

Mollusc World

Issue 30

November 2012

Molluscs in a changing climate
Tapestry shell borders
News from field meetings



The Conchological Society of Great Britain and Ireland

Helping to understand, identify, record and conserve molluscs

From the Hon. Editor



One of the big events in the UK this year (that is apart from the Olympics and the Queen's Diamond Jubilee!) has been the weather; a relatively dry winter followed by prolonged rainfall in many areas, with many places experiencing flooding. Following the wet weather, the national newspapers have featured articles about plagues of slugs and the perceived

spread of introduced species. But how does this relate to reality? In this issue there are several articles touching upon this subject, from Bas Payne's contribution on molluscs and climate change (based on his talk to the Conchological Society at the 2012 AGM) to extracts from an e mail debate initiated by Mary Seddon on whether snails and slugs have become more abundant in the UK this year. One theme to emerge is the importance of submitting records of all molluscs (marine and non-marine) whenever we can to help build up an overall picture, not just concentrating on the unusual or rarer species.

It has been good to meet a number of new members at our meetings recently. Time is precious for all of us but if you find yourself free and within reach of one of our indoor or field meetings, why not give a meeting a try? They are always interesting and you can be guaranteed a warm welcome (see back cover). This issue includes no less than five field meeting reports from varied locations.

If you would like to store issues of this magazine in a neat and accessible way, our member Celia Pain recommends some navy blue binders which have spring-loaded cords to hold the magazines in place. They are obtainable from Modern Bookbinders Ltd, Pringle Street, Blackburn, Lancashire BB1 1SA. (01254 59371) Email: modern.binders@btconnect.com.

Peter Topley

(photo above: Rosemary Hill)



(left) Workshop and discussions at the October 2012 all day meeting at the Angela Marmont Centre, Natural History Museum, London.
(photo: Peter Topley)

Mollusc World

This magazine is intended as a medium for communication between Conchological Society members (and subscribers) on all aspects of molluscs. We include articles, field meeting reports, research news, results from the mapping schemes and identification aids. We welcome all contributions in whatever form they arrive (see back cover for further details).

Contents

- 3 Letter to members *Mike Allen*
Book sale announcement/ New members
- 4 Molluscs, climate change and NBN *Bas Payne*
- 6 Mass mortality of some Helicid snails *Adrian Brokenshire*
- 7 Trust me - I'm a malacophile *Chris du Feu*
- 8 Are UK snails and slugs more abundant this year?
correspondence initiated by Mary Seddon
- 10 Rivelin revisited: field meeting *Robert Cameron*
- 11 Shell borders of Burghley House Gobelins tapestries
Peter Topley and Kevin Brown
- 14 Downton Gorge field meeting *Ron Boyce*
- 15 Field meeting to Connemara, Ireland *John Fisher*
- 18 Field meeting to Titchfield, Hants. *June Chatfield*
- 21 Pearl in a Razor Shell *Paul Dansey*
- 22 The story of wampum *Janet Ridout Sharpe*
- 24 J. Wilfrid Jackson - a retrospective *Brian Goodwin*
- 27 Lava Shell, *Codakia tigerina* *John Llewellyn Jones*
- 28 Field meeting in Winchester, Hants. *June Chatfield*
- 30 A Taste for Slugs *Graham Long*
Slug tennis! British Shell Collector's Club dates
- 31 About the Society/Instructions to authors
- 32 DIARY OF MEETINGS

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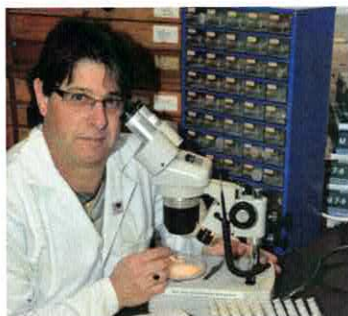
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Front cover: *Modiolus barbatus* (Bearded Mussel), Knocknahaw, Connemara, Republic of Ireland (photo: Sebastian Payne).

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

Dear Conchological Society members



Thank you for endorsing me as your president, I'm both humbled and honoured, and I hope to continue the excellent work of the presidents I have worked under (Jan Light, Julia Nunn and Bas Payne). Who am I and what do I do? Although first intrigued by being

told how snails could tell us about the past environments when I was a schoolboy of fourteen, my own interest started from an archaeological perspective, first as an amateur, then student, now professional archaeologist. As an environmental archaeological scientist and geoarchaeologist, I use ancient fragments of shells recovered sieved from soil samples and sorted under a microscope to determine the past landscape and land use and how that has changed, largely through the effect of people in the past. You'll hear more about this over the next three years.

I don't know whether I consider myself a professional or amateur conchologist – and it doesn't matter – for it's the wider and varied interests in conchology and all its many facets that is the binding strength of the Conchological Society. Unlike our past three presidents, my primary interest is in terrestrial rather than marine molluscs, but those interests are not exclusive! I do, however, share many interests in common with them ... the strength of the Conchological Society is the huge diversity of interests and the marriage of professional and amateur; strengths that need fostering.

I am particularly keen to increase the diversity of our meetings and to encourage more of our members, and others, to dip their toe in the water and come with us on field meetings. Our meetings secretary, Bas Payne, is working on a new and expanded programme of meetings. I intend to run one 'presidents field meeting' a year, where we look for snails in a variety of modern habitats, and I can put them into a longer archaeological perspective. We will also see some of the archaeological sites and landscapes at the same time; the snails will be on and in most of them! There will also be an annual president's day where I can meet a number of you and you can visit my mollusc workshop (it's being built as I write), examine snails (there will be four microscopes available) and share tea or wine in our garden. Through our meetings, especially our field meetings, I hope that we can encourage more people to become engaged in conchology at a whole variety of levels; young and old, amateur and professional. It is the recording by people engaging with the countryside, and through expert identification, that the Conchological Society is not only fun, but provides an important scientific record.

It is important that we share the interest we have with others and foster new members. You may have ideas, or thoughts about what you'd like us to do, events you would like to host or attend ... if so contact me.

In this vein we are actively supporting the publication of a children's book, *Sammy the Slug wins the day*, by Sonia Copeland Bloom. This is an illustrated story book that also contains interesting facts and information about snails (and slugs). Look out for this publication. We also plan to increase the remit of our peer reviewed Journal (*The Journal of Conchology*), ultimately making this available in both paper and digital form to our members.

Mike Allen

Book Sale 2012/2013

The Society is very grateful to Stella Turk for kindly giving us many of the shell books from her library to auction for Society funds.

These will be auctioned this winter, in the same way that we auctioned books given by Bernard Verdcourt in 2010/2011.

A catalogue is to be posted on the website, together with a bid form. Bids must be received by 28th February 2013.

Further details will be posted on the website at the same time as the catalogue. Non-members may bid, but their bids will only be considered in the absence of bids from members.

If you do not have web access, and would like a copy of the catalogue and bid form, please send a stamped addressed envelope (A4 envelope; large letter rate stamp) to Bas Payne, The Mill House, Clifford Bridge, Drewsteignton, Exeter, EX6 6QE.

Bas Payne

New Members

The following member has joined the society recently and has not previously been included in either this column of Mollusc World or in the latest edition of the Members' Guide (February 2011). **Please note that to be included**

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For many years, the Conchological Society has set out to record the distributions of British Molluscs in order to understand more about their biology and more recently to help their conservation in the face of human impacts and habitat change. This led first to the publication of distribution atlases (Kerney 1976,1999; Seaward 1982, 1990, 1993), and more recently, to the contribution of Conchological Society recording data to the database held by the National Biodiversity Network (NBN) (<http://data.nbn.org.uk/>), which allows anyone to look at distribution maps, and (except for particularly sensitive species and datasets) access the original recording data.

One value of these records and of the NBN database is that it allows us to look at distributions changing over time, reflecting among other things the impacts of habitat change and pollution, and the arrival and spread of introduced species.

Recently there has been particular concern about the effects of climate change. Over the past century, average temperatures in the UK and worldwide have increased by around 1°C. This is not a large change, being approximately the average temperature difference between Wiltshire and Nottinghamshire, or Yorkshire and southern Scotland. It is less than the temperature difference between sea level and 300 m up; and is small by comparison with the low temperatures of the ice ages, or the high temperatures of much of the past 300 million years. But it seems to be having considerable effects on many plants and animals. Fish stocks and butterflies are moving north, and spring is arriving earlier. The comma butterfly (*Polygonia c-album*), for instance, used to be rarely seen before the beginning of July, but first sightings in May are now commonplace. As figure 1 shows, the comma became widespread in northern England between 1975 and 2000, and in southern Scotland

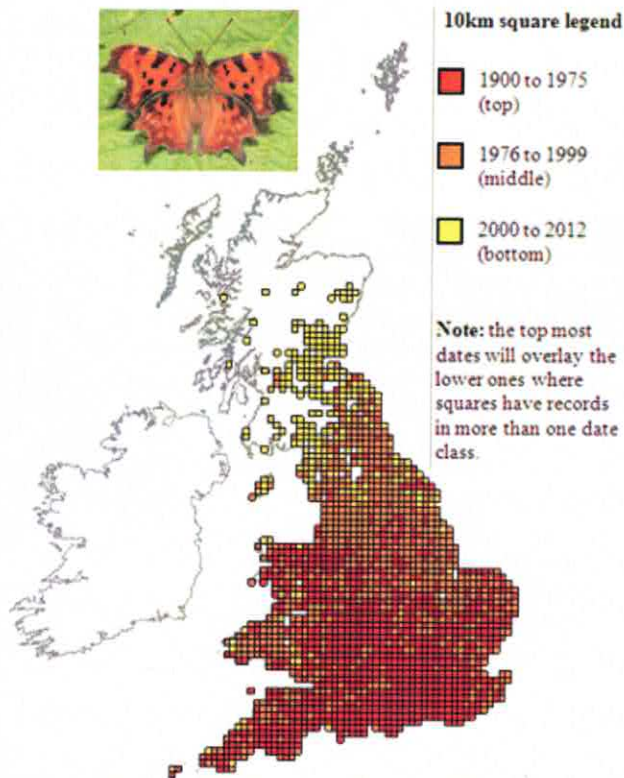


figure 1: 10km distribution of the Comma (*Polygonia c-album*) in Great Britain and Ireland: changes between 1900 and 2012. (inset photo: Alan Outen)

What about molluscs? Many terrestrial native species have been in decline for the past 50 years and longer. Michael Kerney and Robert Cameron, writing in 1979, pointed to the decline of many of our scarcer native species and commented that this was in contrast to increases in many introduced species. Robert Cameron and Ian Killeen (2001), surveying the situation 25 years later, confirmed that this trend had continued, and concluded that the decline in native species had mainly been caused by human actions – by habitat destruction and modification – and that ‘the effects of climate change appear slight and ambiguous for native species in recent times’ (p.363). The situation is similar and rather worse for freshwater molluscs (Killeen 2010).

Marine molluscs have also been affected by habitat destruction and modification, especially by dredging; and by the presence of introduced species. But Baxter (2010) draws attention to the threat of future climate change and especially ocean acidification. Hawkins *et al.* (2010), writing in the same volume about the sea shore, point to northward extensions in some molluscs, for example the toothed top shell, *Osilinus lineatus*, and reductions in abundance in others at the southern edges of their distributions such as the tortoiseshell limpet, *Tectura testudinalis*.

NBN potentially provides a way to monitor changes in distribution. However, as figures 2 and 3 show, it does not show changes in marine molluscs with the same clarity and reliability as changes in the comma butterfly.

Figure 2 examines the spread of the toothed top shell (*Osilinus lineatus*). The NBN map appears to show a range extension (the orange and yellow squares) into central and north Wales; however as Hawkins *et al.* illustrate (op. cit., figure 33), it has long been established in north Wales, and the recent range extension has been relatively small, from the west side of Anglesey to Colwyn Bay.

Figure 3 looks at the northward retreat of the tortoiseshell limpet. What one would expect is to see yellow squares in the south, showing the area where it was no longer present by 1975, and orange squares slightly further north showing where it has gone by 2000, with red showing its current distribution (i.e. after 1999). No such pattern emerges from the map in figure 3 – and anyone who has recorded sea shells in southern England will probably be surprised to see the tortoiseshell limpet recorded there: Seaward (1982) shows its southward limit in north Wales!

This immediately highlights one of the current problems with mollusc records on the NBN database: it contains too many records that are likely to be unreliable either because of errors in data entry, or misidentification.

NBN allows the user to select or reject records originating from different sources. Figures 4 and 5 show the results for *O. lineatus* and *T. testudinalis* using only Conchological Society records. The most reassuring result is that almost all the improbable records for *T. testudinalis* in southwest England disappear, though two surprising records remain, one in South Wales and the other in the Isle of Wight. But again there is no clear indication of significant retreat. Similar results are given by other northern mollusc species.

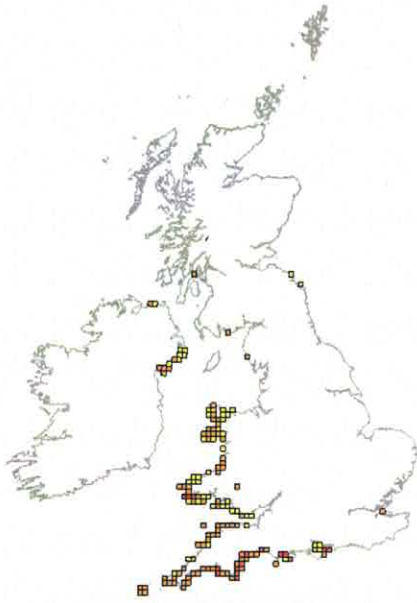


figure 2: 10km distribution of *Osilinus lineatus* in Great Britain and Ireland: changes between 1900 and 2012. (inset photo: Steve Wilkinson)

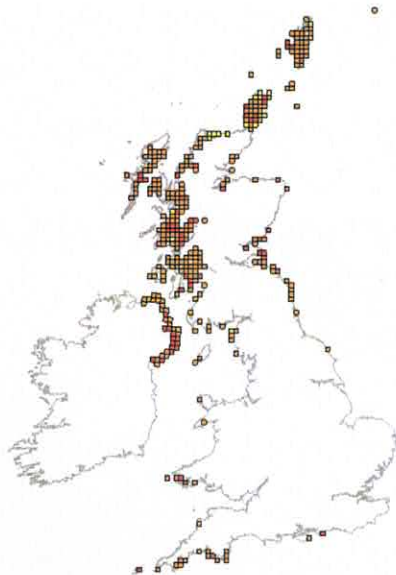


figure 3: 10km distribution of *Tectura testudinalis* in Great Britain and Ireland: changes between 1900 and 2012. (inset photo: Steve Wilkinson)

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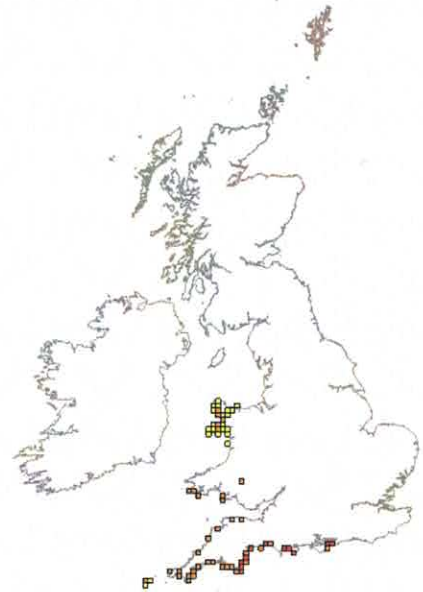


figure 4: 10km distribution of *Osilinus lineatus* in Great Britain and Ireland: changes between 1900 and 2012. Conchological Society records only

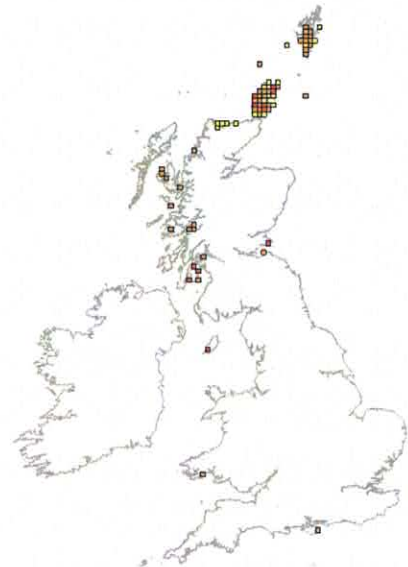


figure 5: 10km distribution of *Tectura testudinalis* in Great Britain and Ireland: changes between 1900 and 2012. Conchological Society records only.

So what is the explanation? There are probably at least three reasons acting together. The first, as already evident, is that unreliable records are likely to make it much more difficult to see a pattern of change. The second is that there are relatively few records for most mollusc species. Contrast, for instance, the 312,754 records of comma butterflies on NBN at the date of writing with only 1983 records of *O. lineatus* and 1750 of *T. testudinalis*. If you want to detect change, you need repeated observations at many different places – and that means a lot of records. The third is the obvious but more interesting underlying explanation. Most molluscs are less mobile than butterflies and fishes: they move slowly, and are good at surviving variable conditions and short-term change by retreating into crevices or digging into the earth. One of the best examples of this is the landsnail *Papillifera bidens*, which arrived at Cliveden on imported Italian stone in the 1890s, and has survived since

then without moving more than a few yards from the original wall. One might expect faster distributional change in marine molluscs with planktonic larvae, but there is little evidence for this so far. Some introduced molluscs appear to have covered large distances quickly; but it is likely that they have travelled as hitch-hikers in plant pots from garden centres – not under their own steam.

NBN undoubtedly has the potential to pick up relatively small-scale distributional change; but we need much more data for molluscs than we have at the moment, especially targeted on species and areas where change seems likely; and we need more reliable datasets. And this will also help with conservation. We will have better knowledge of what is changing, better understanding of the reasons for change, and the evidence to make a better case for the need for conservation. It is important that we all get out there, record molluscs and send our records in; and, to improve the reliability of the data, it is important to check NBN and keep voucher specimens of anything that looks surprising..

Acknowledgements

Many thanks to all those who helped with suggestions, information and discussion during the preparation of this note and the talk that it is based on, and in particular: Ian Killeen, Jan Light, Adrian Norris, Julia Nunn, Richard Preece, Adrian Sumner, Peter Topley, and Steve Wilkinson.

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A local mass mortality event of some species of Helicidae *Adrian Brokenshire*

On 18th July 2012 my wife led a ramblers' group walk around the coast path at Portland, Dorset. On returning home she mentioned seeing an exceptional number of dead snails on paths near Portland Bill, south and west of the coast guard lookout. I resolved to go and look for myself, but couldn't make it down to the Bill until 22nd July.

I parked away from the Bill just above Pulpit Inn, at the roadside south and west of the coastguard lookout. The ground around the well trodden paths was like a bog with standing water. The grounds around the pub were almost as bad, still very wet, and along the whole north end of this piece of waste ground were dozens of dead *Monacha cantiana* (Kentish Snail); lovely white and pink specimens. I collected some and moved on.

Other paths were still very wet, with standing water in places and a lot more fresh dead snails than is usual to see in this area. Along the coast path and adjoining paths there were many dozens of dead fresh shells of *Cepaea hortensis* (White-Lipped Snail) and *C. nemoralis* (Brown-Lipped Snail), all the colours and stripe forms you could imagine. I walked around a lot of paths and collected a good sample of varieties (figure 1). The paths were still very wet and where some snails had been trodden on they had not been broken, but pushed into the soft surface.

Why so many fresh dead snails? The wet weather had brought them out of the rank grasses and scrub areas to graze on fresh young growth along the paths. At the beginning of the week of 18th July 2012 we had terribly

heavy rain, the highest rainfall in the whole country. I think the snails got caught in this. The paths became waterlogged and in some instances had water flowing along them and the simple explanation is they all drowned, hence the mass mortality.



figure 1: Shells of *M. Cantiana*, *C. hortensis* and *C. nemoralis*. from the Portland Bill mass mortality event.

In his Non-Marine Recorder's Report for 2011, Adrian Norris notes uneven mollusc recording activity with variation geographically, between habitats and between species. Some rarer species with specialised habitat requirements in some parts of the country are far better recorded than common, ubiquitous species elsewhere. He appeals for all records, even casual records of common species to be submitted. It can be exciting to visit sites to search for a species last recorded there by some Victorian reverend amateur naturalist. However, if this activity is at the expense of recording species in other, more mundane habitats it will obviously bias the national distribution maps. A good example of this bias can be seen in Lincolnshire. John Redshaw, the county recorder, noted that *Arion intermedius* is common and widespread; *Deroceras laeve* is a widespread species of wetlands. In contrast, *Lehmannia valentiana* is a rare species (Redshaw, 2011). Over the last decade I have run a number of slug workshops for various groups in the county (wildlife trusts, gardeners' associations etc.) and, as part of the event, attendees bring slugs from (usually) their gardens. To judge from species found both *A. intermedius* and *D. laeve* would be very rare indeed but *L. valentiana* widespread.

Slugs seem to be particularly badly recorded. Even amongst conchologists interest in them seems far less than in their hard-shelled relatives. Problems of keeping distribution records up to date have been compounded by recent splits (e.g. *Arion hortensis* agg.), by other nomenclature changes (*Deroceras caruanae* aka *D. panormitanum* aka *D. invadens*) and by rapid changes in distributions (e.g. *Boettgerilla pallens*).

Much-overlooked habitats include gardens and brownfield sites. Both of these cover considerable areas in Britain and both can have surprisingly abundant or diverse species assemblages. Gardens tend to have rich feeding opportunities for slugs (not the hostas in particular; the compost heap is far better value) and enjoy/suffer introductions via the garden centre route. Brownfield sites provide an almost virgin habitat where species can establish themselves with little initial competition and may also have been boosted by introductions by former users. For example, a morning's search of an ancient oak wood in Skye produced a few specimens only of six species of slug, none of which were uncommon, whereas in the afternoon less than an hour's searching in a brownfield site produced many specimens of eight species. Again, on a recent holiday in the Lake District a garden produced a total of 12 species whereas a nearby wood, searched equally well, yielded only seven species. Field visits to the garden need not be long, particularly if you keep a piece of plywood or chipboard on the ground in a shady corner (figure 1). I have recorded up to ten species of slug under a piece of plywood only about 25 cm by 75 cm. There is no need to have daily field trips (although daily observations can be very interesting in showing how species composition and numbers vary between and within years). You should, though, try and make these garden 'field trips' at least once each season.

Outside the safety of your own garden things can be a little awkward sometimes. Slug recording in a public place may attract quizzical glances, or worse. In these days of often

over zealous and unjustified concerns about health and safety I suppose I can understand a teacher's concern at seeing a mature human, clad in a green anorak, turning over logs or other debris in close proximity to his class of primary school children playing in a wooded recreation area. I did have to explain that malacophilia and paedophilia were entirely different conditions. (What a pity. In former times children would have abandoned the swings and roundabouts to join in the slug search: free education, lots of fun and more species records. And it is these young people we need to engage with now in order to ensure a future supply of recorders.)

But these awkward events are more than compensated for by the people who, from time to time, do approach out of curiosity. Usually these people are at least not entirely uninterested in seeing a little of our native fauna, particularly if it is something out of the ordinary. Even the common species, though, are out of the ordinary if looked at closely. A strongly rocking *Arion ater* always amazes (why do they do it?). Or *Deroceras reticulatum* with its Milk of Magnesia lookalike mucus oozing freely (I wonder if it tastes the same too?). Or the enigmatic *B. pallens* with its attractive lilac keel, now occurring from the Orkney Islands to the Channel Islands, an expansion in distribution that has taken only 40 years. Sometimes there is a most memorable event too. What better new vice-county record than an invading slug with Spanish origins, *L. valentiana*, on Plymouth Hoe? Sir Francis will be turning in his grave (which is a reminder that cemeteries are often productive sites).

So what about a New Year resolution for 2013? Make it the year of the commonplace record.

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figure 1: Slugs (*A. ater* agg., *L. valentiana*, *Deroceras*) on the ground under a board in a garden. (photo: Peter Topley)

Have snails and slugs become more abundant in the UK this year?

Part of an e-mail correspondence initiated by Mary Seddon, October 2012

From Mary Seddon

OK, so a debating point for us all! In the UK it's been fairly wet this year, with consistent poor weather and lack of sun.

Hence gardeners I know have been asking whether slugs and snails have become more abundant this year with all the rain. They have been losing their crops due to snails and slugs, as well as lack of sun during critical periods.

I'm leaning towards the view that it's because it's been wetter, that they've just been more active, and hence more visible, rather than simply more abundant in the UK.

But what do others think? Have you found them more abundant; has the rain meant more individuals survive to become adults? Does this mean that we'll see populations booming in the UK?

Has it been drier in different parts of Europe? Have others seen a decline in populations?

Any thoughts on this will be most welcome!

From Adrian Norris (Non-Marine Recorder)

I have been thinking about this myself over the past few months. I worked out the records sent to me via Recorder [software] and found that the bulk of specimens did not contain many slugs at all. David Long even states that he can't understand why slugs cannot be found.

The best explanation of this is perhaps the fact that many species go down into the ground in dry situations and then we have very wet weather and a large proportion die from drowning [see also page 6]. The situations in gardens tend to be more simplistic as gardens are watered thus bringing them into context.

Surveys of woodland suggest that those species which climb can do so and thus survive; most slugs do not climb and thus may not survive.

In summary my thoughts are that in the more open areas slugs have gone down in numbers, whilst in urban areas they may have increased.

From António M. de Frias Martins, President of Unitas Malacologica, Azores

From these (blessed) islands, waiting for everyone to visit during the World Congress of Malacology 2013 [see <http://www.unitasmalacologica.org/congress.html> for more information- Ed.], I say that probably climatic changes are taking a heavy toll on land snail abundance. I quote a passage from Cameron et al. (2012)* on Santa Maria land snails: 'regular local monitoring over several decades has detected a decline in many species (A.M.F. Martins, unpublished) and it was noticeably harder to find specimens in 2011 even than in 2008, an exceptionally dry period having intervened.'

I thought that, due to my age, I was losing the touch to find the little creatures, for it was much easier to find species (namely Pupillids) in the Azores 10-15 years ago. However, we saw it happen in Santa Maria from 2008 to 2011...

Sure the climatic trends, being global, are not the same everywhere: it rains more in the UK and less somewhere else.

However, a long term analysis is needed to understand what is going on. Wouldn't this be a great topic for the World Congress of Malacology?...

*Cameron R.A.D., Pokryszko B.M. and Frias Martins A.M. (2012) Land snail faunas on Santa Maria (Azores): local diversity in an old, isolated and disturbed island. *Journal of Molluscan Studies* 78 (3):268-274

From Keith Alexander

I have certainly noticed an increase in slug activity in my garden – the vegetable patch especially, where it proved impossible to grow certain crops this summer. But there was no noticeable increase in *Cepaea hortensis* numbers, nor the smaller snails which are found in the same area. I also noticed no obvious increase in abundance during fieldwork surveys, etc, across the field season. I even found it difficult to find much variety of terrestrial mollusc species when I coached an identification workshop in Cornwall a month or so ago. So the only difference this year has been the slug activity on my vegetables. I think that means that my experience is in full agreement with what you say.

From Roy Anderson

I live in wet and windy Ireland but have noticed an alarming decline in small gastropods over the last five to ten years. I have absolutely no clear idea why there has been such a serious decline. *Lauria cylindracea* has virtually disappeared from this part of Ireland. Everywhere one can see dead shells under ivy on bridges and walls but no live specimens at all. The age of the shells suggests that something devastating occurred 2-5 years ago, for example- the very cold winter of 2010? *Leiostylax anglica* was not affected whatever the factor was! However *Pupilla muscorum* may be almost extinct in Northern Ireland after a very heavy decline – I have not seen a live specimen in six years. *Spermodea lamellata*, once common in beech woods has now retreated to deep litter under evergreen cover such as that of *Ilex* and rhododendron – drought seems to be implicated here. *Carychium* species are now uncommon and small zonitids scarce. Woodland litter faunas are everywhere much thinner than before.

Slug abundance here is relatively unchanged. *Arion flagellus* increased greatly in abundance between 2000 and 2007 but is declining again. *Arion owenii* is increasing and likely to become a garden nuisance here. *Arion vulgaris* has turned up in a few places but is still relatively scarce. Helicids and Hygromiids have increased recently and *Cornu aspersum* and *Cepaea* are now at plague levels in most urban/suburban areas.

Therefore it is very much a mixed picture.

From Martin Willing (Conservation Officer)

It's worrying to hear from Roy of the Irish decline of *Lauria cylindracea* and *Pupilla muscorum*. As you know most non-marine molluscan attention (and certainly most funding!) seems to be going to 'rare' species; primarily European Union Habitat Species Directive (EUHSD) listed, with a second tier of importance for the UK Biodiversity Action Plan (UK BAP) priority species. Perhaps such declines of more 'everyday taxa' highlight the need for the Conc. Soc. to emphasise the importance of regularly monitoring the more mundane.

There's something of a general belief that the 1999 Kerney Atlas pretty much tied things up for the more widespread species, leaving little to be gained from work unless it's for species flagged up with some conservation designation. Highlighting the alarming declines of such relatively common and widespread taxa may provide real incentive and purpose to regularly look for and record 'more ordinary' species. I suppose that's the point of the dynamic new Red List(s).

Whilst talking of declines I'm worried about *Ponentina subvirescens*. About 18 months ago Paul Sterry (Nature Photographers) asked me to try and locate some live specimens to be photographed for a new publication. I thought that this would prove straightforward and headed to areas of maritime cliff habitat in South Devon where I had previously collected the snail; I didn't locate it. Then in September I repeated the search on two islands in the Scillies; again I drew a blank. In addition to my attempts Paul went on the hunt. Despite careful and lengthy searches he has also failed to find it on five islands in the group and additionally at many former sites (relocated with GPS!) on the Land's End Peninsula. Within the last few weeks yet further intense searches across Lundy (the snail is a qualifying feature of conservation management there), by Paul assisted by Andrew Cleave and other volunteers, also drew a blank. It is unclear why this decline has occurred; the previous cold winters, periods of prolonged drought? We simply don't know. Strangely we both noticed an apparent increase in *Ashfordia granulata* at many of our *Ponentina* 'sites'. We're not giving up so easily and the search will continue elsewhere in the south-west to see how widespread this apparent decline is. When did you last see a live one in the UK?

From Mary Seddon

On *Ponentina*, I do recall problems finding it in Pembrokeshire some years ago, but I put this down to habitat management. As for me, it's a question of finding the right microhabitat first, and then sitting down and teasing apart the vegetation carefully to find live specimens.

Recently I went to a place where I can usually find *Balea heydeni*, as well as *Lauria cylindracea*, and thinking about it I only saw a few specimens of the latter, part of the habitat being an ivy-covered wall which is usually the type of place where it's abundant. It would be great to get more feedback from different regions and other field workers.

From Robert Cameron

My local experience in Sheffield is that the cold snap in December 2010 had a big effect, perhaps aided by long periods without rain. Both *Cepaea* and *Cornu aspersum* got knocked back, especially the latter, and summer of 2011 saw fewer slugs too. Now there are baby and quite large juvenile *C. aspersum* again (and of course some adults).

Over the years (18 years in this house) slugs have fluctuated a lot. *Arion flagellus* used to be abundant, but went downhill several years ago, and is still hard to find. *Arion rufus* is definitely commoner this year than last, but given the devastation on our vegetables, I am wondering if *Arion vulgaris* has arrived, but have not dissected yet to find out.

I agree that litter-dwelling species are hard to find this year [see Robert's report on the Rivelin Valley field meeting, page 10, *Ed.*]. I think these small species fluctuate a lot from year to year, and will make a comeback when the weather is right. In a local, very rich wood looked at at intervals over sixteen years

or more, *Clausilia bidentata* has gone from swarming everywhere, through impossible to find except dead shells, to present in modest numbers again. Of course, this is just casual observations, and will be affected by weather on the day.

Sorry, only anecdotes to add to the pile. When I am abroad, I have not noticed that faunas are any harder to sample.

From Adrian Sumner

I've finally got around to adding my bit from Scotland, which has probably been quite as wet as most places. Like Robert's comments, mine are essentially anecdotal.

In my garden, things seem much the same as ever, with plenty of *Limacus maculatus* living in the compost bin, and a good number of *Lehmannia valentiana* (a fairly recent arrival). Out in the country, I have had some very profitable excursions with lots of species and individuals, and others that have been rather poor. The suggestion that small snails have not done well rings a bell with me, and I have returned home from recording trips surprised not to have found, for example, *Cochlicopa* spp. or *Discus rotundatus* (or very few). However, nearly all the places I've visited this year have been in areas where I haven't been before, so I have nothing to compare them with.

At one site, a passer-by suggested that all the slugs and snails would have been washed away by the rain, and I feel there could be something in it; if not washed away directly, the leaf litter they live on might have been washed away.

Some species seem to be doing very well, particularly those that like to climb up nettles and other vegetation. In particular, I have found a lot more *Zenobiella subrufescens* and *Trochulus hispidus* than before; is this something to do with the weather, the sort of sites that I've been visiting, or simply improving observer competence and experience? (I suspect the last could be important!)

So how does one monitor potential changes of this sort? Some years ago I selected a number of sites, reasonably local, with the intention of visiting them each year (ideally more than once each year); in practice, some sites don't get visited for some years. Is this a good way to proceed? It seems to me any such project will be affected by weather, season, and all sorts of other factors, including observer experience, but surely this must be one way of monitoring changes which could provide a lot of useful data, and also engage members and indeed the general public in looking at slugs and snails.

From Simone Cianfanelli, Natural History Museum, University of Florence, Italy

I have deeply thought about your e-mail before replying to you, reading also the answers of others.

In fact in the course of my researches in Italy and in Tuscany in particular, where I have sampled a lot during several projects, I have not noted significant variations in the presence of terrestrial snails. Moreover the appraisal of their presence is quite difficult to assess, beyond the climatic variation, but with exhaustive studies.

The only relevant variation that I can report to you with certainty is the greater diffusion of allochthonous species, that in litters or alluvial sediments are the prevailing component. However this is a phenomenon that has been occurring for several years.

The Rivelin valley is one of several steep-sided valleys that descend towards the centre of Sheffield from the west, full of old industrial workings using water power. Between them, these valleys have a rich fauna of slugs and snails, despite cutting through the acid sandstones of the Coal Measures. They have a lot of woodland and wet patches formed from abandoned mill-races and ponds.

This year, there was a Sheffield ‘Bioblitz’, so in conjunction with the Sorby Natural History Society we decided to do our bit to achieve the 1000 species target set for the blitz. Sorby had last surveyed the Rivelin valley in 2002, almost exactly ten years to the day previously, so a ‘before and after’ survey seemed like a good way to contribute. Six members of either Society participated on what was a cold, cloudy but dry day, covering the same area as in 2002. Despite earlier rain, the ground and undersides of logs were dry and cold and searching was hard work (figure 1). I also sieved some litter.



figure 1: Robert searching, Rivelin Valley. (photo: Ron Boyce)

What did we find? The list is very similar to that obtained in 2002. Two snails, *Punctum pygmaeum* and *Columella aspera*, were not found this time, despite the litter samples, but it is hard to believe that they are really absent. There were no new arrivals. Despite the wet areas, there were no typically wetland species except *Carychium minimum*. The slugs provided more excitement. The great find was *Limax cinereoniger* (figure 2), a typically coloured specimen and a new record for the valley. It is known from another valley in the city (at Little Matlock Wood), and it suggests that these valleys have retained some woodland for centuries. The other unexpected find was a single, very dark *Limacus maculatus* (figure 3) climbing about 2.5 m up a tree-trunk, seen just before we finished our survey. Ben Rowson has the specimen, and has confirmed the identification. *Boettgerilla pallens* was another nice find, though it is known elsewhere in the city. Given recent work (Geenan *et al.*, 2006), we did not attempt this time to distinguish between the nominal species in the *Arion* (*Carinarion*) complex (*circumscriptus*, *silvaticus*, *fasciatus*), though the few specimens found resembled *A. circumscriptus* externally. The stream itself was not examined in detail but did yield *Ancylus fluviatilis*.

The Bioblitz comfortably achieved its target (more than 1100 species), and so we contributed about 3% to the total. This may seem modest, but of course there are many more plants and insects available than molluscs.

Reference

Geenan, S., Jordaens, K. and Backeljau, T. (2006). Molecular systematics of the *Carinarion* complex (Mollusca: Gastropoda: Pulmonata): a taxonomic riddle caused by a mixed breeding system. *Biological Journal of the Linnean Society* 89: 589–604.

2002	2012
<i>Carychium minimum</i>	<i>Carychium minimum</i>
<i>Carychium tridentatum</i>	<i>Carychium tridentatum</i>
<i>Cochlicopa lubrica</i>	<i>Cochlicopa lubrica</i>
<i>Columella aspera</i>	
<i>Lauria cylindracea</i>	<i>Lauria cylindracea</i>
<i>Acanthinula aculeata</i>	<i>Acanthinula aculeata</i>
<i>Punctum pygmaeum</i>	
<i>Discus rotundatus</i>	<i>Discus rotundatus</i>
<i>Arion rufus</i> agg	<i>Arion rufus</i> agg
<i>Arion flagellus</i>	<i>Arion flagellus</i>
<i>Arion subfuscus</i> agg	<i>Arion subfuscus</i> agg
<i>Arion circumscriptus</i>	<i>Arion circumscriptus</i>
<i>Arion silvaticus</i>	
<i>Arion fasciatus</i>	
<i>Arion distinctus</i>	<i>Arion distinctus</i>
<i>Arion intermedius</i>	<i>Arion intermedius</i>
<i>Vitrina pellucida</i>	<i>Vitrina pellucida</i>
<i>Vitrea crystallina</i>	<i>Vitrea crystallina</i>
<i>Vitrea contracta</i>	<i>Vitrea contracta</i>
<i>Nesovitrea hammonis</i>	<i>Nesovitrea hammonis</i>
<i>Aegopinella pura</i>	<i>Aegopinella pura</i>
<i>Aegopinella nitidula</i>	<i>Aegopinella nitidula</i>
<i>Oxychilus cellarius</i>	<i>Oxychilus cellarius</i>
<i>Oxychilus alliarius</i>	<i>Oxychilus alliarius</i>
<i>Zonitoides excavatus</i>	<i>Zonitoides excavatus</i>
<i>Limax maximus</i>	<i>Limax maximus</i>
	<i>Limax cinereoniger</i>
	<i>Limacus maculatus</i>
<i>Lehmannia marginata</i>	<i>Lehmannia marginata</i>
<i>Deroceras reticulatum</i>	<i>Deroceras reticulatum</i>
<i>Deroceras panormitanum</i>	<i>Deroceras panormitanum</i>
	<i>Boettgerilla pallens</i>
	<i>Tandonia budapestensis</i>
<i>Euconulus fulvus</i>	<i>Euconulus fulvus</i>
<i>Trochulus hispidus</i>	<i>Trochulus hispidus</i>
<i>Trochulus striolatus</i>	<i>Trochulus striolatus</i>
<i>Cepaea nemoralis</i>	<i>Cepaea nemoralis</i>
<i>Cornu aspersum</i>	<i>Cornu aspersum</i>
Total: 34	Total: 34



figure 2: *Limax cinereoniger*. (photo: Rosemary Hill)



figure 3: *Limacus maculatus*. (photo: Robert Cameron)

Shell borders of Gobelins tapestries at Burghley House

Peter Topley and Kevin Brown



Burghley House, the palatial Elizabethan house in Lincolnshire built by William Cecil, 1st Lord Burghley and Treasurer to Queen Elizabeth I, is home to a series of Gobelin tapestries. The tapestries were ordered from Jean Jans at the Paris Gobelins factory by the 5th Earl of Exeter and his Countess while on a tour of Europe in 1680 (Leatham, *et al.* 2009). The tapestries hang in a room which was originally part of the Long Gallery, known as 'Queen Elizabeth's Bedroom', and are part of a series depicting scenes from Ovid's *Metamorphoses*. On a visit in 2011 the first author was particularly struck by the borders around the tapestries which show a variety of shells (see example above), and the curator kindly agreed that he could return and photograph them for this magazine. At the top of the border around each tapestry are depicted the arms of Cecil impaling Cavendish, representing the 5th Earl and his wife Lady Anne Cavendish, daughter of the 3rd Earl of Devonshire (figure 1).

books entirely featuring shells, the *Ricreatione dell' occhio e della mente*. Buonanni was not a scientist, this was not a scientific publication, and many of the spirally coiled shells were wrongly printed in reverse making them look sinistrally coiled which is also the case with many of the shells depicted in the tapestries. Also, in the first half of the seventeenth century, several major shell collections existed in France, perhaps copying the passion for shells in the Low Countries, including the collections of the Duke of Orleans, Pierre Morin and the 'Cabinet du Roi', the collection of the King himself (Dance, 1986). The designers of the Gobelin tapestries may have been influenced by these or other sources.

Part of two of the tapestries were obscured behind an opulent 17th century state bed (figure 2) but it was possible to photograph details of the friezes of most of the others.



figure 1: One of the Gobelin tapestries, depicting Bacchus and Ariadne, with shell border.



figure 2: Tapestries behind the state bed in the 'Queen Elizabeth's' Bedroom.

One of the first author's questions upon seeing the remarkable borders of these tapestries was, from where did the tapestry designers get their inspiration? The tapestries were woven at a time when an interest in shell collecting was beginning to spread throughout Europe.

Shortly after the visit of the 5th Earl and his wife to Paris, in 1681, Fillipo Buonanni published in Rome one of the first Mollusc World November 2012

The tapestry partly visible on the left in figure 2, Boreas & Orythia, at some point in its life had been cut from top to bottom, presumably to fit a room scheme. This cut was repaired in 1914 but both the repair and the overall tapestry had deteriorated badly by 2000. The tapestry was wrapped and stored. The decision, taken in 2008, to alter the layout of Queen Elizabeth's Bedroom meant that the tapestries that had for many years hung behind the headboard, and therefore were obscured, would be fully visible. The tapestries concerned were a pair of narrow panels. The visual effect would not have been good. It was decided to return to the layout of hangings mentioned in the 1738 Inventory, when Boreas & Orythia filled the north wall of the room. Complete conservation of the tapestry took over six months (Anon, 2010).

The second author took up the challenge of trying to identify as many as possible of the species depicted in the tapestry borders. He came back with a reasonable list, emphasising that 'all identifications should be preceded with cf.!' It is most likely that all the identifiable species that are depicted would have been readily available from French colonies of the time, for example Mauritius, the Caribbean, Southeast America (later Louisiana Purchase land) and Mediterranean France. The exception to this is *Nautilus pompilius*, but this species is known to have been traded from early times, hence the presence of silver and gold mounted examples; both natural and polished shells are depicted in the tapestries. Some species depicted are probably sub adults, among them *Strombus gallus*, *Lambis truncata* and *Cymatium femorale*.

Several sections of the borders are repeated, with varying accuracy and with some alteration of the background. This suggests that there were probably several weavers working to a common source, either a published illustration or perhaps a specially commissioned cartoon. Altogether 41 shells were identifiable with varying degrees of certainty of at least 26 different species (table 1).

<i>Buccinum undatum</i> L. 1758 'knobbed form'?
<i>Charonia lampas</i> (L. 1758)
<i>Chicoreus ramosus</i> (L. 1758)
<i>Cittarium pica</i> (L. 1758)
<i>Conus</i> sp.
<i>Cymatium femorale</i> (L. 1758)
<i>Cypraea</i> sp.
<i>Cypraea</i> – possibly <i>arabica</i> complex
<i>Cypraea histrio</i> Gmelin, 1791
<i>Cypraea mauritiana</i> L. 1758
<i>Cypraecassis testiculus</i> (L. 1758)
<i>Cassis</i> sp. poss. <i>Cypraecassis rufa</i> (L. 1758)
<i>Drupa morum</i> (Roding 1798)
<i>Galodea echinophora</i> (L. 1758)
<i>Haliotis</i> sp. (<i>tuberculata</i> ?) (L.1758)
<i>Lambis truncata</i>
<i>Melongena melongena</i> (L. 1758)
<i>Nautilus pompilius</i> L. 1758
<i>Pugilina morio</i> (L. 1758)
<i>Strombus costatus</i> Gmelin 1791
<i>Strombus gallus</i> L. 1758
<i>Strombus gigas</i> L. 1758 – juvenile?
<i>Strombus raninus</i> Gmelin 1791
<i>Tonna</i> sp. possibly Mediterranean <i>T.galea</i> ?
<i>Trochus niloticus</i> (L.1767)
<i>Turbinella angulata</i> (Lightfoot 1786)

table 1: Species identified in images of the Burghley Gobelins tapestry borders (alphabetical order) (see also figure 6).

A recent development at Burghley, also with a shell connection, are the 'Gardens of Surprises'. Opened in 2007 these gardens are an acknowledgement of William Cecil's love of gardens and were inspired by descriptions of the garden he developed at his house in Hertfordshire, Theobalds, which featured fountains which sprayed passers-by, a maize, formal gardens, statues and naturally, shell grottos. The modern one at Burghley (figure 3) is part of a small, enclosed water feature and includes an arch of scallop and *Spondylus* shells with interspersed *Turritella terebra* and scattered larger shells including *Cassis cornuta*, *Tonna galea* and *Lambis chiragra*.

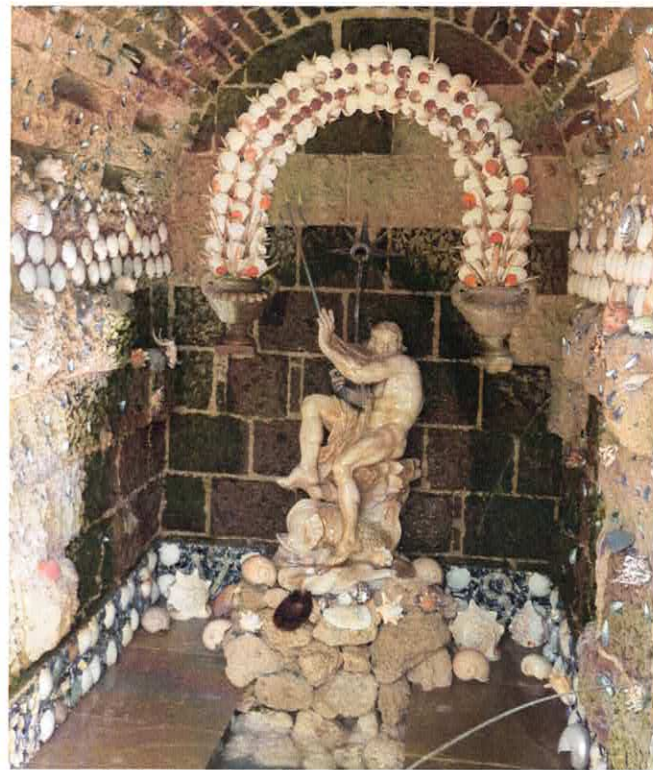


figure 3: shell grotto at Burghley House.

The gardens near the house reveal one more conchological connection, a topiary bush in the shape of (presumably) a snail (figure 4). These examples of modern mollusc inspired garden design show how shells have continued to feature in art at Burghley into modern times.



figure 4: Topiary snail, Burghley house.

Acknowledgements

Thanks go to Jon Culverhouse, Curator at Burghley House, for permission to photograph the Gobelins tapestries and use the photos to illustrate this article, and for useful comments and discussion.

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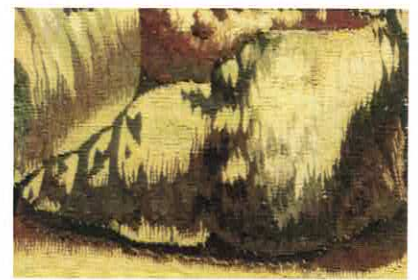
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Cittarium pica



Chicoreus ramosus



Buccinum undatum



Trochus niloticus



Cypraecassis testiculus



Charonia lampas



Melongena melongena



Galeodea echinophora



Strombus raninus



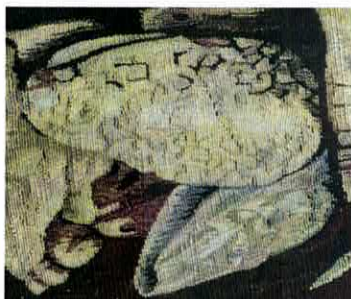
Haliotis sp. (tuberculata?)



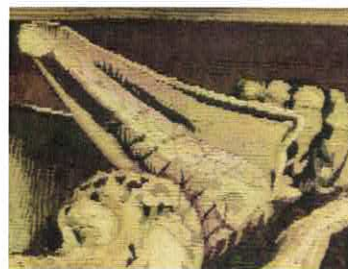
Tonna sp.



Strombus costatus



Conus sp. and Cypraea histrio



Juvenile *Cymatium femorale*



Juvenile *Strombus gigas*



Cypraea mauritiana



Lambis truncata



Nautilus pompilius

figure 5: Examples of possible identifications of shells from the Burghley Gobelins tapestries.

Downton Gorge National Nature Reserve is probably the least findable of any field site the Society has visited. It is leased rather than owned by Natural England, but the terms of the lease stipulate that it is only to be visited by escorted groups by prior arrangement and that the public are otherwise excluded. The site notices are within the public exclusion zone. County boundaries oscillate unexpectedly in this area as well. Having heard that mollusc records were required for this site, we contacted the senior reserve manager Simon Cooter and he kindly agreed for us to visit. The reserve forms part of an estate developed by Richard Payne Knight who was a leading figure in the Picturesque movement with an interest in unpretentious natural beauty rather than the contrived manipulation of scenery as advocated by Lancelot ‘Capability’ Brown; but it did involve a certain amount of deliberate landscaping. He added two very handsome stone bridges and cut pathways and tunnels along the gorge, and built Downton Castle in 1780.

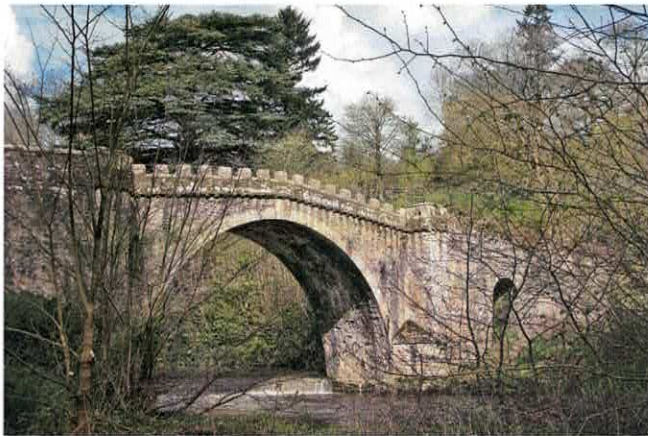


figure 1: Bringewood Forge bridge (photo: Rosemary Hill).

We assembled at the Forge Bridge (figure 1) on the river Teme and were delighted to see a redstart and a tree creeper on the trees next to the river. The river level was too high for any freshwater sampling so we worked our way upstream in the direction of the gorge. The Woolhope Club of Herefordshire has a range of historic natural history records for the site. The only records for molluscs date from 1896 when A.E. Boycott visited the area near Forge Bridge and found *Oxychilus cellarius*, *Aegopinella nitidula*, *Aegopinella pura*, *Vitrea crystallina*, *Discus rotundatus*, *Trochulus hispidus* (figure 2), *Cepaea nemoralis* (with varieties *castanea* and *rubella*), *Cepaea hortensis*, *Arianta arbustorum* and *Clausilia bidentata* (figure 3). All of these were found during our visit.

Near to SO 450747 we came across *Oxychilus alliarius* and the slugs *Arion intermedius*, *Arion subfuscus*, *Arion silvaticus* and *Deroceras reticulatum*. At SO 443742 there was a limestone stream and a dry stone wall where *Zenobiella subrufescens* was found. Also here were *Trochulus striolatus*, a dead shell of *Vitrea pellucida* and live *Cochlodina laminata*, *Arion ater* agg, and *Arion distinctus*. Near the river we found dead shells of *Radix balthica* and live *Arion subfuscus*. We saw a number of veteran trees in this part of the site, in particular of oak, hazel, field maple and large-leaved lime. There is a further bridge over the river at SO 445742, near to which we found *Lehmannia marginata*, *Vitrea contracta* and *V. pellucida*. The path continues upstream through a tunnel in the

limestone, at the other side of which we found dead shells of *Helicigona lapicida* (figure 4) which had probably fallen from the cliff face above, live *C. laminata* and *Cochlicopa lubricella* and dead shells of *Nesovitrea hammonis* and *Cochlicopa lubrica*. A leaf litter sample taken near the bridge contained no further species. A further visit to the site at another time of year and to cover another section of the reserve is likely to prove rewarding.



figure 2: Juvenile *Trochulus hispidus* from leaf litter.



figure 3: juvenile *Clausilia bidentata* from leaf litter.



figure 4: Shell of *Helicigona lapicida* (photo: Rosemary Hill).

Our thanks are due to Simon Cooter for all his help in facilitating our visit and supplying us with a booklet about the reserve, and to the Woolhope Club for providing the historic molluscan records.



figure 5: (Left to right) Rosemary Hill, Rosemary Winnall, Simon Cooter and Brett Westwood at Downton Gorge.



figure 1: some of the meeting participants at Dog's Bay, Connemara. (photo: Jan Light)

Those who attended this meeting, which took place from September 24th to 31st 2011, were Bas* and Rosemary Payne, Ron Boyce*, John Llewellyn Jones*, Celia Pain, Julia Nunn* (meeting organiser), Jan and Nick* Light, Rosemary Hill*, Terry and Sonia O'Connor, and John Fisher* (*figure 1, left to right).

As a relatively new member of the Society I was looking forward to learning new methods of collecting and cleaning shells from my more experienced colleagues, as well as recording everything we found.

I thought I knew the area fairly well as I had been visiting my in-laws in Galway for the past 40 years but I was soon to discover otherwise. Everybody else arrived on the Saturday but as Sunday had no planned excursion I decided to join the others on the Sunday. I felt that I would either find them at Dogs Bay or the coral strand at Malin Bay. I drove to Clifden and through Ballyconeeley and as I approached the coral strand sure enough two figures were to be seen on the beach (Rosemary and Ron). I joined them for a while before we went to Sandpiper Cottage where we met up with John and Celia.

The cottage was for eight people but there were only five of us and therefore we had plenty of space to spread our shells. The view overlooked Dogs Bay and it was fantastic. The rest of the party had two cottages on the island of Inishnee. On the Sunday evening we all went to meet up with Julia to discover just what she had planned for the rest of the week. Much to my surprise ALL the planned locations were new to me, which made it very exciting.

On Monday morning we set off for Doonloughan. This was an area of rapids with seaweed-covered boulders (see figures 2 and 3). On turning the boulders we discovered a wealth of sealife, they were covered with ascidians along with some very spectacular molluscs. I found my first live *Arca tetragona*, four *Mimachlamys distorta*, plenty of live *Diodora graeca* (figure 8) and some of the best *Mimachlamys varia* I have ever found, in all colours including white, lemon and even white ones with red spines. Celia and John went to a nearby sandy bay where they found *Gari depressa*, *Venus verrucosa*, *Venus casina*, *Tapes aurea*, *Moerella donacina*, *Thracia phaseolina* and many other species.

The next day we went to Mweenish Island (figure 4). Julia had warned us that it was a walk of about half a mile through mud. The others decided to take the longer route



figure 2: Searching for molluscs at Doonloughan. (photo: Sonia O'Connor)



figure 3: *Nucella lapillus* (dog whelk) in the process of boring into a limpet (*Patella* sp.), Doonloughan. (photo: Ron Boyce)



figure 4: Shore at Mweenish Island Rapids. (photo: Ron Boyce)

along the grass verge but I choose to tackle the mud. We all arrived at the rapids at about the same time. Apart from some very good edible oysters the species recorded were much the same as we found at Doonloughan the previous day. After we came off the beach Rosemary, Ron and myself decided to visit a sandy beach further along the road. Rosemary found *Cythereella smithi*, and *Oenopota rufa* and we all found a lot of dead bivalves. When we left the beach we walked up the hill to the car and looked down to the sea where we saw five otters swimming about. This delayed us for about an hour and made us late back to the cottage but it was certainly a bonus at the end of the day.

On Wednesday we travelled to Lettermore Island (figure 4). This location consisted of fast running water travelling under a bridge which would only be accessible on a very low tide. My hope here was to find *Leptochiton scabridus* but this was not to be. Jan found one but I believe that was the only one found. However I did find *Acanthochitona fascicularis* under the rocks which was another first for me. Jan also found three of this species. It would have been a huge advantage to have waders for this site but unfortunately I only had the standard wellies. We also found some nice *Mimachlamys varia* (figure 5) and collected some winkles for consumption.

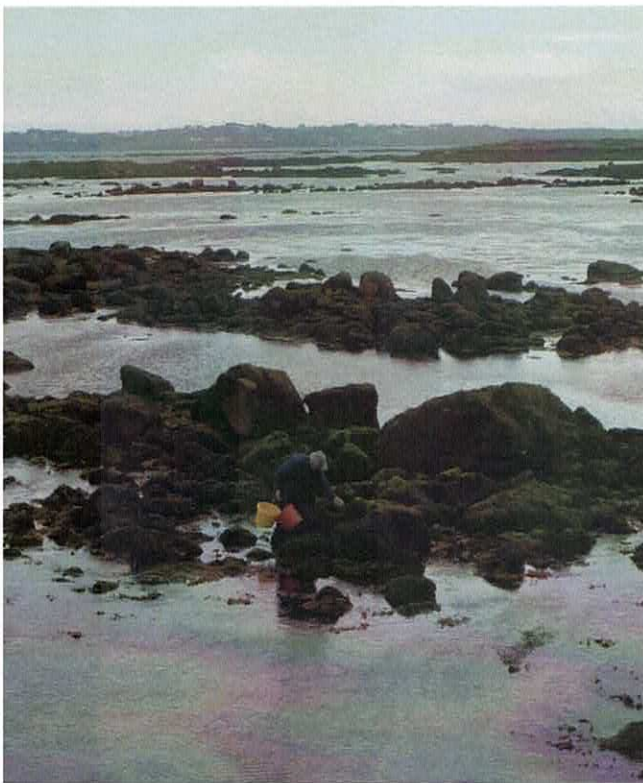


figure 4: Lettermore Bay with Bas Payne, foreground.
(photo: Sonia O'Connor)

Thursday proved to be another exceptional day at Knocknahaw (figure 6). This was a very deserted beach with a rocky, seaweed covered, upper shore and muddy sand beyond. Here we found live *Pecten maximus*, *Mimachlamys varia*, *Ostrea edulis*, *Dosinia exoleta*, *Venerupis decussata*, beautiful iron-stained *Venus verrucosa*, *Littorina littorea* and even *Buccinum undatum*. At extreme low water we waded out to a gravel bank where we found huge numbers of *Gibbula magus*. However the highlight of my day was to



figure 5: *Mimachlamys varia* (variegated scallop) Lettermore Bay.
(photo: Ron Boyce)

find good numbers of *Modiolus barbatus* (front cover, figure 9), yet another species I had never found previously. I also found one specimen of *Callochiton septemvalvis*.

On the Friday we took a quick trip to Dogs Bay but unfortunately the beach was covered in sand and no shell sand was available. We did however manage to collect a nice colour series of small *Littorina saxatilis* off the rocks at the far end of the bay (figure 10). We then went on to Gurteen Bay which proved more productive although all the shells were dead. They included *Angulus squalida*, *Epitonium clathrus* and *Dentalium vulgare*.

I would like to thank Julia for organising such a wonderful programme for the week and Jan, Bas, Celia and John for all their help and advice. As I have a 50th wedding anniversary to attend in Galway this September I have booked Sandpiper Cottage for the low tide week and intend to visit more of the Connemara islands.

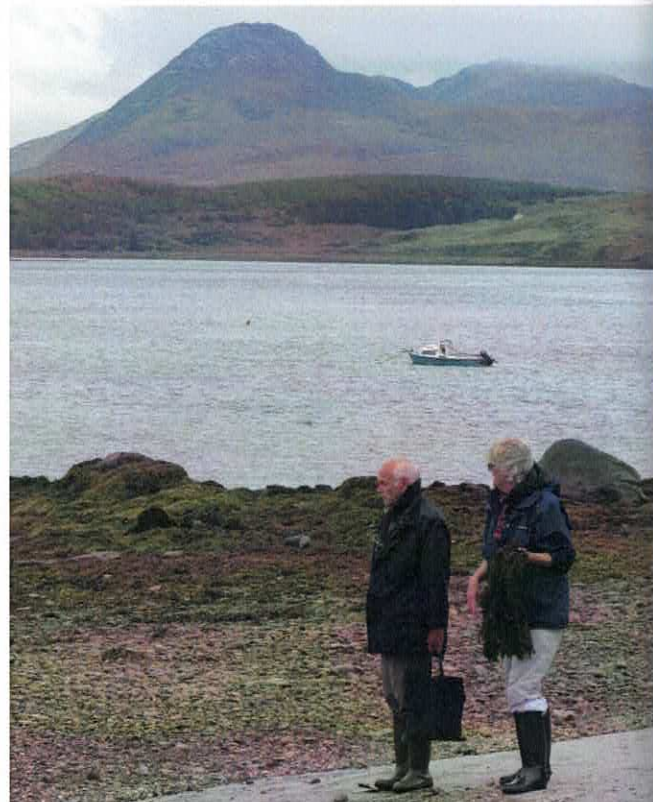


figure 6: Knocknahaw with John Fisher and Jan Light.
(photo: Ron Boyce)



figure 8: Live *Diodora graeca* (keyhole limpet) (length c. 23mm), Knocknahaw. (photo: John Llewellyn-Jones)



Calliostoma zizyphinum (painted top shell) with repaired shell (possible crab damage?) (width c.20mm), Lettermore Island. (photo: Ron Boyce)

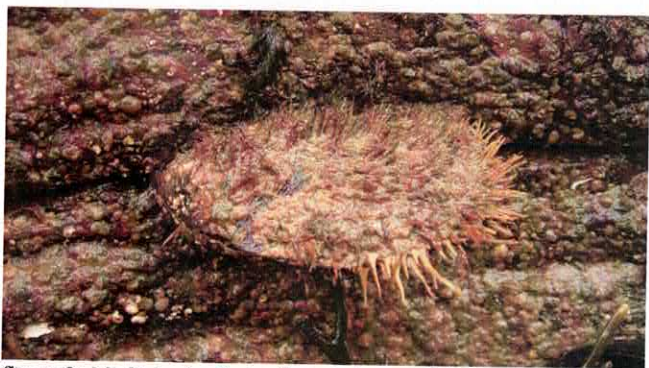
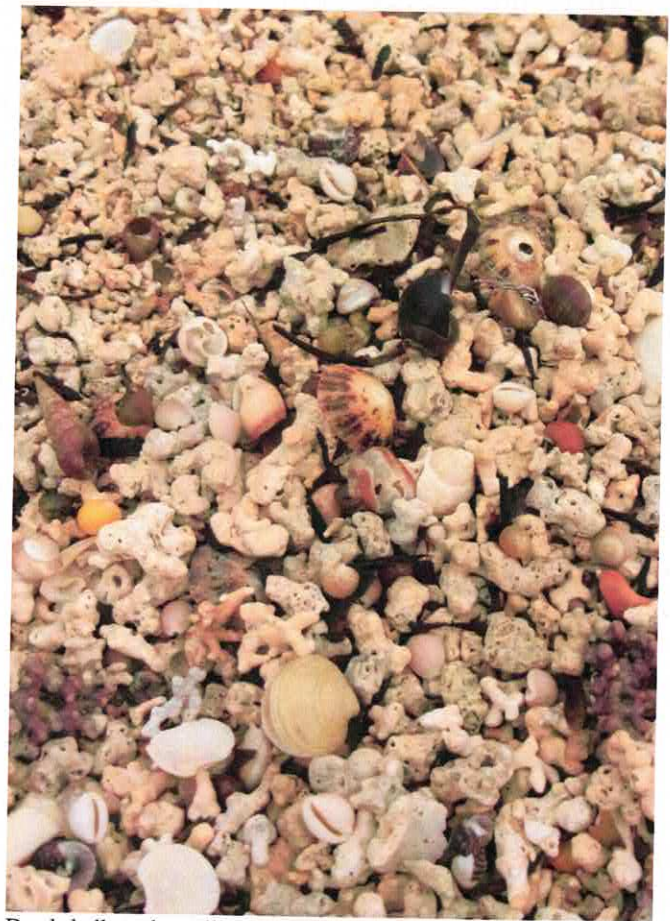


figure 9: *Modiolus barbatus* (bearded mussel) in its habitat attached to a boulder, Knocknahaw Point (see also front cover). (photo: Bas Payne)



Dead shells and coralline algae, Carraroe. How many cowries (*Trivia* sp.) can you spot? (photo: John Llewellyn-Jones)



figure 10: A range of colours in *Littorina saxatilis* agg. (rough periwinkle), Dog's Bay. (photo: John Llewellyn-Jones)



Two colour forms of *Helicella itala* (heath snail) (c.18mm). On rocks and leaves above the shore, Ardmore. (photos: Bas Payne)

The field meeting to Titchfield, postponed from April 2011, was held on 5th May 2012. A general outline of the location, its freshwater canal habitats and seashore based on previous visits highlighting and illustrating three well established aliens was published in *Mollusc World*, issue 27, November 2011. This gives the background to the population of quahog (*Mercenaria mercenaria*) for which this Solent shore is notable following its first discovery at nearby Lee-on-Solent by the late David Heppell in 1957 and also of the Philippine carpet shell (*Ruditapes philippinarum*) that came more recently. The longest established of these aliens is the American slipper limpet (*Crepidula fornicata*) a nineteenth century introduction to the south-east with oysters imported to Whitstable that spread along the south coast rapidly from the beginning of the twentieth century to become a very common beach shell on Solent shores by the early 1950s.

The Titchfield Canal

As high tide was late morning, the first half of the field meeting was spent investigating the freshwater life of the Titchfield Canal and terrestrial mollusc fauna in vegetation alongside in marsh and footpath habitats (figures 1 and 2). The route followed was from SU 53033 02441 to SU 53333 02870. Thirty one species of molluscs were recorded; these were made up of 12 freshwater and 19 terrestrials (See table 1 for the list). All except *Acroloxus lacustris* (lake limpet), *Cochlicopa lubricella* (slender slippery moss snail) and *Hippeutis complanatus* (flat ram's-horn snail) were represented by living specimens. An animal drinking-trough supported a thriving population of *Lymnaea truncatula* (dwarf pond snail) spotted by Janet Ridout Sharpe. *Galba palustris* (marsh pond snail) was the most common Lymnaeid in the canal and ditch alongside. Ram's-horns found included *Anisus vortex*, *Planorbis carinatus*, *Bathyomphalus contortus*, *Gyraulus albus* and *Hippeutis complanatus*. The only operculate snail in the canal was *Potamopyrgus antipodarum* (Jenkins's spire snail).



figure 1 (above left): Adrian Bicker and Roger Aquilina examining the contents of pond nets made more visible when washed into a white tray.

figure 2 (above right): Marsh/carr habitat alongside the Titchfield Canal.

Snails of damp terrestrial habitat along the water channels included *Succinea putris* (common amber snail) attached to vegetation, *Ashfordia granulata* (Ashford's hairy snail), a wetland species in Hampshire and *Carychium minimum* (least herald snail) on dead sticks where its tiny (2mm)

white shell showed up well and this shorter broader shell favours marshes. In drier habitats of grass along the footpath behind the shore road were larger land snails – *Cornu aspersum* (common garden snail) (see also figure 3), *Cepaea hortensis* (white-lipped snail) and *Monacha cantiana* (Kentish snail).



figure 3: *Cornu aspersum* attached to the wall of the Visitor Centre at Titchfield Haven. It shows a clear hibernation mark in the shell where the colour of the new season's growth does not match that earlier and there is a period of growth when little dark pigment that gives pattern was added to the shell.

On the shore

Over 30 species of sea shells were found, a good number of them represented by living specimens (see table 2 for the list). Collecting during the afternoon was done on the falling tide, starting with the strand line on the top shingle bank (figure 4), extending later to the large flat expanse of muddy sand and bound shingle (figure 5), the latter with red seaweeds attached and often covered by a film of seawater so not totally dry.

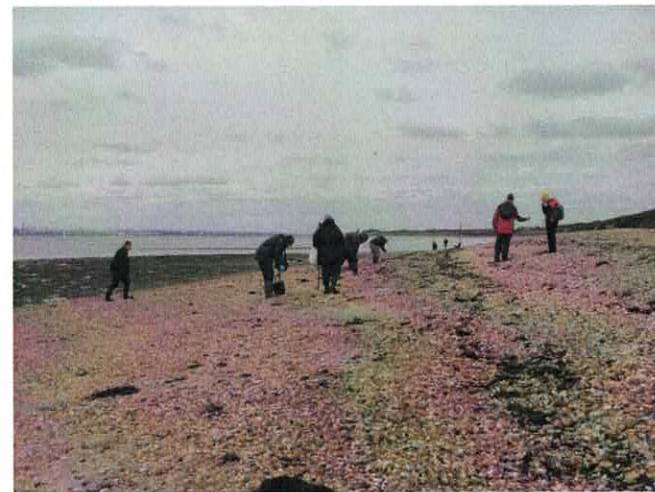


figure 4: Shell collecting on the upper shingle bank whilst waiting for the tide to drop: it takes longer to go out due to the double tides of the Solent caused by the Isle of Wight offshore.

Fieldwork was concentrated on the western part of the shore below the beach houses from SU 53022 02382 to SU 52647 02465 and we did not have time to work the boulders and seaweeds on the east of the shore figured in the last *Mollusc World* issue 27. Shells were found in quantity on the strand line with a good range of species but some shells, particularly *M. mercenaria* were more abundant low on



figure 5: Examining the bound shingle zone as the tide recedes: the New Forest shore of Southampton Water is in the background.



figure 6: Adrian Bicker photographing low on the shore with Ron Boyce and Rosemary Hill searching behind.



figure 7 (left and right above): Janet Ridout Sharpe locates a good specimen of the Quahog. Everyone had a chance to collect paired shells and one live one was located.



figure 8: The posterior ends of *Mercenaria mercenaria* (Quahog) protrude from the muddy sand. Shells that died *in situ* are found in this position.

the shore in the muddy sand, some still *in situ* (figures 6 to 8). It was in this area that live ones were recorded. As we had a good low spring tide that also coincided with wind off the land rather than off the shore, the tide went out to its full distance. One species of chiton, *Lepidochitona cinerea*, was found, usually attached to large empty shells of quahogs which, being heavy and thick, provide a firm attachment surface. This common chiton was the one that I frequently found in the 1970s at the Wicor shore, Portchester at the top of Portsmouth Harbour where it was found on manmade boulder material such as building rubbish.



figure 9: A sub-mature *Ocenebra erinacea* (sting wrinkle) showing the siphonal canal still open. The similar American introduction (*Urosalpinx cinereus*) has an open siphonal canal as an adult but it is limited to the south-east and the sculpture of the spire is different and well illustrated in Graham (1988).



figure 10: *Solen marginatus* (Grooved Razor) as a pair of valves. This lives in muddy sand and will be burrowed in the area not far away. One needs to look for the siphon marks on a good low tide.

At Titchfield the bound shingle habitat provided habitat for over 10 species of gastropods that would normally be associated with rocky shores (figure 9) while the softer muddy sand supported about 10 species of bivalves that burrow (figure 10) but also there was an additional suite of bivalve species that associate with harder surfaces. *Mytilus edulis* (Edible Mussel) and *Anomia ephippium* (Common Saddle Oyster) attach by tough byssus threads, *Ostrea edulis* (Flat Oyster) cements its valve to the substratum while

Barnea candida (little piddock) and *Petricola pholadiformis* (false piddock in the venus family) burrow into stiff clay or soft rock such as the Eocene clays that outcrop along the Solent shore in this area. Some weed washings were done by Rosemary Hill, but the red seaweeds on this shore are not particularly productive for molluscs. Scrubbings of tubeworm cases (*Pomatoceros*) produced a Pyramidellid, *Brachystomia lukisi* that is a parasite of *Pomatoceros*. From weed, *Rissoa interrupta*, a grazer on algal epiphytes and detritus feeder of the rocky shore, is also referred to as a variety of *Rissoa parva* due to intermediate forms between those with costae (ribs) and those that are smooth (Graham, 1988, Wigham, 1975a, b). *Tricolia pullus* (pheasant shell) is found amongst small red weeds and is distinguished by its thick white calcareous operculum and the attractive colourful patterns of markings on the smooth shell.



figure 11: The orange sponge (*Suberites*) attached to the shell of a slipper limpet together with a keeled tubeworm (*Pomatoceros lamarcki*).

Other finds of interest having molluscan implications included a magnificent orange sponge (*Suberites*) attached to a stack of slipper limpet shells, a surface that they shared

with the keeled tubeworm (*Pomatoceros lamarcki*) that are typical of hard surfaces on the lower shore (figure 11). Uncharacteristic movements for netted dog-whelks with jointed legs on display were hermit crabs (*Hyas coarctata*) that had taken possession of old shells of *Hinia reticulata* for a home. This is the smaller of the two common hermit crabs that is distinguished by its longer and more slender legs as well as the smaller size (the larger one can be smaller too when it is juvenile): both are creatures of the lower shore. A number of the edible whelk shells (*Buccinum undatum*) had round holes in the body whorl, indicative of crab predation. Oyster catchers and other wading birds as well as gulls frequent the shore at low tide and molluscs like burrowing bivalves of cockles and carpet-shells are among their prey. The bill length of the bird relates to the depth of the burrows that they access.

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table 1: Non-marine Mollusca SU/53-02- to SU/53-03, footpath and Titchfield Canal.

Scientific name	English name	Status	Notes
<i>Acroloxus lacustris</i>	lake limpet	Shells	
<i>Aegopinella nitidula</i>	waxy glass-snail	Alive	
<i>Anisus vortex</i>	whirlpool ram's-horn	Alive	
<i>Arion circumscriptus</i> agg.	slug	Alive	
<i>Arion subfuscus</i>	dusky slug	Alive	
<i>Ashfordia granulata</i>	Ashford's hairy snail	Alive	
<i>Bathymphalus contortus</i>	button ram's-horn	Alive	
<i>Carychium minimum</i>	least herald snail	Alive	On wet wood by canal
<i>Cepaea hortensis</i>	white-lipped snail	Alive	
<i>Cochlicopa lubrica</i>	slippery moss snail	Alive	
<i>Cochlicopa lubricella</i>	slender slippery moss-snail	Shell	One only
<i>Cornu aspersum</i>	common garden snail	Alive	
<i>Deroceras reticulatum</i>	common grey field slug	Alive	
<i>Discus rotundatus</i>	rounded snail	Alive	Mostly under dead wood
<i>Galba palustris</i>	marsh pond snail	Alive	
<i>Gyraulus albus</i>	white ram's-horn	Alive	
<i>Hippeutis complanata</i>	ram's-horn	Shell	
<i>Lauria cylindracea</i>	chrysalis snail	Alive	
<i>Lehmammia marginata</i>	tree slug	Alive	On dead wood
<i>Lymnaea truncatula</i>	dwarf pond snail	Alive	Abundant in a water trough
<i>Monacha cantiana</i>	kentish snail	Alive	
<i>Oxychilus alliarius</i>	garlic glass-snail	Alive	On rotting wood
<i>Oxychilus draparnaudi</i>	Draparnaud's glass-snail	Alive	
<i>Oxychilus navaricus</i>	glossy glass-snail	Alive	
<i>Pisidium personatum</i>	pea-mussel	Alive	Found and determined by Rosemary Hill from Titchfield Canal
<i>Pisidium personatum</i>	pea-mussel	Alive	Found and determined by Rosemary Hill from Titchfield Canal
<i>Planorbis carinatus</i>	keeled ram's-horn	Alive	
<i>Potamopyrgus antipodarum</i>	Jenkins's spire snail	Alive	Occasional in sea loch
<i>Radix balthica</i>	common pond snail	Alive	
<i>Succinea putris</i>	common amber snail	Alive	
<i>Trochulus hispidus</i>	common hairy snail	Alive	

table 2: Marine molluscs: beach below Meon Shore Chalets SU/53022 02382 to SU/52647 02465.

Scientific name	English name	Status	Notes
<i>Acanthocardia echinata</i>	prickly cockle	Shell pairs	Occasional, especially on lower shore when fresh.
<i>Acanthocardia tuberculata</i>	cockle	Shells, single valves	Found by Graham Long.
<i>Aequipecten opercularis</i>	queen scallop	Alive	Rare alive on lower shore, the live one found by Janet Sawyer.
<i>Anomia ephippium</i>	saddle oyster	Alive	Rare alive on lower shore, occasional shells on beach.
<i>Barnea candida</i>	little piddock	Shell pair	Found by June Chatfield on lower shore.
<i>Brachystomia lukisi</i>		Alive	Found by Rosemary Hill in tubeworm scrubblings– a parasite of <i>Pomatoceros</i> .
<i>Buccinum undatum</i>	edible whelk	Alive	Live ones on lower shore and shells of juveniles. Some banded. Shells common on strand line.
<i>Calyptraea chinensis</i>	chinaman's hat	Shell	Rare on lower shore.
<i>Cerastoderma edule</i>	edible cockle	Alive and shell pairs	Frequent to common on lower shore and strand line.
<i>Crepidula fornicata</i>	slipper limpet	Alive	Live ones, often in stacks on lower shore, shells abundant on the strand line.
<i>Gibbula cineraria</i>	grey top-shell	Alive	On bound shingle of lower shore occasional and shells on strand line.
<i>Gibbula umbilicalis</i>	purple top-shell	Alive	On bound shingle of shore and on strand line as shells.
<i>Hinia reticulata</i>	netted dog-whelk	Shell	Frequent on lower shore and strand line. Also egg capsules photographed.
<i>Lepidochitona cinereus</i>	grey chiton	Alive	Occasional on specimens on lower shore attached to hard surfaces of stones or shells.
<i>Littorina littorea</i>	edible winkle	Alive	Live on lower shore where common, occasional shells in strand line.
<i>Littorina saxatilis</i>	rough winkle	Alive	Live on upper part of shore.
<i>Macoma balthica</i>	Baltic tellin	Alive	Rare as live specimens and few shells.
<i>Mercenaria mercenaria</i>	quahog	Alive	Occasional alive on lower shore where paired valves were frequent. Introduced from USA, 1950s.
<i>Mytilus edulis</i>	edible mussel	Alive	Occasional on bound shingle of lower shore and as shells on strand line.
<i>Nucula turgida</i>	nut shell	Single valve of shell	A good shell with periostracum attached found by Graham Long.
<i>Ocenebra erinacea</i>	sting winkle	Shell & alive	On lower shore and strand line as shells. 1 live sub-adult (open siphonal canal but white lip callus) on lower shore.
<i>Osilinus lineatus</i>	common or thick top-shell	Alive	Rare, found by Rosemary Hill.
<i>Ostrea edulis</i>	edible flat oyster	Alive	Live on lower shore, occasional shells in strand line.
<i>Parvicardium exiguum</i>	cockle	Shells, single valves	On strand line found by June Chatfield and Graham Long.
<i>Patella vulgata</i>	common limpet	Shell	On lower shore.
<i>Petricola pholadiformis</i>	common piddock	Shell valve fragment	Rare on beach.
<i>Rissoa interrupta</i>		Alive	Found by Rosemary Hill in weed washings. Rare. Also regarded as a variety of <i>R. parva</i> .
<i>Ruditapes philippinarum</i>	Philippine carpet-shell	Alive	Occasional alive on lower shore, paired valves frequent.
<i>Solen marginatus</i>	grooved razor	Shell pairs	Occasional as shells on lower shore.
<i>Tricolia pullus</i>	pheasant shell	Alive	Found by Rosemary Hill in weed washings. Rare.
<i>Venerupis decussata</i>	cross-cut carpet-shell	Alive	Occasional on lower shore.
<i>Venerupis senegalensis</i>	pullet carpet-shell	Shell pairs	Frequent to common on lower shore and strand line.

Pearl in a razor shell

Paul Dansey

To my surprise when searching for razor shells on Filey beach, East Yorkshire, I discovered a small (2.5mm) pearl in *Ensis siliqua* (19 August, 2012) (figure 1). I had previously discovered one in *Ensis directus* 20 years ago. The word pearl is a metaphor for something rare and beautiful, and the beauty is in the way light reflects from the translucent layers.

A pearl is a hard object (calcium carbonate) produced within the soft tissue of a living shelled mollusc. Almost all species of shelled molluscs are capable of producing pearls. The most valuable pearls occur in the wild but they are fairly rare. Most of them have no value except as curiosities but they are recognised internationally as natural pearls. Natural pearls can be an irregular shape whereas cultivated ones are more likely to be a perfect shape. Cultivated pearls from pearl oysters and freshwater mussels make up the majority that are currently sold, mainly for jewellery. (Source: University of Cambridge Museum of Zoology)



figure 1: Small pearl in *Ensis siliqua*, Filey beach, East Yorkshire.

The excitement of finding empty shells of the large North American hard-shelled clam or quahog (pronounced 'kwarhog'), *Mercenaria mercenaria* (Linnaeus, 1758), lying on the mud at low tide during the Society's visit to Titchfield Haven last May [see page 18] was only surpassed when the shells were turned over to reveal their wonderful interiors. Perfectly smooth and white like unglazed porcelain but edged with lustrous royal purple, especially at the posterior edge where the colour spills in to fill the palial sinus, these shells are strikingly beautiful (figure 1). Quahogs today are prized for their culinary value and are famous as the source of 'clam chowder', which is doubtless the reason why this foreign mollusc has been able to gain a foothold in Southampton Water. But in the past, in another time and another place where there were no bright plastics and artificial dyes, these shells were prized for their colour.



figure 1: The interior of a left valve of *Mercenaria mercenaria* collected at Titchfield Haven.

The natural range of the quahog is along the eastern coast of North America from the Gulf of St Lawrence in the north to Florida and into the Gulf of Mexico in the south. The name derives from *poquauhock*, which in the Narragansett language means 'dark shell'. The Narragansett were a tribe of Native Americans of Algonquian ethnic affinity, who occupied the present state of Rhode Island in the north-eastern USA and who, like many other North American coastal tribes, made beads out of seashells. The earliest shell beads known from this area are over 4500 years old, painstakingly cut, shaped, drilled and polished using stone tools and grinding slabs. Traditional shapes included barrel-shaped white beads cut from the columella of buccinoid shells of the genus *Busycan* and tubular purple beads made from the margins of quahog shells. The white shell beads, which were much more common than the purple ones because they were easier to make, became known as wampum which is short for *wampumpeag*, meaning 'strings of white shell beads' in the Narragansett tongue. However, this term is now used to describe both purple and white shell beads and the artefacts made from them.

Wampum was traded with other tribes in ceremonial contexts. It was held in high esteem, both because of the

difficulty of its manufacture and because of the connections of shell with water and its life giving properties. The thinner white part of the clam shell was often made into disc shaped beads that were strung together to form necklaces and bracelets. The thicker posterior purple margin was shaped into tubular beads that were also strung. Later both purple and white cylindrical beads were woven together on a loom using hemp thread or animal sinew to create 'belts' with geometric and, more rarely, figurative designs (figure 2). The earlier beads are larger, about 8 mm long and 5 mm in diameter, with relatively large perforations which are hourglass shaped in longitudinal section, showing how the bead had been carefully drilled from both ends using a stone drill point. With the advent of European metal tools, the beads became smaller and the perforations straight and narrow.



figure 2: Part of an American museum exhibit on wampum. (photo: June Chatfield)

The Narragansett traded with other coastal Algonquian tribes and also inland with the Iroquois tribes who lived around Lakes Erie and Ontario and along the valley of the St Lawrence River. Strings of wampum were used as currency, with the purple beads being higher in value than the white ones. Wampum was also used in gift exchange, for personal ornaments where it formed an expression of wealth, and in religious ceremonies.

The Iroquois were extremely warlike in nature and much effort was spent in establishing treaties between neighbouring tribes in order to form confederations and reduce hostilities. These treaties came to be sealed by the exchange of wampum belts and the designs woven into these were highly symbolic, so much so that it has been claimed that some of the belts were used as mnemonic devices by the elders who used them to recount tribal histories (Hale, 1897) (figure 3). Wampum belts continued to serve as emblems of diplomacy long after European contact in the 16th century, not just between tribes but also between tribes and European colonists. Among the most famous of these are the belts made to commemorate the treaty between the Algonquian Delaware tribe and William Penn to mark the founding of the state of Pennsylvania (figure 4). Several of these are known, all with the same design but sometimes with the background in white beads and sometimes in purple beads with the colours reversed. The design shows two equal-sized figures holding hands, the fatter one with the hat presumably representing the European side of the treaty.

The Europeans quickly realised the importance of wampum as an exchange medium of great cultural significance and utilised it to good effect in trade (Fagan, 1991). The shell beads could easily be manufactured using metal tools, and water-driven mills were established as wampum factories. The raw material was readily and cheaply obtained from clambers who collected quahogs for food and the beads were mass-produced. Strings of wampum took just days to produce instead of the weeks or months it took using traditional tools. Most of the manufactured wampum went into the fur trade in the north-west: as long as the beads were of a suitable shape, size and colour, they were readily accepted as good money. It is interesting to note that European tubular glass trade beads were never accepted as a substitute for wampum, although they were widely used for ornamental purposes (Feest, 1980). The wampum was produced in strings of set denominations and in 1650 the rate was set at eight white beads or four purple beads to the penny. However, as more and more wampum flooded the market its value began to decline. The exchange of loose or inferior quality beads was prohibited and in 1662 the white beads were revalued at 24 to the penny. The use of wampum as common currency was eventually phased out during the 18th century as the supply of mature clams began to run out due to over-fishing and silver coinage came into circulation.

Woven wampum belts continued to be made and valued as ceremonial objects by the north-eastern tribes. Early photographs show these being worn sash-like across one shoulder or draped around the neck of tribal worthies. They soon attracted the attention of European collectors and

several are on display in British museums. The earliest, a piece about 35 cm long and five beads wide, shows a simple design of three white diamonds against a purple background: this belt is known to have been in the collection of John Tradescant senior, head gardener to King Charles I, before 1638. It is now in the possession of the Pitt Rivers Museum in Oxford, but unfortunately it is not on public display. Another early example, figured by Hale (1897), is said to have been presented to the Pitt Rivers Museum in 1897 (figure 3:1) (although it could not be found in their online catalogue). This belt is attributed to the Huron (Iroquois) and dates to the mid 17th century or before. It is known as the 'Double Calumet Treaty Belt' because of the design which shows several double-bowled calumets or peace-pipes. It is described by Hale as being about three feet (90 cm) long and nine beads wide, with a background of 'the most costly purple wampum'. What treasure lies in the mud at Titchfield Haven!

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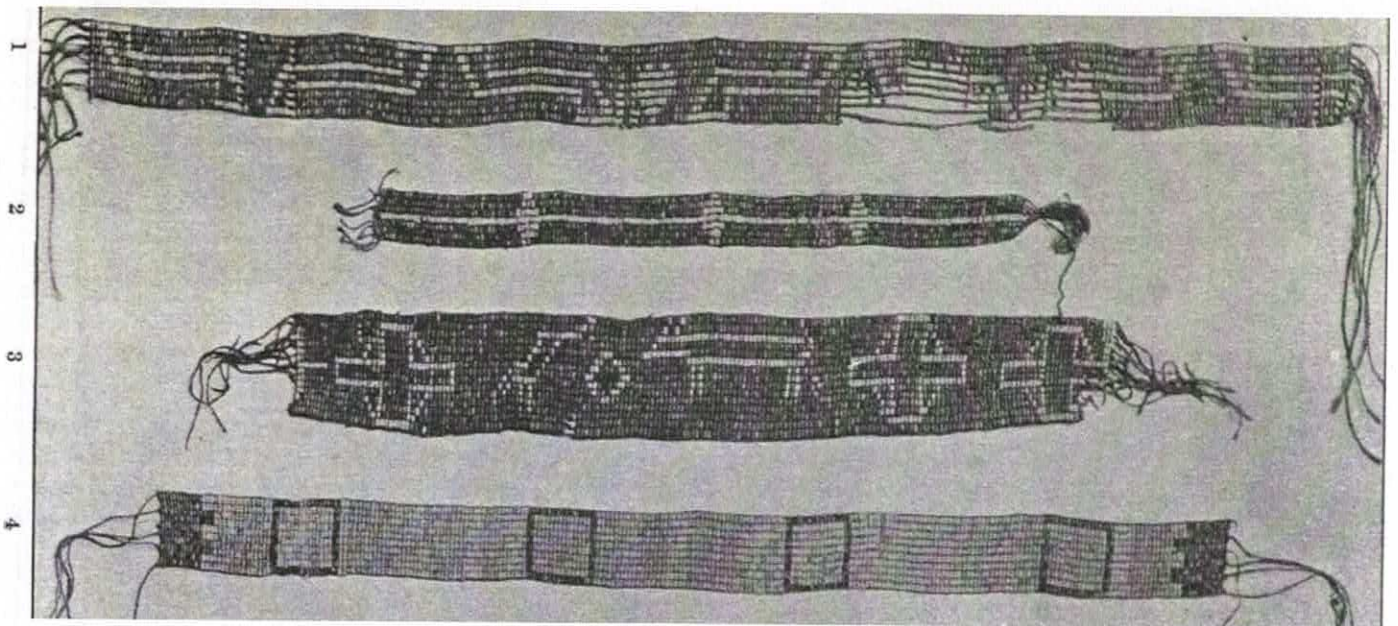


figure 3: Four Huron wampum belts (From Hale, 1897, plate XI).



figure 4: Delaware wampum belt made to commemorate the founding of Pennsylvania (From Hale, 1897, plate XIII, 3).

The Conchological Society of Great Britain and Ireland (hereafter 'CSGBI') has a rich history full of interesting characters committed to a better understanding of the world of molluscs. One such person is John Wilfrid Jackson who, like many of the 'old timers', lived to a ripe old age, dying in his 99th year. His contribution to conchology, the CSGBI, and to many other areas of natural history was briefly outlined by R. M. C. Eagar (1978) in his obituary of Jackson in the *Journal of Conchology*. However, having spent some time researching J. Wilfrid Jackson (as he generally signed himself) at Buxton Museum & Art Gallery where there is an extensive archive, I think he merits a more detailed review of his life and work. Since this is written for the CSGBI I will concentrate on 'matters molluscan' but JWJ was insatiably curious (his motto was 'I will investigate'), and as his obituary records, he made telling contributions in local natural history, cave Mammalia, archaeology, Carboniferous geology and the study of Brachiopods. A summary of published papers reflecting the breadth of his interests is shown in the appendix at the top of page 27, while a more detailed sketch covering all aspects of JWJ's work is given in Bishop (1982).



figure 1: Portrait of Jackson in his D.Sc. robes, paid for by friends from the CSGBI, in 1929.

Jackson was born in Scarborough on 15th June 1880 but the family soon moved to Manchester in search of work for his father. His childhood and education are not well known, but certainly his formal schooling ended at the age of 12, in 1892, when he started his first full time job as office boy at the 'Clarion' newspaper. He soon moved into the cotton trade and later the wool industry, becoming Assistant Woollen Buyer for the South American shipping firm of Kolp, Kullman & Co. from 1904–1907. Having only a basic school education, Jackson realized the importance of further study whilst at work, taking certificate courses in shorthand, English, Spanish and Latin at the Lower Mosley Street Schools from 1902–1904, and in 1906 beginning classes in Geology at what is now U.M.I.S.T.

By this time, Jackson was not only working and studying but had also developed a keen interest in natural history, especially conchology. Quite how, when and why he became interested is unclear but Jackson himself recalled an epiphany on Mafeking Night (12th May 1900), when he visited the home of Robert Standen in Manchester to inspect his shell collection. From this point on, at the age of 20, Jackson's interest in conchology took firm root and by the end of the year he had been nominated for membership of the CSGBI (one couldn't simply join in those days), being elected in January 1901. This relationship was maintained over the next 78 years, until his death, no doubt making him one of the longest serving members of our Society.

Without a scientific education or university degree, JWJ was perhaps aware of the need to establish some 'credentials' and he soon started publishing papers in the *Journal of Conchology*. At first these were mainly notes of CSGBI excursions and finds he made himself in the Manchester region and Derbyshire, but he gradually expanded the range of his work. Like most of his contemporaries at the time, he concentrated on systematic and descriptive matters and rarely strayed into experimental studies. One interesting exception, however, is a 1906 paper on an attempt to breed from a sinistral *Helix pomatia*. Jackson's original notebook and sketches remain in Buxton Museum's archive (see figure 2 and figure 3). The descriptions must have seemed pretty 'racy' for the time!

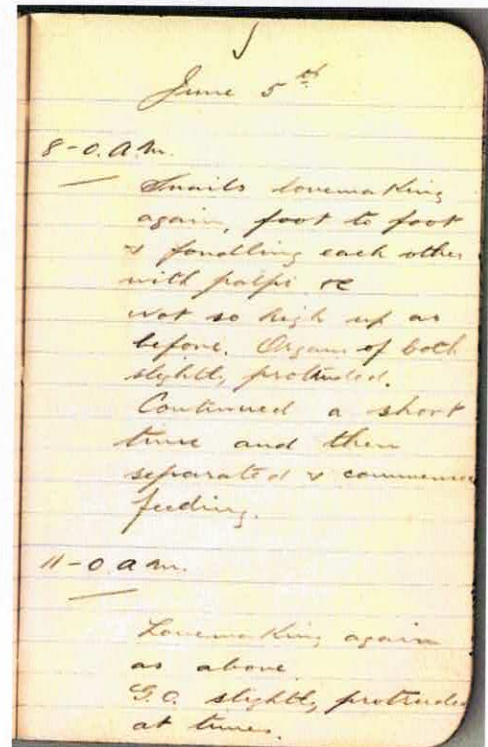


figure 2: Jackson's notebook of 1906 recording an attempt to breed from a sinistral *Helix pomatia*. The RS refers to Robert Standen, Jackson's soon to be father-in-law.

Around this time, having started meeting other enthusiasts at CSGBI meetings, JWJ published a number of collaborative efforts, including with Fred Taylor (whose obituary occurs in *Journal of Conchology*, 23, 86) and Alfred Santer Kennard (see 'Eminent Conchologists' on the CSGBI website (<http://www.conchsoc.org/node/606>)). Kennard remained a friend, correspondent and co-worker for nearly 50 years

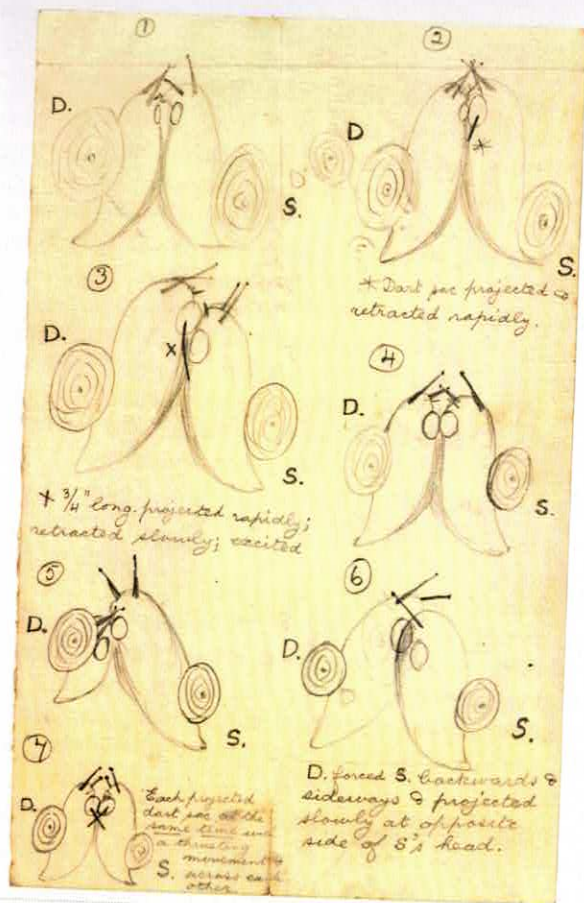


figure 3: Sketch from 1906 of snails 'lovmaking'.

until his death in 1948. (N.B. extracts from some of Kennard's letters to Jackson and those of other correspondents are planned for a future article). Another friendship that began when Jackson was starting out in conchology was with Robert Welch, a naturalist and photographer of repute from Ireland. Following correspondence and shell exchange, JWJ visited Ireland in summer 1904 and made personal contact. Later that year Jackson, inspired by Welch's photography, purchased his first camera and for the rest of his life photographed, developed and printed all his own material. Figure 4 shows one of several, often witty, cards sent from Welch to JWJ over their long friendship until 1936 when Welch died.

Jackson must have made a strong impression in CSGBI circles, because in 1904 he was elected to the Council and he remained an officer, in one role or another, for the next 40 odd years, until his retirement in 1945. He certainly made a strong impression in the Standen household for in 1906 he married Robert's daughter, Alicia Mayor Standen and soon after, in 1907, he applied for a post at Manchester Museum, where Robert Standen worked as Assistant Keeper. Whether Standen had any influence or role in the recruitment is not recorded. Certainly William Boyd Dawkins (later Sir WBD) was part of the interview panel and on appointment he took JWJ under his wing, supervising him in curatorial duties and research on the osteology of mammals. Having already attended Dawkins' public lectures on geology and archaeology, the influence exerted may well have been responsible for Jackson's expanding interests towards geology and archaeology. Jackson and Dawkins maintained a close personal and professional relationship until the latter's death in 1929. For example, they both made important contributions to the

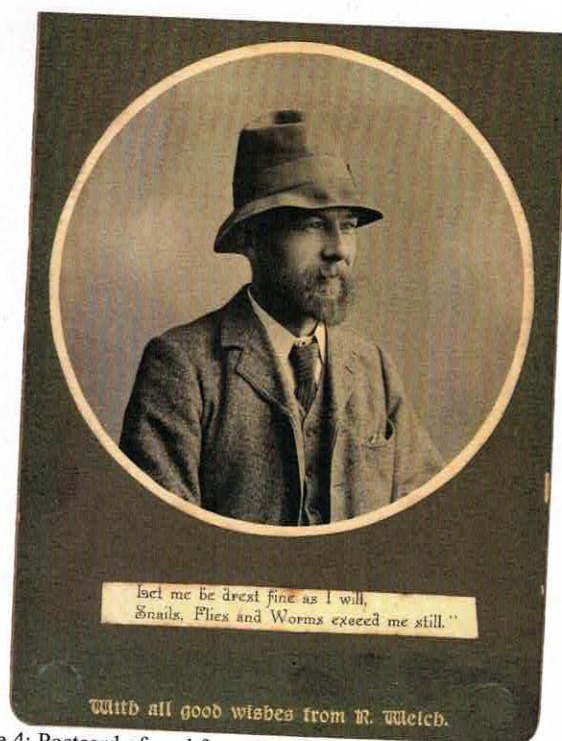


figure 4: Postcard of, and from, Jackson's friend Robert Welch. Welch was a well-known Irish naturalist and eminent photographer - included among his subjects was 'The Titanic'.

Glastonbury Lake Village excavations (WBD on the human remains and JWJ on animal remains). One of the last things they worked together on was the re-opening of cave excavations at Creswell Crags, Dawkins as Chair of the Committee and Jackson as the bone expert. When Dawkins died his widow presented to the town of Buxton his library and a significant amount of correspondence, together with furniture, pictures and other archive material. These have been incorporated into a 'Boyd Dawkins Room' at Buxton Museum (see figure 5), subsequently augmented by similar material when Jackson later died.

Because JWJ was employed at Manchester Museum to look after the geological collections, and because his interests were rapidly expanding into caves, bones and archaeology, it is somewhat inevitable that his conchology output slowed after the end of the First World War. However, during the War years he devoted significant effort in researching a series of papers on 'ethno-conchology'. These were originally published in the (splendidly titled) *Memoirs and Proceedings of the Manchester Literary and Philosophical Society*. These articles (on the shell-purple industry, cowries as currency, shell trumpets, pearls, etc.) were soon augmented and worked up into a book, 'Shells as Evidence of the Migration of Early Culture', published in 1917. This work remains a comprehensive collection of facts about the cultural use of shells in early human societies. The year 1917 also marked Jackson's election as Hon. Secretary of the CSGBI, a post he held until his retirement in 1945, with the exception of his Presidential year in 1924.

One notable feature of JWJ's work as he expanded his expertise was his ability to 'cross-fertilize' his interests, for example, archaeology and conchology in his book (above). Most workers concentrated on recent or fossil molluscs, recent or fossil brachiopods but Jackson managed to be an expert in all of these (and in many others areas) and he used his knowledge of living groups to interpret fossil faunas. One of the most significant contributions he made was in his



figure 5: The Boyd Dawkins Room at Buxton Museum and Art Gallery. Dawkins was a mentor of Jackson at Manchester Museum and both of them left substantial amounts of archive material to Buxton Museum, some of which is on show in the Boyd Dawkins Room.

reporting of the usually ignored rodent bones and Mollusca from cave excavations that gave important clues to the wider ecology of the area and prevailing environmental conditions.

Jackson spent his whole 'academic' working career at Manchester Museum and as his expertise and reputation grew he was recognized by a string of awards and honours. Manchester University awarded him his M.Sc. (1921) and D.Sc. (1929), and he received the Murchison Award from the Geological Society of London in 1934. Figure 1 shows Jackson in his D.Sc. robes, the hire cost of which was paid for by a 'whip-round' among his CSGBI friends. He was a founder member of the British Spelaeological Association and served on the Council for British Archaeology, and on the Peak Park Planning Board. Presidencies came thick and fast (five between 1940–1945, including the Yorkshire Naturalists Union), as did Honorary Memberships, including the CSGBI in 1955.

Eagar (1978) notes JWJ's output of published papers at over 150. In fact, it was well over 300 and a reasonably comprehensive list is given in Bishop (1982). Nearly 100 works were on conchology (excluding fossils), with some interesting ones produced in his later years. These included his CSGBI Presidential Address on the distribution of Pearl Mussels (Jackson, 1925), which Eagar (1978) notes 'utilized palaeontological evidence as well as extensive private records', as well as carefully researched biographies on Captain Thomas Brown (Jackson, 1944) and Martin Lister (Jackson, 1945), the latter his Presidential Address to the Yorkshire Naturalists Union. As he got older, Jackson saw many of his friends and colleagues die and as an 'elder statesman' of the CSGBI, Jackson took on the role of 'go to' obituarist. His first in 1925 was for Robert Standen, his father-in-law, and he wrote more than 20 obituaries and biographical sketches, many of which were published in the *Journal of Conchology*.

Jackson's last curatorial job at Manchester Museum, at the end of the Second World War, was the transfer of fossil collections of Sir Arthur Smith Woodward (who died in 1944) from Macclesfield to Manchester. Sir Arthur, a fossil fish expert at the Natural History Museum whose reputation suffered as a result of his involvement in the 'Piltown' controversy, had been a close friend of both Sir William Boyd Dawkins and Jackson.

On retirement, Jackson (together with wife and daughter, both called Alicia) moved to Buxton, where he had established close links with the Museum, and had acted as 'Honorary Consultant' since 1929. He continued publishing a steady stream of papers (especially on the animal remains excavated from archaeological sites) into the 1960's. Gradually though the focus of his activities switched to actively passing on his knowledge and he undertook lectures to Societies and schools, organized and led geology excursions and ran numerous WEA classes and Summer Schools. He was revered by many of his students. In an appreciation published soon after he died, one of them noted 'we were receiving the results and conclusions of almost a life time's experience and intensive study. How fortunate we were!' Remarkably, Jackson carried on his WEA classes until 1971, when he was into his 90's.

To the end he was generous with his time and encouraging of young and older 'students' alike. A fellow volunteer at Buxton Museum, Clive Champion, who is working on Jackson's extensive collection of fossil Brachiopoda, recalls a visit when he was a young man, to see Jackson. After a pleasant afternoon spent discussing all manner of brachiopod matters, the 98 year old JWJ offered any further help and assistance, but stressed 'probably best not to wait too long'!

In conclusion, and as a tribute to J. Wilfrid Jackson, I can do no better than to quote the final paragraph from Bishop's (1982) biographical sketch: 'We have in Jackson one of those very keen men who delighted in the pursuit of natural science as a hobby, and with hardly any formal training, had the motivation to turn their hobby into a lifelong career without seeking any self-advancement in their position, career-wise or socially''

Footnote

I am aware that there are certainly a few current CSGBI members who knew, or at least met, Jackson. If anyone has any recollections of meetings, or other memories or anecdotes, I would be pleased to hear them and can be contacted via email (impala44@btinternet.com) or via Buxton Museum & Art Gallery, Terrace Road, Buxton, Derbyshire, SK17 6DA.

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Appendix: A summary of J. Wilfrid Jackson's published works

Mollusca/Brachiopoda. Over 90 papers on recent molluscs and 5 on recent brachiopods, including important reports on material from the Scottish National Antarctic, British Antarctic (Scott's Terra Nova) and Siboga expeditions.

Geology. More than 50 papers, especially on the Carboniferous rocks and fossils from around Manchester, Cheshire and Derbyshire. An important work was his catalogue of the type and figured specimens in the Geology Department of Manchester Museum.

Archaeology. About 25 papers including ones on artefacts (bronze sword, cinerary urns, flint scrapers, neolithic pottery), general articles on

prehistory in Derbyshire and Manchester and several papers on Irish archaeology, particularly from County Antrim.

Bones. About 80 published 'bone reports' on animal remains from sites around the UK including Stonehenge, Woodhenge, Grimes Graves and Maiden Castle. He also visited Egypt. In addition, he compiled over a 100 further reports which appear not to have been published.

Caves. 35 papers on caves, including from Derbyshire, Yorkshire, Scotland and Ireland. An important work is his chapter on 'Archaeology and Palaeontology' in the book 'British Caving' by Cullingford.

Miscellaneous. More than 30 works including obituaries, biographies and others such as papers on both recent and fossil myriapods (millipedes).

The Lava Shell, *Codakia tigrina*

John Llewellyn Jones

I did something recently, introduced to me by Kevin Brown, that I wouldn't have done for any other reason than its interesting use of a shell. I had a massage, at the Reef Spa in Maidstone, Kent. I had to pluck up the courage to organise it over the phone and then to even turn up.

At the Spa, having filled in the various forms (Health and Safety!), I was shown into a dimly lit room where Jenny, the masseuse, was waiting for me. I was asked to take off my clothes except for my pants and lie face down on the couch. I had organised, before hand, to have a photo taken by the manager while Jenny massaged my back using the lava shells (figure 1).



figure 1: John being massaged using lava shells.

Jenny told me that the shells were as efficient and safe as the hot stones massage which have to be heated up in an oven beforehand. These shells were very smooth and hot and Jenny's massage was very gentle and relaxing, her actions loosening various muscle knots in my back. It also really improved the circulation in my feet and my partner Celia and myself, both diabetics, are going to try and arrange a foot massage session with the Spa to improve blood flow. And if it helps we will continue to have them.



figure 2: Lava shell home kit.

Kevin Brown also put me in touch with a parlour that sold home kits (figure 2). What was interesting was that when the kit arrived the beautiful lava shells were in fact created from a blend of fine porcelain and real seashell lime, not natural shells as in the Spa (figure 3-bottom right). The shells are beautifully polished double valved Pacific Tiger lucines or the red lipped lucine *Codakia tigrina* (L.1758) *syn. exasperata*, a common bivalve living subtidally to 20 metres. They are collected around the Philippine islands for food and other artifacts (figure 4) and have been for thousands of years. The shells are attractively ribbed but these are ground down to produce the beautifully smooth surface. A hole is then drilled in one side. In use a sachet of minerals, sea kelp and algae is emptied into the shell followed by a sachet of activator. A plastic button fits tightly in the hole sealing everything in. The shell heats up via a chemical reaction occurring between the gel and activator. The heat inside the shell lasts for around an hour. I felt that this was a modern and interesting use of a shell.



figure 3: From top clockwise – polished shell, porcelain lava shell & untreated shell.



figure 4: From top clockwise – Box, purse, massage shell & purse.

A field meeting was held in Winchester to see two sites along the River Itchen, the Navigation, water meadows and Falldon Nature Reserve at Winchester College. Results and grid references are shown in table 1. Initial collecting at the meeting point of St Catherine's Park and Ride car park yielded the unexpected find of three shells of *Cochlicella acuta* that one normally associates with coastal locations but no live specimens were found. Graham Long pointed out that this had been found previously in Winchester at the Butterfly Conservation reserve at Magdalen Down.

Walking to the first site of St Faith's Meadow, a short detour was made to sample from the Itchen Navigation at Tun Bridge (SU 78374 28055) Here there was limited aquatic vegetation and a restricted molluscan fauna but all typical of chalk rivers, especially *Planorbis carinatus*. The navigation could usefully be investigated downstream on a future occasion.



figure 3: Caddis fly larva case constructed of shells including *Gyraulus albus* and other molluscs. (photo: Tom Walker)

Physa fontinalis, *Anisus vortex*, *Planorbis planorbis*, *Ancylus fluviatilis*; and bivalves *Sphaerium corneum*. Tom Walker found some caddis cases constructed of shells (figure 3). The river debris gave a good crop of additional shells of land snails including *Balea heydeni*. Living on bankside vegetation were *Oxyloma elegans*, *Trochulus striolatus* and *Cepaea* sp. juveniles.



figure 1: Path with shallow stream on the left which yielded a rich haul of shell debris. (photo: Peter Topley)



figure 2: Shell debris from stream. (photo: Peter Topley)

The next collecting stop was in two streams alongside the Garnier Road pumping station. Initial excitement with the possible sighting of a shell of a large mussel in the water followed by adventurous manoeuvrings for a closer look revealed nothing more than a broken piece of white plate! Following the path in the direction of St Cross, attention was given to the shallow stream on the other side of the path (figure 1) and this yielded a rich haul of shell debris (figure 2 and see table) and even a shell of *Theodoxus fluviatilis* that one does not meet very often away from the Thames. Living specimens were of: operculates *Bithynia tentaculata*, *Valvata piscinalis*, *Potamopyrgus antipodarum*; pulmonates *Lymnaea styagnalis*, *Radix balthica* (=peregra),



figure 4: River Itchen from St Faith's Meadow with St Catherine's Hill (chalk) behind. The Itchen Navigation runs at the foot of the hill.

By the picnic tables an informal track led to the River Itchen and St Faith's Meadow that we had permission to visit from Hampshire Wildlife Trust who manage the site. Here we had a good view across the Itchen to St Catherine's Hill on the skyline (figure 4), the latter managed as chalk grassland also by the Trust. There was open ground at the riverside where some tree felling had taken place and John Glasgow spotted a grass snake sunning itself on a tree stump but it soon slithered away out of sight and here also, young slow-worms (they eat molluscs) were found under a log. Slow-worms are common in Hampshire. The flow in the river was fast after a wet June but there was some weed at the side that yielded the same species as before but in addition some live *Gyraulus albus*. Bankside vegetation produced *Succinea putris*, *Cepaea* and *Deroceras laeve*.

The group then returned to Garnier Road and followed the footpath at the side of the Itchen to Winchester, stopping to collect on the way. A search of tussock sedges yielded a terrestrial rather than wetland fauna of *Cepaea hortensis*, Mollusc World November 2012

Cornu aspersum and *Arion ater* agg. Just one dead shell of *Vallonia pulchella* was found. *Monacha cantiana* appeared in nettles near Winchester College, *Bithynia tentaculata* and *Potamopyrgus antipodarum* were netted from the College Mill and *Trochulus striolatus* from the Abbey grounds where we had lunch.



figure 5: Group examining waterside vegetation in the Falldon Nature Reserve. (photo: Peter Topley)

The afternoon was given to a visit to Falldon Nature Reserve, owned by Winchester College with a permissive access path (figures 5 and 6). This is named after the family seat of Edward Grey, who was Foreign Secretary at the outbreak of World War I. The nature reserve was set up in his memory after he died in 1933. Grey, an indifferent student, loved the countryside and especially the Itchen Valley and fly fishing that occupied more of his thoughts than college work. The Itchen valley also served as a retreat later in life when he had a fishing cottage at Itchen Abbas, just upstream from Winchester, where he went at weekends after work in London during the week. Curiously, Grey, who was a contemporary at Winchester College with the Conchological Society's J. R. le B. Tomlin, never joined the College natural history society as Tomlin did; his interest focused more on fishing. It was Grey's first wife Dorothy who made a naturalist and bird-watcher out of him and his most well-known publication is *The Charm of Birds* published towards the end of his life (Waterhouse, 1999). In 1935 the College natural history decided to set up Water Meads as an Edward Grey memorial nature reserve and they were allowed to take over the management of the site (Brockway, 2010). Unfortunately the diggers used in 1936 to re-channel the water left the meadow rather dry, something that I picked up on previous collecting here and confirmed on the Conch. Soc. field meeting with a great abundance of *Monacha cantiana* rather than the wetland *Ashfordia granulata*.



figure 6: *Valvata piscinalis* (common valve snail) from river Itchen, Falldon nature reserve. (photo: Peter Topley)

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Name	1	2	3	4a	4b	5	6
<i>Acroloxus lacustris</i>		S					
<i>Aegopinella nitidula</i>				A			S
<i>Ancylus fluviatilis</i>		S					
<i>Anisus vortex</i>		S	A	A			
<i>Arion ater</i> agg.			A	A	A	A	
<i>Ashfordia granulata</i>				S			
<i>Balea heydeni</i>		S					
<i>Bithynia tentaculata</i>	A	S	A	A	A		
<i>Carychium minimum</i>				S			
<i>Cepaea hortensis</i>			A	A	A		
<i>Cepaea nemoralis</i>				A			
<i>Cochlicella acuta</i>							S
<i>Cochlicopa lubrica</i>		S		A			
<i>Cochlodina laminata</i>						A	
<i>Cornu aspersum</i>				A	A		
<i>Deroceras leae</i>			A				
<i>Deroceras panormitanum</i>						A	
<i>Deroceras reticulatum</i>		A		A			
<i>Discus rotundatus</i>		S					
<i>Gyraulus albus</i>			A				
<i>Hygromia cinctella</i>		S					
<i>Lauria cylindracea</i>		S					
<i>Limax maximus</i>						A	
<i>Lymnaea stagnalis</i>		S		S			
<i>Merdigera obscura</i>		S					
<i>Monacha cantiana</i>				A	A		
<i>Oxychilus cellarius</i>				A			
<i>Oxyloma elegans</i>		A		A			
<i>Physa fontinalis</i>		A					
<i>Pisidium</i>	A			A			
<i>Pisidium casertanum</i>		S					
<i>Pisidium milium</i>		S					
<i>Planorbis carinatus</i>	A		A				
<i>Planorbis planorbis</i>		S					
<i>Potamopyrgus antipodarum</i>	A	S	A	A	A		
<i>Radix balthica</i>		S		A			
<i>Sphaerium corneum</i>		S					
<i>Succinea putris</i>			A	A			
<i>Theodoxus fluviatilis</i>		S					
<i>Trochulus striolatus</i>		A					A
<i>Vallonia excentrica</i>		S					
<i>Vallonia pulchella</i>					S?		
<i>Valvata cristata</i>		S					
<i>Valvata piscinalis</i>	A	A			A		
<i>Vitrea crystallina</i>				S			
<i>Zonitoides nitidus</i>		S					

table 1: Results from the Winchester field meeting on 30th June 2012.

Key to collecting sites: 1. Itchen Navigation at Tun Bridge; 2. Footpath and water channel by old pumping station' shell gravel sorted by Tom Walker and Peter Topley; 3. St Faith's Meadow and River Itchen; 4a. Falldon nature reserve by Winchester College; 4b. Itchen from Garnier Road pumping station to College Mill; 5. Leaf litter below Caucasian wingnuts at entrance track to Falldon; 6. St Catherine's Park and Ride carpark. A = live record, S = shell only. **OS Grid References:** Tun Bridge SU 48374 28055; Garnier Road old pumping station SU 47935 28278; St Faith's Meadow SU 47860 28067; Falldon Winchester College nature reserve SU 48271 28577 to SU 48244 28676; Garnier Road Itchen and path to College Mill SU 48136 28522; Below wingnut trees SU 48300 28531; St Catherine's park and ride SU 48795 28241.

(see also page 31 for photo of participants)

Nearly all the conversations I have had with gardeners this year have ended up in a discussion about the problems of slugs. Some have told me about going into the garden night after night to remove the creatures from their favourite plants. One person told me about getting rid of 60 or so every night for over a week. Accounts such as these have led to several articles on slug control in the gardening journals and the popular press.

Few, though, will have seen anything like the number of slugs present in the ride at Ladycross in the New Forest on a late evening in mid-July this year. They were everywhere: on the ground, on the tree trunks, and up among the branches, and included *Arion ater* agg., *Arion subfuscus*, *Lehmannia marginata*, *Limax cinereoniger* and *Limax maximus*. The latter was by far the more common of the two *Limax* species. *L. cinereoniger* is found throughout the forest but never in great numbers. One magnificent specimen, black not ash grey, with a rippled white keel running down its back, was longer than my hand span. Trying to keep a secure footing while searching with lights among fallen timber in soggy ground and avoiding bumping one's head on low hanging branches is not easy, but it was surprising that there was no sign of the smaller species, and the only snails found were all *Oxychilus alliarius*.

The highlight of the evening would surely have thrilled every harassed gardener. *Carabus* beetles were present in great numbers, not least the large, black *Carabus violaceus* (violet ground beetle) which is adorned with a scintillating band around the edge of the elytra that seems to change colour when viewed from different angles. These caught our attention as the night drew on. Despite their name, the beetles were hunting slugs up the trees. They were uninterested in the many *L. marginata* available and seemed to have one *Arion* species in their sights. These they seized by the midriff, lifted them easily from the trunk and carried them up several feet further to find a crevice in the bark in which to wedge them before tearing them apart. When the beetle had finished, there was very little left to indicate what kind of slug it had been or even that it had been a slug at all.

All of which raises some interesting questions for entomologists and conchologists alike. How often does an individual beetle need to feed? Do they always consume the whole slug? Is there a link between the larger than expected population of *C. violaceus* here and the explosion in the

number of slugs this year? Is the tree hunting technique general or particular to this area? Are other slug species taken elsewhere? Has this behaviour been witnessed and photographed before?

Finally, special thanks to Gary Palmer for capturing both the moment of seizure and the aftermath (below) in difficult conditions.



Anyone for slug tennis?

The following is from the live on-line commentary on the Murray v. Berdych tennis match in the 2012 US open semi-final:

'Berdych playing like a slug who was once merrily slithering along, chomping on blooming foliage, before coming a cropper after being duped into drinking some liquor and is now all over the place. (Disclaimer: I'm not saying Berdych has been drinking liquor. I'm not really sure what I'm trying to say.)'

[with thanks to Alan Outen for sending this in, Ed.]

British Shell Collectors' Club

27th April 2013
Shell Convention

26th October 2013
Shell Show



Both events will be held at Theydon Bois Community Centre, Coppice Row, Theydon Bois, CM16 7ER

Open 9am to 4pm, admission free.

For further information and other events see:

www.britishshellclub.org.uk/

About the Conchological Society

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

How to become a member

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

Ordinary membership £33.00

Family/Joint membership £35.00

Student membership £15.00

Under 18 (receiving *Mollusc World* only) £5.00

Institutional subscriptions £47.00.

In view of the high cost of overseas postage, members living in Europe will be asked to pay an additional postage charge of £8, and members living in the Rest of the World an additional postage charge of £17. See website for further details.

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

How to submit articles to *Mollusc World*

Copy (via e mail, typed or handwritten) should be sent to the Hon. Magazine Editor (contact details below). If sending electronic 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, but if other programmes (e.g. Works)

are used, please indicate the programme used with the accompanying e-mail. Images and Artwork may be digitised, but we recommend that a digital image size 200Kb- 1.5Mb (JPEG preferred) be sent with your submission. For line art we recommend that you send hard copy, all originals will be treated with care and returned by post. Authors should note that issues of the magazine may be posted retrospectively on the Conchological Society's web site. The copy deadline for the March 2013 issue is 30th January 2012; inclusion in that issue is dependant upon space available but contributions are always welcome at any time.

Please send articles to:

Peter Topley, c/o The Hon. General Secretary, Miss R.E. Hill, 447b Wokingham Road, Earley, Reading RG6 7EL (or alternatively Peter's address may be found in the member's guide); email: molluscworld@ntlworld.com.

Advertisements in *Mollusc World*

We are pleased to invite advertisements, provided they are in line with the Conchological Society's charitable objectives and responsibilities. Typical examples might include books and other publications, equipment, services and collections of (or individual) shells. The latter will be vetted on a case by case basis and only accepted if there are no ethical problems. Advertisements of shells for sale from commercial shell dealers will generally not be accepted. A nominal charge will usually be made for advertisements and will be required from commercial advertisers. Charges per issue are currently £20 per 100 cm² space for a boxed advertisement or £1.00 per line for a text only advertisement. Any requests for advertisements should be sent to the Editor by the normal route; information on preferred methods of payment will be given at the time.



Some Conchological Society members in Winchester below the statue of King Alfred: he carries a sword rather than a kitchen scoop on a pole! (see page 28) (photo: June Chatfield)

Conchological Society of Great Britain and Ireland

Diary of Meetings



Programme Secretary: *Bas Payne, The Mill House, Clifford Bridge, Drewsteignton, Exeter EX6 6QE; 01647 24515, programme@conchsoc.org.*

Saturday 8 December 2012

INDOOR MEETING: Lecture and exhibits.

Guest speaker: Miranda Lowe (NHM London) - *Blaschka: Glass creatures of the ocean.*

14.00: Angela Marmont Centre, Natural History Museum.

The lecture will start shortly after 14.00.

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

Saturday 26 January 2013

INDOOR MEETING: Demonstrations, exhibits, discussion meeting and lecture.

Guest speaker: Dr Anna Marie Roos - *'Your curious wrong-turned snails': Chirality and the Conchology of Martin Lister.*

11.00 - 17.00: Angela Marmont Centre, Natural History Museum

There will be exhibits, demonstrations and discussion in the morning.

The lecture will start shortly after 14.00.

Saturday 23 February 2013

INDOOR MEETING: Lecture and exhibits.

Guest speaker: Professor David Kipling - *The role of amateur divers in recording UK nudibranchs.*

14.00: Angela Marmont Centre, Natural History Museum.

The lecture will start shortly after 14.00.

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

Saturday 20 April 2013 (note changed date)

ANNUAL GENERAL MEETING and PRESIDENTIAL ADDRESS.

Guest speaker: Jennifer Robinson - *Shells from Roman Pompeii.*

14.00: Angela Marmont Centre, Natural History Museum.

The lecture will start shortly after 14.00.

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

Later 2013 meeting dates:

Indoor meetings: Please note the following dates in your diary - Saturday 5 October (no Council), Saturday 19 October (Council meeting only) and Saturday 14 December (Council meeting and indoor meeting).

The programme of summer **field meetings** will be published in the next *Mollusc World* (March 2013), and also on the website as arrangements are made. . It is hoped that this will include a long marine field meeting in Northern Ireland in August.

The Programme Secretary will be 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.

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. The October and January meetings start early, at 11:00, to give more time for exhibits, demonstrations and discussion. ***Please bring plenty of exhibits and demonstration material, especially to the October and January meetings.***

If you intend to attend a **field meeting**, please remember to inform the leader, 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.

Any updates and further details will appear on the website (www.conchsoc.org).