’), sinistral snails evolving to avoid predation by snakes, snails living in caves 1 km below the Earth’s surface, divers transplanting living *Pinna nobilis* shells following the 2012 ‘Costa Concordia’ shipwreck, or an octopus wedging open a bivalve with a stone before feeding on it.

I was intrigued by the story of Jeane Power studying live *Argonauta* in the 1800’s and losing her research notes when a ship sank, fascinated to read the latest theory of

why shells have patterns, enchanted by the account of the TRY Oyster Women’s Association managing oyster fisheries in the Gambia.

There are sections on ‘Sea-Silk’ textiles produced from *Pinna* byssus, research into conotoxins and their medical potentials, pteropods facing ocean acidification, on ammonites, their extinction and nautiloid relations, and bracelets carved from *Spondylus* shells found in prehistoric graves in Europe. If some sections are overfamiliar, money cowries for example, it must be remembered that this book is not primarily intended for those already interested in shells.

The text is complemented with eight pages of colour photographs, there is a brief glossary of technical terms, and there are detailed references for each chapter – though these are mainly to scientific papers, and perhaps a more general bibliography to take a non-scientist deeper into conchology would have been helpful.

Although ‘steeped’ in conchology I still found much of interest in this book and can thoroughly recommend it.

Kevin Brown

This is a version of Simon's article that first appeared in *American Conchologist* 39 (1), March 2011)*

When the Spanish explorer Don Álvaro de Mendaña 'rediscovered' this archipelago in 1568, he believed he had found the source of King Solomon's fabled treasure. Mendaña's dreams were soon tarnished, and he died of malaria shortly afterwards, but the Spanish name 'Yslas de Salomon' stuck. I visited the Solomon Islands in August 2010 in search of molluscan treasure.

Jet travel has made trips to the Solomons easier than was the case in Mendaña's time but still gruelling. Visitors arrive in the capital, Honiara, from Brisbane, Australia. For European shell collectors, Brisbane is the opposite side of the globe, so the long-haul flights are then followed by a 'backwards' flight over the Coral Sea to the Solomons. The round-trip from Europe requires a daunting six days of travel and visitors from North America fare little better. More adventurous souls than I may opt to fly to Papua and make their way by sea canoe to the northernmost island groups of the Solomons – a traditional trading route, but fraught with dangers.

The 922 islands that make up the Solomons have a combined land area somewhat less than the state of Maryland. It is their 3,300 miles of coastline that is the main attraction for shell collectors. There are mangrove swamps and extensive lagoon areas. The larger islands like Guadalcanal are ruggedly mountainous and densely forested – challenging habitats for landsnail collectors to explore.



figure 1: Most of the islands in the Solomons archipelago are low-lying coral atolls with shallow-water lagoons – rich molluscan habitats. This picture was taken while flying over the Solomon Sea and shows Kisa, Lolohan, and Laumuan Islands, in the Russell Islands group.

Transport between islands is usually by canoe, even for worryingly long journeys. The traditional 'dug-out' canoe was my principal means of transport around Marau Sound, in the south of Guadalcanal. This was one of the more seaworthy vessels I used, although it paid to be handy with the 'baler'...

Most conchologists, amateur and professional, have their 'wish list' of countries they'd like to visit. I have my list, and it's long. So, why the Solomons? In the late 1990s, I was obtaining a good range of shells from the Solomons, but the flow then 'dried up'. I wanted to see for myself whether these islands were still a potential treasure-trove of shells and to find out why the shells were no longer coming out.

The Solomons have a turbulent history. Polynesians started arriving here 800 years ago by canoe; they were probably

disappointed to find the major islands already settled by Melanesian peoples. The racial tensions between Melanesians and Polynesians continue to this day, and disputes over land ownership have never been forgotten. I came to know many Melanesian people in Marau, who regard themselves as the 'original' settlers of Guadalcanal. Their lingering resentment towards other settlers is still apparent. Attempts by Europeans (mainly the British) to 'colonise' the Solomons eventually put an end to 'head-hunting,' yet neither the natives nor the British can have felt satisfied with the subsequent developments. In one extreme example from 1927, some Kwaio tribes people of Malaita Island killed a tax collector and his armed guards; the reaction of the self-styled 'colonialists' was to send a punitive expedition (including a battleship!) that killed or captured hundreds of Kwaio, desecrated and destroyed sacred tribal sites, and set up a situation that foments bad feelings that last even to today. The tribal people can be forgiven for their suspicions about European-style 'diplomacy.'

The Solomons gained independence in 1978, but the twenty-first century started with five years of what is best described as civil war. Territorial disputes, particularly on Guadalcanal, led to hundreds of deaths, tens of thousands of refugees, a bankrupt government and economic devastation. In 2001, the government, such as it was, asked for outside help to quell the violence. Australian shell collectors who used to visit were now warned not to go. With no visitors buying shells, the Solomon Islanders just had no reason to search for the 'collectable' species.

In the Are'are language of the Marau peoples, seashells are called 'puriruri'. Marau Sound is a delight for cowrie (*Cypraea*) collectors. With the help of local villagers I found 35 species around just one small island. The shells illustrated in figure 2 were found by snorkelling or by turning rocks at low tide. Apart from those shown in the photo other species also found in this locality were: *tigris*, *mappa panerythra*, *arabica*, *mauritiana*, *teres*, *moneta*, *erosa*, *aurantium*, *annulus*, *humphreysi* and *ziczac*. In my quest for 'bana' (seashells, in the Roviana language), I turned an intertidal rock and found a *Mauritia arabica* (L., 1758) guarding its eggs. Naturally, the rock was immediately put back after one photo (figure 3). *Lyncina aurantium* (Gmelin, 1791), the golden cowrie, was selected as the highest denomination postage stamp in a special 'Cowries of the Pacific' set issued by the Solomons in 2002. This species is much rarer here than in the Philippines, but appears very similar morphologically.

The sandy bottom of Marau Sound is also a fertile habitat for mitres (figure 4), but it is the cone shells that are so characteristic of the Solomon Islands that a series of Solomons postage stamps features only cones – 14 different species on the 14 denominations. Although the Solomons has few truly endemic *Conus*, several quite interesting species are easier to find here than elsewhere (figure 5). The once legendary *Conus gloriamaris* Chemnitz, 1777 is found close to Honiara, but in very difficult conditions for divers: the black sand bottom is stirred up by river run-off and the area is all- too-popular with saltwater crocodiles!



figure 2 : Cowries from Marau Sound, Solomons. 1. *Erosaria eburnea* (Barnes, 1824) 33.8 mm; 2. *Cribrarula catholicorum* (Schilder & Schilder, 1938) 12.1 mm; 3. *C. cribraria zadela* (Iredale, 1939) 16.1 mm; 4. *Nucleolaria nucleus* (L., 1758) 16.8 mm; 5. *Erronea caurica* (L., 1758) 38.0 mm; 6. *Lyncina carneola* (L., 1758) 20.1 mm; 7. *Palmadusta clandestina candida* (Pease, 1865) 20.6 mm; 8. *Purpuradusta fimbriata* (Gmelin, 1791) 8.9 mm; 9. *Erronea cylindrica lenella* (Iredale, 1939) 28.2 mm; 10. *Pustularia margarita* (Dillwyn, 1817) 12.2 mm; 11. *Ransoniella punctata* (L., 1771) 10.8 mm; 12. *Ovatipsa chinensis amiges* (Melvill & Standen, 1915) 29.1 mm; 13. *Erronea chrysostoma* (Schilder, 1927) 27.7 mm; 14. *Eclogavena coxeni hesperina* (Schilder & Su mmers, 1963) 17.7 mm; 15. *Luria isabella* (L., 1758) 15.6 mm; 16. *Bistolida stolidia crossei* (Marie, 1869) 24.9 mm; 17. *Erronea erronea* (L., 1758) 25.3 mm; 18. *Erosaria beckii* (Gaskoin, 1836) 11.4 mm; 19. *E. labrolineata* (Gaskoin, 1849) 16.8 mm; 20. *E. helvola* (L., 1758) 14.4 mm; 21. *Bistolida kieneri depriesteri* (Schilder, 1933) 13.8 mm; 22. *Palmadusta asellus* (L., 1758) 21.2 mm; 23. *Staphylaea staphylaea consobrina* (Garrett, 1879) 13.6 mm; 24. *Melicerona listeri* (Gray, 1824) 16.2 mm



figure 3: A *Mauritia arabica* (L., 1758) guarding its eggs, new Georgia.

The giant clam, *Tridacna gigas* (L., 1758) has traditionally played an important role in the life of the Solomon Islanders and continues to do so today. Figure 6 shows a young *Tridacna* lodging in the reef near Kiambe Island in Roviana Lagoon. All the recognised *Tridacna* species are found in the Solomons, and the living animals can be difficult to identify. The clams incorporate living algae in their mantle tissue (endosymbiosis), providing nourishment through photosynthesis. The algae can be clearly seen in this picture. There is considerable variation in mantle colour.



figure 6: A young *Tridacna* near Kiambe Island, Roviana Lagoon.



figure 4: Mitre shells from Marau Sound. 1. *Vexillum rubrocostatum* Habe & Kosuge, 1966, 27.8 and 27.9 mm; 2. *V. antonellii* (Dohrn, 1861), 23.8 mm; 3. *V. coronatum* (Helbling, 1779), 21.1 mm; 4. *V. semifasciatum* (Lamarck, 1811), 22.3 mm; 5. *V. vulpecula* (L., 1758), 43.9 and 45.1 mm (5a seems to be an unusual localized colour form); 6. *Imbricaria conularis* (Lamarck, 1811), 20.3 mm; 7. *Mitra pellisserpentis* Reeve, 1844, 24.6 mm; 8. *Pterygia crenulata* (Gmelin, 1791), an unusually inflated specimen (31.0 mm).

Known locally as ‘hio’, *T. gigas* is an important source of protein for the Roviana people. The shells are often carved, most notably into ‘shell money’. Discarded shells of *T. gigas* litter the seashore and I saw a children’s ‘play-pit’ filled with *Tridacna* shells. The Roviana people make ‘bakiha’ from *T. gigas* shells, which is used as a form of money. The non-commercialised societies in the Solomons started using currency only recently and the tradition of shell money remains strong. Special grinding tools are used to carve the massive shells, a time-consuming labour, and the bakiha shown here (figure 7) would be the prize possession of a Solomon Island family. The rings can be worn on the wrist or hung round the neck. The Marau people of southern Guadalcanal make a completely different form of shell money, called ‘hikahika’. It is still sometimes used to ‘buy’ a bride, or to buy property. As westerners might say, ‘time is money’, and it is the time required to create these pieces that translates into their value. *Oliva carneola* (Gmelin, 1791) are painstakingly ground down, one at a time, to form small ‘cylinders’ that can be strung on a cord. The ‘spacers’ are made from turtle shell (figure 8).



figure 5: Cone shells from Marau Sound: 1. *Conus crocatus* Lamarck, 1810, 25.8mm; 2. *C. floccatus* Sowerby, 1841, 43.5 mm (a marvellously variable species); 3. *C. striolatus* Kiener, 1845, 29.5 mm; 4. *C. legatus* Lamarck, 1810, 24.8 and 25.2 mm; and 5. an unusual form of *C. consors anceps* A. Adams, 1854, 50.5 mm.



figure 7: ‘Bakiha’, a form of money made in New Georgia from *T. gigas* shells.



figure 8: 'Hikahika' made by the Marau people of southern Guadalcanal from *Oliva carneola*. Also shown here are four forms of *O. carneola* from Marau Sound, including an albino.

Visitors to the Solomons should be wary of the products made from *Tridacna* that are offered as souvenirs. Tridacnidae are protected by CITES, and there would be heavy penalties for attempting to export these shells without proper documentation. Any artefacts containing any shell product whatsoever must be declared and inspected on arrival back in Australia.

The shallow waters around New Georgia Island in the Western Province are a haven for opisthobranchs. The species I saw most commonly was *Chelidonura varians* Eliot, 1903 (family Aglajidae), which is active on sandy bottoms during the day. This species actually has an internal shell (figure 9). The women of New Georgia collect *Nassarius camelus* von Martens, 1897, which are exported to New Britain. This curious little species, rarely more than 8 mm, is then used as money by the indigenous Tolai peoples (figure 10).



figure 9: *Chelidonura varians*, New Georgia.



figure 10: *Nassarius camelus* from New Georgia.

In Honiara's market, mangrove whelks or mud creepers (*Terebralia palustris* (L., 1767)) are stacked in heaps (figure 11). The price is charged for one heap, but they freely redistribute themselves between heaps – to the frustration of the vendor! Despite the awareness of molluscs as a food source, there is no tradition here of collecting shells specifically for conchologists.



figure 11: *Terebralia palustris* in Honiara market, Guadalcanal.

My Solomon Island travels took me from Guadalcanal to the town of Munda in the Western Province. Munda has a population of barely 4000, and a paved runway suitable for wide-bodied jets. This anomaly is because Munda was a centre for military activity during the Second World War. Indeed, Munda experienced some of the fiercest fighting in the Pacific, in 1942/3, largely because its airfield offered the Japanese a staging point to attack 'Henderson Field', the country's principal airfield. Today, much of the surrounding lagoon area is a designated a 'Marine Protected Area,' where no shell collecting or fishing is allowed. The rusting remnants of the fighting are easy to find, both in the water and on land. Much military equipment was scuttled or unceremoniously 'dumped' in these waters, unwittingly providing many artificial reefs for marine life.

The Solomons remain a relatively undeveloped country. This means that boats capable of pulling a dredge are hard to come by and there are few compressors for SCUBA gas. Good shells have certainly been obtained by dredging here in the past, but the so-called 'tensions' of the early 2000s caused a loss of interest. Other drawbacks for conchologists are the surprisingly heavy seas (even in 'sheltered' lagoons), cyclones, human-eating sharks, and – of course – copious saltwater crocodiles. There are barely 20 miles of paved roads in the entire country, so water transport and 'bushwhacking' are essential for exploring the Solomons.

Despite the ethnic tensions, the Solomons retain much of its allure for shell collectors. Based on my direct observations, the native islanders show respect for their marine

environment. They recognise the importance of human interaction with marine ecosystems and willingly work with the authorities to preserve what is unique.

Acknowledgements

I wish to thank the villagers of Suhu, Vutu, Hautahe, and Simeruka, the people of Munda and its neighbouring villages, and the Peter Joseph WWII Museum near Kipatu. I also thank Markus

Huber, Felix Lorenz, Jean-Claude Martin, Giancarlo Paganelli, and Dennis Sargent for their valued advice.

All photographs appear courtesy of Simon's Specimen Shells Ltd (www.simons-specimen-shells.com).

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Scallops used as lamps in the Blasket Islands, Ireland

Peter Topley



figure 1: Great Blasket Island, Kerry, Ireland.

The Blasket Islands (or *Na Blascaodai* in Gaelic – possibly from the Norse word ‘*brasker*’, meaning ‘a dangerous place’) (figure 1) are a group of islands off the west coast of the Dingle peninsula in County Kerry, Ireland. The Blasket Centre on the nearby mainland in Dún Chaoin is a heritage museum which remembers the community who lived on the islands (mainly on Great Blasket) until their evacuation in 1953. The modern centre, with its somewhat jarring modern architecture in this rural setting (figure 2), tells the story of island life, subsistence fishing and farming, traditional life including modes of work and transport, home life, housing and entertainment. The Centre details the community's struggle for existence, their language and culture, and the extraordinary literary legacy they left behind, following anthropological and linguistic study around the end of the nineteenth and beginning of the twentieth centuries particularly from writers and linguists. A number of books written by islanders record the islands' traditions and way of life, including *Fiche Blian ag Fás (Twenty Years A-Growing)* by Muiris Ó Súilleabháin.



figure 2: The Blasket Centre, Dún Chaoin.

Visiting the Blasket Centre in August 2014, I noticed a simple display showing a scallop shell (*Pecten maximus*) being used as a lamp (figure 3). Until the end of the nineteenth century the Blasket islanders used a cresset, called a ‘*slige*’, for light. It was a metal vessel in the shape of a scallop shell, which were previously used for the same purpose (*slige* is the Gaelic for shell). The vessel, or

originally the shell, was filled with fish oil. A peeled rush was immersed in the oil with the tip, which was lit, jutting out over the edge of the vessel. This was not a very efficient source of light but was for many years the islanders' sole source of lighting prior to the paraffin lamp which was apparently introduced rather late to the islands. Electricity never came to Great Blasket.



figure 3: Mock up of a Blasket Island scallop shell lamp using *Pecten maximus*, The Blasket Centre, Dún Chaoin.

Shells, including *Pecten*, have been used as lamps from ancient times (Forbes, 1955) until comparatively recently (Johnston, 1850) and they inspired the design of early pottery lamps as well as continuing to be used decoratively today. A web site advertising tours of Kents Cavern near Torquay, Devon states: ‘At one point all lights are turned off, and the darkness is then relieved by stone age shell lamps. These lamps consist of large flat shells filled with kindling on which animal fat had been dripped. Standing in the light of these shell lamps it is easy to appreciate the emotional impact that caves had on people. In France cave systems were decorated with pictorial and sculptural art, no doubt given extra life by the flickering flames of shell lamps.’ Far from being used to create an ‘emotional impact’, the islanders of Great Blasket relied on the faint glimmer of light provided by their shell lamps to help them survive the darkness of winter in their inhospitable island environment.

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2013 was an exceptional year for British marine mollusca, with multiple new species recorded for the British and Irish fauna and even new species described from British waters, and so was always going to be a difficult year to follow in terms of highlights.

2014 began promisingly though, with the exceptional winter storms blowing some unusual vagrant species onto southwest coasts, attached to flotsam items. Steve Trehwella reported the Caribbean epibyssate bivalve species *Isognomon bicolor* (Adams, 1845) and *Pinctada imbricata* Röding, 1798, both from a plastic drum stranded on Chesil Beach. A coconut found by Tracey Williams washed ashore near Newquay, Cornwall, had several small bivalves attached which were confirmed by Anna Holmes of the National Museum of Wales as *Martesia fragilis* Verrill & Bush, 1898 (Holmes A. *et al.*, 2015), the first record of the species being stranded in Britain. *Martesia* is a genus of wood-boring piddocks with three species known in the Atlantic. *M. striata* (L., 1758) is the species usually (albeit still very rarely) stranded in Britain and Ireland, though they can be difficult to identify to species level and subsequent examination of specimens in the National Museum of Wales collection has revealed two specimens from Galway which are actually *M. fragilis* and pre-date the Newquay records.

Later in the year Steve Trehwella made another interesting vagrant find on Chesil. This time the flotsam item was a bait jar, a north American brand with very fine slits in the lid, containing a number of north American species which had evidently survived a long journey washing across the Atlantic and, given that the specimens were much bigger than the slits, had almost certainly grown inside it from planktonic larvae. This exotic fauna contained two scallops, identified as *Euvola ziczac* (L. 1758) and *Aequipecten heliacus* (Dall, 1925) both known from the Gulf of Mexico.

The common sea hare species *Aplysia punctata* (Cuvier, 1803) will be familiar to many, particularly anybody who has witnessed one of its occasional mass spawnings. The two other species of *Aplysia* known from British waters are much rarer here, albeit notorious for growing to a considerable size. The reason for their rarity is that they are primarily species of more southern waters with southern Britain at the extreme limits of their range, hence a flurry of records during 2014 inevitably prompts speculation as to possible causes.

The flurry commenced in May when Paula Lightfoot was fortunate enough to spot a specimen of *A. depilans* Gmelin, 1791 while diving in the Helford estuary in Cornwall. Many references imply that the larger *Aplysia* species are only likely to be encountered sublittorally but later in the year a fresh dead specimen of *A. depilans* was found washed up in Havelet Bay, Guernsey. Then, in November, a live specimen, with egg masses, was found by Peter Mark Crowther on rocks at low tide at St. Brelade, Jersey. Peter photographed this specimen extensively and took some measurements; it was over 30 cm long and weighed over 2lb. Despite the numerous photographs it was rather difficult to determine whether this was *A. depilans* or the third species, *A. fasciata* Poiret, 1789; there are

numerous features which can aid field identification, the most useful perhaps being that in *A. fasciata* the parapodial lobes are fused only at the extreme posterior of the animal (which apparently enables the animals to swim very effectively which must be a most impressive sight) whereas in *A. depilans* they are fused much higher up the back. With expert help from João Pedro Silva and Gonçalo Calado of Portugal, this Jersey specimen was confidently identified as *A. fasciata* based on the shape of the posterior part of the foot (figure 1).

Rounding off this relative glut of records of the rarer *Aplysia*, the prolific Cornish worker David Fenwick got an unexpected Christmas present when he discovered two *A. depilans* in a low tidal pool at Marazion on Christmas Eve. They were still there when he returned after Christmas and were seen by a number of others too, so became minor local celebrities. At the time of writing the winter has so far been relatively mild with no mid-range forecast of it worsening, so if this is reflected in the seawater temperatures then the increase in sightings of these species may continue through 2015. If you are in the southwest or the Channel Islands then look on slabby rock shores at low water.

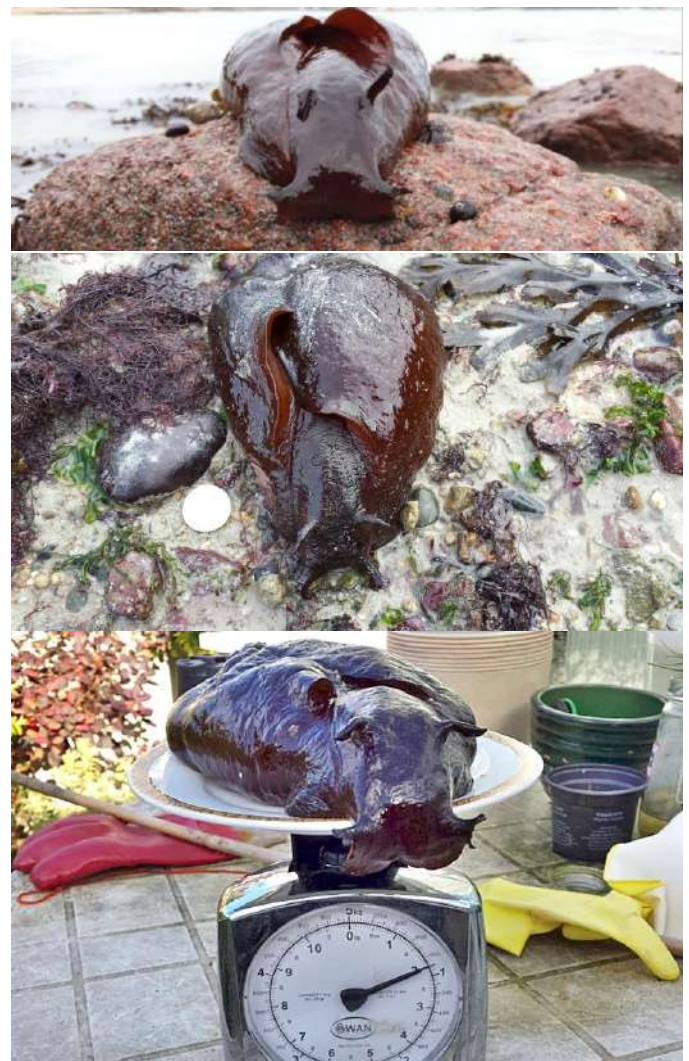


figure 1: *Aplysia fasciata*, Jersey (photo: Peter Mark Crowther)

Staying on the theme of large but rarely recorded species, there were interesting 2014 records for *Ranella olearium* (L., 1758) and *Acanthochitona fascicularis* (L., 1767) (figures 2 and 3). David McKay received an email from one of his fishing boat contacts in the summer saying they had hauled up something which they recognised as unusual, from the Porcupine Bight off SW Ireland. It was alive when found so they had frozen it to keep for David and sent some photographs which suggested it was indeed *R. olearium*. This was confirmed when he was eventually united with the specimen, although it had passed through the hands of a crew member who had ‘cleaned’ it, disposing of the dead animal with the operculum and removing the periostracum.

Despite being the largest of the British and Irish chitons, specimens of *A. fascicularis* are rarely reported. Admittedly it is a southern species and so the available range for records is limited; perhaps it is also particularly well camouflaged and hides well in crevices, or populations do not often extend up into the littoral zone. Specimens can be found though, as Alasdair Shaw’s find on a stone under the pier at Yarmouth on the Isle of Wight demonstrated. This highlights one of the joys of coastal recording (or biodiversity recording in general) in that one never knows what is going to turn up next, even in what might be considered the most unlikely places.



figure 2: *Ranella olearium* Porcupine Bight, off SW Ireland.
(photo: Mike Reid)



figure 3: *Acanthochitona fascicularis*, Yarmouth, Isle of Wight.
(photo: Alasdair Shaw)

Returning to the opisthobranchiata, the divers have again been making some excellent finds and taking splendid photographs. Sue Daly in the Channel Islands found and photographed a beautiful specimen of *Dendrodoris limbata* (Cuvier, 1804) (figure 4), primarily a Mediterranean species, when diving at Les Ecrehous, NE of Jersey. Regular contributor Jim

Anderson, whose Scottish Nudibranchs website is always worth a visit, made a further find of *Cuthona nana* (Alder & Hancock, 1842), a species which until the previous year had eluded him (figure 5). Again the specimen was associated with the hydroid *Hydractinia* on shells housing hermit crabs, and this time there was also spawn present. Several divers have also been collecting and providing sublittoral substrate samples from sites all over Britain and Ireland for analysis. Some have proved very diverse (82 mollusc species from one small bag sample from West Wales) while others, albeit much less diverse, have provided fresh records for more commonly recorded species, e.g. *Manzonina crassa* (Kanmacher, 1798) and *Tornus subcarinatus* (Montagu, 1803) off Norfolk.



figure 4: *Dendrodoris limbata*, Les Ecrehous, NE of Jersey.
(photo: Sue Daly)



figure 5: *Cuthona nana*, Scotland.
(photo: Jim Anderson)

The Society’s week-long Yorkshire marine recording trip has been documented in Mollusc World (Issue 37, March 2015) and produced several records of note, particularly from the dived and dredged material available, such as a first North Sea record of *Doto hystrix* Picton & Brown, 1981 and numerous firsts for the waters off Yorkshire. The find causing the greatest stir however was a pulmonate practically from dry land, namely the *Otina ovata* (Brown, 1827) population found in caves at Flamborough by Jan Light (you obviously can’t keep a good marine recorder down). Not only is this species rarely encountered live, this represented a first live record for the entire British east coast, a huge range extension. It is also worth mentioning here that specimens from this find were used by Ian Smith to generate one of his photographic accounts for the species. All of Ian’s excellent photographic species accounts may be found here: www.flickr.com/photos/56388191@N08/collections/. There are also links from the British Marine Mollusca group on Facebook

(www.facebook.com/groups/british.marine.mollusca) which continues to thrive, with 283 members at the time of writing and a continuous stream of interesting and stimulating postings.

Whilst on the subject of pulmonates, and at the risk of treading on the toes of my colleague the Honorary Non-marine Recorder, *Myosotella* [= *Ovatella*] *myosotis* (Draparnaud, 1801) is another of that small suite of molluscs inhabiting the supralittoral zone and hence has half a foot in both the marine and non-marine camps. It has been good to see potential progress being made in 2014 to resolve the long-standing issue of whether the strongly dentate and weakly dentate forms, both found frequently around Britain and Ireland, represent separate species, subspecies or are merely ecomorphs of a single species. Anatomic work by António M. de Frias Martins at the University of the Azores suggests that although *M. myosotis* is indeed actually a complex of species, all British specimens belong to a single taxon, the available name for which is *M. denticulata* (Montagu, 1803). More detail is given by Martin Willing in *Mollusc World* (Issue 36 November 2014) and Prof. Martins is still keen to receive further British and Irish specimens for anatomical examination, particularly from rocky, exposed habitats.

2014 also saw some technological advances in the Society's recording activities. Some will be aware of the online iRecord facility (www.brc.ac.uk/irecord) where users can log their records and recording activities, including photographs. The Society's Recorders have undertaken to verify mollusc records on the system, thereby helping users to confirm their

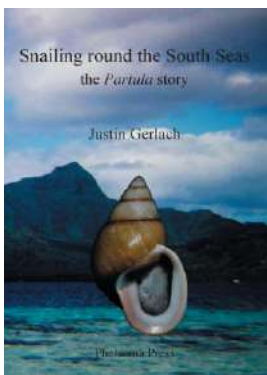
identifications and at the same time making those records available to the Society's datasets. There had been some concern as to how that data might actually be migrated between iRecord and the Society's datasets (held in the Recorder 6 software) and thence to the NBN Gateway website (see www.nbn.org.uk) where all the data is made publicly available. This hurdle has now been crossed and recently over a thousand marine mollusc records were migrated from iRecord into Recorder 6 and from there to NBN. Online submission of records is increasingly popular, so this represents a significant step forward for the Society. Huge thanks are given to everybody who has contributed to the ongoing development of the Society's marine recording activities. Singling people out can be controversial but for 2014 particular thanks is given to Paul Dansey (for submission of a very large batch of *Ensis* records), David McKay (for large numbers of records submitted, particularly from offshore, with many more to follow in 2015), John Fisher (for continued support and for long, long hours spent sorting grit samples and compiling lists) and Mike Weideli, whose support and assistance with Recorder 6 are beyond value.

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Book review: *Snailing round the South Seas: The Partula story* by Justin Gerlach

Phelsuma Press 2014. 172pp Paperback/Kindle c. £10.00 ISBN 978-0-9533787-6-0



The sad story of the demise of many *Partula* snail species endemic to the South Pacific islands is well known. This book places this mass extinction in context, with more than half of the book telling the fascinating story of land snail exploration, discovery, shell collecting and research in Polynesia from the days of Captain James Cook right through to the 1990's with modern day DNA analysis and the work of Jim Murray and Bryan

Clarke. On the way the author recounts the early efforts of *Partula* collectors based in the islands such as William Harper Pease and Andrew Garrett, the latter the first collector to be meticulous with his data and who amassed vast collections. Amongst early evolutionary biologists who worked on variation and speciation in *Partula*, perhaps the most well known is Henry Crampton, famous for his three volumes on *Partula*, including those of Tahiti and Moorea (curiously not cited in the book's references section). The author summarises some of Crampton's thinking on the evolution of the snails in relation to the changing geography of the islands and contrasts this work (some of it speculative and based merely on physical

characteristics) with work in the 1990's which began to use gene sequencing to construct a pattern of island colonisation.

The later chapters of the book relate the immense pressure on many *Partula* and related species due to the introduction of alien predators, particularly the carnivorous snail, *Euglandina* which led to the extinction of many species. The author describes an expedition to Raiatea where he rescued some of the last remaining living *Partula* snails from the island. The book relates the efforts of institutions to breed the snails in captivity and efforts to re-introduce them into the wild. Closing chapters bring the story up to date, including the rediscovery of some species at high altitudes, out of the reach of *Euglandina* due to the cooler climate, and the threat placed on this situation by the rise in global temperatures.

The book is well illustrated with colour photographs and diagrams, but unfortunately these are often not well reproduced in the printed edition, with details often obscured by high contrast; there are also a number of typographical errors in the text (including one repeated block). These are relatively minor problems in a book that will be fascinating to anyone interested in land snail evolution and the history of conchological exploration in these islands.

Peter Topley

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figure 1: Cally lake, Dumfries and Galloway.

After several years of visiting beaches and recording the shells and the intertidal life, I have migrated like some elderly salmon, to the burns and lochs of Dumfries and Galloway. It came about almost by accident. A local volunteer group were interested in the Cally Estate owned by Scottish Forestry Commission and which had previously been owned by the Murray-Usher family. The volunteers had researched the history of the estate and been involved in mapping and restoring the drystone walls, opening up and maintaining footpaths and work on a ruined schoolhouse. They were planning to work on the watercourses on the estate, most of which are artificial. I mentioned that, as a student, I had studied freshwater biology so they issued me with a net and asked me to look at what fauna there was in the waterbodies. Unfortunately, the funding for the project dried up but, as I had my net I decided to go ahead.

The first thing I learnt was how little I knew about freshwater invertebrates! There were many, many more species of aquatic insects, larvae and nymphs than I thought; 123 species of water beetle, more than 190 caddis fly, 34 stone fly, 47 mayfly and 44 dragonflies and damselflies not to mention the waterboatmen, assorted diptera and other beasties, many of which need to be dissected and examined under a microscope to identify them. I decided to concentrate on the molluscs as there were very good keys by Macan (1977) and Killeen *et al.* (2004).

Most of the waterbodies on the estate are artificial. They consist of many small burns straightened to act as drains, two larger burns and a large artificial lake, the Cally Lake (figure 1) (one of only two lakes in Scotland; all the others are lochs).

The larger burns had been diverted from their original courses to bring them to where they could provide water for the big house and walled garden, to fill the lake in front of the house and to power a large cotton mill in the town. Although the estate is now forested, in the nineteenth century, it had been parkland grazed by white cattle and fallow deer and the burns had been designed to meander and tumble picturesquely alongside footpaths through the estate. Ravines had been cut through rock to re-route the burns and to create artificial waterfalls.

The burns run over gravel, rock and sand with mud in the slower moving stretches and have little or no vegetation (figures 2 to 4). The pH is alkaline 7.7 to 8.0. The lake is also alkaline with dense emergent vegetation round the edges and heavy growth of Canadian pond weed and other water plants in the deeper water.



figure 2: Disdow Burn.



figure 3: Burn and take off for Mill Lade showing the silt trap.



figure 4: Artificial waterfall on Bush Burn.

The burns were sampled by kicking the gravel upstream of the net and examining the contents and by lifting and examining rocks and stones in the water (figure 5). The lakes and lochs were sampled by pushing the net through the marginal vegetation.

The small ditches contained a few bladder snail (*Physa fontinalis*), Jenkin's spire shell (*Potamopyrgus antipodarum*) and the freshwater limpet (*Ancylus fluviatilis*) (figure 6). The larger burns had more *P. fontinalis*, and many *Radix balthica* (figure 7) in the slower moving sections. The Cally Lake contained large numbers of the keeled ramshorn (*Planorbis carinatus*). *Bithynia tentaculata* was also common. There were a few *Gyraulus albus* and wandering snails (*Radix balthica*) and I found one marsh snail (*Lymnaea palustris*). Several *Sphareum corneum* and one *Psidium* sp. were also found.



figure 5: Jim sampling Bush Burn.

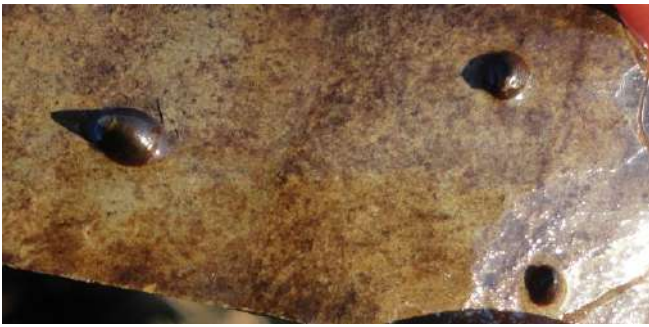


figure 6: *Ancylus fluviatilis*.



figure 7: *Radix balthica*.



figure 8: *Sphaerium corneum*.

Outside the estate, in the small rivers and streams around Gatehouse of Fleet, the most common freshwater snails were *P. antipodarum*, *R. balthica* and *A. fluviatilis*. The dwarf pond snail (*Galba trunculata*), the host of liver fluke, was found in small streams on the moorland above the town along with large numbers of *A. fluviatilis*. A large population of *L. palustris* was found in two garden ponds in the grounds of a local castle. The greater ramshorn (*Planorbium corneum*) and *R. balthica* occurred in the pond at Cream O' Galloway organic farm and I found *P. antipodarum* and *R. balthica* in cattle troughs there.

Elsewhere in Dumfries and Galloway, many small streams contained *P. antipodarum* and/or *A. fluviatilis*. Castle Loch at Loch Maben had large numbers of *P. fontinalis*, and smaller numbers of *P. carinatus*, *L. stagnalis*, *L. palustris*, *R. balthica* and *B. tentaculata*. On one visit I saw many large bivalves (*Anodonta* sp.) lying on the bottom. They all had ragged holes in the centre of each valve – possibly caused by otter predation. Ornockenoch Loch had *P. carinatus* and an adjacent pond contained large numbers of *P. carinatus*, *R. balthica* and *P. fontinalis*. There were large numbers of *P. corneus*, and *L. stagnalis*, one *L. palustris*, one shell of *S. corneum* and many shells of *B. tentaculata* in Carlingwark Loch.

At the Logan Botanic Gardens, I found *R. balthica* in a natural pond and *A. fluviatilis* in a formal pond while the pond in Colliston Park, Dalbeattie, had many *A. fluviatilis*. Single specimens of the amber snail (*Oxyloma elegans*) were found in a pond and a stream at Barstobrick.

I have only managed to look at a very few of the many streams, rivers, ponds and lochs of Dumfries and Galloway. There are lots more left to survey so I anticipate many happy days out with my net, dipping tray, forceps and magnifying glass.

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Addendum

After I had sent in this article one of the volunteers told me that he had come across two ponds in the south end of the estate. We went to the ponds and found large numbers of button ramshorn snails *Anisus leucostoma*, some marsh snails *Lymnaea palustris*, one white ramshorn, *Gyraulus albus*, several moss bladder snails, *Aplexa hypnorum* and a number of pea mussels, *Pisidium* sp. *A. hypnorum* was a particularly interesting find, a first for me and only the third time it has been recorded in Dumfries and Galloway (figure 9).



figure 9: *Aplexa hypnorum*, Cally Estate. (line spacing = 2 mm)

Dennis Roy Seaward, 2nd December 1928 – 9th January 2014: An Appreciation

Jan Light



Dennis Seaward became a Life member of the Conchological Society in 1969 and served as Marine Recorder between 1979 and 1990 (figure 1, above (photo: Hilary Seaward)). Although he was an amateur naturalist he brought an admirable level of professional dedication to his molluscan pursuits and a solid commitment to the invaluable role he played in maintaining the Society's profile and involvement in biological recording.

My first impressions of Dennis are as clear in my memory as the occasion on which our encounter took place. I was attending an Indoor meeting in my first year of membership, 1981, with so much to learn. I felt a tap on my shoulder and turned to see Dennis. I had taken a collection of mollusc shells from Portland Harbour to display under 'Members' Exhibits'. In this assemblage I had a few complete shells of a very showy bivalve with a restricted distribution in British Isles waters (figure 2). 'I see you have displayed some shells of *Tellina incarnata* (formerly *squalida*) from Portland Harbour'...'Yes...?' 'Where did you find them living' Dennis asked me. Whoops, I thought, they were not living but very fresh articulated specimens. Pristine in fact.



figure 2: *Tellina incarnata* (formerly *squalida*) collected from the sand flats at Smallmouth, Portland Harbour in 1984. For scale the shell length of the top left shell is 5cm. Formerly found regularly during fieldwork, the species suffered a decline after major works at Ferrybridge to move the entrance to the Fleet. The sand flats are now a popular site for windsurfers which impedes access for intertidal fieldwork.

At that time it was the practice to distinguish between three categories of shell when recording. 'A' denoted a live-collected specimen. 'B' was a category used for articulated bivalves and fresh, undamaged shells of gastropods. 'C' was a category that encompassed single shells of bivalves, and gastropod shells in conditions ranging from worn to fragmentary and included beaten up subfossil shells and fragments. 'Well actually they were not alive', I said, 'but they looked as if they were very freshly dead'. This little object lesson served a dual purpose. I learnt that in the matter of biological recording there is no place for fudging, accuracy is vital and when I became Marine Recorder after Dennis stepped down, the Society refined its definition system for recording marine molluscs to L for live and S for dead shells. No ambiguity.

So my first encounter with the Society's Marine Recorder was instructive, if not entirely comfortable, but over the years, and particularly once I had been recruited as a Sea Area Representative I came to admire him immensely.

Dennis was born in Stockton-on-Tees where he would attend Stockton-on-Tees Grammar School. His early interests focused around flight: he was particularly keen on building and flying model gliders, and frequented the local flying club. He heard he had won a scholarship to learn to fly just as he obtained his call-up papers for National Service in the RAF. He never did learn to fly, although he maintained a life-long interest in planes and flying.

From planes to birds, and thus Dennis began to keep birdwatching notes from February 1947, which hobby continued during National Service. Afterwards upon completion of his Civil Engineering course at Manchester University, he obtained an engineering job with Cleveland Water Board. Dennis became very involved in ornithological activities based at a Field Centre set up by Eric Ennion and his wife, and where he met his future wife, Peggy. Ultimately an active participation in ornithology would be the route to his marine molluscan work.

He moved to Yeovil with his family working for Wessex Water Board, a newly formed body which took over responsibility for water supply in South Somerset and North Dorset. A very time-consuming new job with less time for natural history resulted in fewer notes in his nature notebooks but interests in marine animals began in Teesmouth, when he began to make notes about the animals he found on washed-up *Laminaria*.

Initially field notes on molluscs focused on non-marine species. He began a correspondence with the Non-marine Recorder, Michael Kerney (who was based at Imperial College) in October 1969 and went on to submit records for Somerset and Dorset. In May 1970 Kerney wrote 'Many thanks for the box of specimens. It is most satisfactory that ST51 is now so excellently recorded. South Somerset looked very thin a year ago!'

Dennis started sending records to the Marine Recorder, Stella Turk, with whom he would go on to co-author *The Marine Molluscs of the Isles of Scilly*. He became SA 16 Area Representative for the Society's Marine Census and in 1979 he was elected Marine Recorder. Dennis was an active member of the Fleet Study Group and concentrated

his fieldwork in the Weymouth and Portland area. Over a couple of decades he published a series of papers and studies on the marine molluscs of the Fleet (figure 3).



figure 3: The Fleet Lagoon in Dorset and the Chesil Bank on its seaward margin are part of the Jurassic Coast, a UNESCO World Heritage Site, and a Site of Special Scientific Interest. Here the lagoon is viewed from Abbotsbury, looking towards Portland in the distance.

After my initial meeting with Dennis I occasionally joined him on the shore, both on the sand flats of Smallmouth and along the Chesil bank. The molluscan infauna of those sand flats was exceptional: a full suite of venerid clams was accompanied by *Gari fervensis*, *G. depressa*, *Tellina squalida*, *Pandora alba*, and *Antalis vulgaris*, this latter species seldom being found living intertidally in my experience. Along the Fleet Dennis discovered the unique assemblages of molluscs living interstitially in the shingle, both beneath plants of *Suaeda maritima* at HWM and within the saline springs percolating through the Chesil Bank to trickle into the Fleet at ELWST. His meticulous fieldwork was to pioneer searching techniques for other Conchological Society members to employ in order to find such under-recorded rarities as *Truncatella subcylindrica*, *Paludinella littorina*, *Caecum armoricum* at other sites in the British Isles.

Dennis was meticulous in all aspects of biological recording and in checking information he was given. When I sent records for new and surprising finds I faced a friendly interrogation as to the circumstances of my find. It was very clear to me that recording was a serious business. But after a while the thrill of the chase in tracking down new sites and new records proved much more rewarding than adding more specimens to my collection. Dennis was very conservationist in his collecting and did not suffer gladly the random and indiscriminate collecting of specimens he sometimes witnessed during field meetings and dredging trips. He attended a few Society field meetings but I saw that he also liked to work on his own or with a group of like-minded field workers from other disciplines. When I took over in 1991 he was a hard act to follow.

Although Dennis found time to conduct extensive fieldwork he must have spent even more hours at his desk preparing the data that would eventually result in the *Sea Area Atlas of the Marine Molluscs of Britain and Ireland* edited by Dennis and published by the NCC in 1982. It contained records collected specifically for the Census as well as data culled from various other sources. The intention of this Atlas was to identify erroneous records where possible and to stimulate further surveys.

In 1990, the NCC published the follow-up to the Atlas, *Distribution of Marine Molluscs of North West Europe*

based on nearly ten years' work coordinating the Conchological Society's recording effort and undertaking meticulous research to verify the accuracy of as many records as possible. When I inherited his correspondence files it was evident that this work had included painstaking search of the literature and private documents in order to include authentic records in the atlas (figure 4).

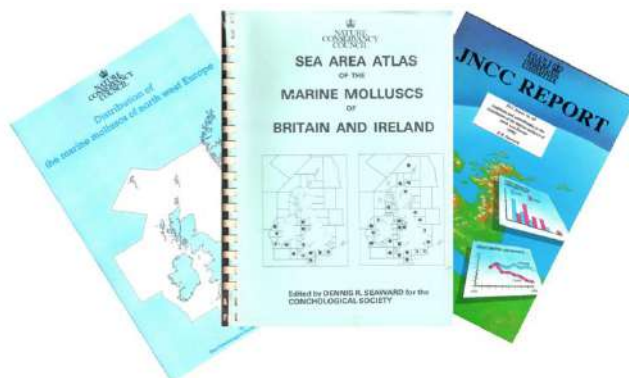


figure 4: The *Sea Area Atlas of the Marine Molluscs of Britain and Ireland* and related publications edited by Dennis Seaward.

Dennis was elected a fellow of the Linnean Society in 1992, which august body awarded him the H. H. Bloomer medal for Zoology in 1994 for his field and research work in biological recording.

Dennis was also a member of the Malacological Society of London and PORCUPINE marine natural history Society. After he retired as Marine Recorder in 1991 Dennis went on to develop his interest in historical landscapes and associated vegetation, and became a member of the Centre for Historical Studies.

When I took over from Dennis in 1991 I inherited a scheme in apple-pie order and during my tenure as Recorder I would see the Society shift from a paper-based Census and archive, to an electronic one. This was not achieved overnight nor was it seamless, and a number of members gave and continue to give generously of their time to bring about digitisation. Sterling work continues in a rapidly developing digital biological recording arena, built on the solid foundations of Dennis' stewardship of the Society's Marine Census.

British Shell Collectors' Club



Saturday 5th September 2015
Chatsworth Shell Fayre, DE45 1PP.
 Open from 9am, admission free.

Saturday 31st October 2015
Shell Show
 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

I have always loved the sea and as a little girl loved to find seashells along the beach at Helen's Bay, Northern Ireland, where I grew up. As a child I enjoyed books and found in the children's section of the library that non-fiction books were only interesting if they had animals, insects or better still, things of the sea. One of my first school projects was on different types of whales – not that I could go whale spotting off my beach! Those books also had pictures and mysterious descriptions and stories of the octopus which have captivated my interest ever since. But here in lies a problem, how do you find octopi if you don't scuba dive? Well for the next 20 years I was limited to tantalising glimpses at aquariums where ever I happened to be visiting. More recently, in the last decade, I have been able to find many more species and specimens by surfing the web.

In the autumn of 2014 I greatly enjoyed the episode of the BBC's 'LifeStory', narrated by David Attenborough, which highlighted a couple of octopi. I was fascinated with the mimic octopus, *Thaumoctopus mimicus*, which can camouflage itself against the sea bottom to be hidden. But it gets its name from the fact it can mimic other things, which are either inedible or deadly. It doesn't limit itself – this is no one trick pony. The mimic octopus shows greater intelligence as it changes depending on what it wishes to confuse or confound. It will mimic a sea snake when confronted by territorial damselfish, which are preyed upon by sea snakes. Looking the same is not sufficient for the mimic octopus – it will even change its behaviour. An article on the website

<http://phenomena.nationalgeographic.com/2009/12/13/the-mimic-octopus-my-first-ever-post/> explains that, 'when mimicking the leaf-shaped sole, the octopus not only draws its tentacles and head back into a leaf shape, but also matches a sole's colours and undulates its body to resemble its swimming style.'

The beauty of 'on-line' is that you can see this creature moving courtesy of others, without getting wet, without travelling, without having to learn to scuba dive (which I can't due to a back condition). This URL has movies of the mimic octopus (be warned that unfortunately this website uses offensive language): <http://hideousseacreatures.tumblr.com/post/61678671117/indonesian-mimic-octopus>.



figure 1: *Thaumoctopus mimicus* mimicking (above) a flounder and (below) a sting ray. (photos: hideousseacreatures.tumblr.com)

More pictures at this URL show the mimic octopus as a lionfish, a venomous sea snake and other `different

predators (see also figure 1). Here is another link which takes you through the shapes of flounder, lionfish and sea snake: <https://www.youtube.com/watch?v=os6HD-sCRn8>.

Back to the BBC Life Story episode. It concentrated on the veined octopus, *Amphioctopus marginatus*, which utilised two coconut shells to shelter from a predator and then caused the coconut shell to roll away before leaving the safety of the shells. Searching the internet you will find many images of this octopus hiding within large clams, cockles, two parts of a broken bottle, even a glass container. Scientists only first noticed this behaviour with coconut shells for temporary shelter in 2009. Some of the most stunning images of *A. marginatus* that I found on the internet can be seen at:

a) in a coconut shell: <http://museumvictoria.com.au/about/mv-news/2009/tool-use-in-veined-octopus/>

b) in a bottle: <http://fineartamerica.com/featured/4-veined-octopus-georgette-douwma.html>

c) in an open clam: <http://ocean.si.edu/ocean-photos/veined-octopus-anilao-batangas-pier-philippines>

d) a veined octopus that has buried shells to make its burrow: <http://knowledgeiswonderful.blogspot.co.uk/search/label/Animal%20Minds>

e) using shells as a shelter: [http://en.wikipedia.org/wiki/Amphioctopus_marginatus#mediaviewer/File:Octopus_shell_\(figure_2\)](http://en.wikipedia.org/wiki/Amphioctopus_marginatus#mediaviewer/File:Octopus_shell_(figure_2))

Finally, and fascinating again, are the movies.

This first movie shows the octopus finding two single valves of a clam:

<https://www.youtube.com/watch?v=HDab2mX5mXA>.

This second link shows the octopus using two shards of a glass bottle:

https://www.youtube.com/watch?v=XIN5wfc_igk.



Figure 2: A small (4–5 cm) *Amphioctopus marginatus* using a nut shell and clam shell as shelter.

(photo: Nick Hobgood, Creative Commons licence BY-SA 3.0)

Not long after I moved to North Berwick in 1997, Michael Kerney, who was the Conchological Society's Non-marine Recorder at the time, wrote to me to say it would be interesting to know if *Candidula gigaxii* was still present at Canty Bay, just to the east of North Berwick. *C. gigaxii* had last been recorded there in 1930, by D.K. Kevan, after being found there originally by the Rev. John McMurtrie in 1888, and this site was, and still is, the only site for the species in Scotland. The only access appeared to be along the foot of the cliffs so, choosing a low tide to make sure I didn't get cut off, I clambered along the rocky shore until I reached a small bay (not Canty Bay itself) which did indeed contain a good population of *C. gigaxii*. (I later discovered a much easier route to the site, down a steep grassy slope from the main road!) Although *C. gigaxii* has a reputation as a somewhat ephemeral species, colonising a site and then disappearing after a few years, it was still present at this site some 70 years after it had previously been recorded, and 112 years since it was originally recorded. Further investigation showed that the population actually extended a few miles in each direction from this site, and a few individuals could be found by the shore in North Berwick itself.

Thus began my interest in 'rediscovering lost snails', the term I use for finding species for which no records have been obtained for a long time. In fact, things might not have proceeded any further, but a few years ago I was shown some specimens from the collections of National Museum of Scotland that stimulated my interest. These were *Monacha cantiana* from Charlestown in Fife; *Succinella oblonga* from the Peffer Burn in East Lothian; and *Oxychilus navarricus* from Bridge of Don at Aberdeen. These are all very local species in Scotland and *S. oblonga* is particularly rare. *Monacha cantiana* was soon rediscovered. Charlestown lies on the north shore of the Firth of Forth, a little to the west of Rosyth, and on a narrow strip of rough ground between the shore and the road I found several specimens (figure 1). This was in 2010, 90 years after it had previously been recorded. No other 'lost snail' that I have sought has been as easy to find.



figure 1: The site at Charlestown, Fife, where *Monacha cantiana* lives.

Succinella oblonga was next on my list, but first of all I had to find out where to start looking. Although the museum label stated 'Peffer Burn, East Lothian', there are two Peffer Burns that I know of (and possibly others). Museum labels may therefore be a limited value in locating sites, and other sources of information need to be used. Fortunately many of the early recorders published quite detailed accounts of their recording activities. Kevan (1931b) described fairly

precisely where he found *S. oblonga*, by the Peffer Burn a mile and a half from the sea near the village of Whitekirk, just a few miles from North Berwick, but I have failed to find it there. At this point I might have given up, but not long afterwards, snailing in southwest Scotland with Adrian Norris, we looked for *S. oblonga* at an established site at Ballantrae, around a coastal lagoon (where we failed to find it), but did discover it at the top of the beach at Ayr. Now I had learnt what this snail looked like when live and had also been shown the sort of habitats it might prefer. Armed with this information, in 2011 I set off on a long walk along the beach to the mouth of the Peffer Burn (figure 2), where I was lucky enough to find a thriving population (figure 3), 80 years after Kevan had discovered the species in the area.



figure 2: The mouth of the Peffer Burn, East Lothian, the home of *Succinea oblonga*.



figure 3: *Succinella oblonga*.

Kevan (1931b) recorded two more sites where he found *S. oblonga*: the mouth of the River Almond in what was then West Lothian (now part of Falkirk District) and by the River Forth just above Stirling. I was unable to find it at either of these sites, however, and it has probably been lost. At the River Almond site there has been extensive land reclamation, with building of sea walls, while at Stirling the site appears to be exactly where the motorway now crosses the river.

So far, *Oxychilus navarricus* at Bridge of Don has eluded me. On a trip to Aberdeen just a few years ago I searched for it without success, but when I read the original report it

turned out that it had been recorded on the south bank of the River Don, while I had been looking on the north bank.

The rediscovery of *M. cantiana* at Charlestown led me, indirectly, to another rediscovery. Back in 1979 I found *O. navarricus* at Inverkeithing in Fife, and it turned out to be present over a large area to the east of Dunfermline, but until my visit to Charlestown I had never seen it to the west of Dunfermline. If it was present at Charlestown, how much further west did it extend? To find out, I walked along an old railway line, now a cycle path, several miles west of Dunfermline. Although it was some time before I found *O. navarricus*, I soon discovered another 'lost snail' – *Cochlodina laminata*, present in some numbers on the damp retaining walls of the old railway cutting (figure 4), and still present 110 years after it had last been recorded.

Searching for various other species has so far been unsuccessful. *Truncatellina cylindrica* used to be present both on Arthur's Seat in Edinburgh and on North Berwick Law (a volcanic plug on the south side of the town). It may have disappeared, but I have probably not been assiduous enough in searching for it. *Pyramidula pusilla* was reported from both Arthur's Seat and Craigmillar Castle in Edinburgh (Kevan, 1931a), but I failed to find it at the latter site, and neither site seems very limey, as preferred by this species. Waterston (1931) found *Acicula fusca* in Bilston Glen in Midlothian, but the site has been filled with colliery waste, though it is possible that *A. fusca* could still be present elsewhere in the glen.

Rediscovering lost snails can be as exciting as finding a completely new record, but it is not easy finding the site of the original record. Grid references were unknown in those days, and descriptions on museum labels can be imprecise. Databases are usually of no use in pinpointing where a species was originally found. As described above, one may come upon a lost species by chance, but it is more helpful to

peruse older literature, much of which is accessible in universities or local libraries and museums. Older issues of journals such as the *Journal of Conchology* and *Scottish Naturalist* are now available on-line, thanks to the Biodiversity Heritage Library, but I am also able to consult copies of these and other journals in the National Library of Scotland in Edinburgh. Although some species have almost certainly been lost through habitat changes, others might still be present but not recorded recently because nobody has looked.



figure 4: The old railway cutting at Blairhall, Fife, site of *Cochlodina laminata*.

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- Waterston, R. (1931) [No title] *Scottish Naturalist*, p. 152.

Membership update

The following members have joined the Conchological Society recently or have not previously been included in either this column of Mollusc World or in the latest edition of the Members' Guide (2014). **Please note that to be included here members must sign a data protection consent form.**

If you have not been included and now wish to please contact Carolyn Postgate at CIRCA subscriptions (details).

(names and details removed)

The codes in italics after the member's e mail address indicate the member's interests:

A – Applied conchology (shell artefacts/money, cooking, art etc)

B – Conchological books

C – Conservation *D* – Diving

E – Ecology and pollution *F* – Fossils

G – General malacology including genetics/physiology

Mb – British marine

Mf – Foreign marine

Nb – British non-marine

P – Photography

W – Conchological poetry and prose

Z – Captive breeding of molluscs

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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.

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Subscriptions are payable in January each year, and run for the period 1st January to 31st December. • Ordinary membership £33
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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.
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How to submit articles to Mollusc World

Copy (via e mail, typed or handwritten) should be sent to the Hon. Magazine Editor (contact details above). If sending copy using e-mail please include a subject line "Mollusc World submission". When emailing several large file attachments, such as photos, please divide your submission up into separate emails referencing the original article to ensure receipt. Electronic submission is preferred in Microsoft Word. Images and Artwork may be digitised, but we recommend that a digital image size 200Kb- 1.5Mb (JPEG preferred) be sent with your submission. All originals will be treated with care and returned by post if requested. Authors should note that issues of the magazine may be posted retrospectively on the Conchological Society's web site. The general copy deadline for the November 2015 issue is 1st October 2015 but it would be helpful to the Editor to send articles by the second week of September in order to keep to publishing deadlines; inclusion in a particular issue is at the Hon. Editor's discretion and depends upon the space available but contributions are always welcome at any time.

Advertisements in Mollusc World

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

Conchological Society of Great Britain and Ireland

Diary of Meetings

Please check the website (www.conchsoc.org) for further details and any updates, including other meetings arranged at shorter notice.



Saturday 1st August 2015: FIELD MEETING (non-marine): Perivale Wood, West London.

Joint meeting with The Selborne Society. Organiser: June Chatfield (01420 82214).

Ancient woodland with meadows, ponds and a canal on its boundary.

Meet at 11:00 at the entrance, down track between 36 and 38 Sunley Gardens, UB6 7PE.

Pond-dipping for adults at 14:00. No car park; restricted street parking; ¼ to ½ mile from Perivale Station.

Saturday 26th September – Saturday 3rd October 2015: FIELD MEETING (marine): Lleyn Peninsula and southern Anglesey, North Wales.

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

The Lleyn Peninsula and southern Anglesey have a good variety of beaches and rocky shores with almost all aspects; the Menai Straits have strong tidal currents and a rich and interesting fauna.

A week of shore visits is being planned to coincide with the low autumn spring tides (LT 26th 14:50 (+0.5); 28th 16:30 (-0.2); 29th 17:10 (-0.2) 2nd 19:00 (0.5)), including subtidal sampling by a local diving group, and, it is hoped, access to dredged samples.

Plans will be kept flexible in order to respond to weather (especially wind direction) at the time, since varied aspect allows us to pick suitable shores. A primitive shared laboratory space will be available in the barns of a farmhouse N of Criccieth which is being rented by members of the group. Visits to terrestrial and freshwater sites are also possible.

If you are interested in coming, please contact Bas.

Saturday 17th October 2015: INDOOR MEETING: Demonstrations, exhibits, and lecture.

Guest Speaker: Peter Cosgrove. Mollusc of the Glen: Scotland's most important wildlife species

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 21st November 2015: REGIONAL INDOOR MEETING: Haslemere Museum.

Organiser: June Chatfield (01420 82214; collections@haslemereuseum.co.uk).

A day of talks, exhibits, discussion and a public shell roadshow. E.W. Swanton, past President of the Society, was curator at this Museum, which houses his and other shell and fossil collections including the collection and archives of Sir Archibald Geikie of the British Geological Survey. The museum is less than a mile from Haslemere railway station; there is a public car park nearby. Full details will be posted on the website.

Saturday 28th November 2015: 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. This year's workshop will examine shell sand from Mull, led by Adrian Rundle.

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.

Saturday 12th December 2015: INDOOR MEETING: A Christmas miscellany

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

As usual, a 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 Bas (contact details below).

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

Please note the following dates in 2016 for your diary:

Saturday 23rd January 2016: INDOOR MEETING 14:00 (preceded by Council meeting).

Saturday 27th February 2016: INDOOR MEETING 11:00; talk at 14:00

Saturday 16th April 2016: ANNUAL GENERAL MEETING 14:00 (preceded by Council meeting)

?Saturday 17th September 2016 – Saturday 24th September 2016: MARINE FIELD MEETING, Orkney.

Saturday 8th October 2016: INDOOR MEETING 14:00 (preceded by Council meeting)

Saturday 19th November 2016: REGIONAL MEETING (venue tba)

Saturday 10th December 2016: INDOOR MEETING 14:00 (preceded by Council meeting)

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