Mollusc World

November 2022 • Issue 60

Ena montana: The search continues

The Wildlife & Countryside Act 1981: a historical review

Molluscs of the Boyne Valley

The Conchological Society of Great Britain & Ireland

Helping to understand, identify, record and conserve molluscs

From the Hon. Editor

This issue of the Conchological Society's magazine includes an important historical review of the UK Wildlife and Countryside Act 1981 (with a focus on molluscs) by Martin Willing, who has worked on behalf of the Society, along with others, on its periodic reviews over many years. Moving to the Republic of Ireland there is an informative account of a three-year survey of the molluscs of the Boyne Valley by Andrew Wright. In addition, there are reports from three field meetings, which remain an important part of the Conchological Society's work. Despite the increased costs of travel and other pulls on our time, it would be worthwhile trying to commit to go on at least one of these when they are organised next year. You will meet like-minded, enthusiastic people and learn new things, whilst contributing to the recording schemes. Also, the saying 'another pair of eyes' is very true when looking for molluscs, even though you might not be able to identify them straight away! Also, please see the back page for details of our upcoming indoor meetings. Some fascinating talks are scheduled.

In August, the *Guardian* reported* the discovery of a sighting of the rare nudibranch sea slug *Babakina anadoni* off the Isles of Scilly by Allen Murray, a volunteer diver taking part in the Wildlife Trusts' Seasearch initiative, 'where citizen scientists are asked to dive and record the wildlife around the coast.' This is unusually far north for this species, which has been previously reported (very occasionally) off more southerly European coasts, as well as the eastern Atlantic and Brazil. Maybe this is yet another sign of a warming marine environment?

Thank you to all who have contributed to this issue. If you are reading this, please think about writing something for the March 2023 and subsequent issues. It would also be nice to have some more articles on marine molluscs.

Peter Topley

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 280 members and subscribers worldwide. Members receive two publications: Journal of Conchology which specialises in Molluscan Biogeography, Taxonomy and Conservation and this magazine. New members are always welcome to attend field meetings and indoor meetings before joining.

*https://www.theguardian.com/environment/2022/aug/04/rare-coloured-sea-slug-spotted-in-british-waters-for-first-time

Mollusc World

is intended as a medium for communication between Conchological Society members (and subscribers) on all aspects of molluscs, in addition to the material found on our web site where many back copies are available for viewing. Mollusc World will also be of interest to all those enquiring about this subject or the work of the Society. We welcome all contributions in whatever form they arrive (see page 35 for further details).

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The Hon. Editor's thanks go to Janet Ridout Sharpe for vital help with checking and copy editing.

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Front Cover: Keith Alexander searching for *Ena montana* in Avonwick Wood (photo: Ben Rowson) (see page 3).

Field meeting in Avonwick Wood, Bradford-on-Avon, Wiltshire, June 11th 2022

Keith Alexander

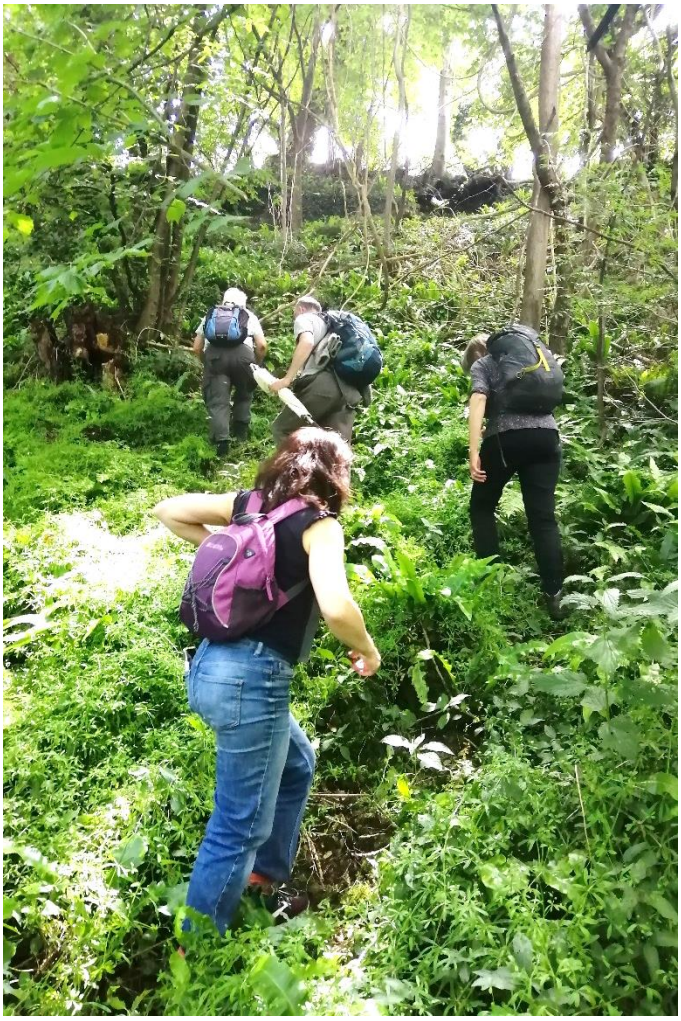

figure 1: Participants ascending the steep slopes of Avonwick Wood. (photo: Ben Rowson)

Three members with two partners gathered at Avonwick Wood as part of the Society's national survey of *Ena montana*. This 21 ha woodland lies along a steep limestone escarpment on the south side of the river Avon between Bath and Bradford-on-Avon in South Wiltshire (VC8) and is situated within the civil parish of Westwood (figure 1). This escarpment is technically in the southernmost part of the Cotswold Hills although it has a distinctly 'Mendip' feel about it. The predominant trees are large mature oak standards with massive old ash coppice stools together with much hazel, field maple and even some live young wych elm. The ground flora is very much dominated by ramsons – going well over and slippery underfoot – but with patches of dog's mercury and even some herb paris locally.

A Woodland Trust (WT) noticeboard explains that this ancient woodland is now protected as a living laboratory where WT are monitoring the effects of ash dieback. The wood is not open to visitors, allowing the deadwood from trees as they decline to provide valuable habitats for bats, beetles and fungi. The mollusc fauna has been subjected to a detailed survey for the WT by Chris Gleed-Owen. Chris subsequently reported a single example of *E. montana* in 2021 during standardised sampling, carried out as part of a terrestrial mollusc monitoring project. The aim of the Conchological Society field meeting was to clarify the status of *E. montana* in this reserve.

The morning was spent exploring the lower slopes of the eastern part of the wood, searching especially for molluscs climbing the tree trunks, targeting ash and hazel as these are known to be favoured by *E. montana*. We also searched amongst ground debris as we progressed through the woodland, and I also used a standard heavy duty entomological sweep-net to search for snails climbing amongst the ground vegetation (see front cover). There are no paths anywhere in the wood and so this somewhat restricted our access to potential locations of molluscs in some areas.

The list was slow to develop but we eventually found most of the typical tree-climbing species – *Clausilia bidentata*, *Cochlodina laminata*, *Lehmannia marginata*, *Cepaea nemoralis*, and even *Cornu aspersum*, all present on tree trunks – but no *E. montana*. That these species had been active on the tree trunks and could be found showed that conditions in the wood were suitable for tree climbing and this made the absence of *E. montana* on the day all the more inexplicable. It had been an unusually dry spring, but this clearly did not restrict other species' activity. Deeper into the wood we began to find *Zenobiellina subrufescens* amongst stands of dog's mercury. Old shells of *Pomatias elegans* drew Ben Rowson's attention to patches of dry ground debris and a very old and fragile shell of *E. montana* was spotted amongst them (figure 2).

I had found live *E. montana* at a central Cotswold site recently by beating hazel stems with a stick and holding the sweep net beneath to catch anything dislodged, and so began to try this technique here. I immediately found the first *Merdigera obscura* of the morning but little else other than a few flightless saproxylic weevils, *Acalles misellus* and *Kyklioacalles roboris*, which are known to develop in dead hazel stems.

figure 2: *Ena montana*, Avoncliff, 11.06.2022. (photo: Ben Rowson)

After lunch on a fallen ash trunk, we moved into the western part of the wood. This proved increasingly steep and mollusc searching was much more difficult as a result. A few additional species were found here, including *Boettgerilla pallens*, but we soon decided it might be more productive to try and head back along the upper slope – easier said than done as it turned out! An empty shell of a juvenile *Helicella itala* was an unexpected find on the limestone cliff which forms the top edge of the wood. A further empty shell of *E. montana* was eventually found amongst dry debris with frequent *P. elegans* and quite close to where the earlier shell had been found on the lower slope – and also close to where a shell had been found in 2021. Live *P. elegans* were found in the wood as well as empty shells.

The total for the day was 30 species of slugs and snails. The absence of live *E. montana* is rather bewildering as the species has clearly been present in the past. The woodland looks very suitable for the species overall although the young ash trunks which the species seems to favour in the more northern Cotswold sites are very localised here at present. Could *E. montana* have died out from this site? And if so, why? No obvious cause is apparent. The shells looked old and abraded but we have no means of assessing how long ago the snails might have died. The field meeting appears to have identified a conundrum.

Acknowledgements

Thanks are due to the Woodland Trust for permission to search for *E. montana* in this closed woodland reserve and especially for arranging for us to make use of their land for car parking. Thanks also to Chris Gleed-Owen for helpful correspondence and for access to his mollusc monitoring report.

Euglandina gigantea in Costa Rica

Peter Topley and Alan Outen

The most well-known (or infamous) member of the *Euglandina* genus of voracious predator snails in the family Spiraxidae is the rosy wolf snail, *Euglandina rosea* (Ferussac, 1818), a native of the southern USA. This snail was introduced into many tropical areas to control invasive *Achatina* species but instead proceeded to devour the native fauna, including the *Partula* snails of Polynesia. The buccal mass including the enlarged toothed radula of members of the genus is contained within a beak-like rostrum. This can be extended, so that the radula is ejected past the mouth and into the snail's prey.

Other members of the genus *Euglandina* may not be so well known, but there are around 60 species, whose native range encompasses much of the tropical and subtropical Western Hemisphere. A number of species were described and illustrated in *Land and freshwater Mollusca* (1900–1901), one of the 63 volumes that comprised the monumental *Biologia Centrali-Americana* by Eduard von Martens (figure 1), and also in the Mollusca volumes by P. Fischer and H. Crosse (1870) in an equally ambitious (but unfinished) series covering a similar geographical area. Von Martens concedes in his book that at that time many species had 'been described only from one or a few examples, and not figured; they have been admitted and handed down from work to work by subsequent writers, who have themselves described new species, without the possibility of comparing specimens.' One of the species that von Martens included was *Glandina* [now *Euglandina*] *sowerbyana* L. Pfeiffer, 1846 from Costa Rica (figure 2). Later, the prolific Henry A. Pilsbry published a paper (Pilsbry 1926) in which he described a series of land shells from Costa Rica collected by the geologist A. A. Olssen. Pilsbry realised that what had been described as a Costa Rican form of *E. sowerbyana* differed in certain characteristics including 'its constantly blunter apex, the first whorl revolving nearly in a plane, though somewhat convex above', and he therefore described it as a separate species: *Euglandina gigantea* Pilsbry, 1926.

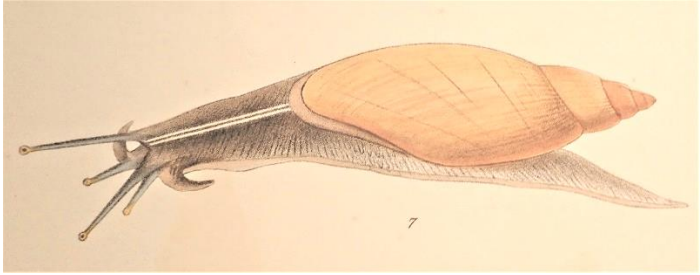

figure 1: *Euglandina cumingi* (H. Beck, 1837) from Plate 4 of E. von Martens (1900–1901). (photo: Peter Topley)

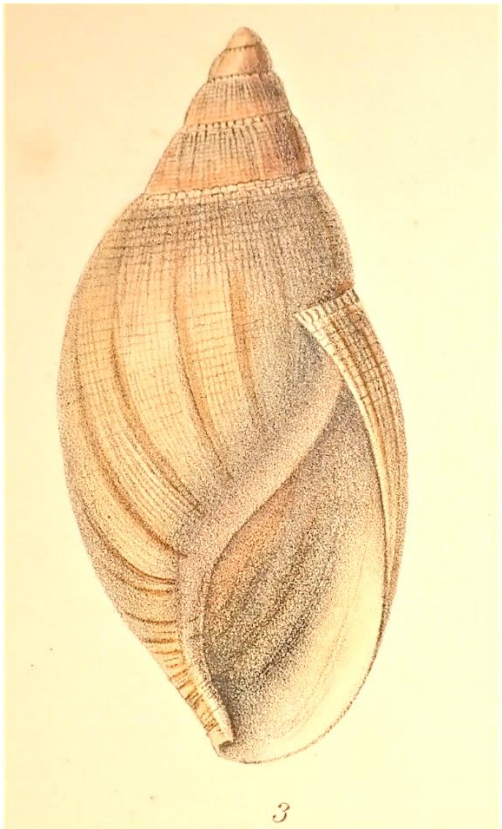

figure 2: *Euglandina sowerbyana* from Plate 2 of E. von Martens (1900–1901). (photo: Peter Topley)

In May this year, whilst on a natural history holiday in Costa Rica, Alan Outen and his wife Pattie came upon this species and he took the photos which form figures 3 and 4. He writes as follows:

'From memory we both think that the shell was at least 12 cm in length and possibly more. The site was a fairly small area of privately-owned rain forest located between San Carlos and Fortuna. It was clearly very rich in its flora and fauna, even on the basis of what we saw in the one-and-a-half- to two-hour night walk (5 to c. 7pm).

'For various reasons, I was having to photograph using a 50 mm macro lens and lean forward as far as I could with Pattie holding onto me! We were warned by our guide not to step off the path and certainly when one was shown very venomous snakes that were so cryptic it was difficult to spot them, even when pointed out, we could understand the problems. We also did not want to be left behind! I was having to focus using the light from peoples' torches.'

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figures 2 & 3:
Euglandina gigantea,
rain forest, Costa Rica.
(photos: Alan Outen)

Molluscs of the Boyne Valley

Andrew Wright

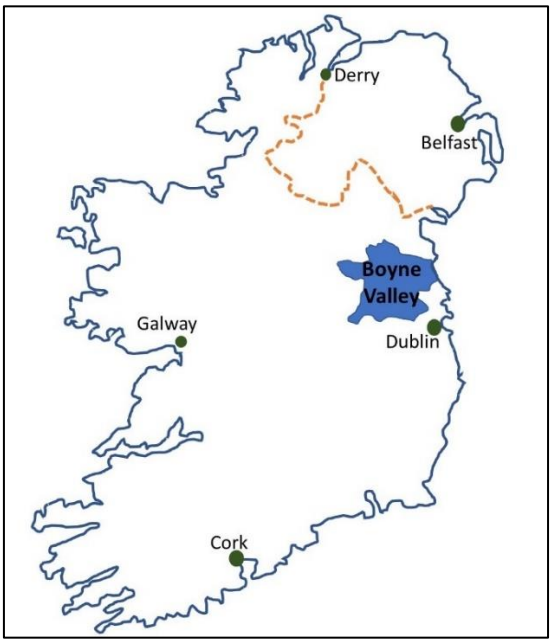

figure 1: Outline map of Ireland showing location of the Boyne valley. (map: Peter Topley)

The River Boyne is a large hard water river flowing mainly through the north of County Meath in eastern Ireland (figures 1 and 2). The area surveyed generally concentrated on nine 10-km Ordnance Survey squares covering the area of the River Boyne from the coast at Mornington through Drogheda to Navan, and to the south of the river (figure 3). The main aim was to see how much of the recorded fauna on the Habitas/NBN databases could be relocated, especially the populations of *Succinella oblonga* previously recorded along the banks of the River Boyne (Roy Anderson pers. comm.). The survey was carried out between 2017 and 2019.

The River Boyne is accessible through most of the area because of the construction of stretches of canal and towpath in the late 1700s to make it navigable from Drogheda to Navan. This has the advantage that it creates many different 'wet' environments along its route – disused/working canal, boggy areas behind the canal, etc. The river has been dammed at various points to create stretches of deep slow-moving water as well as shallower faster-moving water. On the banks, the area includes the extensive megalithic passage tombs at Newgrange, Knowth and Dowth, which have been declared a UNESCO World Heritage Site, and also the estate at Oldbridge – the site of the 'Battle of the Boyne' in 1690 – with its extensive riverine woodland that is in public ownership. Most of this woodland, however, is of fairly recent origin as pictures of the Boyne battle show a treeless landscape.

figure 2: River Boyne near Stackallan, Meath.

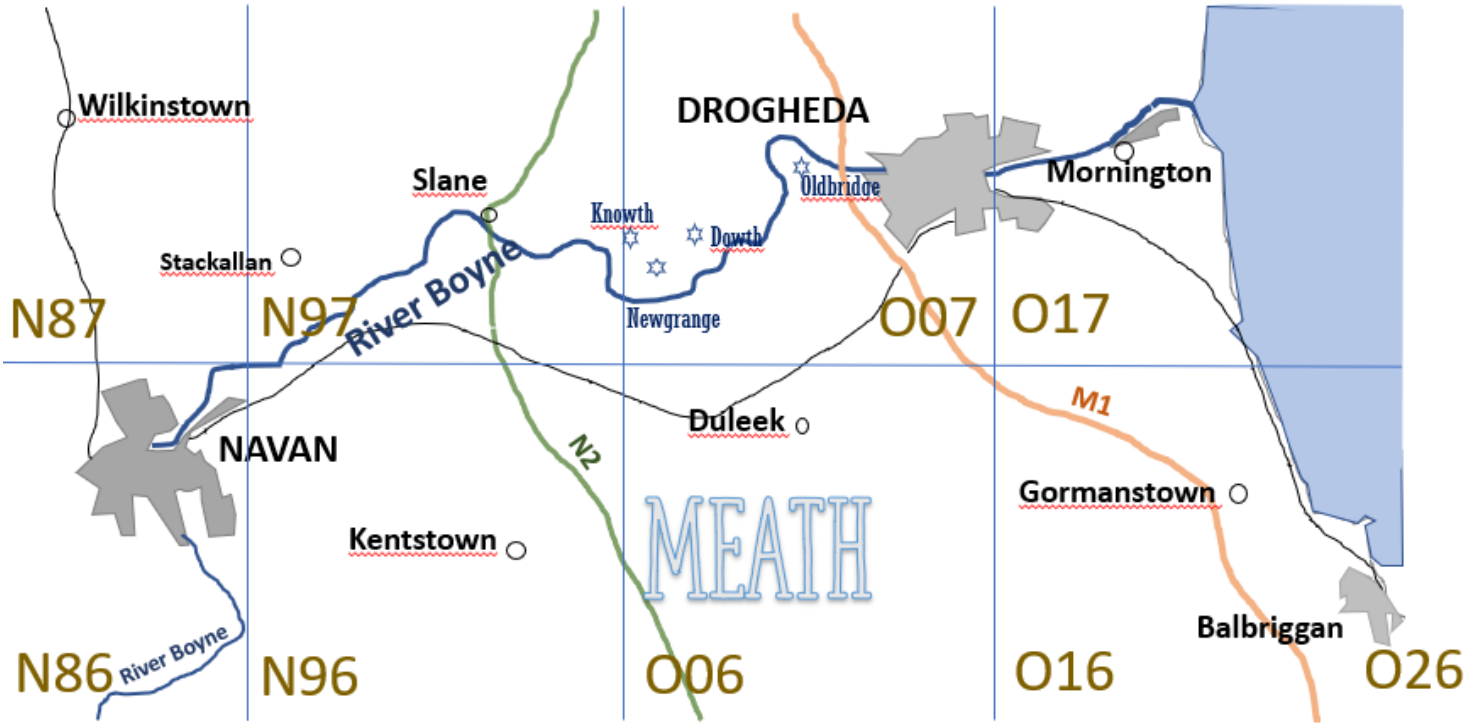

figure 3: Simplified map of the Boyne Valley, County Meath, Ireland, showing the relevant 10-km recording squares.
(map: Peter Topley – based on map supplied by the author)

Away from the river access to land is not good in Ireland – you do not have the green lines of footpaths marked on Ordnance Survey maps as in England, so sampling off-road is problematical (who can blame the landowners in this day of fly-tipping and litigation!) and this means that most of the sampling took place around the main river and roadsides, etc. On the coast there are extensive dunes at Mornington and Baltry and these are present in some form along most of the coast. There are a few other interesting areas: Duleek Commons is a 'proper' common of meadow/wetland, and on the opposite side of the river at Oldbridge is Townley Hall with an area of well-established woodland. The underlying rock types are mainly Carboniferous in age with silts and fine-grained sandstones and a few areas of limestone.

Sampling

The sampling method consisted mainly of taking a sample of soil or a scoop from the river bed for analysis at home. The samples were dried and passed through a series of stackable sieves with mesh sizes of 10, 5, 2, 1, 0.5 and 0.25 mm for ease of sorting. Flood debris samples were also collected along the riverbanks. This method was used by Kerney (1969) and will give a very good idea of the fauna present and locate areas of interest which can be followed up later. This sampling technique, however, has limitation – it favours aquatic molluscs and those living in woods against molluscs living in grassland and hedges and 'rubbishy' places. Also it produces a lot of 'shell' records as opposed to living molluscs. With flood debris samples it is difficult to know how far material has travelled but those samples taken along the Boyne seem to be fairly specific, i.e. some of the less common species may be frequent in one sample but a sample taken further up or down steam will have none. Probably most material that gets into the main channel during flooding episodes will be swept out to sea. The data was collated on an ACCESS database. All species that were present in the samples were recorded.

The main source of baseline data was the NBN atlas which is managed by the National Biodiversity Network (https://nbnatlas.org). In the study area (over the nine squares) there are about 107 recorded species with 515 non-marine Mollusca records; most of these are assigned to the 10-km squares only and probably most are from the records compiled by Kerney (1999). Another source of data was the National Biodiversity Data Centre Ireland which is an initiative of the Irish Heritage Council and is funded by the Department of Culture, Heritage and the Gaeltacht and the Heritage Council (https://maps.biodiversityireland.ie). This has slightly less records but it does have a few species that are not present in the NBN atlas. The records are again assigned to 10-km squares.

The present survey recorded 118 different species (out of about 178 in Ireland) over the nine squares, which included seven Endangered (E), 12 Vulnerable (VU) and five Near-Threatened (NT) species from the Irish Red List (Byrne *et al.* 2009). Comparing the present survey to the online databases, 11 'new' species were recorded (table 1).

N**otes on selected species**

***Theodoxus fluviatilis*.** This species has not previously been recorded in the area. One shell was found in a very isolated part of the river – it is certainly not common.

Acicula fusca (VU) (figure 4). This was common in the mixed woodland along the Boyne and the odd woodlands to the north of the area. It seems to especially like the dryish undergrowth of beech trees and does not seem quite as intolerant as Kerney (1999) suggested as it was present even in a small area of trees in Drogheda town on the south side of the river. One curious fact is that live animals were present in all of the samples with very few empty shells present, if at all. There were about 10% of white shells in the samples.

figure 4: White and dark forms of *Acicula fusca* from Oldbridge, Meath.

***Bithynia leachii, Physella acuta* and *Planorbarius corneus*.** These species are new records for the area and were fairly common in the main river. *Bithynia leachii* was also found in the renovated parts of the canal around Oldbridge and Newgrange. *Planorbarius corneus* seems to like the more overgrown disused canals around Slane. These species have been expanding their range in Ireland (http://www.habitas.org.uk/molluscireland/).

Myxas glutinosa (EN). A few broken shells of this species were found at Taafe's Lock below Ardmulchan Church (figure 7) in a disused part of the canal. This is probably a case of 'now you see it, now you don't'! Possibly when this section of the canal is renovated it will create a more favourable environment for this species.

Aplexa hypnorum (VU) **and *Anisus vortex*** (VU). A few shells of both of these species turned up in most of the samples from the River Boyne – presumably they live in the quieter sections behind the dams. *Aplexa hypnorum* was also common in Duleek Commons.

Succinella oblonga (EN). Unfortunately, no living specimens were found, but fresh-looking shells turned up next to the river at Newgrange in the roots of flag iris and recent-looking shells at Oldbridge from a river sample (figure 5). Shells were also found at Slane but these were very worn. Access to the River Boyne is along the canal path where the banks are generally naturalised – however, it would seem that *Succinella oblonga* likes cropped grass which would generally be on the other (inaccessible) side of the river (Anderson 2016).

Leiostyla anglica (VU) **and *Acanthinula aculeata***. This pair seem to be confined to really 'wild' undisturbed woods and light woodland, often occurring together. Neither was common in occurrence although *Leiostyla anglica* was slightly more frequent than *Acanthinula aculeata*.

figure 5: *Succinella oblonga* (h. 8 mm) from Oldbridge, Meath.

Pupilla muscorum (EN). This species was found mainly in the sand dunes along the coast – there is a large colony on the dunes at Mornington living amongst the wild thyme. Inland dead shells were found in Duleek Commons and in flood samples on the River Boyne, suggesting that colonies might still exist in the area inland.

Spermodea lamellata (EN). This species is new to the area and one colony was found in Little Wood, Slane, which is owned by Coillte (the forestry commission). Whether it has always been there or was introduced by the forestry planting is not known. However, this is a perfect place for the species, being a very wet wood with an undergrowth of *Luzula* grass and *Euglesa personata* inhabiting the ditches under the trees.

Vallonia pulchella (VU) **and *Vitrea crystallina.*** These were common along the Boyne riverbank, often in mossy hillocks. Neither was common elsewhere (*Vitrea contracta* is the commonest *Vitrea*) although they were present in most situations: woods, scrub, sand dunes, old walls, etc.

Vertigo antivertigo (VU). This was common along the Boyne riverbank and the overgrown canals. Away from the river it was found in Duleek Commons and in a ditch by the roadside near Naul, which shows that one can be lucky with recording even with access to roadsides only.

Vertigo moulinsiana (EN). This species was found in flood debris along the Boyne, mostly live and fairly common, suggesting that these snails lived where they were found as opposed to being washed up there. However, most of them were recorded just below or in extensive reed beds at the side of the river. This species was not found on the canal. A few of the shells in the samples were about half the size of the others (figure 6), reminiscent of *V. lilljeborgi*, although it seems an unlikely species to be found on the Boyne even if it had been washed down from afar. However, Lough Ramor at Virginia, Cavan, which feeds into the Boyne, may be a source.

figure 6: *Vertigo moulinsiana* and *Vertigo* sp. from the banks of the River Boyne at Slane.

Vertigo angustior (VU). This species is new to the area with one shell found at Taafe's Lock below Ardmulchan Church (figure 7). It was present in a sample from the disused canal. This species is said to like short vegetation and stable water levels. While there is not much short vegetation around the area in which it was found, the water levels in the canal would be very stable.

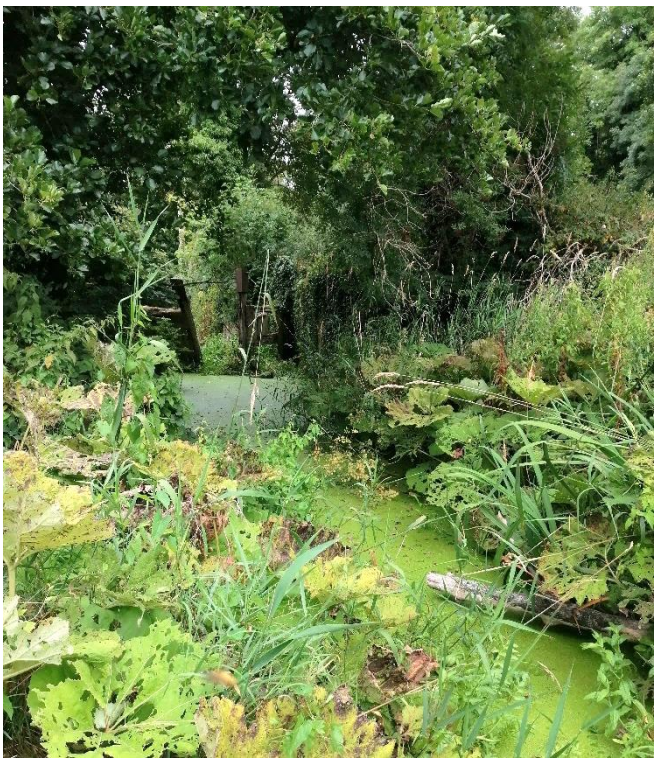

figure 7: Taafe's Lock on a disused section of the Boyne Canal at Stackallan, Meath.

Merdigera obscura (EN). The species was fairly common in the area and it was found in various environments, from under cement blocks on grass to scrubby areas and woodland. It especially likes living in dry ivy under trees in woodland and was mostly found as live specimens, even in very dry conditions.

***Balea heydeni*.** This species was a surprise, being amongst the most common species (in terms of records). Mostly found as shells, it was present in most environments: in the absence of trees it was found on walls, etc.

Cecilioides acicula (VU). This species seems to be reasonably common in the area. Five of the records were from *in situ* sites, the rest from river samples. Although no live ones where found, some of the material was fresh. It seems commonest along the coast as odd shells turned up in most of the marine shell grit samples examined.

***Discus rotundatus*.** This species was very common in the area, but curiously it generally occurred only as dead shells in soil samples (as opposed to *Acicula fusca* which was the opposite).

Semilimax pyrenaicus. This species was found in the woodlands bordering the River Boyne and to the north of the area. MolluscIreland has suggested that it is expanding its range, which certainly seems to be the case here as it was found in four 10-km squares where it had previously not been recorded. It also seems detrimental to the more familiar *Vitrina pellucida* as the woods would have one or the other, but not both. The only times they were found living together was in 'lighter' environments like hedgerows and light scrubby woodlands. For example, in the Slane (N97) 10-km

square there is a previous record of *V. pellucida* but not of *S. pyrenaicus*. In the present survey, there are ten records for *S. pyrenaicus* in this square and only one for *V. pellucida*, and in that they were found living together. Where did they come from? The distribution of sweet chestnuts in Ireland shows a remarkable correlation to the occurrence of *S. pyrenaicus*.

Theba pisana* and *Helicella itala (VU). The colonies of *T. pisana* in dunes at Mornington and Baltray on the sides of the River Boyne have been known for a long time and seem to have been introduced in the 19th century (Kerney 1999). They occurred along the coast from Laytown north to Clougerhead, which seems to be their northern limit and this is possibly the most northern colony in Europe. Further expansion northwards would be difficult as the dunes stop at Clougerhead with the rocky cliffs. They were not found on the next dunes northwards at Port Beach and they only live in the dunes close to the sea. Oddly, *T. pisana* did not occur in similar dunes from Laytown (south of the Nanny River) to Gormanston. However, *H. itala* was common along this stretch, suggesting the two species might be mutually exclusive. Going south, *T. pisana* was present again in sand dunes at Skerries – with again no *H. itala*. Stelfox (1911) mentioned that *T. pisana* 'seldom has a long enough summer' in Ireland to develop a lip; a lip has not been found in the population at Mornington but the few found at Skerries certainly had a well-developed lip. *H. itala* did occur on the north bank of the Nanny River at Leytown where a colony, slightly inland, was present on grassy banks behind the railway bridge. There are no previously recorded inland records for *H. itala* in the survey area although a colony was found on a roadside verge at Donore under some pine trees; this is probably a 'pop up' colony as there are limestone outcrops close by from which they could have come.

Ashfordia granulata (NT). This is new to the area and was found on the River Boyne banks amongst grass and nettles from Navan to Slane. It probably is a new arrival as it is common where it does occur so it should have been recorded. This species was recorded new in Bushy Park, Dublin, in a recent survey (Moorkens & Killeen 2020) so it would seem possibly to be extending its range.

Hygromia cinctella. This species was found in two localities, one in flood rubbish alive by the River Boyne at Slane, and the other on the grass verge outside an Aldi supermarket in Drogheda. It is definitely a new arrival to the area and there have been a few records in Ireland so far (MolluscIreland).

Anodonta anatina. This species was common in the River Boyne from Oldbridge to Slane. It is probably not new to the area and could have been missed if the river was fairly high during previous surveys.

Euglesa pulchella (EN). This species was fairly common in samples from the River Boyne and was also present in the disused part of the canal from Stackallan to Navan.

Sphaerium lacustre (VU). This species was found in the renovated part of the canal at Oldbridge and at Mornington. The colony at Mornington is in a river just where it flows into the estuary where the bottom is very muddy: it is the only bivalve present so it seems to be able to survive here in extreme conditions.

Dreissena polymorpha* and *D. rostriformis bugensis. These two species have been rapidly expanding their range in Ireland (Rowson 2022). Neither of these two species has been found to date (August 2022) in the River Boyne between Navan and the coast.

Vertigo geyeri, recorded from Duleek Commons (Norris 2008) and ***Sphaerium nucleus*** (Biodiversity Ireland) from the disused quarry at Mell, Drogheda, have not been relocated and this quarry cannot be accessed easily at present.

Slug species

***Arion* spp**. The typical black slug, *Arion ater*, with its rocking motion was only found on Duleek Commons and in one place on the River Boyne near Slane, and the 'greenish' *Arion flagellus* was found in the south of the survey area. All the other *Arion* (*Arion*) slugs showed not the least inclination to 'rock' and they came in a bewildering array of colours, especially the juveniles. Forms were found that could be *Arion rufus* (with a bright red foot fringe) and *Arion vulgaris* (with a dark rim around the breathing pore) living next to each other, so rather than taking the knife out to them these were all recorded as *A. rufus* agg. About 20 years ago the 'typical' *A. rufus* (bright red type) occurred in my garden in the area (as illustrated in Kerney & Cameron 1979). Of all the colour variants found in the present survey, this one was not found and it has certainly gone from the garden.

Milax gagates. This is a rare species in the area, only recorded previously from one 10-km square. The only place it was found was in my garden in Duleek; it seems to like lettuces! This species was not found in the wild in the survey area.

Ambigolimax valentiana* and *Lehmannia marginata. There are no records in my survey area for *A. valentiana* on the NBN or Biodiversity Ireland (https://biodiversityireland.ie/) databases. However, the species was reported in (east) Navan on the banks of the River Boyne in September 2007 (Norris 2008) and is now one of the most common slug species. It was found everywhere: gardens, woods, hedges, wet environments (reeds) and dunes. It seems possibly to have a detrimental effect on the original populations of *L. marginata*, as suggested by Rowson *et al.* (2014). There are fewer records for *L. marginata* (six) as opposed to 16 records for *A. valentiana* and the two species were not found together in the woodlands in the area. However, both species were present in my garden where *L. marginata* seems to be happy to feed on the moss/algae/liverwort on the cobbles outside the house – a very useful occupation!

Limax maximus. Ross (1984) states that this species 'is almost ubiquitous under decaying hardwood stumps and logs' and indeed it was previously recorded in four of the 10-km squares in the survey area. However, the present survey did not find it in any of the woodlands in the area, where *Limacus maculatus* was present under the logs. The only locality where it was found was in the dunes at Mornington, slightly inland on the estuary bank of the River Boyne in grass at high tide level under a log which it was sharing with *Myosotella myosotis* (its marine association has been discussed by Rowson *et al.* (2014)).

My garden in Duleek seems to be a haven for different slug species as I have recorded at least 12 species, and I have probably introduced *Tandonia sowerbyi* as a result of recent efforts!

Marine species

Peringia ulvae was very common in the Boyne estuary. However, in 2018 a colony was found living happily amongst rocks on the upper part of the beach at Gormanston – probably a 'pop up' colony as it was not there the following year, although it appeared again in 2020. Shells of *Leucophytia bidentata* have been found in all three 10-km squares next to the sea, which suggests there are colonies all along the coast; however, only one live colony was located in the River Boyne estuary, on the north bank. *Myosotella myosotis* was found in both the River Boyne and Nanny estuaries; there are specimens from the Nanny in the Belfast Museum. *Otina ovata* (not included in table 1) was found outside the survey area in shell sand at Clougerhead.

table 1 (below): Species recorded from the Boyne Valley area, Ireland. (X = species recorded on the NBN atlas but not found in the present survey)

Species	N86 - Navan	N87 - Wilkinstown	N96 - Kentstown	N97 - Slane	O06 - Duleek	O07 - Drogheda	O16 - Gormanston	O17 - Mornington	O26 - Ballbriggan	**Total**
Theodoxus fluviatilis				1						1
Valvata piscinalis	4	2	1	7	2	3	1	2	1	22
Valvata cristata	4	1	X	7	1	7	1	1	1	23
Acicula fusca	1			4		4		X		9
Bithynia tentaculata	7	1	1	8	1	7	1	1	1	28
Bithynia leachii	1	1		4		5				11
Peringia ulvae							1	2	1	4
Potamopyrgus antipodarum	4	1	1	6	3	4	5	4	2	30
Carychium minimum	2	1	1	7	1	3	2	1	1	18
Carychium tridentatum	3	1	2	4	3	6	3	2	1	25
Leucophytia bidentata							1	1	1	2
Myosotella myosotis								2		2
Aplexa hypnorum				2	3	2				7
Physa fontinalis	4	1	X	7	4	3		1	1	21
Physella acuta				1						1
Lymnaea stagnalis	4	1		4	X	2		X	1	12
Galba truncatula	4	X	1	5	3	6	1	2	1	23
Stagnicola fuscus agg.	2			3	3	8	1	2	3	22
Radix auricularia	1					1		X		2
Ampullaceana balthica	4	1	3	8	3	6	1	2	1	29
Myxas glutinosa				1						1
Planorbarius corneus	1			4		1				6
Planorbis planorbis	1		2	2	1	4	1	2		13
Planorbis carinatus	4	1		8	1	4		2	1	21
Anisus vortex	1			4		2				7
Anisus leucostoma	1		1	3	2	1	1	1	1	11
Bathyomphalus contortus	2	1	1	5	3	5	2	3	1	23
Gyraulus albus	2	1	X	3	1	5	1	1	1	15
Gyraulus crista		1		3	1	1	1	1		8
Gyraulus laevis					1	X		X		1
Hippeutis complanatus	X			1	1	2		X		4
Ancylus fluviatilis	2	1	1	4	4	2	1	1	2	18
Acroloxus lacustris	1			5		1	X	1		8
Succinea putris	2	1	1	6	2	6	4	1	1	24
Oxyloma elegans	2	2		7	5	4	3	2	1	26
Succinella oblonga				1		2				3
Pyramidula umbilicata	1	X	2	3	2	2	3	2	2	17
Cochlicopa cf. *lubrica*	7	2	3	10	5	8	8	8	2	53

Species (continued)	N86 - Navan	N87 - Wilkinstown	N96 - Kentstown	N97 - Slane	O06 - Duleek	O07 - Drogheda	O16 - Gormanston	O17 - Mornington	O26 - Ballbriggan	**Total**
Cochlicopa cf. *lubricella*	1	1		1	1	3	1	5	1	14
Columella edentula			1	3		4	X			8
Vertigo antivertigo	1		1	3	1	5	1	X		12
Vertigo moulinsiana	1			2		1				4
Vertigo pygmaea	1	X	1	3	2	4	1	2		14
Vertigo substriata					X	X				0
Vertigo angustior				1						1
Pupilla muscorum	1			X	1	X	2	2		6
Lauria cylindracea	6	2	4	8	6	9	8	9	3	55
Leiostyla anglica			1	2	1	1	1	1		7
Vallonia costata	X	X	1	2		1	1	2	1	8
Vallonia cf. *excentrica*	1		1	3	2	3	3	4	2	18
Vallonia pulchella	1			2	1	3		X		7
Acanthinula aculeata	X			1	1	2	X	1		5
Spermodea lamellata				1						1
Merdigera obscura	1		2	4	1	2	2	4	2	18
Punctum pygmaeum	1		X	1	1	2		1	1	7
Discus rotundatus	7	1	3	10	6	6	6	8	2	49
Arion ater				1	1					2
Arion flagellus			1			2	1		1	5
Arion rufus agg.	2	1	1	4	1	2	1	2	1	15
Arion subfuscus	1	1	1	2	1	2	1	1	1	10
Arion circumscriptus	1	1		3	1	3	1	1	1	12
Arion fasciatus		X				2			X	2
Arion silvaticus	X	X		1	1	1	1	1	X	5
Arion distinctus	5	2	2	3	1	3	2	1	1	20
Arion hortensis					1	1				2
Arion intermedius	X	X	1	1	1	1		2		6
Semilimax pyrenaicus	2	1	1	10		4				18
Vitrina pellucida	3	1	X	1	2	4	2	4	1	18
Vitrea contracta	7	2	3	6	3	7	6	6	2	42
Vitrea crystallina	2	1	1	4	1	5		1		15
Testacella scutulum agg.						X				0
Aegopinella pura	3	1	1	4		5	4		1	19
Aegopinella nitidula	6	2	3	10	5	10	7	7	4	54
Nesovitrea hammonis	1	X	1	1	1	1	1	X		6
Oxychilus alliarius	1	1	2	3	1	2	3	1	2	16
Oxychilus cellarius	5	2	5	9	4	9	7	10	5	56
Oxychilus draparnaudi	1			1				X		2
Milax gagates					1			X		1
Tandonia budapestensis	1	1	1	1	1	3	1	1	1	11
Tandonia sowerbyi	1	1		1	1	2		2		8
Boettgerilla pallens				1	1	X				2
Limax maximus				X	X	X		1		1
Limacus maculatus	1	X	1	2	1	2	1	X	1	9
Ambigolimax valentiana		1	3	3	2	2	2	4	2	19
Lehmannia marginata	1	1	2	1	1	2		1		9
Deroceras laeve	1	X	X	1	1	2		X		5
Deroceras invadens	1	1	1	2	2	1	2	1	2	13
Deroceras reticulatum	1	1	1	4	3	2	5	2	1	20
Euconulus cf. *alderi*	4			4	3	4			1	16
Euconulus cf. *fulvus*			3	1		3				7
Cecilioides acicula	1			3		1	1	1	2	9
Clausilia bidentata	4	1	2	6	3	8	5	8	5	42
Cochlicella acuta	X			1		1	2	3	1	8
Balea heydeni	3	1	3	9	7	7	8	8	3	49
Xeroplexa intersecta	X					2	2	2	2	8
Cernuella virgata	X					1	2	2	2	7
Helicella itala						1	2	1	1	5

Species (continued)	N86 - Navan	N87 - Wilkinstown	N96 - Kentstown	N97 - Slane	O06 - Duleek	O07 - Drogheda	O16 - Gormanston	O17 - Mornington	O26 - Ballbriggan	**Total**
Ashfordia granulata	2			2						4
Hygromia cinctella	1					1				2
Trochulus hispidus	4	2	1	4	3	6	2	5	1	28
Trochulus striolatus	6	2	2	5	4	10	7	12	2	50
Theba pisana								3	1	4
Cepaea nemoralis	4	1	2	6	2	7	7	8	3	40
Cepaea hortensis	2	2		3		1				8
Cornu aspersum	2	2	1	1	3	3	3	7	1	23
Zonitoides nitidus	1		2	7	1	5		1	1	18
Anodonta anatina				3		1				4
Sphaerium lacustre						2		1		3
Sphaerium corneum	4	1	X	6	1	2	1	1	1	17
Pisidium amnicum	1	1		4	1	1	X	X	1	9
Euglesa casertana	1	1	X	4	4	3	1	1	1	16
Euglesa henslowana	2	1		4		3	X			10
Euglesa hibernica				4	1	1			1	7
Euglesa milium	4	1	1	7	4	3	1	2	1	24
Euglesa nitida	4	1	1	7	4	5	3	2	1	28
Euglesa obtusalis	1			1	2					4
Euglesa personata	1	2	2	3	3	2	1	1	2	17
Euglesa pulchella	1			4	1	1		X	X	7
Euglesa subtruncata	4	1	2	7	6	9	3	2	1	35
Total number of species for each 10 km square	197	65	89	380	172	337	167	207	101	1712

Summary

The present survey indicates that the molluscan fauna in and around the River Boyne is fairly healthy with nearly all the previously recorded species found, with the exception of *Vertigo substriata*. By comparing the number of 10-km squares in which a particular species was previously recorded with the number of squares where it was recorded in the present survey, a rough idea can be gained on whether any particular species has declined. On this basis, the following species have shown a decline: *Limax maximus*, *Vertigo substriata*, *Arion* (*Carinarion*) *fasciatus*, *Gyraulus laevis* and *Acanthinula aculeata*. *Succinella oblonga* is also included as the material from one of its recorded squares was not very fresh-looking. It is, however, very difficult to conclusively say that a species has vanished from a particular square as most of the records, with the exception of a couple, are assigned to 10-km squares only, not to a specific location. This is fine for common species but for the rarer ones that may have only occurred in one particular location it would be difficult to relocate them and it is possible they might still occur. There is also the possibility that some of the historical records have been assigned to the wrong square. For example, old records labelled from Drogheda could be assigned to either O07 or O17 as it is a big town and spreads over both squares. This could explain the large number of 'unfound' species from O17. Certainly the present survey would indicate that *Limax maximus* and *Succinella oblonga* are species that have declined: *Limax maximus*, as it was previously recorded from four squares (now only one), and *Succinella oblonga* which lived in a very specific place along the Boyne riverbank at which it has not been relocated.

Overall the present survey has added about 30% to the number of species previously recorded for each of the 10-km squares. Table 2 gives a summary of the species counts for these nine 10-km squares. Kerney (1999), in his mapping of Ireland, considered that he was recording about 60% of the species for each square so the present survey would concur with this, although it is very unlikely that all the species have yet been located. Differences in sampling across the squares are not simply due to some squares (e.g. O07) having more sites that can be accessed and sampled than other squares.

OS 10 km square	N86	N87	N96	N97	O06	O07	O16	O17	O26	Total
Present survey records	80	52	51	100	79	99	65	75	65	666
nbn records	57	45	46	71	52	76	45	80	38	510
Not found (X)	10	12	10	2	3	6	5	14	3	65
Total recorded	90	64	61	102	82	105	70	89	68	731

table 2: Summary table of species recorded in each 10-km square.

Acknowledgements

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The Wildlife & Countryside Act 1981: a historical review and outline of the current 7th Quinquennial Review

Martin Willing

The Wildlife and Countryside Act (WCA) embraces wide-ranging legislation that protects numerous plants and animals in the UK, including well known species such as great crested newt, dormice, white-clawed crayfish and all bat species. Giving a species specific protection under the law is a serious business that requires careful analysis of the existing evidence and likely positive and negative consequences. If protection is afforded it ideally needs to fit the particular circumstances of that species which, in many cases for threatened mollusca living in Britain and Ireland, relates chiefly to maintaning the quality and quantity of their habitat. Survey, handling and collection are rarely issues. In addition to legal protections species can be protected in other ways, chiefly by habitat protection, helped by direct management. A good example exists in mid-Wales where an isolated population of Desmoulin's whorl snails (*Vertigo moulinsiana*) living at Rhos Goch has been protected by the site's designation as a National Nature Reserve, and helped by selective clearance of advancing scrub which shades the snail's habitat.

The **WCA** passed into law in 1981 and its **Schedule 5** lists species of animals which are '*in danger of extinction in Great Britain or likely to become so unless conservation measures are taken*'. Animals listed on Schedule 5 are protected by one or more parts of **Section 9**; these include (listed in slightly simplified form):

9 (1): intentionally or recklessly kills, injures or takes; or
9(2): possess or controls; or
9(4): intentionally or recklessly damages, destoys, disturbs or obstructs its place of shelter; or
9(5): sells, offers or exposes for sale.

Species covered by all parts of Section 9 are said to have 'Full Protection'; people wishing to survey and possess these (as live animals or whole or partial dead specimens) require a licence to do so (obtained from a governmental nature conservation body such as Natural England, Natural Resources Wales or NatureScot).

The WCA requires that protected species lists be reviewed every five years; the so called **Quinquennial Reviews** (QQR) which are coordinated for the UK by the Joint Nature Conservation Committee (JNCC).

When the WCA became law in 1981 only three mollusc species were listed: (the glutinous snail (*Myxas glutinosa*) (figure 1), the Carthusian snail (*Monacha cartusiana*) (figure 2) and the sandbowl snail (*Quickella* (previously *Catinella*) *arenaria*) (figure 3). Since then and following six later QQR reviews, a further 7 species were added and two removed so that there are currently (prior to the enactment of the current 7th QQR review) 8 listed species: the fan mussel (*Atrina fragilis*) (figure 4), De Folin's lagoon snail, (*Caecum armoricum*) (figure 5), the Roman snail (*Helix pomatia*) (figure 6), *Q. arenaria,* the freshwater pearl mussel (*Margaritifera margaritifera*) (figure 7), *M. glutinosa,* the lagoon sea slug (*Tenellia adspersa*) and the northern hatchet shell (*Thyasira gouldi*) (figure 8). **Table 1** presents a historical summary of the WCA in relation to Mollusca for the period 1981 > 2022.

The Conchological Society has contributed input to all 6 of the QQRs, often working in cooperation with Buglife (see References below for Society publications).

figure 1: Glutinous snail (*Myxas glutinosa*). Bala, Llyn Tegid. (photo: M. Hammett)

figure 2: Carthusian snail (*Monacha cartusiana*). Banks of River Ouse, Lewes, East Sussex.

figure 3: Sandbowl snail (*Quickella arenaria*). Potts Valley, Cumbria.

figure 4: Fan mussel (*Atrina fragilis*). English Channel.

figure 5: De Folin's lagoon snail, (*Caecum armoricum*). Pagham Harbour, West Sussex.

figure 6: Roman snail (*Helix pomatia*). Bellano, near Como, Italy.

figure 7: Freshwater pearl mussel (*Margaritifera margaritifera*). Northern Scotland. (photo: Peter Cosgrove)

figure 8: Northern hatchet shell (*Thyasira gouldi*). (photo: Amgueddfa Cymru/National Museum of Wales)

The Conchological Society has contributed input to all 6 of the QQRs, often working in cooperation with Buglife (see the **References** section below for Society publications).

In early March 2021 the consultation process for the 7th QQR was launched by JNCC. MJW was approached by Buglife and invited to submit mollusc comments and suggestions (to be incorporated into a larger Buglife submission to JNCC [as with previous QQR reviews 3 – 6]) as part of the 7th QQR review.

JNCC guidelines revealed that in this latest QQR review the selection criteria had changed substantially from previous reviews. Thus: -

- The new selection criteria will be based on the Red List status of the species and are as follows: – Only Critically Endangered and Endangered species will be eligible for listing on Schedule 5.
- All Critically Endangered species will be automatically recommended for scheduling.
- Extinct species will be placed on a parking list in case they are rediscovered/return to Great Britain.
- Endangered species need to be assessed against a set of 'decision criteria'. These reflect the threats to the species from collection, sale, disturbance, habitat destruction, etc.

Existing species on Schedule 5 also needed to be reassessed to see if they still required or were eligible for protection. The revised criteria mean that several species (not currently on the WCA) have either been assessed as Critically Endangered (CR) or Endangered (EN) (as in Seddon *et al* 2014) and will now be added to Sch. 5 of the Act. These species are the lagoon spire snail (*Semisalsa stagnorum*) (figure 9) (CR), the Witham orb mussel (*Sphaerium solidum*) (figure 10) (CR), Thames ram's-horn snail (*Gyraulus acronicus*) (figure 11) (EN) and Taylor's spire snail (*Marstoniopsis insubrica*) (figure 12) (EN). Study of these two EN species in relation to recent information (Rowson *et al* 2021) suggests that they would now be assessed as CR taxa.

Conchological Society support for the inclusion of these four species was not for full Sch. 5 protection, but rather on a more restricted basis. In several cases we emphasised that the ecology of these invertebrates is such that habitat destruction or degradation (e.g., by invasives or pollution) is the most salient threat, and criterion 9(4) is thus the main justification for listing them on the WCA. We have noted that criteria 9(1) (intentional killing) and 9(2) (possession) can have the unintended consequence of discouraging or impairing the surveys and citizen science efforts that are often needed to research and monitor these species. Except for *M. margaritifera* (where Full Protection is strongly supported) and to a lesser degree the 'Least Concern' *Helix pomatia* (commercial exploitation), intentional killing is an insignificant threat to the survival of these species, so does not seem an especially strong criterion under which to protect them.

figure 9: Lagoon spire snail (*Semisalsa stagnorum*). Thorney Island, West Sussex. (photo: Paul Sterry)

figure 10: Witham orb mussel (*Sphaerium solidum*). New Bedford River, Cambs.

figure 11: Thames ram's-horn snail (*Gyraulus acronicus*). River Evenlode. (photo: Ian J. Killeen)

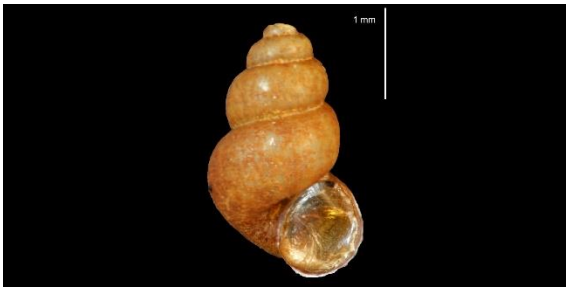

figure 12: Taylor's spire snail (*Marstoniopsis insubrica*). (photo: Amgueddfa Cymru/National Museum of Wales)

In addition to these species the Arctic whorl snail (*Vertigo arctica* (= *modesta*)) (figure 13) was also included. Its current status of EN might be reassessed as CR in the light of the species' very restricted distribution and the increasing natural and human threats to it (such as site trampling, collection and/or destructive survey work). It was therefore suggested that it be considered for at least for 9(4) but possibly also 9(1) and 9(2).

Of the six other species currently on Sch. 5 (*Q. arenaria*, *M. glutinosa*, *C. armoricum*, *H. pomatia*, *A. fragilis* and *T. gouldi)* it was considered that full Sch. 5 protection was unnecessary and, as explained above, did little to protect them, acting instead as an obstacle to survey work. *Q. arenaria*, *T. adspersa* and *M. glutinosa*, were all recommended to downgrade to 9(4) (the former two species had also been proposed for downgrade in earlier QQR reviews). *A. fragilis* was recommended for regrade to 9(4) and 9(5) to remove the need for a licence to survey whilst *T. gouldi* was, as in the 4th, 5th, and 6th QQR reviews, recommended for full removal from Sch. 5.


figure 13: Arctic whorl snail (*Vertigo arctica*). Coire Garbhlach, Cairngorms. (photo: Richard Marriott)

Under the new WCA criteria *H. pomatia* would be removed as the status review (Seddon *et al* 2014) assesses the snail as of Least Concern (LC). It was suggested that downgrade might be to to 9(4) and 9(5) to retain some habitat protection and prohibit commercial sale and so removing the need for the survey licences (a requirement that has led to numerous legitate survey problems). Since the snail was afforded Sch. 5 protection, survey work has (1) shown the snail to be much more widespread than previously suspected and that (2) a number of natural factors such as habitat shading (S. Terry; personal communication) may be a greater threat to populations than human collection (which affects a limited number of populations).

MJW sent an initial first Conchological Society response to Buglife in April 2021 (summarised in **table 1**) and it was then incorporated into a larger response together with many other invertebrate species before submission to JNCC. In late autumn 2021 JNCC sent out their responses to the first consultation and invited further comment for submission by early 2022. **Table 2** details the various JNCC initial proposals (some of which were rather ambiguous but have been reported as they are understood to apply) to the first consultation and then a summary of the Society's second reply to these.

In summary we broadly welcome what we understand to be the first JNCC proposals for *A. fragilis, C. armoricum, H. pomatia, M. glutinosa, M. margaritifera* and *Tenellia adspersa.* We are also pleased that the conservation needs of the little whirlpool ramshorn snail (*Anisus vorticulus*) (figure 14), *G. acronicus, M. insubrica, S. stagnorum* and *S. solidum* are recognised by proposed inclusion in the WCA. There are, however, concerns that the suggested FP is excessive and that Section 9(4) alone would be sufficient. We are disappointed and do not understand why *Q. arenaria* and *T. gouldi* remain with recommeded FP. It seems illogical to regrade *A. fragilis, C armoricum* and *T. adspersa* but to retain FP for these two. There has been a strong case why these two should be downgraded or removed from the Act. Removal of *Q. arenaria* was recognised as long ago as 1986 when in the 1st QQR document this was proposed by the Nature Conservancy Council (NCC 1986). They stated, 'Catinella arenaria*: This species has its main locality in a National Nature Reserve where it is effectively conserved. The species can only be identified with certainty by dissection and hence its present listing on Schedule 5 is inhibiting survey and the consequent taking of additional conservation measures at other sites*'. Then with the 3rd QQR in 1995 JNCC again recommended Sch. 5 removal with this justification: '*The two known sites are protected and are being managed to the advantage of* Catinella arenaria*. Checks in 1990 showed that the habitats were suitable and that the snail was present in both of these sites (Brind & Bratton, 1992; Colville, 1991). Habitat degredation, should it occur, would be extremly difficult to counter, using the powers afforded by Section 9 of the Wildlife And Country side Act. As far as is known, there is no threat from collecting. It is impossible to distinguish* C. arenaria *from another species of snail* Succinea oblongata [sic] *without dissection. This makes enforcement of the law virtually impossible. Also it may hinder the search for additional sites for the species, as specialists may be reluctant to admit that they have taken the species from the wild'.* Despite these and later arguments the initial QQR7 recommendation from JNCC is to retain FP for the snail.


figure 14: Little whirlpool ramshorn snail (*Anisus vorticulus*). Pulborough Brooks, West Sussex. (photo: Paul Sterry)

Similarly with *T. gouldi* there are strong grounds for full WCA removal. This was first suggested in a JNCC draft recommendation to the 5th QQR where it was stated that, '*The northern hatchet shell has a wider distribution in northern British waters than previously believed. It is not affected directly or indirectly by collection*'.
In the Conchological Society's second QQR7 submission to JNCC proposals these statements provided by Dr. Graham

Oliver were included: '*In the Scottish sea lochs I reckon it is a glacial relict and JNCC may be retaining it to help conserve these sites as they tend to be rich. They also can hold species usually associated with offshore, so for example* Mendicula ferruginea *only occurs offshore beyond 150m and is typically a deep-water species, as is* Axinulus croulinensis. *Very oddly they can be found in upper Loch Fyne in 20m. This is the same explanation of why the Arctic* Mytilus trossulus *can be found in a Scottish Sea Loch. I would suggest telling this to JNCC and let them decide if and why they retain it. On its own it does not make a lot of sense'. T. gouldi* is at no risk from collection, rather it is its unusual habitat that needs conserving. Protection restricted to 9(4) alone would cover its 'place of shelter' as it lives in self-constructed burrows; dredging of such areas could be argued as 'intentional or reckless damage etc'. Its presence in a habitat that is a priority for conservation for other reasons does not alone seem to be a justification for FP under the WCA.

Finally the rejection of *V. arctica* is a disappointment.

At the time of writing this article in summer 2022 JNCC were still in the process of considering the responses to their proposals. It is not yet known whether they have modified their views as a result of our suggestions. A further follow-up article will appear in a future Mollusc World once the final QQR7 decisions have been made by DEFRA. In the meantime the Society will be sending further thoughts to JNCC with regard to some their first proposals, some of which seemed inconsistent with the evidence that we provided.

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table 1: A historical summary of Wildlife & Countryside Act 1981 in relation to Mollusca (1981 > 2022)

Notes: all **QQR 6 2013*** recommendations were shelved - no resulting WCA changes. For further details of **QQR7** see table 2

	Summary of changes and recommendations from Quinquennial Reviews (*review start dates) (FP = Full Protection under WCA)						
Species appearing on WCA 1981 > 2022	**WCA 1981**	**QQR 1 1986***	**QQR 2 1991***	**QQR 3 1994***	**QQR 4 2001***	**QQR 5 2008***	**QQR 7 2021 > First Conch. Soc. recommendations to JNCC**
Little whirlpool ram's-horn Snail ***Anisus vorticulus***						Suggested for addition by Buglife / Conch. Soc. but rejected as already on Annex IV of EUHSD	No recommendation
Fan mussel ***Atrina fragilis***			Addition recommended but not enacted	Addition recommended & FP given in 1998	FP	FP	Recommended for downgrade to 9(4) only or full removal
DeFolin's lagoon snail ***Caecum armoricum***			Addition recommended & given in 1992	FP	FP	Buglife / Conch. Soc. Recommend downgrade to 9 (4a) only to cover 'place of shelter; recommendation rejected.	Recommended for downgrade to 9(4) only or full removal
Sandbowl snail ***Quickella arenaria***	Full protec-tion (FP)	Removal recommended by JNCC but not enacted	Removal recommended by JNCC but not enacted	Removal recommended by JNCC but not enacted	FP	FP	Recommended for downgrade to 9(4) only or full removal
Roman snail ***Helix pomatia***					Addition recommended & partial protection given in 1998 Section 9 (parts 1,2 & 5)	Near FP	Recommended for downgrade to 9(4) & 9(5) only

table 1: continued

Species appearing on WCA 1981 > 2022	**WCA 1981**	**QQR 1 1986***	**QQR 2 1991***	**QQR 3 1994***	**QQR 4 2001***	**QQR 5 2008***	**QQR 7 2021 >**
Pearl mussel ***Margaritifera margaritifera***		Addition recommended but not enacted	Addition recommended & added to Sch. 5 Section 9.1 (intentional killing etc 1991)	Increase to full protection recommended and granted 1998	FP	FP	FP to be retained
Carthusian snail ***Monacha carthusiana***	Full protect-ion (FP)	Removal recommended & enacted in 1988					
Glutinous snail ***Myxas glutinosa***	Full protect-ion (FP)	FP	FP	FP	FP	FP	Recommended for downgrade to 9(4) only
Lagoon snail ***Paludinella*** (was *Littorina*) ***globularis*** (figure 15)			Addition recommended & FP given (1992)	FP	Conchological Society Recommend-ation to JNCC to remove but not included as a review species.	Conch. Soc. / Buglife recommendation to remove from WCA forwarded by JNCC and accepted by DEFRA	* 
Lagoon sea slug ***Tenellia adspersa***			Addition recommended & FP given (1992)	FP	FP	Buglife / Conch. Soc. Recommend downgrade to 9 (4a) only to cover 'place of shelter; recommendation rejected.	Recommended for downgrade to 9(4) only
Northern hatchet shell ***Thyasira gouldi***			Addition recommended & FP given (1992)	FP	Buglife / Conchological Society Recommend-ation to JNCC to remove but not included as a review species.	Conch. Soc. / Buglife recommendation to remove from WCA forwarded by JNCC but not accepted by DEFRA	Recommended for removal
Witham orb mussel ***Sphaerium solidum***					Recommend-ation to JNCC by Buglife / Conchological Society but not included by them as review species.	Recommended for full protection by JNCC but not accepted by DEFRA	Considered for addition under selected Sch. 5: 9 (4) only
Lagoon spire snail ***Semisalsa stagnorum***							Considered for addition under selected Sch. 5: 9 (4) only
Thames ram's-horn snail ***Gyraulus acronicus***							Considered for addition under selected Sch. 5: 9 (4) only
Taylor's spire snail ***Marstoniopsis insubrica***							Considered for addition under selected Sch. 5: 9 (4) only
Arctic whorl snail ***Vertigo*** (=***modesta***) ***arctica***							Considered for addition under selected Sch. 5: 9 (4) & possibly also 9 (1) & (2)

* figure 15: Lagoon snail (*Paludinella globularis*). Old Town Bay, St. Mary's, Isles of Scilly.

table 2: Summary of JNCC's Recommendations (late 2021) and the Conchological Society's Response (January 2022)

Species	Conch. Soc. original recommendation April 2021	JNCC's recommendation December 2021	Conch Soc consultation (feedback and suggestions summary: January 2022)
Anisus vorticulus	Not in original submission.	Full protection (to bring into line with EUHSD Annex IV status).	Full protection is excessive; it is not at risk from collection or disturbance as, when present, it occurs in very large numbers and is difficult to find. The causes of decline are almost entirely down to two factors: ditch management and water quality. Recommend addition to WCA at 9(4) only.
Atrina fragilis	Recommended for downgrade to 9(4) only or full removal.	9(5) only.	We fully support this recommendation and reasons for it. It is accepted that protection of 'place of shelter etc 9(4) has practical limitations.
Caecum armoricum	Recommended for downgrade to 9(4) only or full removal.	Regrade to 9(4)(a).	We fully support this recommendation (to regrade) and the reasons for it. Disturbance to restricted gravel upper beach locations 'used for shelter' would be covered.
Gyraulus acronicus	Considered for addition under selected Sch. 5: 9 (4) only.	Added to WCA … full protection.	We welcome addition but consider full protection unnecessary as the snail is not at risk from collection or disturbance but habitat degradation and competition with invasive taxa are likely causes of decline. If full protection is maintained would this indirectly provide the necessary habitat protection under 9(1)? Probably best protected only under 9(4) in preventing intentional or reckless damage or destruction to place of shelter (where it lives within the riverine habitat).
Helix pomatia	Recommended for downgrade to 9(4) & 9(5) only.	Regrade to sale only 9(5)..	We fully support this recommendation and reasons for it. Work since first WCA protection has shown the snail to be more widespread and often common (hence 'least concern' on status review). Local commercial collection and sale would be usefully legally stopped.
Margaritifera margaritifera	Maintain full protection.	Retain full protection	Continued full protection fully supported.
Marstoniopsis insubrica	Considered for addition under selected Sch. 5: 9 (4) only.	Added to WCA … full protection.	Unless full protection affords some measure of habitat protection then this seems excessive and arguably might impede more wide-ranging survey work which is required to try to locate any remaining populations (especially in the very extensive Great Ouse system where populations were last found living). Recommend list on 9(4) only.
Myxas glutinosa	Recommended for downgrade to 9(4) only.	Seems to be on 9(5) only. It is unclear if it still includes 9(1) & 9(2).	We welcome the regrade from full protection BUT there is no evidence of risks from sale or collecting therefore suggest instead 9(4) only. Full protection (if maintained) serves no purpose as it is water quality and fluctuating lake levels that pose a threat, collecting or disturbance.
Quickella arenaria	Recommended for downgrade to 9(4) only or full removal.	Retain full protection	There is no risk from sale or collection and the statement from JNCC, "Precautionary principle. Uncertainty about status if descheduled" requires both justification and clear explanation in terms of Schedule 5 (9) components; we maintain that this is not the case based upon last surveys in the Pennines in 2015 (Willing 2016) and earlier ones on Braunton Burrows. Habitat condition is key to conservation and so recommend <u>only</u> 9(4). (see further discussion in main text).
Semisalsa stagnorum	Considered for addition under selected Sch. 5: 9 (4) only.	Added to WCA … full protection.	We welcome addition but consider full protection serves no demonstrable benefit unless it can be shown that this would assist in the all-important habitat protection. … not at risk from collection but habitat changes put it at risk. Thus, suggest place on 9(4) only. It is currently known only from one non-tidal lagoon which is inaccessible so collection not an issue but habitat change (salinity increase and ingress of reedbeds) are. Thus, reasoning for these proposals mirror those given for *Tenellia adspersa.*
Sphaerium solidum	Considered for addition under selected Sch. 5: 9(4) only.	Added to WCA … full protection.	We welcome addition but for the same reasons as given for *Marstoniopsis insubrica* consider full protection unnecessary … but competition with invasive taxa are causes of decline. Thus, suggest place on 9(4) and 9(5) as potentially at risk from collection for sale by shell dealers.
Tenellia adspersa	Recommended for downgrade to 9(4) only.	Regrade to 9(4)(a).	We fully support this recommendation and reasons for it.
Thyasira gouldi	Recommended for removal.	Retain full protection.	The removal of this species from Schedule 5 was first suggested in the 4th QQR and then suggested for removal by DEFRA in both 5th & 6th QQRs. (see further discussion in main text).
Vertigo (=modesta) arctica	Considered for addition under selected Sch. 5: 9 (4) & possibly also 9 (1) & (2).	Protection under WCA rejected.	Only known from two small areas of high-altitude base-rich habitat. These are at increasing risk due to (1) climatic warming affecting high-altitude arctic-alpine plant communities partially due to reduced snow cover and at one site only (Geal Charn) by (2) disturbance to plants by increasing visitor numbers and (3) risk of habitat damage due to specimen collection and / or destructive survey work for both snails and their associated arctic/alpine associate flora. If not included on the WCA Sch. 5 then we recommend that NatureScot plans for regular, non-destructive monitoring of these unique sites.

Freshwater mussels, alive alive oh!

Janet Ridout Sharpe

Unio species have been reported from a whole string of early tell sites* along the Euphrates river and their identifications have been many and various, including *U. tigridis, U. mancus, U. elongatulus* and *U. pictorum*, with many specialists giving up on the attempt and referring to them simply as '*Unio*'. The reason for this confusion is the extreme variability of the shells recovered from these archaeological sites, which range from short and thick to elongated and fragile.

A genetic study of *Unio* specimens from across the Western Palaearctic region (Araujo *et al*. 2018) has helped to clarify the situation, suggesting that *U. mancus* and *U. elongatulus* are restricted to Mediterranean Europe, and that *U. pictorum* does not occur in Anatolia, Syria or the Levant. A further molecular study of the biogeography and evolutionary relationships of Unionidae in the Eastern Mediterranean (Lopes-Lima *et al*. 2021) concluded that *U. tigridis* occurs throughout the Euphrates and Tigris river basins whereas a second species, *U. bruguierianus*, potentially occurs only in the upper basins of these two great rivers in Turkey and northern Syria and Iraq.

I was charged with the analysis of shells recovered from Jerablus Tahtani, a small tell on the right bank of the Euphrates in Syria, just south of the Turkish border. The site was founded in the Late Chalcolithic or Uruk period around 3700 BC and was then continuously occupied until *c.* 2250 BC, well into the Early Bronze Age. It was excavated over several seasons around the turn of the millennium by a team from the University of Edinburgh, in advance of inundation by dam construction. The assemblage was dominated by *Unio* shells which displayed the more elongated, tapered and smoothly rounded posterior of *U. tigridis*, as opposed to the shorter, more abrupt 'truncated' posterior of *U. bruguierianus* (Mussel Project 2022) (figure 1). The shells from Jerablus were nevertheless variable in shape and ranged from heavy and robust to lighter and more gracile (figure 2).

Not all variability in freshwater mussel shells can be attributed to genetics. Ecophenotypic studies of European populations of *Unio pictorum* (Zieritz & Aldridge 2009, Zieritz *et al.* 2010) showed that specimens collected from sheltered waters had more elongated shells than specimens collected from the open river and current velocity appeared to be the determining factor governing shell shape. This could suggest that the shells from Jerablus were collected from different habitats within the river, from quiet backwaters to fast-flowing channels.

Why were *Unio* shells so frequent at these early riverside settlements? The usual explanation is that they were eaten and there is some circumstantial evidence for this. At Jerablus the shells are commonly broken but not highly fragmented, as would be expected if they had entered the site as a component of the river-mud bricks which were used in its construction. They occurred above the flood level and so cannot be attributed to the periodic inundations that parts of the tell experienced during its occupation. The numbers of right and left valves occurred in similar proportions, suggesting they were still joined at the hinge when discarded; occasionally both valves of the same shell were found together. Although the valves numbered in hundreds, it takes two valves to make a complete shell and the estimated number of individuals was very low for a site that was occupied for around 1500 years. The shells were not found in discrete middens but were generally distributed across the site in accumulations of household rubbish. They obviously did not form a major component of the diet.

figure 1: Internal view of right (above) and left (below) dissimilar valves of *Unio tigridis* from Jerablus Tahtani. The lower valve bears comparison with a 'probable holotype' of *Unio tigridis* figured in Tillier & Mordan 1983: Plate 7, Fig. 3.

figure 2: External view of left valves of *Unio tigridis* from Jerablus Tahtani showing variation in shape.

Shells that were sufficiently complete for measurement showed an overall increase in size from the Uruk period during the transition to the Bronze Age. This could indicate that harvesting pressure was reduced over time, allowing the shells longer time to develop. Other explanations are possible, of course, in that the shells could have been collected from different localities or have been subject to environmental change, but there is little evidence for this. The Uruk period saw the beginnings of state formation in the ancient Near East but communities in northern Syria were not yet self-sufficient in agriculture and still relied to some extent on wild food resources which would have included freshwater mussels. By the Bronze Age, pastoral farming was well-established in the area and pressure on wild resources would have been less – which may explain the increase in size of the shells from Jerablus.

The mussels would normally have been collected at the same time of year in the autumn after the breeding season (when their gills would have been full of spiny glochidia larvae) and when river levels were at their lowest. Freshwater mussels are highly nutritious, being rich in protein and omega-3 fatty acids, and they have been explored as a supplementary food source for malnourished children in South-East Asia (Haldar *et al*. 2014). It is possible they fulfilled the same role at Jerablus.

Elsewhere in the world vast middens of freshwater mussel shells indicate their frequent use as a food source in the past. Middens have been found on the banks of dried-up lakes in Australia dating back 27,000 years (Mulvaney & Kamminga 1999), and huge shell mounds in prehistoric North America show that they formed an important component of the diet (Parmalee & Klippel 1974). Although freshwater mussels have been pronounced edible by those willing to sample them today, few have described them as a culinary delight (for example, see blog.raymears.com/2010/07/13/freshwater-mussel-find/). Nevertheless, until recently and before their global decline, they were there for the taking when other sources of food were low. The occasional presence of *Unio pictorum* among oyster food refuse in Wallingford, South Oxfordshire, suggests that they may have supplemented the diet in medieval England.

As a postscript, one might ask where this era of molecular taxonomy leaves us archaeomalacologists who have only the shells to work on? The human societies at the centre of our investigations were probably not troubled by the finer points of nomenclature, so perhaps we shouldn't be either.

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* 'An artificial mound … consisting of the accumulated and stratified debris of a succession of consecutive settlements at the same site, the refuse of generations of people who built and inhabited them, and of natural sediment.' (https://en.wikipedia.org/wiki/Tell_(archaeology).) [Ed.]

A juvenile *Trivia* from Newton Bay, Northumberland

Peter Topley

Amongst a number of kelp holdfasts cast up on this shore in early September, one held a 10-mm juvenile *Trivia* with the recently dead animal still within the shell. The shell has not yet developed the ribbing and shell characteristics of the adult cowrie, retaining a spire and 'gastropod aperture'. The dark colour of the animal shows through the very thin shell. It is very hard to determine juvenile *Trivia* to species level, but the adult shells I found on the same shore were all *T. arctica*. Ian Smith has included images of several stages of juvenile *T. monacha* in the species' account for the Conchological Society's online *Encyclopedia* (https://conchsoc.org/spAccount/trivia-monacha).

A 50-year-old record of *Charonia seguenzae* from the Aegean coast of Turkey

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The taxonomic standings of the *Charonia* species (Tonnoidea, Charoniidae) present in the Mediterranean Sea are somewhat uncertain. According to the authoritative compilation of the marine molluscs of Europe by Alf *et al.* (2020), there are two *Charonia* species in the Mediterranean: *C. lampas* (Linnaeus, 1758) and *C. variegata* (Lamarck, 1816). On the other hand, the equally authoritative MolluscaBase (2022) also accepts *C. seguenzae* (Aradas & Benoit, 1872), the type locality of which is the coast of Sicily, as a valid species. The opinion of MolluscaBase was based on a paper by Beu (2010) who argued that eastern Mediterranean specimens of *Charonia* were conchologically different from Atlantic specimens of *C. variegata* and that therefore the eastern Mediterranean *C. seguenzae*, which had previously been considered to be a junior synonym of *C. variegata*, was a distinct species.

A long time ago on a summer day, the first author collected a live *Charonia* while snorkelling near the shore about a kilometer south of the town of Kuşadası on the Aegean coast of Turkey (approximate coordinates: 37.851 N, 27.242 E). The bottom was rocky and the depth was probably 2–3 m. The exact date of the collection was not recorded but it is estimated to have been between 1972 and 1975. The snail was subsequently extracted from its shell and discarded; unfortunately, its preservation was neither considered nor would have been feasible at that time. Luckily, the shell itself has survived in good condition despite having been moved several times over the years from one home to another. It now resides in the mollusc collection of the Carnegie Museum of Natural History, Pittsburgh, PA, USA (CM 167792).

The shell is 254 mm tall (figure 1). It may have been taller at some point because the tip of the spire was worn down at the time of collection. The inner and outer lips have prominent ridges. Although the shell is heavily encrusted with various types of growths, a narrow, but seemingly deep, umbilicus-like slit is still visible (figure 2).

We have followed Beu (2010) and identified the specimen as *C. seguenzae*. The most recent compilation of the marine molluscs of Turkey lists only *C. variegata* as having been definitely recorded from the Aegean and the Mediterranean coasts of Turkey (Öztürk *et al*. 2014). We are assuming that those records actually represent *C. seguenzae*. The source of the record for the Aegean coast of Turkey in Öztürk *et al*. (2014) was an earlier paper where no definite locality was given (Demir 2003). Beu (2010) gives a few undated museum records of *C. seguenzae* from around Bodrum on the Turkish coast about 100 km south of Kuşadası. The present specimen, despite being almost 50 years old, constitutes a record of *C. seguenzae* from a known locality at the Turkish Aegean coast that is also traceable to a specimen.

figure 1: *Charonia seguenzae* from Kuşadası, Turkey, collected circa 1972–1975 (254 mm). Note the aperture surrounded with prominent ridges.

figure 2: Columellar side of the lip showing the umbilicus-like slit.

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Winkle Club, Hastings

June Chatfield

Whilst visiting the old town and fishing beach at Hastings in June 2018, my eye was taken by a large silver winkle collection box for the Winkle Club which was duly photographed. This led me to further investigation on the Winkle Club website (www.winkleclub.org).

As stated on the silver winkle, it was founded in 1900. In the Prince Albert (now defunct), a popular local pub with the Hastings fishermen, conversations as usual featured on putting the world to rights and what could be done to help the many poor children over Christmas. In another part of Hastings was the Royal Oak, which had founded an Acorn Club whereby all members had to carry acorns and if a member challenged another member who did not have his acorn with him, then he was fined and the money put to helping poor children at Christmas. Recollections of a founder member, Bill Betts (alive in 1972), was that at the Prince Albert an Alec Chatfield (no relation to the writer but it was originally a Sussex surname) asked 'Why an acorn? This is the Old Town; can't we have something to do with fishing?' Then at the same time somebody appeared in the bar bearing a bucket of winkles collected from the rocks and that proved the inspiration: Winkle Club.

To manufacture the official members' winkles, the body was removed and the interior filled with sealing wax.

The current Patron is the Admiral of the Fleet Lord Boyce, Lord Warden of the Cinque Ports. Hastings is of one of the Cinque Ports, a group of harbours in Essex, Kent and Sussex. It has had associations with royalty. Princess Elizabeth (now the Queen) was presented with a gold winkle brooch in 1951, while the Duke of Edinburgh was made a club member in the presence of the Queen in 1966. On his death in 2021 the flag on Winkle Island was flown at half-mast during the funeral. Lord Montgomery was also presented with a silver winkle.

Winkle Island is an area of pavement at the junction of several roads in the Rock-a-Nore area of Hastings, by the fishing beach and fish market. For many years the Winkle Club ran dances there. In the 1950s on the death of Alderman Blackman, President for many years of the Winkle Club, it was decided to set up a memorial to this dedicated Winkler and this went up with a flagpole at the centre of Winkle Island in July 1959. In addition, a giant silver winkle collecting box for charity, made by a Winkle Club member, was also set up. Appropriate to their charitable aims around Christmas, Winkle Island is the site for a club Christmas tree that continued to be erected during the Covid-19 pandemic.

Next time you go to Hastings, visit the winkle and winkle-up.

‘Monstrosities’ of ‘*Littorina rudis*’ from Gore Cove, the Fleet, Weymouth, Dorset

Adrian Brokenshire

On reading the article on a scalariform *Planorbis carinatus* by Adrian Sumner (2022), I remembered that I had a very old paper on some monstrosities of *Littorina rudis* (Maton, 1797) by E.R. Sykes (1892) in my library (figure1). I sent a copy to Adrian as it had reference to some *Planorbis*, other molluscs and possible ideas on how monstrosities might be formed.

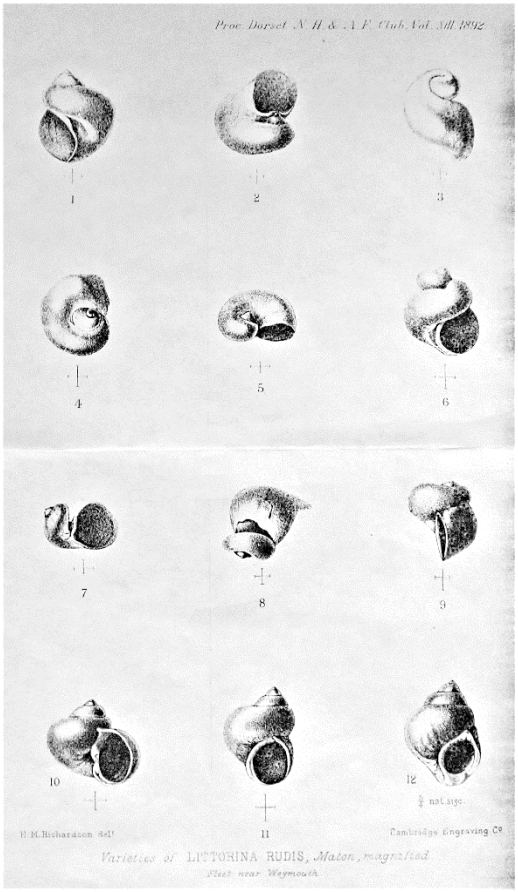
This also brought back recollections of many, many years ago, looking for the shells mentioned in the above paper. These days, with an identification without dissection or DNA evidence, these would now be *Littorina saxatilis* agg.[1] Gore Cove on the Fleet is an area with large accumulations of dead and rotten eel grass mixed with thousands of empty mollusc shells. Searching for *Littorina* and monstrosities was not a pleasant task, having to wash several times and disinfect the samples. The bulk were dried and sorted by eye and later by binocular microscope. I picked out numerous ‘so-called’ monstrosities (note here that I said so-called!).

The shells illustrated in the Sykes paper are ¾ natural size; all but figure 12 are without the distinctive thickened lower area of the aperture that you see in typical *L. saxatilis* agg.; all have a distinct umbilicus which you do not see in *L. saxatilis* agg. The shells are all extremely smooth and show no growth or ornament of any kind. You might say that these features are all part of the process that makes them deformed/malformed or monstrosities.

At the time they were collected, looking more closely with a hand lens and microscope, I realised that they were not actual shells, but were made up of a very fine cemented sediment and looked more like a hollow chamber or lining made by an unknown organism that had taken up part of the shape of the shell. These ‘pseudo-shells’ had possibly fallen out due to damage or buffeting while accumulating on the shore. What would go to all the trouble to line an empty shell when I would have thought the shell itself was more than adequate? I didn’t keep any examples, which I now regret. I could, of course, go through the whole process again but after well over 40 years I don’t relish the task or feel in a humour to do so.

What of the Sykes paper: are the shells illustrated true monstrosities or ‘pseudo-shells’ along the lines of what I had found on the Fleet? Never having had the opportunity to examine the shells illustrated by Sykes, I cannot say. I shall put this down to another molluscan mystery.

Note: Figure 12 (bottom right) of Sykes’ plate is the only shell illustrated that was not collected in the Fleet proper, but at its entrance, probably Ferry Bridge?



EXPLANATION OF THE PLATE.

Fig. 1. A reversed specimen lent by Mr. Brockton Tomlin.

Figs. 2 and 3. In these specimens the mouth is bent upwards and passes over the spire. In Fig. 2 the spire is in the mouth. Fig. 3 shews another view of a specimen further grown.

Fig. 4. In this specimen the tube of the whorl increases and decreases in diameter alternately, thus having an undulating plane of the surface.

Fig. 5. The last whorl is nearly at right angles to the earlier ones.

Fig. 6. The direction of the axis of the shell is much altered.

Fig. 7. The last whorl is detached from the others.

Fig. 8. The last whorl gapes away from the earlier ones, but returns to the normal just before the mouth.

Figs. 9, 10, and 11. These specimens show the varying height of the spire.

Fig. 12. This shell is from the mouth of the Fleet where the water is salt, and is of much thicker substance. The other specimens come from near Langton Herring, where the water is brackish and weed is present.

figure 1: Scalariform *‘Littorina rudis’* (from Sykes 1892).

Other examples of a scalariform planorbid: *Gyraulus albus* (c. 5–7 mm) from Stainland in Calderdale, Yorkshire. From an old collection. See also page 153 of the recent *Freshwater snails of Britain and Ireland* (Rowson, B. *et al.*, FSC, 2021).

(note and photo: Peter Topley)

References

Sumner, A. (2022) A scalariform *Planorbis carinatus*. *Mollusc World*, **58**: 23─25.

Sykes, E.R. (1892) On some monstrosities of *Littorina rudis*, Maton. *Proceedings of the Dorset Natural History and Antiquarian Field Club*, **13**: 191─198.

[1] *L. rudis* is now accepted as a junior synonym of *Littorina saxatilis* (Olivi, 1792) (see: https://www.molluscabase.org/aphia.php?p=taxdetails&id=140264). (Ed.)

Field meeting to Farnham Park, Surrey, May 26th 2022

June Chatfield

figure 1: The author photographing a specimen with some of the participants at the Farnham Park field meeting. (photo: Tom Walker)

Nine people attended this meeting, representing the Conchological Society of Great Britain & Ireland, the Alton Natural History Society, Friends of Farnham Park and a visitor (figure 1). After an introduction to the history and geology of the site and seeing some specimens found on the reconnaissance the day before, we took the main track from the car park towards the swallow hole. We worked monads TQ8347 and TQ8447. En route we stopped to investigate the long grass alongside the path, finding an abundance of sub-mature Kentish snails (*Monacha cantiana*), white-lipped snails (*Cepaea hortensis*) and girdled snails (*Hygromia cinctella*), common hairy snails (*Trochulus hispidus*), waxy glass snails (*Aegopinella nitidula*), and many juvenile *Arion ater* agg. and leopard slugs (*Limax maximus*) (figure 2). At the edge of the swallow hole we searched under logs, not very successfully because of the recent dry weather, but we did locate the common garden snail (*Cornu aspersum*), rounded snail (*Discus rotundatus*), Caruana's slug (*Deroceras invadens*) and more *L. maximus*.

figure 2: The group looking for snails on the way to the swallow hole. (photo: Isobel Girvan)

Our next target was the fairly newly constructed Friends' Pond dug into clay and frequently disturbed by dogs swimming there (figure 3). This proved negative for freshwater molluscs and also water plants, but by searching in damp grass at the edges we added live specimens of the slippery moss snail (*Cochlicopa lubrica*), common grey field slug (*Deroceras reticulatus*) (new to the list) and more *T. hispidus*, *A. nitidula*, *C. aspersum* and juvenile *A. ater* agg. Pockets of dampness were important for these molluscs. An entomological diversion at the pond was broad-bodied chaser dragonflies (*Libellula depressa*) laying eggs on pond vegetation in a more secluded area and two others in courtship (figure 4). This northern section of the pond, with more aquatic vegetation and less disturbed by dogs swimming, still did not yield any freshwater molluscs.

figure 3: Friends' Pond looking towards grassland.

figure 4: (above) Looking at dragonflies and (below) broad-bodied chaser (*Libella depressa*) over Friends' Pond.

Walking to the next pond through a meadow with meadow buttercup, yellow-rattle and common spotted orchids in flower, we scratched around in the grass tussocks (figure 5) and Tom Walker found a fine live adult specimen of the eccentric grass snail (*Vallonia excentrica*) that intrigued the non-conchologist members of the group for its small adult size and the distinctive white reflected trumpet-like rim to the mouth of the adult shell.

figure 5: Tom Walker searching a meadow for molluscs.

figure 6: Carron Pond.

Our final stop in the morning session was at Carron Pond (figure 6) which had been fenced off to keep out dogs as it is a habitat for great crested newts. From the mollusc point of view this looked a more inviting habitat with its floating lily pads but, like the Friends' Pond, it did not yield any aquatic molluscs. Perhaps the newts and dragonfly nymphs had been eating them! In a wooded hollow adjacent to Carron Pond three species of slugs, *A. ater* agg., *D. reticulatus* and *L. maximus*, were found (figure 7). Lunch break at the Farnham Park Golf Café concluded the morning session.

figure 7: (above) Collecting in the hollow above Carron Pond and (below) slugs from the hollow above Carron Pond: *Arion ater* agg. (all were juveniles), *Deroceras reticulatus* and *Limax maximus*.

In the afternoon we followed the edge of the grazed meadow, then took a path uphill to the Yoyo Pond which also proved devoid of molluscs as did the tributary from the pond and the Nadder Stream. Land snails found here were *T. hispidus*, *M. cantiana* and *C. aspersum*: nothing new (figure 8). This habitat of open oak woodland is on the Reading Beds, a neutral clay but baked dry from recent lack of rain. The last part followed the footpath along the southern boundary of the park where the chalk outcrops and this was evident in the molluscan finds. Below the fence separating the park from the gardens of houses below were several live round-mouthed snails or land winkles (*Pomatias elegans*), with the operculum on the back of the foot closing the mouth of the shell like a trap door when the animal retreats inside its shell: this is, together with the thick shell, a good protection

figure 8: Approaching Yoyo Pond.

against desiccation. It is a prosobranch, more closely related to winkles of the shore than to the pulmonate land snails, having also separate sexes rather than being hermaphrodite, but it has lost the gills and adapted to air breathing and life on land. Also below the fence were strawberry snails (*Trochulus striolatus*), *H. cinctella*, *M. cantiana* and *C. hortensis*. Just beyond the children's play area was an old chalk quarry (figure 9).

figure 9: Chalk quarry habitat in the south of the park.

figure 10: *Monacha cantiana* and *Cepaea hortensis* (yellow banded form) from the chalk quarry floor.

Long grass on the quarry floor produced some live *C. hortensis* on the vegetation. These were mostly the yellow unbanded form, together with more *M. cantiana*, *T. striolatus* and the slug *D. reticulatus* (figure 10). On the chalk exposure at the top of the quarry face (figure 11), the banded snail (*Cernuella virgata*) was found, another chalk associate, adding another species to the list (see end). In the lower meadow, where the chalk is still exposed (it is overlain by a more acidic clay head deposit in the upper meadow), were more *C. virgata* (at SU8445 4755). Other finds were the slugs *Arion circumscriptus* agg., *A. distinctus* and *D. invadens*, and shells of *C. aspersum*.

Additional species found during the previous day's reconnaissance were the dusky slug (*Arion subfuscus*) and Draparnaud's glass snail *(Oxychilus draparnaudi*). The chrysalis snail (*Lauria cylindracea*) was found live amongst

rock rubble at the entrance to Farnham Castle over the Heritage Weekend in September 2021, but was not found on this occasion.

figure 11: Graham House of the Alton Natural History Society searching for snails at the chalk quarry face.

Comparing two former deer parks

In 1993 and subsequent years the author and members of the Conchological Society were involved in surveys of Nonsuch Park in Ewell, north-east Surrey (Chatfield 1994, 2014) which is on the same series of bedrock at the opposite end of the county, also a former deer park and now a public open space. A consideration of the similarities and differences in the environment and a comparison of the site history and molluscan fauna seem appropriate.

Firstly, the similarities. Both sites are of similar size and both are the 'Little Park' around the main building (the castle in Farnham and former palace in Nonsuch), adjacent to a larger Great Park not now in the public domain. They are both in the same climatic band at the northern foot of the North Downs at opposite ends of Surrey, Farnham in the west and Nonsuch in the east. They both became public open spaces managed by local authorities in the 1930s and saw some agricultural use during World War II. Heathland, ancient woodland and wetland habitats are largely absent from both parks and they share the same geological sequence from Chalk, Reading Formation, London Clay and some post-Ice Age head deposits and a little alluvium. The mollusc fauna is in both cases neither diverse with rarities nor abundant, since the larger area is on acidic soil.

Now the differences. The details of site history are different as Farnham Park has functioned as a deer park for over 600 years (from 1376) as a seat of the Bishop of Winchester (Heather 2009) while Nonsuch Park has a much shorter history as a deer park, being created in 1538 by Henry VIII until it passed out of royal hands in 1670 when Charles II granted it to his mistress Barbara Villiers (Baroness Nonsuch) who removed the deer; it was sold for the land and its building materials from demolition around 1680-83, allegedly to pay for her gambling debts. Throughout the 18th century Nonsuch Park served as a home farm around the Mansion House until bought by several local authorities in 1937. The layout of fields dates from that time and it was mostly used for cereal growing and hay-making. Farming ceased in the 1960s at Nonsuch Park and in the 1980s in adjacent Warren Farm. Whilst much of the bedrock sequence from late Cretaceous to Tertiary (Palaeogene) is the same in both former deer parks, at Nonsuch there is an additional bed of Thanet Sand that forms a belt of sandy soil and covers the chalk in strips. The Thanet Sand Formation (named after the Isle of Thanet in Kent) does not extend much into west Surrey. Both sites are on variable topography with some low ground eroded out during post-glacial times by meltwater streams, now dry valleys with head deposit. However, the highest elevation at Nonsuch is on the chalk, giving rise to some calcareous surface run-off onto the younger more acidic Palaeogene strata, while the chalk at Farnham Park is the lowest ground in the south and surface runoff water is of an acidic character. Running water streams exist only at Farnham Park (the Nadder Brook) as the former post-glacial stream that cut the valley through Nonsuch (the Earthbourne) is now a dry valley so the only freshwater habitats here are ponds and ditches (Chatfield 2014).

The total list of molluscs at Nonsuch is 47 species (39 terrestrial and seven freshwater) whereas at Farnham Park it is 22 species, all terrestrial. Nonsuch has been the subject of more molluscan field work than Farnham Park, over a 30-year period, so there is collecting bias but some limiting factors at Farnham, with a greater area of acid soils in the north, will likely mean that it is not as species rich for molluscs. However, it will be interesting to see what additional finds will be made at the Alton Natural History Society's fungus foray to Farnham Park on 5th November 2022 since slugs, especially, are greatly attracted to fungi as food. The northern section of Farnham Park on acid London Clay has also not, so far, been worked for molluscs. The only leaf litter sample taken on the field meeting at Farnham Park proved unproductive due to the exceptionally dry conditions, so more samples need to be taken in damper seasons to locate the tiny snails typical of leaf litter.

Species list

24.05.2022: *Aegopinella nitidula, Arion ater agg., Arion circumscriptus, Arion distinctus, Arion hortensis, Arion subfuscus, Cepaea hortensis, Cernuella virgata, Cochlicopa lubrica, Cornu aspersum, Deroceras invadens, Deroceras reticulatum, Discus rotundatus, Hygromia cinctella, Limax maximus, Monacha cantiana, Oxyychilus draparnaudi, Pomatias elegans, Trochulus hispidus, Trochulus striolatus, Vallonia excentrica.*

09.2021: *Lauria cylindracea*.

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Chatfield, J. E. (2014) Nonsuch Park and adjacent open spaces in Ewell, Surrey: an update twenty years on. *The London Naturalist*, **93**: 70–149.

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Conchological Society obituaries - some we missed

Brian Goodwin

'Our dead are never dead to us, until we have forgotten them' - George Eliot.

In a previous article published in *Mollusc World* (Goodwin, 2022) I presented a short history of Conchological Society of Great Britain and Ireland (CSGBI) obituaries from the Society's first 100 years, up to 1975. That article highlighted a number of prominent omissions with the promise of 'future rectification'. I now fulfil that promise, in part. In order to keep the length manageable, the personal accounts are brief and I have restricted it to the following seven 'worthies':

An early Secretary & Treasurer – T.W. Bell;

Three Presidents[1] – S.J. Hickson, E.R. Sykes, H.M. Gwatkin; and,

Three long-serving Council Members – J.R. Hardy, E.C. Stump, A.K. Lawson.

Thomas William Bell (1853–1933).

In the first few years of the Society, three of the (four) founders took on most of the organisational work.[2] William Nelson was President and Curator; J.W. Taylor was Journal Editor; and, William Denison Roebuck was Treasurer and Non-Marine Recorder. Although initially Henry Crowther attended regularly, he 'dropped out' completely after March 1878. There was no 'permanent' presence as Hon. Sec. until 1880 when Thomas Bell was appointed and carried out the role for the next 10 years. The following year he also became Treasurer, and held this post for 9 years.

Looking back over the Minute Books in the Society Archives, I think it is fair to say that Thomas was not the most efficient of Secretaries. His recording of attendance was patchy, he often omitted the location of the meeting, and sometimes the date! The wording of minutes means that we cannot be sure whether papers 'read' were done so by the actual authors, or by someone else on their behalf. Minutes were frequently brief, and vague:

'Mr. W. D. Roebuck, F.L.S., and the Chairman each exhibited large collections from various localities.'

Bell's hobbies (he was a glass and china dealer by trade) extended beyond conchology. He also had an interest in Geology and was a member of Leeds Geological Association[3] and the Yorkshire Naturalists' Union. He occasionally exhibited at CSGBI meetings, usually from visits to the area around Peterborough (his first wife's birthplace), and he submitted some Yorkshire records but does not seem to have written anything.

However, what Thomas Bell was supremely good at, was attending the Society meetings! T.W. Bell is first recorded at a meeting on 26th July 1877 (as a visitor, but he was elected a member during the meeting). Over the next 100 meetings he was a 'core' member with Taylor and Roebuck, with all three attending at least 80% of the time. Of the other founders, Henry Crowther as we've noted was soon a non-factor while Nelson only attended about half of the meetings. Once elected as Hon. Sec. in 1880, Bell rarely missed a meeting over a period of 10 years. Since, at this period attendance at meetings was very low[4], Bell's role in keeping the fledgling Society afloat was crucial.

When Bell ceased secretarial and financial responsibilities he was elected as a Council member for two years (1890 and 1891), but was not on the list of Society members at January 1892. Quite what happened after 1890 is not clear, but he seems to have dropped out of the Leeds conchological community. It is possible that something in his personal life may have been a factor. I discovered that his first wife Sarah (née Savage) who he married in 1875, died in 1888, leaving him with three young children. Early in 1893 he remarried and I suppose it is conceivable that his new wife Emily might have demanded more of his attention, especially as three more children came along over the next ten years.

Although born in Halifax, Bell spent most of his life in Leeds and died there towards the end of 1933, aged 81. I have been unable to find a portrait, but his signature is shown in figure 1.

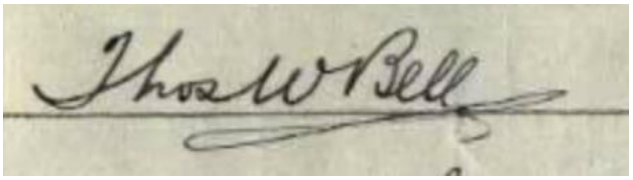


figure 1: Signature of Thomas Bell.

Sydney John Hickson (1859–1940).

Sydney John Hickson (D.Sc., M.A., F.R.S.) was an eminent academic with a world-wide reputation in his specialist area – soft corals …. not molluscs. However, he was also a prominent member of the Manchester scientific 'community' where the Society was based at the time, and therefore a perfectly suitable person for the (in those days, largely ceremonial) role of President (see figure 2).

figure 2: Portrait of Sydney Hickson.
(National Portrait Gallery – Creative Commons).

Sydney was the youngest of 9 children born (Highgate, London) to shoe manufacturer George and his wife Ellen. His parents clearly had great expectations of him and by the time he was eleven, in 1871, he had been sent off to the Mansion Grammar School in Leatherhead. Ten years later, after an abortive foray into medicine, he was studying science at Downing College, Cambridge and it was here that he undertook the only molluscan research I have found, namely a laborious microscopical study of the eyes of *Pecten* and *Spondylus.*

After a post as deputy professor of comparative anatomy at Oxford, he returned to Downing College in 1890 as a Lecturer in Natural Science. The 1890s was an eventful decade for Sydney. Having joined CSGBI in 1893, he was appointed as Professor of Zoology at Owens College, Manchester the following year. Mainly on the basis of a series of papers on the relationships of the soft corals (*Alcyonaria*), he was elected F.R.S. in 1895. He married Annie Maud Fletcher in 1896, and then in 1897 he took on the role of CSGBI President. Hickson remained a CSGBI member until he resigned in 1926, on his retirement to Cambridge.

According to a headline from the Manchester Evening News of 8th February 1940 (see figure 3), it was retirement in name only. He died on 6th January 1940 and further biographical details are given in Gardiner (1940).[5]


PROFESSOR RETIRED,
NEVER STOPPED WORK

figure 3: Headline from the Manchester Evening News – 8th February 1940.

Ernest Ruthven Sykes (1867–1954).

Ernest was born (Clapham, London) into a wealthy, upper-class family and spent much of his childhood in Dorset. He was educated at Eton and Trinity College, Cambridge where he studied Law.

Although Sykes joined CSGBI in 1888, it seems he may have been one of those southern-based conchologists who were not exactly satisfied with the Society's focus and he became intimately involved with the establishment of the Malacological Society of London in 1893, serving as its first Secretary. Clearly the London base was more practical and allowed easier attendance at meetings. He wrote many papers for Proceedings of the Malacological Society, but hardly any for our Journal. However, he did serve as our Society's President in 1900, a few years before he was similarly honoured by the London Society (1904-1906). A biographical study (Rees, 1962) lists 99 papers on a wide range of conchological subjects – land & marine; taxonomy; faunal lists; gastropods, chitons, pteropods; and including four papers jointly written with his father-in-law, James Cosmo Melvill. Figure 4 shows a portrait and his signature.

After a distinguished career as a Barrister-at-Law in the Inner Temple, his marriage to Melvill's daughter Gladys Bertha, which took place on 12th February 1907, prompted a move to Dorchester where he lived for the rest of his life. He took an active role both in local natural history societies and in civic affairs (Rees, 1962). In 1933 Sykes was appointed vice-chairman of the Dorset Quarter Sessions, became chairman the year after, and then in 1938 was appointed a Deputy Lieutenant for the County of Dorset.

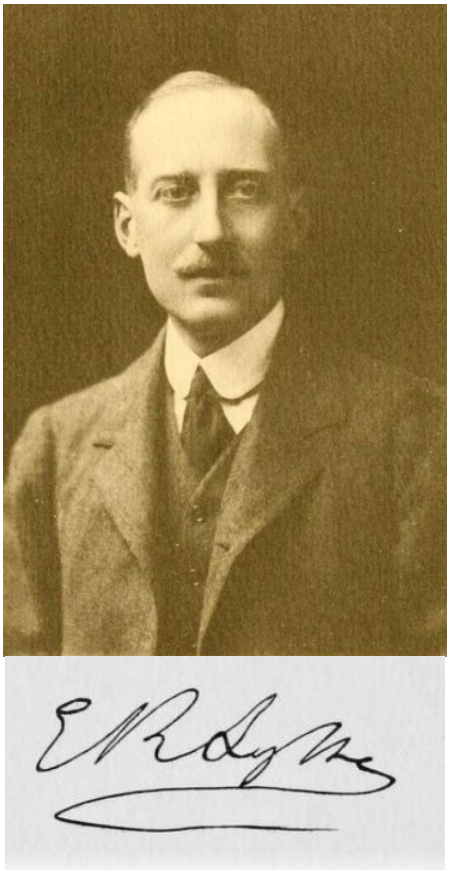


figure 4: Ernest Ruthven Sykes (from *Proc. Malac Soc.* **12**, 1916/1917) and signature.

After marriage and leaving London his output of papers gradually slowed and direct contact with conchological colleagues also seems to have tailed off. This may well have been a contributory factor in why he missed out on a CSGBI obituary – he was not closely involved in the Society and there was simply no one who knew him well enough to write one. Although he slipped the Conchological Society obituarial net, a brief note on his shell collection – 'conservatively estimated to contain 76,000 shells' - did appear in the Journal (Rees, 1954).

Henry Melvill Gwatkin (1844–1916).

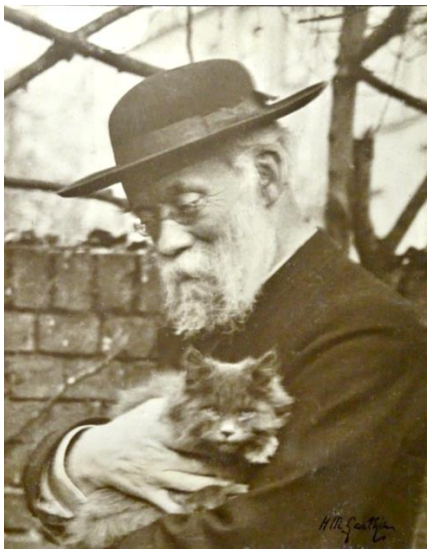


figure 5: Henry Melvill Gwatkin. (CSGBI archive)

Professor Gwatkin (see figure 5), rather like Professor Hickson, did not seem to have had an especially close connection to the Society, other than being a member.

He did have a very specialist interest – molluscan radulae – on which he was a world authority, but this was very much a relaxation (albeit pursued indefatigably) from his career in theology, for which he is probably more widely remembered.

Henry Melvill Gwatkin was born on 30th July 1844 at Barrow-on-Soar, Leicestershire and was apparently *'rendered deaf as a young boy by an attack of scarlet fever'*.[6] He was educated at Shrewsbury School and then at St. John's College, Cambridge where he took his B.A. in 1867; became a fellow in 1868; Theological Lecturer in 1874; and, finally Dixie Professor of Ecclesiastical History from 1891 to the time of his death. His baptismal record (figure 6) simply shows his parents as Richard and Ann, but the 1851 Census reveals that Richard was actually the Vicar of Barrow-Upon-Soar and Henry was therefore following in family footsteps.

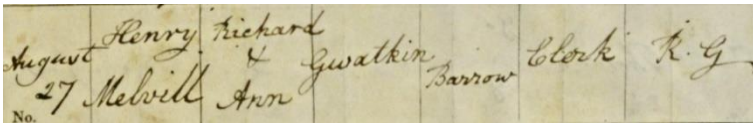
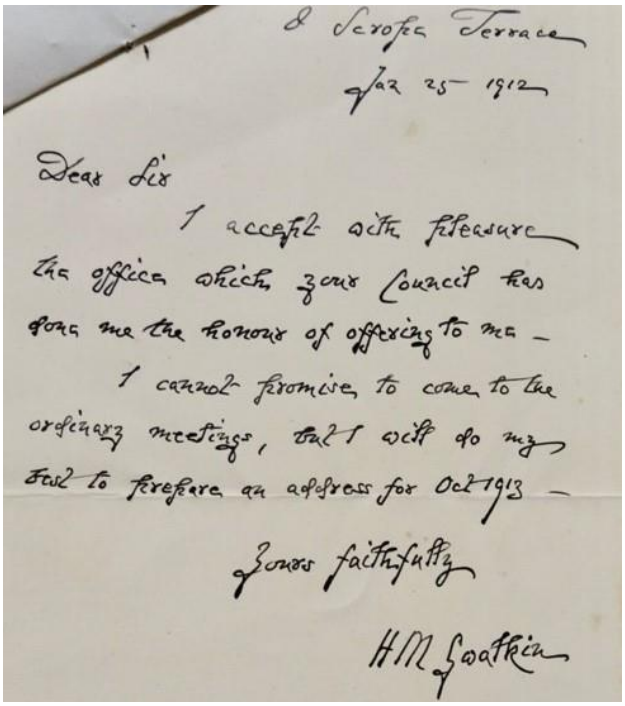


figure 6: Gwatkin's Baptismal Record from 1844.

A brief internet genealogical search revealed that Henry married Lucy De Lisle Brock (daughter of another Vicar) and they had three children: Ethel Ruth, born 1875, who went on to become the first headmistress of the Queen Mary High School in Liverpool; Clancy De Lisle, who died aged just 8 in 1886; and, Paul de Saumarez, born 1886.[7]

Henry's main claim to fame was his theological studies, on which he published prolifically.[8] Conchologically, he did not commit much to print. What he did produce, however, were thousands of slide preparations of molluscan radulae. His collection is now mainly in the Natural History Museum, London, with some 1723 slide preparations in the National Museum of Wales.[9] When Gwatkin accepted the Presidency (see letter of 25th January 1912 – figure 7), he did promise to deliver a presidential address and he was as good as his word, speaking on his specialist subject, 'Some Molluscan Radulae' (Gwatkin, 1914).


8 Scroope Terrace
Jan 25 1912

Dear Sir

I accept with pleasure the office which your Council has done me the honour of offering to me – I cannot promise to come to the ordinary meetings, but I will do my best to prepare an address for Oct 1913 –

Yours faithfully

H M Gwatkin
figure 7: Gwatkin's letter accepting the post of CSGBI President. (CSGBI Archive)

In August 1916, Henry was knocked down by a car that he had not heard because of his deafness. He died three months later on the 14th November 1916, in Cambridge, aged 72. Burial was in the Parish of the Ascension Burial Ground, Cambridge, where he was later joined by his wife. Probate (see figure 8) shows that he left the considerable sum (for the time) of nearly £14,000.

GWATKIN the reverend Henry Melvill of 8 Scroope-terrace **Cambridge** clerk died 14 November 1916 Probate **Peterborough** 19 January to Lucy de Lisle Gwatkin widow. Effects £13757 16s. 11d.

figure 8: Gwatkin's Probate Record.

John Ray Hardy (1844–1921).

At least six Council members who served a minimum of five years (up to 1975) did not receive the recognition of a CSGBI obituary. Here I deal with the three who served more than 10 years, the first of which was John Ray Hardy.

John Ray Hardy (figure 9) was born to parents John (a railway clerk, and keen naturalist) and Sarah in Sheffield in 1844, but the family soon moved to the Manchester area where he spent the rest of his life. It was a large family – I counted at least 11 children in various Censuses – and John must have felt rather plain in the company of such exotically named siblings as George Octavius, William Withering and Septimus Walter, not to mention sister Theodosia. Since another brother was christened Charles Linnaeus, it seems entirely possible that John himself was named after the famous English naturalist John Ray (1627-1705).

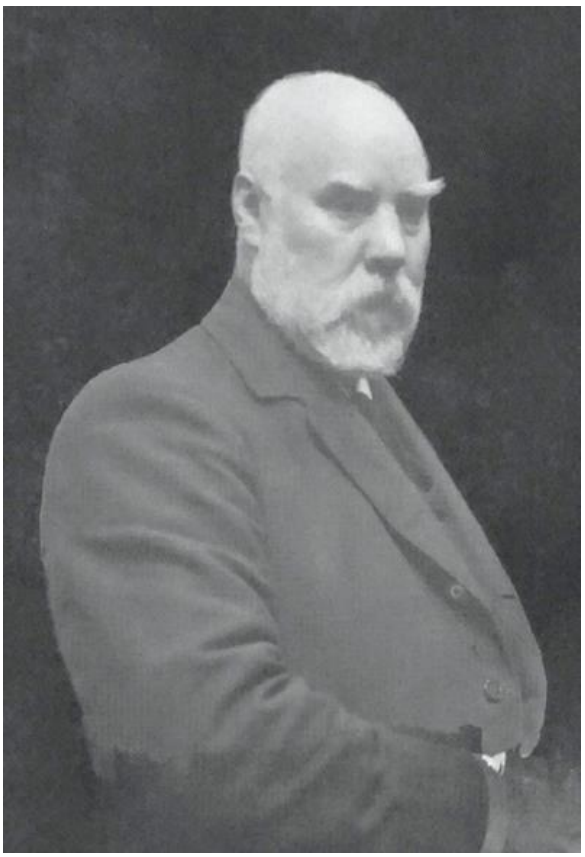


figure 9: John Ray Hardy.
(J. Wilfrid Jackson collection, Buxton Museum & Art Gallery)

Leaving school, he initially trained as an Apprentice Engine Fitter but the work evidently was not to his liking and by the 1871 Census he was recorded as a 'professional naturalist'. After a time in charge of the

Manchester Marine Aquarium, and then as Keeper of the Queen's Park Museum, he was appointed Assistant Keeper at Manchester Museum in 1881, and worked up to Senior Assistant Keeper and Entomological Curator in 1901, a position he held until he retired in 1918. Although Hardy's main focus was Entomology (especially Coleoptera and Lepidoptera),[10] he had a broad interest in natural history and also devoted time to molluscs, birds, spiders, and plants.

John Ray Hardy was a colleague of former Presidents William Hoyle and Robert Standen (and later J. Wilfrid Jackson) at the Museum (see figure 10) and joined the Society in 1895. He married Mary Eglin Hall in 1897 and was elected to CSGBI Council in 1910, serving continuously for 11 years until his death in 1921. Standen did write an obituary, but for the *Lancashire & Cheshire Naturalist* (**13** (11): 219-223).

figure 10: (left to right) Robert Standen, W.E. Hoyle and J. R. Hardy in 1898. (J. Wilfrid Jackson collection, Buxton Museum & Art Gallery).

Edward Consterdine Stump (1856-1940).

Edward C. Stump was born 21st May 1856 in Melbourne, Australia to parents Richard and Sarah, one of four children. In the late 1860s the family moved back to the United Kingdom, settling in the Manchester area where, by the 1871 Census, both father and son (aged 14) were working in the textiles trade. Ten years later, both had moved into banking, Edward eventually rising to become a bank manager.

Edward was a prominent member of both the Manchester Microscopical Society, in which he fulfilled various roles including Librarian, Secretary and (in 1909) Vice-President,[11] and the CSGBI which he joined in 1893. He attended meetings regularly; was elected as an Auditor in 1897, a role which he carried out for several years; and, for at least one CSGBI meeting, was 'in the chair'. Exhibits shown at meetings included land and marine shells from Australia *('some very beautiful and unusual varieties of Cypraea decipiens Smith, from West Australia'*), and a range of British species. I found no written works. E.C. Stump was first elected a member of Council in 1898, and then after a year off served continuously from 1900 for the next 18 years.

Figure 11 shows Edward's signature. The only picture I could find (figure 12) is a very grainy extract from the photograph taken at the 1910 Annual Meeting.

In about 1915 he moved to 'Balgownie', Rochdale Road, Blackley, Manchester where he resided for the last 25 years of his life. Initially, he was accompanied by his sister Emily Mary, who died in 1932. Neither he nor Emily ever married and when he died on 6th January 1940, probate reveals he left effects worth £2479 7s 3d.

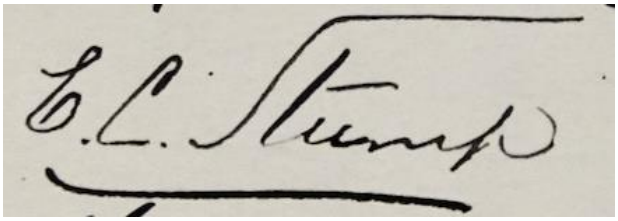


figure 11; Signature of E.C. Stump.

figure 12: From the Conchological Society AGM 1910 – left to right: J.K. Taylor, E.D. Bostock, E.C. Stump, J.W. Baldwin, A.E. Salisbury, E. Collier.

Arthur Kenneth Lawson (1885-1961).

The most recent, and probably the least well known of the omissions was A.K. Lawson (figure 13). Born in Hull in 1885 to Edward (a steamship agent) and Selina, Arthur Kenneth became a railway clerk on leaving school in Cheshire. He married Clara Barber in 1912 and was a pillar of the local natural history movement in and around Altrincham where he lived for most of his life. Lawson joined CSGBI in 1919, was elected to Council in 1924 and served continuously for about 20 years. Among roles in natural history circles, he was 'founder-secretary' and a leading light in the Altrincham Natural History Society and a stalwart of the Lancashire & Cheshire Fauna Committee. The latter, whose initial President was Sidney Hickson, also numbered Robert Standen, J. Wilfrid Jackson, and more latterly, Nora McMillan among their ranks, and Lawson was the editor for the Fauna Committee's '*A Check List of the Fauna of Lancashire and Cheshire, Part 1'*. He published relatively little himself, mainly faunal lists; notes about local mollusca (figure 14); and locality records from his travels such as *'Milax gagates new to Forfarshire'*.

Perhaps his most significant achievement in natural history was to organise a public subscription appeal that raised over £1,000 to establish Cotterill Clough and Marbury Reedbed Nature reserves in memory of the celebrated pioneering Cheshire ornithologist Thomas

Alfred Coward. According to a newspaper cutting from the Bowden Guardian, Lawson also found time for 'am-dram' (as founder of Hale Barns Dramatic Society) and Freemasonry (secretary of the Affability Lodge for 7 years).

figure 13: Arthur K. Lawson and his wife, Clara, on the beach at Ilfracombe, 3/8/1923. (J. Wilfrid Jackson collection. Courtesy of Buxton Museum & Art Gallery).

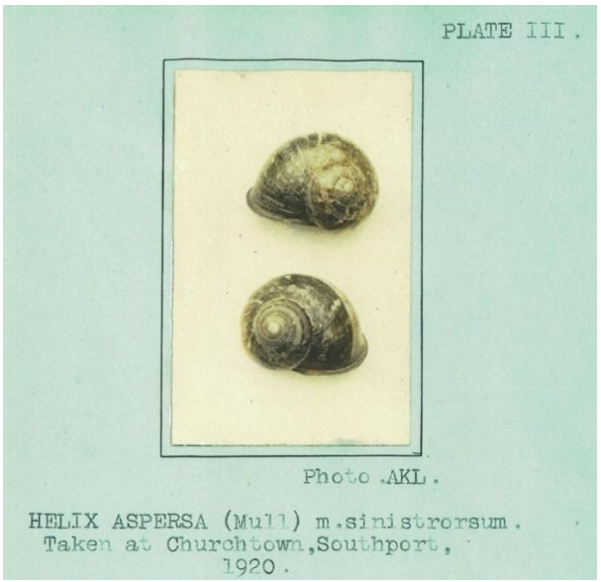


figure 14: From the *Proceedings* of the Altrincham & District Natural History & Literacy Society.

After a short, but painful, illness (prostate related), Arthur K. Lawson died at The General Hospital, Altrincham on 29th October 1961, aged 77, leaving effects of £3841 on probate. As a measure of the respect in which he was held, his wife received a remarkable 97 letters of condolence from family and friends.

There remains the question of why the above did not receive CSGBI obituaries? In some cases, a reasonable hypothesis is not too hard to find, for others, less so. Bell, for example, having been a pillar of the Society, seems to have lost interest and withdrew from activities some time before he died in 1933. By that time, there were probably not many members of the Society that knew him or remembered him that well. On the other hand, Hickson, Sykes and Gwatkin were never that closely involved in the first place, and all received obituaries from other sources where they were 'better connected'. It's much harder to speculate why Stump and Lawson, weren't honoured, although Stump (and perhaps also Lawson) became less active conchologically in later years. The hardest of all to fathom is John Ray Hardy. He was still a Council member at the time of his death and had many friends in Manchester including Jackson and Standen who, after his death, organised the sale of his various collections for the benefit of his widow. Perhaps a Journal obituary was deemed unnecessary because that by Robert Standen for the *Lancashire & Cheshire Naturalist* covered not just conchology but the full range of his natural history interests.

'Better late than never' seems a rather inadequate excuse for having missed these obituaries first time round, but I hope this belated recognition will help to reinforce the sentiment in the epigram that began the article – our dead are never dead to us, until we have forgotten them.

Endnotes

[1] Three further (very early) Presidents who did not receive Obituaries will be covered in a planned article on the Early History of CSGBI. The two others from the Society's first 100 years, Collinge and Hopwood, are probably worthy of short individual articles.

[2] The fourth, Henry Crowther, did a single year as Hon. Sec. in 1877, two years as Librarian (1893 and 1894), and nothing else until elected President for a year in 1925.

[3] Where his official roles included Vice-President and Secretary.

[4] Around this time, six members would have been regarded as an excellent turnout. On at least two occasions it appears from the Minute Book that Taylor may have been on his own!

[5] https://www.nature.com/articles/145338a0

[6] https://ca.thegospelcoalition.org/columns/bedes-wall/remembering-h-m-gwatkin/

[7] It is worth pointing out, however, that some genealogical information seems to be conflicting. The 1871 Census has Lucy living with her parents and unmarried in 1871, while the 1881 Census records Ethel as 6 years old and born in 1875, implying marriage around 1869. It seems unlikely that Ethel would have been born out of wedlock and thus some further investigation is clearly needed.

[8] Wikipedia has a list of some of his theological works, and one on radulae - https://en.wikipedia.org/wiki/Henry_Melvill_Gwatkin

[9] They are listed in part 64 of the Handlists of the Molluscan Collections in the National Museum of Wales: Series 1. Radula Slides of H. M. Gwatkin and J. R. le B. Tomlin. Compiled by Alison Trew. February 1996. 124 pages.

[10] See - https://www.coleoptera.org.uk/biographical-dictionary?page=96

[11] In the same year, Professor S.J. Hickson was President of the Manchester Microscopical Society.

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Rees, W. (1962). Ernest Ruthven Sykes (1868-1954). *Journal of the Society for the Bibliography of Natural History* **4** (1): 20-27 [including bibliography].

The piece below was sent to me by the late Graham Saunders (1944 – 2015) back in March 2014. In that year he sent me two other articles which were published in 2015: *Mollusc World* **37**:24–27 (on *Calliostoma*) and **38**:7 (on *Pholadidea loscombiana*), the latter published shortly after his death. The article did not appear at the time because Graham felt it was merely a series of notes, however having rediscovered the piece recently I thought it worth including as I am not aware of it being published elsewhere. Any comments from readers are welcome. Note that *Chlamys nivea* is now accepted as a sub species of *Mimachlamys varia*. [Ed.]

Conjecture on proto-sentience

Graham Saunders

The following is derived from combination of personal observation spread thinly over about forty years and hearsay which in this case involves the interrogation of numbers of divers who were not primarily conchologists, malacologists or shell collectors although some are aqua-culturists.

I have been attempting to rationalise a series of observed or reported behavioural phenomena observed in populations of some scallop gene pools.

I have been attempting to understand the population dynamics of *Chlamys nivea* MacGillivray 1825 [figure 1 uses the current name]. The breeding cycles of all potentially commercial scallops have been very extensively monitored over a long period, and the results well documented, although this data does not normally reach the Society journals or reference documents that we, as amateurs, refer to.

figure 1: *Mimachlamys varia nivea* (MacGillivray, 1825). Under boulders on mud, Port an Eorna nr. Plocton, nr. Skye, Scotland (2009 – Conch. Soc. marine field meeting). (photo: Peter Topley)

Species and recognisable populations within species exist over distribution ranges which include wide varieties of environmental conditions and they evolve to exploit them. Although we might expect DNA sequencing to offer certain proofs, it will not reveal the whole story. There are some rather inconvenient paradoxes out there which make absolute rubbish of our traditional logic. I will only bore you with one example: brown trout and sea trout look different but according to DNA sequencing they are said to be one species. Their offspring can be one morph or the other if they have the environmental opportunity. The best survival option is to have some of each.

Long term survival requires a gene pool to deliver offspring to a suitable habitat in sufficient density to create a viable breeding colony. Filter feeders do not recognize their own young so new virgin territory is ideal.

Monitored populations have demonstrated a very clear relationship between phases of the moon and scallop reproductive cycles. Spat release is normally followed by twenty-eight days as plankton. Exceptionally this may extend to fifty-six days if conditions are harsh and growth rate is retarded. We do not know of any capable of surviving a third phase. The spat cloud is initially composed of an astronomical number of individuals which are under relentless attack by larger organisms in the plankton. The survivors need to stay together for an entire lunar month if they are to establish a new colony. A level of communication is necessary to achieve this. I assume chemo-signalling is the most likely media. I have one eyewitness report from a diver inspecting a recently laid oil pipeline across a featureless sea bed. On one stretch of pipe over a distance of about four metres was a settlement of more than twenty *Chlamys* [now *Pseudamussium*] *peslutrae* [figure 2]. The remainder of the inspected pipe was clean.

figure 2: *Pseudamussium peslutrae* (Linnaeus, 1771). Off NW Scotland. (photo: Peter Topley)

Instinct is transmitted hard wired, in the first instance, via a single cell. There seems no alternative explanation as most, if not all, life forms come into existence with some level of it. It carries instructions at myriad levels of complexity. My conjecture is that a spat cloud has a self-awareness facilitating selective concentration of the most similar individuals for delivery to a viable habitat.

British Shell Collectors' Club

Saturday 29th April 2023

Shell Convention

An opportunity to meet other members and to seek advice from experienced collectors. The event is well attended by dealers, and there may be members' exhibits and exchange tables, and sometimes an auction of fine specimens and books.

Saturday 28th October 2023

Shell Show

• shells for sale • exhibits/prizes • dealers' tables
• all welcome – beginners to experts

Both are open 9am to 4pm Open to the public
Admission free Theydon Bois Community Centre,
Coppice Row, Theydon Bois, CM16 7ER.

Please check web site for up to date and further information: www.britishshellclub.org

Hartslock field meeting, August 6th 2022

Tom Walker

figure 1: Looking west over the River Thames from the Hartslock reserve. The grassy hillside with scrub is shown in the foreground.

It was not the best of conditions for a field meeting. There had been no rain in this area of Britain for many weeks and the ground was very dry, so the hope of finding many living shelled molluscs, let alone slugs, seemed slight. Still, for this combined meeting with the Reading and District Natural History Society, we had eight people turn up – three from the Conchological Society and five from the RDNHS, including Chris Raper, the volunteer warden of the site.

Hartslock is a 4.4-ha nature reserve owned by the Berks, Bucks & Oxon Wildlife Trust, south-east of Goring in South Oxfordshire, on the north bank of the river Thames. It is a steeply sloping, south-west facing unimproved chalk hillside, mostly grass and scrub, although with some trees along the south-western and north-eastern margins. There are superb views of the river to south and west, the latter towards the Goring Gap (figure 1). The reserve is famous for its orchids, there being at least seven species on the site, including the rare monkey orchid, and it is the only place in Britain where this species is known hybridising with the lady orchid. But by the time of our visit all the orchids were well over.

Molluscs are much less well recorded on the reserve. There are no records on the Conchological Society database prior to 1983, and there are only 35 records in total covering 19 species (with a further one on the National Biodiversity Network, NBN) – and no slugs. So it was well time that a more comprehensive survey was carried out.

We started by walking along the south-western margin of the reserve where there is a small path between scrub and woodland – the latter outside the reserve. We searched among the scrub and under mature oak, beech and ash trees. Live *Pomatias elegans* were present in abundance, as would be expected on a chalky hillside. An interesting find was examples of *Cepaea nemoralis* in aestivation (figure 2) with a very well-developed epiphragm – a sign of the extremely dry conditions. A few other species typical of shaded ground were observed, some living but only empty shells of several taxa. We had hoped to find some slugs but the ground was much too dry and any that might have been present would have descended well below the ground surface.

We next climbed the steep hillside to explore the grass/scrub areas. These produced good numbers of typical xerophilic species but the only living mollusc was *Abida secale*, found by Rosemary Hill. It was disappointing not to find any *Pupilla muscorum* but this species seems to be on the decline and it is possible that it is no longer living on the site – previously there has only been a single record, in 1983. Another nationally declining species is *Helicella itala*; we found numerous dead shells but no living examples, although live specimens were seen by the author earlier in the year and are regularly recorded by Chris Raper, the warden.

figure 2: *Cepaea nemoralis* with epiphragm.

The third site we investigated was a small accessible area in the fringe of scrub woodland along the north-eastern margin of the reserve. Among the scrub was an area of longer grass which looked promising. It was good to find a few living molluscs in this slightly cooler shaded area, but the ground was still very dry and there was no evidence of any slugs. Somewhat surprisingly, perhaps, is that we did not even find *Discus rotundatus* here.

We returned to the reserve entrance for lunch and took the opportunity to examine some of the numerous anthills among the grass, built by the yellow meadow ant, *Lassius flavus*. Naked eye searching produced several small species, including *Cecilioides acicula*, but a sample taken for sieving from abandoned anthills turned up trumps. In about 1 litre of sediment there was a total of 152 shells from 20 species, including two which had not been found elsewhere, and indeed were new to the site: *Acanthinula aculeata* and *Punctum pygmaeum*, as well as several slug plates. Many of the anthill remains were very small and fragmented, some being less than 1 mm in size, and it was not possible to identify the *Cepaea*, *Cochlicopa* or *Trochulus* fragments to species. Of course, all the anthill specimens were dead and it is impossible to determine how recent they are – some may have been in the ground for many decades or even longer, but it is good to know that at some time in the past these species were present at Hartslock and could well be found living if visits were made in more favourable climatic conditions. And we now know that some slugs do inhabit the reserve, even if only their internal shelly plates were found during the present visit.

It has been possible to add 11 species to the Conchological Society database for the reserve, although sadly only three were found alive: *Cochlicopa lubricella*, *Cornu aspersum* (figure 3) and *Trochulus hispidus*. A return visit during more clement conditions would hopefully turn up more living molluscs. The only previously recorded species we did not find was *Cochlicopa lubrica*; I wondered if the two previous records (in 1983 and 2004) could be a mistaken identification for *C. lubricella*, but since one of the records was my own I was able to review the relevant specimen, and I am happy with the original determination.

figure 3: An unusually pale juvenile *Cornu aspersum*.

figure 4: Male rufous grasshopper, *Gomphocerippus rufus.*

The Hartslock reserve is sufficiently small that we had covered most of the likely shelly areas in the morning and after lunch we all joined the Natural History Society, when a total of 15 people strolled around the reserve looking mainly for flowers and butterflies, but taking an interest in all the very rich biota of the site. Several nationally scarce insects were observed: the rufous grasshopper, *Gomphocerippus rufus*, is common here (figure 4), and we were pleased to find the delightfully named bastard toadflax bug, *Canthophorus impressus* (figure 5).

The day was enjoyed by all those who shelled on this delightful reserve and I thank everyone for coming, and in particular Chris Raper who facilitated the visit and kindly unlocked the entry gate to allow us to park on the grass, thus saving a 20-minute walk from the nearest public parking.

figure 5: Bastard toadflax bug, *Canthophorus impressus*.

HARTSLOCK 6 August 2022	Previously on CS database	South-west border path	Grass/scrub hillside	North-east wood/scrub area	Anthills by entrance (shell only)
		SU616703	SU617793	SU617794	SU161796
Abide secale	y		l		
Acanthinula aculeata					2
Aegopinella nitidula	y	s		l	5
***Agriolimax /Limax* slug plates**					1
Carychium tridentatum		s			19
Cecilioides acicula			s		19
Cepaea nemoralis	y	l	s		
Cepaea sp.					1
Cernuella virgata			s		
Clausilia bidentata	y		s		
Cochlicopa lubrica	y				
Cochlicopa lubricella		s	s	l	
Cochlicopa sp.					5
Cochlidina laminata	y	l		s	
Cornu aspersum		l			
Discus rotundatus	y	l			10
Helicella itala	y	s	s		1
Milacidae slug plates					4
Monacha cantiana	y	s		s	
Nesovitrea hammonis	y	s			3
Oxychilus alliarius		s			
Oxychilus cellarius	y	s		s	
Oxychilus navarricus helveticus	y		s		
Pomatias elegans	y	l		l	1
Punctum pygmaeum					2
Trochulus hispidus		s		l	
Trochulus striolatus	y	l	s	s	
Trochulus sp.					18
Vallonia costata	y	s		s	6
Vallonia excentrica	y		s	s	39
Vertigo pygmaea	y		s		4
Vitrea contracta		s	s	s	10
Vitrina pellucida				s	1
Xeroplexa intersecta	y		s	s	1
TOTAL SPECIES	**18**	**17**	**13**	**13**	**20**

table 1: The molluscs found at Hartslock Nature Reserve; the species in bold are new to the Conchological Society database for the reserve; l = live specimen, s = shell only. The anthill column shows the number of each species within the 1-litre sample.

entoLIVE – Free invertebrate science webinars

Keiron Derek Brown

The conservation, ecology and marine sectors all rely on scientific research in order to inform policy and guidance, and for practitioners to undertake evidence-based actions that improve habitats for wildlife. Despite the need for access to research outputs, many practitioners, recorders and volunteers are unable to access them due to journal paywalls or technical language (such as complicated statistical analysis).

As a non-academic who has worked in the conservation and environmental education sectors for more than ten years, I have experienced these barriers personally. *entoLIVE* is a new series of webinars launching in 2023 that will aim to bring invertebrate scientists together with naturalists and biological recorders. Each webinar will be presented by a scientist and focus on interpreting a research area for a non-academic audience, with a chance for the audience to ask questions following the presentation. The webinars will be completely free to attend.

As National Recorder for Earthworms, I'm passionate about ensuring the often-overlooked invertebrates are given the spotlight they deserve: *entoLIVE* will go beyond the usual insect groups and cover subjects on any and all invertebrate groups. Season 1 of *entoLIVE* is scheduled for February to May 2023, with 20 fascinating invertebrate research topics on the menu and four of these have a specific focus on molluscs.

The first talk on molluscs will be delivered by Fernando Ángel Fernández-Álvarez, a marine zoologist specialising in cephalopods, with a focus on the oceanic squids that occupy offshore pelagic environments. They exist in their own mesopelagic realm, where they attain huge biomasses and are crucial for energy and matter cycles in the water column. Besides their ecological importance, they are also important economically as they sustain almost 50% of current cephalopod landings in the world. Fernando will give a short snapshot of their mysterious and amazing life, and discuss their interspecific relationships.

Imogen Cavadino is nearing the end of her PhD looking at slugs in British gardens and has agreed to share her results with us. In this talk we will hear about the citizen science research Imogen has been running; from the species-specific cellar slug survey to 'Slugs Count', the first in-depth study of the British garden slug fauna since the 1940s. We'll hear how over 22,000 new slug records made by the public have helped inform our understanding of the slug fauna in Britain and evidence the large-scale changes we have been seeing over recent decades.

Louise Lavictoire is Head of Science at the Freshwater Biological Association, leading an enthusiastic team of people working on species recovery and citizen science projects. The freshwater pearl mussel (*Margaritifera margaritifera*) is a fascinating species and a powerful ecosystem engineer in the UK's rivers and streams. Many of the UK's populations are in freefall with the youngest individuals in the wild being over 70 years old! Time is running out for this species. This talk will explore what the Freshwater Biological Association and partners are doing to bring this species back from the brink of extinction.

The final molluscan *entoLIVE* webinar of the first season will shine a light on the Marine Mollusc Recording Scheme and showcase the work of the Conchological Society of Great Britain & Ireland. The scheme will be 100 years old in 2023 yet is as relevant now as it has ever been. The current scheme coordinator, Simon Taylor, will outline what is involved and how data is gathered, verified, stored and shared.

Other subjects that are well worth checking out include earthworms, bees, ladybirds, crawfish, jellyfish and grasshoppers, as well as a talk on the work by Oxford University and partners to sequence invertebrates for the Darwin Tree of Life project.

All 20 *entoLIVE* season 1 webinars are now open for bookings on Eventbrite: https://www.eventbrite.com/cc/entolive-74679.

Please note that spaces are limited so book early to avoid disappointment.

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(see web site [http://www.conchsoc.org/pages/contacts.php] for additional contact details)

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See website for further details. Payments in sterling only, to Catherine Jagger, CIRCA Subscriptions, 14 St Barnabas Court, Cambridge CB1 2BZ, (shellmember@gmail.com). For UK residents we suggest payment by standing order, and if a UK tax payer, please sign a short statement indicating that you wish the subscription to be treated as Gift Aid. Another simple and secure way of paying for both UK and overseas members is by credit card online via PayPal from http://www.conchsoc.org/join. Overseas members may also pay using Western Union, but a named person has to be nominated, so please use the Hon Treasurer's name, Brian Goodwin.

How to submit articles to Mollusc World

Copy (via e mail, typed or handwritten) should be sent to the Hon. Magazine Editor (contact details above). If sending copy using e-mail please include a subject line 'Mollusc World submission'. When emailing several large file attachments, such as photos, please divide your submission up into separate emails referencing the original article to ensure receipt. Electronic submission is preferred in Microsoft Word. Images and Artwork may be digitised, but we recommend that a digital image size 200Kb- 1Mb (JPEG preferred) be sent with your submission. All originals will be treated with care and returned by post if requested. Authors should note that issues of the magazine may be posted retrospectively on the Conchological Society's web site. Please aim for **copy intended for the March 2023 issue to be sent to him before 21st Jan. 2023**; inclusion in a particular issue is at the Hon. Editor's discretion and depends upon the space available but contributions are always welcome at any time.

Membership update

The following Conchological Society members have not previously been included in either this column of Mollusc World or in the latest edition of the Members' Guide (2022). Please note that to be included here members must sign a data protection consent form. If you have not been included and now wish to be please contact Catherine Jagger at CIRCA subscriptions (details above).

Codes in italics after a member's contact details indicate their interests:
A – Applied conchology (shell artefacts/money, cooking, art etc);
B – Conchological books; *C* – Conservation; *D* – Diving;
E – Ecology and pollution; *F* – Fossils
G – General malacology including genetics/physiology;
Mb – British marine; *Mf* – Foreign marine;
Nb – British non-marine; *Nf* – Foreign non-marine; *P* – Photography;
W – Conchological poetry and prose; *Z* – Captive breeding of molluscs

New member

Ms H. Gardiner h.gardiner444@btinternet.com
C D E F Mb Mf P

Changes of address/email etc

Mr MC.R. du Feu, 1 Sealstrand,, Dalgety Bay, Dunfermline, Fife, KY11 9NG

Dr C. Gleed-Owen CGO Ecology Ltd, 31 Walkford Road, Christchurch, Dorset, BH23 5QD

Mr B. Pinar, 39F Coppergate, 17-18 The Kingsway, Swansea, SA1 5JZ (change of house number)

Conchological Society of Great Britain and Ireland

Diary of Meetings

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

Indoor meetings

Details of whether a meeting is 'live' plus Zoom or Zoom only, will be circulated to members prior to each meeting, together with instructions on how to access the NHM and /or the online Zoom. News updates will also appear on the Society's website.

It is ESSENTIAL to let Catherine Jagger at CIRCA (shellmember@gmail.com) know of your intentions to attend on Zoom or at the NHM, at least a week before each meeting. She will then send you joining instructions and an agenda. If you do not respond on time, it may not be possible to make the necessary access arrangements. Zoom meetings will open from 13.45 and please ensure that you join before the 14.00 start as late admissions may be impossible.

Field meetings

Specific meeting arrangements and any changes will appear on the Society website which Society Members are advised to visit regularly. It is essential for those wishing to attend ANY of the field meetings, to contact the leader in advance (ideally at least a few days before) to book a place and obtain further details.

Saturday 19th November 2022: REGIONAL INDOOR MEETING: World Museum, Liverpool, L3 8EN.
To include an opportunity to see some of the museum's mollusc collections, a demonstration of live projection facilities, an appreciation of Nora Mc Millan and talks on a range of molluscan topics which are still being arranged. Please contact **Rosemary Hill** (rosemaryhi@lineone.net) for more details if you are planning to come.
(A **meeting of the Conservation and Recording Committee** will be held on the following day (Sunday 20th November, 10:00 for 10:30 – 13:00). Agenda items will include recent developments with iRecord and iNaturalist, the Society's CC-BY-NC data license on NBN, and progress on conservation initiatives. Any Society member is welcome, but the venue size limits us to 20 people. Please contact the chair, **Ben Rowson** (nonmarine@conchsoc.org) if wishing to attend.)

Saturday 10 December 2022: INDOOR MEETING with exhibits and lecture (NHM with Zoom link)
Guest speaker: Dr Matt Law (Bath Spa University) 'Reflections on 50 years of Land Snails in Archaeology.'
It is half a century since John Evans published his seminal work. Matt will discuss the influence it has had on the investigation of past environments, and how the subject has evolved since it first appeared in the archaeological world.
14.00-17.00 (13.45 Zoom sign in - pre-register with Circa); Angela Marmont Centre, Natural HIstory Museum, London SW 7 5BD.
(Council members please note that there will be a Council meeting before this meeting (Live and Zoom))

Saturday 18th February 2023: INDOOR MEETING with exhibits and lecture (NHM with Zoom link)
Guest Speaker: Paul Chambers (Jersey) 'The life and times of Norma the Omer'
A talk focusing on the ecology and conservation of Channel Island Ormers (*Haliotis tuberculata*) with a particular focus on the long-term study of an individual animal.
14.00-17.00 (13.45 Zoom sign in - pre-register with Circa); Angela Marmont Centre, Natural HIstory Museum, London SW 7 5BD.

Saturday 15th April 2023: ANNUAL GENERAL MEETING AND ADDRESS (NHM with Zoom link)
Guest speaker: Martin Willing '*Things are not always what they seem; the first appearance deceives many* ....
does recent work on Vertigo species in Wales amount to a paradigm shift in assessing habitat parameters?'
14.00 –17.30 (13.45 Zoom sign in - pre-register with Circa): Angela Marmont Centre, Natural History Museum, London SW7 5BD
(Council members please note that there will be a Council meeting before this meeting (Live and Zoom))

Further INDOOR MEETINGS (NHM with Zoom link) on the following Saturdays (details TBA):
15th July (Zoom only); 14th October; 18th November (**or** Regional Meeting outside London); 9th December.

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

Meeting Programme compiled by Martin Willing. Contacts for meetings related matters are either Martin Willing (martinjwilling@gmail.com) OR Rosemary Hill (secretary@conchsoc.org).