

Mollusc World

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Cardiff Regional Meeting
Recording & Conservation reports
Molluscs in 'Lockdown'



The
Conchological
Society
of Great Britain & Ireland

Helping to understand, identify, record and conserve molluscs

From the Hon. Editor

With COVID-19 it seems like a 'different world' since my last editorial in the March issue of this magazine.

As you will no doubt be already aware, the Society made the decision to cancel all field and indoor meetings this year until further notice, following HM government guidelines. Similar decisions were taken by other organisations. Although the situation may well have changed by the time this magazine goes to print, there is no doubt that there will not be a complete 'return to normal' for some time to come. Although the AGM has been cancelled, following the result of the postal ballot we are pleased to welcome Mags Cousins as our new Hon. Conservation Officer and three new Council members: Peter Barfield, Peter Cosgrove and Rupert Honnor. I am sure that you will also join me in offering a huge 'virtual' vote of thanks to our current Hon. President, Martin Willing, who has performed the role of Hon. Conservation Officer for 36 years from its inception. Martin gives some of the background to this in his extended report included in this issue. In addition, our huge thanks are extended to Bas Payne, who has decided to step down as Hon. Programme Secretary after eight years carrying out this vital role with great success. Please see back cover regarding interim contact arrangements relating to meetings.

It was decided to complete the remaining AGM business formalities by postal ballot. As the number of postal votes received exceeded the number required for the election to be valid, the votes were counted and checked. All resolutions (1) election of examiner of accounts, (2) Treasurer accounts and report, (3) remaining Officers' reports and (4) changes to rules 8,10,11,13 and 19 have been approved. Thank you to all members who voted. There will not be a face-to-face AGM this year but we hope to welcome Robert Cameron to give his talk 'At a Snail's Pace: how a New Naturalist got written' at a future meeting.

I have heard from several people about mollusc encounters in their gardens during the period of 'lockdown'; from Jim Logan looking at snails in his garden in Scotland and Matt Law discovering some new snail records in plant pots on his balcony in Bristol, to Leah Farley, who found a snail crawling on her body after sunbathing for a long period (!) in her garden. There have been some interesting finds reported through postings on the British Marine Mollusca and Slugs and Snails Facebook groups, so plenty of active recording is taking place, and I'm sure that many of you will be 'out in the field' over the summer and autumn period, so please continue to send in contributions for the magazine.

Peter Topley

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

Front Cover: Conchological Society Field Meeting to the Isles of Scilly. Simon Taylor searching for bivalves on the shore SE of Old Grimsby, Tresco, 29th September 2019. (see page 20). (photo: Peter Topley)

Back in 2009, the Open University hosted a massive citizen science project, the Evolution Megalab, to record variation in the shell colour and banding polymorphism in *C. nemoralis* over the whole of its geographical range (Figure 1). It incorporated all the known historical records, and added new records sent in by the public during 2009, Darwin Year. I advertised this project in Mollusc World (Issue 17, July 2008, pp 11-13), contrasting it with a similar scheme, restricted to Great Britain and Ireland, launched by Cyril Diver in 1938, but aborted because of the start of WW 2.

The project resulted in many papers, revealing both geographical variation and changes over time. The key paper (Silvertown *et al.*, 2011) dealt with broad, range-wide patterns. In total, it used data from more than ten thousand populations across the range. The data on which the analyses were based is publicly available to download at [Dryad:doi:10.5061/dryad.p7h802r0](https://doi.org/10.5061/dryad.p7h802r0). These data, however, locate samples only to the nearest 1/100 of a degree (e.g. 49.23° N), covering a distance of about 1 km. I do possess most of the data with a greater degree of precision (usually to 100 m). As records of occurrence, British and Irish records have been passed to the non-marine recorder.

Many analyses looked for changes over time, with climate change very much in mind. But this was more difficult than anticipated, because older records were only rarely in the same places as those sampled in the 21st century. A few very local studies were far more conclusive (e.g. Cameron & Cook, 2013; Cameron *et al.*, 2013) because sites could be re-sampled precisely, sometimes to within a few meters. *C. nemoralis* populations vary greatly over short distances.

Some countries had many records. Poland had few, but the Megalab stimulated a lot of interest, and there were many records available after the Megalab project had closed. *C. nemoralis* has been spreading rapidly in that country and even further north and east. Polish malacologists and I, led by Dr Małgorzata Ożgo, decided to undertake a national version of the Megalab, collating all existing records and inviting new ones, vetted by experienced people. Altogether, we had 1048 populations to use in analysis (Ożgo *et al.*, 2019a) that showed intriguing patterns of variation with geography, climate and habitat. More records came in later.

Learning from the experience of the Megalab, we wanted these data to be available to everybody, in the hope both that gaps would be filled and that people would be stimulated to re-sample populations from which there are earlier records. We needed to give more precise locations than those given in the

public Megalab database. So, through the Polish Malacological Society (Stowarzyszenie Malakologów Polskich) we have set up an open access database with locations defined to 1/1000 of a degree, often to 1/10000. The site, hosted by Adam Mickiewicz University, Poznań, can be found at <http://cepaea.amu.edu.pl> and within it, Cepaea database final.docx gives instructions, and the data themselves at CEPAEA_DATABASEv.1.xlsx. A full account and instructions are also published in Ożgo *et al.* (2019b), in the Polish journal *Folia Malacologica*, which is open access.

It may be that few readers visit Poland. But if you do, and find *C. nemoralis*, please try to score populations that you find, following the instructions given in the website. And see if there are existing records near the places you visit. There are templates for recording, and instructions for passing the record on. All records are moderated, learning from the experience of the Megalab. If you have visited from the UK, you may find it easiest to send records to me at r.cameron@sheffield.ac.uk, but other moderators are listed at the website.

I think this is an exciting development. *C. nemoralis* is spreading rapidly in Poland. Tracking this, and the genetic changes that take place as it does so help us understand the impact of environmental change. It might be a model for other surveys in the future.

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figure 1: A very polymorphic sample of *Cepaea nemoralis* from northern Poland. The very observant may notice a few *Cepaea hortensis* in there, a potential cause of confusion to the uninitiated!

Regional indoor meeting: Amgueddfa Cymru – National Museum of Wales, Cardiff. Saturday 16th November 2019

Peter Topley

This regional meeting of the Conchological Society was kindly organised by our Hon. Non-Marine Recorder, Ben Rowson (who is Senior Curator: Invertebrate Biodiversity (Terrestrial Mollusca) at the museum) and Anna Holmes (who is Curator: Invertebrate Biodiversity (Bivalves) and Hon. Editor of the *Journal of Conchology*). The meeting took place in the Clore Learning Space on the ground floor of Amgueddfa Cymru – National Museum of Wales (NMW) and consisted of seven talks about recent discoveries on marine, terrestrial, and freshwater molluscs, followed by a viewing of the mollusc collection and library.



figure 1: View of NMW, Cathays Park, Cardiff.

The following summaries or abstracts of the talks are either taken from my notes or provided by the speaker.

Studies of Irish freshwater pearl mussel (*Margaritifera margaritifera*) populations. Evelyn Moorkens

M. margaritifera is a critically endangered species. Evelyn said that the process of investigating the species in Ireland has included determining the presence and condition of the population, monitoring population trends, identifying possible causes of any decline, interpreting the data obtained and thinking about rehabilitation and conservation measures. The life cycle of *Margaritifera* involves the larvae attaching to fish gills for the winter, dropping off in the following early summer, burying c.5 cm into the river gravel and emerging when they are big enough to withstand flowing water in order to filter feed. There could be problems at various stages of the life cycle, for example with the host fish (not a usual problem in Ireland), adult mussels in stress and not performing properly, juveniles lost through oxygen blockage in the sediment and chronic poor habitat conditions within a whole catchment. *Margaritifera* is the first living organism that has the same national published monitoring standards across Europe to enable comparison of results.

Several major questions were posed. Using standard methods of surveillance how could they assess the condition and trends over time and look for the reason for the trends? How were they to approach conservation? How did each population achieve the conditions that allowed a sustainable population to continue in the past/present? What were the expectations for each population and what measures could be taken to achieve them?

Monitoring included regular assessment of the population status of mussels, through repeat transects, juvenile habitat mapping and age profiling, together with riverbed redox and near-bed velocity monitoring and assessment of algal and macrophyte cover. There are around 130 different populations of mussels in Ireland, 27 of which are in Special Areas of Conservation (SACs). About a third of them are still recruiting populations in catchments with lakes and wetlands above them (type A), the remainder are either rapidly declining with very little recent recruitment and intensified land use near the river (type B) or seriously impacted old populations (type C) on the east coast. Rapid assessments and baseline studies began in 2004 but these did not give population trends; however, habitat monitoring was now incorporated in addition to counting the mussels. This was used to assess the population and recruitment levels related to the type of habitat, to assist with prioritising rehabilitation. Decline is seen as related to loss of population condition, coupled with decline in the habitat. Alongside this it had been important to monitor the rate of juvenile recruitment. Type B populations had begun to move towards larger mussels predominating and in type C there were very few individuals and these were adults only.

Data was supplemented with shell analysis done in conjunction with a Swedish lab. In type B populations where land drainage and forestry etc were showing serious impacts, shells showed lines in their growth rate associated with pollution incidents where shells had closed up and not been able to filter feed and worse situations where mussels had almost died. Adding habitat monitoring to demography gave a prediction of population trends (is it staying at a sustainable level or on an 'extinction curve'). Further work has shown that population and recruitment decline is linked to adverse changes in oxygen levels and water velocity. Host fish species were also monitored; in the areas with recruiting mussel beds there were fewer fish than in declining areas (because there is more nutrient available), with fish numbers much lower in the worst areas. Encystment of mussel larvae in the best habitats occurred in salmon, with both salmon and trout in declining habitats and only trout in the worst habitats. There was very high mussel genetic diversity in the best rivers and very poor diversity in the worst rivers. Changes in shell growth are indicative of stress and such adults don't breed properly, thus a 24h pollution incident could have consequences on juvenile recruitment for a whole year. Therefore, the prioritisation for type A rivers is total catchment protection. An EU IEP (European ITS Platform) funded project was helping to improve drainage etc.; captive breeding would also be a priority.

Conchological Society field meeting to the Isles of Scilly, September 2019. Sebastian Payne

Bas gave an update on some of the preliminary findings from this field meeting. Based on the main island, St Mary's, most of the field work concentrated on the more sheltered, 'inward facing' shores there and those of other Islands: St Agnes, Bryher, St Martins and the southern end of Treco. More details of this meeting are given in the *Hon. Marine Recorder's Report* in this issue of *Mollusc World*.

Worldwide Diversity and Biogeography of *Vertigo*

Brian Coles

(Abstract)

The genus *Vertigo* (Pupillidae) consists of approximately 100 species of minute land snails widely distributed in the Temperate to Arctic of Asia, Europe, and North America. *Vertigo* had been poorly studied in all respects: shell variation/species definition, distribution and ecology. Study of thousands of shells, combined with phylogenetic analysis of mitochondrial and nuclear DNA sequence of ~400 individuals worldwide demonstrated that the highest diversity occurs in North America, where there are species of circumboreal distribution, species unique to the continent, and species of Asian/Beringian distribution. Asia has the second highest number of *Vertigo* species. The molecular data indicate that there are pairs of 'sister' species – North America/Asia vs Europe – of closely similar shell morphology. Thus, although Europe has the least diversity of *Vertigo* these species are of particular conservation importance.

New snails from the 'sky islands' of Kenya (Ethiopia, and Tanzania)

Ben Rowson

Some of Ben's talk was previously presented at a meeting of the Netherlands Malacological Society (NMV). Kenya is bigger than the UK and Ireland together and very variable climatically from hot desert to mountains which trap rainfall which produce tropical rainforest on their slopes. It is also an area that is much more vulnerable to climate change. The mountains are therefore 'islands' of existence for snails because there is no suitable habitat in between (hence the term 'sky islands'). The sky islands come in two different forms: volcanoes and block-faulted mountains. 13,779 snail specimens comprising 75 species were collected from 13 sites visited on an expedition through northern Kenya in 1998. For a tropical mountain range the total number of species from the expedition and from the literature is quite good, although not as high as the richest lowland rain forest. Some of the snails are large, such a subulinid species in the genus *Krapfiella* (named after Ludwig von Krapf (1810-1881) one of the first Europeans to see Mount Kenya) from the block-faulted mountains. At the other end of the size scale are the small species of *Gulella* in the family Streptaxidae. Some of the genera are more familiar to us, such as *Lauria*. These species are very variable and it has been difficult to decide whether these are different species on different mountains. A conservative approach has therefore been taken when assigning to species level. However, some species are definitely new (eg Rowson, Seddon & Tattersfield, 2009), including some held in museums that haven't previously been recognised. There is a suggestion that the tiny globally invasive species *Paralaoma servilis* in the family Punctidae may have its origin in Africa (rather than the commonly proposed Australia/New Zealand), because there are many other species here that are similar to it. Across the sky islands, the diversity declines while endemism increases as you go north, away from the higher altitude land. Species diversity seems to be nested in the south so it seems that a dispersal from the south has occurred at some point. Elsewhere in Africa work has included identifying and describing Veronicellid slugs and Vitrinid semi-slugs in Ethiopia.

Rafting of Atlantic Bivalves. Anna Holmes

With a small team of collaborators Anna has been looking at non-native species washing ashore on British and Irish

beaches. All the non-native bivalves that they have been found are from the West Atlantic and arrive on pieces of anthropogenic waste, usually associated with the fishing industry, such as crates, ropes, buoys, buckets etc. Details of seven species found were given by Holmes, Oliver et al. (2015) but since then the number of species has quadrupled and a second paper was planned at the time of this talk.

Rafting is when organisms float on the sea surface attached to something, enabling them to reach areas that they would not otherwise access. This has happened in nature for millions of years (e.g. the lemurs of Madagascar or more recently green iguanas in the Caribbean). To be an efficient rafter you have to 'hang on tight'; all the bivalves found can do that as they have strong byssus threads or cement to anchor themselves or, in the case of gastropods, a strong foot. Most of the bivalves are filter feeders and therefore can survive the journey for a long time; any predatory gastropods can just eat their travelling companions! To become an invasive the species needs to be able to grow and reproduce on the raft. If the species is attached with a byssus then disembarkation is a problem, instead it needs to reproduce at the destination. At present our waters are too cold for them to reproduce. They need a temperature of around 20° C, which doesn't happen very often in the British Isles. However, in Cornwall in 2014 there was a temperature of 20° C recorded, so with sea temperatures rising anything could happen.

Violent storms shook the UK in 2013–14 and a coconut was washed ashore in Cornwall inside which there were boring bivalves, including what was only the second record of the fragile wood piddock, *Martesia fragilis* in the British Isles (Holmes, Fenwick et al, 2015). Cases of anthropogenic induced rafting are increasing; the presence of goose barnacles are a good sign that the item has been at sea for a while. In 2016 a plastic toy boat was stranded on Fanore Beach, County Clare, on the west coast of Ireland. Inside the hull was a transverse ark clam *Anadara transversa* and eight calico scallops *Argopecten gibbus*, indicating that they had rafted from the west Atlantic coast (Quigley, Fenwick and MacNamara, 2018). Other species include the bicolor purse-oyster *Isognomon bicolor*, an invasive species in Brazil, which has been washed ashore in many places in Devon and Cornwall. These species don't have anything similar in the British Isles; however, in County Kerry a buoy was washed ashore with specimens of the turkey-wing mussel, *Arca zebra* which has a type locality of Jamaica and has similarities with two UK species, *A. noae* and *A. tetragona*. Until recently *Chama* was only recorded in the fossil record in the UK, but a few West Atlantic species have now been found washed ashore in Ireland and the UK.

Looking at locations from where data has been received there is a gap in the data from Wales. To try to help resolve this problem Anna is helping set up a small 'citizen science project' to encourage people to look for rafted molluscs on beaches, amongst other initiatives with local organisations. Problems and confusions in recording include delays in adding names to data sets, mis-identifications, species complexes and common names. In order to resolve some of these issues the correct names are gradually being added to the British Bivalves website. There is a non-natives tab where a list of species can be accessed. Thirty non-native species have been identified so far. See https://naturalhistory.museumwales.ac.uk/BritishBivalves/Browse_taxa.php.

Brought to the Surface: a new beginning for freshwater snail identification. Harry Powell Project Officer, NMW

This project was announced in *Mollusc World* (48, November 2018). Much has changed in the field of freshwater gastropod identification since the 4th edition of T.T. Macan's key (Macan, 1977) which remains a standard reference for the British fauna, so an update is due and it is hoped to achieve this by the end of 2020, with a publication date around September. Things that need changing in a new guide include important and modern impacts, phylogenetic discoveries (including new genera such as *Omphiscola*, *Stagnicola*, *Radix* and changes in species names). The way that we identify snail features has also changed. Digital images are now used in preference to hand-drawn diagrams in identification guides (such as those in Macan). Perhaps most importantly the distribution of species has changed. There have also been several occurrences of non-native species that have never before been found in the UK.

In order to be as current as possible, collaboration with expert conchologists is planned along with the inclusion of the latest scientific discoveries in species descriptions. It is hoped that this will highlight the importance of freshwater snails, ensuring that the community is up to date on everything that has changed in the topic. New high-quality digital images will be taken which will help to reduce identification errors. Updated accounts of native and non-native species distribution will be provided, assisted by field work. It is intended that this will help people to understand the decline or rise of certain species in the UK, and hopefully even help some conservation efforts for some species that are becoming rarer.

At the time of this talk over 120 water bodies had been sampled (after about a year) across the country. These included looking for species such as the shining ramshorn snail *Segmentina nitida* in Norfolk and Cambridgeshire. Time has been spent sampling the River Thames in Oxfordshire (looking in particular for the Thames ramshorn snail *Gyraulus acronicus*) (with negative results) and also in Sussex. Almost every canal in Wales has been sampled.

There are 57 species of freshwater snail in the UK. At the time of the talk 45 (approximately 80%) of these species had been located, recorded and collected. Harry then gave some examples of data for some of the species found. For example, although the river snail *Viviparus viviparus* is common throughout England, the most recent record from Wales (according to the NBN Atlas) had been in 2004, however this species was finally found in the Montgomery Canal in Welshpool. They have been collaborating with experts including Ian Hughes, who is breeding the glutinous snail, *Myxas glutinosa* and with Chelsea Davis and Rhys Jones at Aberystwyth University who are investigating the role of *Galba truncatula* in the transfer of liver fluke to sheep and cattle. Non-native species include the trumpet ramshorn snail *Menetus dilatatus* for which they found a new vice-county record in Cardiganshire; the large invasive *Cipangopaludina chinensis* (chinese mystery snail) (Rowson, 2019) and although not a snail, the destructive Asian clam, *Corbicula fluminea*, which is spreading in England, has now been found in two locations in Wales (including at a density of 100 individuals/m² in wetlands near Cardiff) (Powell et al, 2019). The surveys have now been added to the Cardiff collection of UK freshwater shells, and further curatorial work has been undertaken on existing specimens. This work has resulted in a new display

at NMW which includes snail models, real snail shells from the collection, an interactive PowerPoint display and a river diorama which had an estimated 23,000 interactions between March and November 2019 (figure 7).



figure 6: Freshwater snail display in NMW, including snail models (in the image above, from upper left: valve snail *Valvata piscinalis*, marsh pond snail *Omphiscola glabra*, bladder snail *Physa fontinalis* and margined ram's-horn *Planorbis planorbis*).

Project organisers had personally interacted with around 2000 people through classes, conferences and training sessions. At the end of an educational pond dipping session with children at risk of exclusion, one of the children had the positive comment: 'that wasn't as boring as I thought it would be'! There is also a Twitter series called #FreshwaterSnailOfTheFortnight running on the NMW Twitter page. The field work and public engagement is to make sure that the guide is as comprehensive as possible. At the time of the talk a draft key had been finished and Harry brought a copy to show meeting participants. The key has all the species of freshwater snail and it had been tested in five free testing/freshwater snail identification training courses called 'snail days' across the country. People who attended these were given either the new key or the Macan key and a previous unpublished FSC guide and ten mystery snail shell specimens. More specimens were identified correctly with the new key than with the others but less of the flat snails (Planorbids) were identified correctly as they were deemed too difficult. This gave important feedback about areas where improvements were needed.

John Adams of Pembroke, a forgotten Welsh naturalist and conchologist.

Graham Oliver



figure 7: Graham Oliver speaking at the Cardiff meeting.

Graham had contracts for the curation of the George Montagu collection at Exeter museum (Oliver, 2017 etc). During this process he came across the name of John Adams of Pembroke in Montagu's publications. Adams is a common name in the world of mollusc taxonomy (e.g. George Adams, Lionel Adams, Henry Adams and Arthur Adams), but little was known about John Adams (but a descendant of John Adams appeared on 'Antiques Roadshow' with a portrait of him, so we finally know what he looked like). The content of Graham's talk is mostly covered in his paper on this subject (Oliver, 2019) and is therefore summarised briefly here:

John Adams (1769-1798) was a member of a long line of well-connected landed gentry from Pembrokeshire, Wales. At the young age of 25 he was elected a Fellow of the Linnean Society and read four papers before his untimely death by drowning (possibly while dredging, which he did many decades before Forbes) at the age of 29. He described 53 invertebrate species as new to science (43 of which are molluscs) mostly from small molluscan shells, but he should be regarded as a naturalist, not a shell collector. He read mathematics at Cambridge University and therefore had no formal training in the natural sciences, but seems to have relied heavily on his library (which still exists and includes many botanical books with his annotations) and social connections to develop his expertise in natural history. Although never publishing on botany, the annotations in his botanical books and his connections with John Symmons and James Edward Smith show him to be competent with the British flora. Graham suggested that John Adams should take his place, amongst other well-known later figures as a pioneer of marine biology in the late 18th century.

Following the talks, there was an opportunity for those attending the meeting (as on previous occasions at this museum) to visit and examine parts of the extensive mollusc collection and library (front cover). Items on display included specimens in the recently acquired Ed Bishop collection (Willing, 2019) and wax models by Guy Wilkins (Topley, 2019) (figure 8).



figure 8: Wax model by Guy Wilkins of *Polinices catena*, NMW collection 'purchased from Guy Wilkins for 18s 6d* in 1934'.

[* c.£46.30 today. Ed.]

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'Lockdown' Balcony snails from Matt Law

In May Matt e mailed Ben Rowson (CS Non-Marine Recorder) as follows: 'I was rooting around under some plant pots on my (central Bristol) balcony, where a population of (I think) *Ambigolimax valentianus* are thriving rather more than I'd like, when I was surprised to spot some live snails... I was wondering if they could be *Zonitoides arboreus*?' Matt later gave further details: 'the snails are found around the holes at the base of three plant pots which sit in a ceramic planter - I haven't seen any on pots outside of the planter. The plants are all from garden centres/supermarkets. The planter has been there about 8 years, the most recent plant arrival was about 3 years ago. I have found five live snails, all <5mm, and four empty shells.'

Ben was currently 'locked out' of access to the National Museum of Wales collections and he asked me to compare the photos (and also some sample specimens sent by Matt – see below) with specimens in my collection. Despite my initial doubts we both confirmed them as sub-adults of this species. Ben congratulated Matt on finding a new Vice-County record on his balcony! Incidentally, Matt later recorded *Paralaoma servilis* on one of the same pots. [Ed.]



Report of a field meeting at RHS Wisley – 27th April 2019 Imogen Cavadino

The Royal Horticultural Society's garden at Wisley has been cultivated since 1878, when George Ferguson Wilson purchased a 60-acre (243,000 m²) site known as the 'Oakwood Experimental Garden' in which he attempted to 'make difficult plants grow successfully'. After Wilson's death in 1902, Oakwood was purchased by Sir Thomas Hanbury who gifted it to the RHS in 1903 for 'use as an experimental garden and for the encouragement and improvement of scientific horticulture in all its branches' (Historic England, 1999). Since then the garden has grown to 240 acres, containing many formal and informal areas, a large arboretum, a glasshouse with tropical and temperate zones, and a trails field where new cultivars of plants are assessed. The frequent movement of plants, equipment and people onto and around the site seems a likely pathway for a diverse and interesting slug and snail fauna to become established.

The earliest records of molluscs held on the RHS database date back to 1909; *Viviparus viviparus*, *Oxyloma sarsii*, *Oxychilus cellarius*, *Bithynia tentaculata*, *Arion hortensis*, *Ancylus fluviatilis* and *Helix aspersa* (*Cornu aspersum*). George Fox Wilson, the first principal entomologist employed at RHS Wisley 1919-1951, only recorded one mollusc species through his career: *Testacella haliotidea* found in 1940 and 1951 (possibly referring to *T. scutulum*/*T. tenuipenis* under current taxonomy). It's clear that the site has not been subject to good recording effort throughout history, though many records exist from a more recent RHS entomologist carrying out a Bioblitz in 1998. A visit from June Chatfield in 2016 also helped boost the species list. However, with only 45 species of terrestrial and freshwater molluscs recorded at Wisley it seemed likely there were many more to discover. For this reason, we were keen to host a meeting at RHS Wisley, bringing the expertise of Conchological Society members together with RHS horticultural students interested in learning more.

Unfortunately, the week before the field meeting was very dry. Combined with Wisley's freely draining sandy soil and brisk, strong gusts of wind of up to 35mph that day, conditions were not ideal for slugs and snails to be easily found. Despite these challenging conditions, twelve hardy participants took part in an enjoyable day around the garden. Areas of the garden explored included Oakwood, the Alpine Meadow, Battleston Hill stumpery, the glasshouse and the riverside walk (figures 1, 2, 3 and 6).

In total c. 38 species of terrestrial and freshwater molluscs were found during the field meeting. 8 of these were species that had not been recorded at Wisley before (table 1). Incidental records of 5 non-molluscan taxa were also made, including encounters with two species of non-native flatworm only discovered to be present at Wisley this past year: *Parakontikia atrata* (syn *Australopacifica atrata*) and *Kontikia ventrolineata*. A terrestrial nemertean was also found, likely a new non-native species for the garden. However, the specimen degraded before tissue could be used for DNA barcoding to identify to species level. All records have been added to the RHS Wisley biological records database, with mollusc records shared with the Conchological Society's non-marine recorder.

Tom Walker had previously visited the glasshouses (figure 3) at RHS Wisley in December 2014, where he discovered populations of two alien species: *Hawaiiia minuscula* and



figure 1: Attendees in wild area RHS Wisley. (photos: Peter Topley)



figure 2: (above) Attendees and (centre) *Boettgerilla pallens* in the rockery area. (below) *Lauria cylindracea* on wall. (photos: Peter Topley)

Afropunctum seminium (provisional identification). Both species are under 3 mm adult size, and are found around wet stones in the tropical zone of the glasshouse. Tom noticed that in 2019 this area appeared much drier and that the snails were harder to find alive than in his previous visit. A small amount of soil from the area where these were found was taken to be processed by Peter Topley, revealing 45 dead shells of *Hawaiia miniscula* (figure 4), 13 of both adult and juvenile c.f. *Afropunctum seminium* (figure 5), and also dead shells of *Zonitoides arboreus*. *Zonitoides arboreus* is yet to be discovered alive in this area of the garden, but has been previously recorded elsewhere on site in 1962 before the current glasshouse was built.

summer of the correct area revealed several empty shells which have now been added to the RHS collections (as permitted by Natural England). Surprisingly this species appears to be tolerant of a busy, heavily managed site, but the prevalence around one bed may link to enrichment of the soil used for plantings.

Shelled slugs had not been recorded at Wisley since 1951, until last year when an RHS horticultural student sent in a photo from the fruit garden area, believed to be *Testacella scutulum*. Unfortunately, we did not have time to search this area, so the capture of material for formal identification is still to be achieved.



figure 3: (above) Glasshouses, RHS Wisley and (below) the author (on left) with attendees looking for alien molluscs.

(photos: Peter Topley)



figure 4: A spear lily, *Doryanthes palmeri*, from Australia, flowering for the first time after 18 years in the glasshouse.

(photo: Peter Topley)

Some species known to be on site were not found during this field meeting, most likely due to limits of time, the gusty, dry conditions and the size of the gardens. *Helix pomatia* has been documented as present since 2009, with photos of active individuals received by RHS staff in 2018. Due to some confusion with garden area names, we did not manage to find evidence of this snail, but a quick search later in the



figure 4: *Hawaiia miniscula* (Binney, 1841) (c. 2.5 mm), alive (with mite) and shells from soil sample, tropical zone, glasshouse, RHS Wisley.

(photos: Peter Topley)



figure 5: c.f. *Afropunctum seminium* (Morelet, 1873) (adults c. 3 mm), alive and shells from soil sample, tropical zone, glasshouse, RHS Wisley.

(photos: Peter Topley)

Due to the unfavourable weather conditions and size of the site, it was proposed that a follow-up field meeting be held in Autumn at RHS Wisley. Thank you to everyone who came along despite the windy weather and for their valuable effort in helping our knowledge of the molluscan fauna for this site. We look forwards to hosting another field meeting at Wisley on Saturday 3rd October 2020 (government restrictions permitting). Our aim for this next field meeting will also be to start creating a reference and teaching collection of the species found on site. Please contact us in advance if you would like to join this meeting so we can organise free access to the gardens for all participants.



figure 6: Tom Walker with other attendees, sampling an ornamental pond for freshwater molluscs, RHS Wisley. (photo: Peter Topley)

Scientific Name	Common Name
<i>Arion ater</i>	Large black slug
<i>Arion fasciatus</i>	Rusty false keeled slug
<i>Arion intermedius</i>	Hedgehog slug
<i>Cerneuella virgata</i> (dead shells)	Striped snail
<i>Hygromia cinctella</i>	Girdled snail
<i>Lauria cylindracea</i>	Common chrysalis snail
<i>Musculium lacustre</i>	Capped orb mussel
<i>Vallonia excentrica</i>	Eccentric Grass Snail

table 1: List of species records new to RHS Wisley from Conchological Society field meeting 27.04.2019.

Scientific Name	Common Name
<i>Aegopinella nitidula</i>	Smooth glass snail
<i>Afropunctum cf. seminium</i>	
<i>Ambigolimax sp.</i>	
<i>Arion ater</i>	Large black slug

<i>Arion ater</i> agg.	Large black slug agg.
<i>Arion fasciatus</i>	Rusty false keeled slug
<i>Arion hortensis</i>	Blue-black soil slug
<i>Arion intermedius</i>	Hedgehog slug
<i>Arion subfuscus</i>	Dusky slug
<i>Bithynia tentaculata</i>	Common bithynia
<i>Boettgerilla pallens</i>	Worm slug
<i>Cepaea hortensis</i>	White-lipped snail
<i>Cepaea nemoralis</i>	Brown-lipped snail
<i>Cerneuella virgata</i>	Striped snail
<i>Clausilia bidentata</i>	Two-toothed door snail
<i>Cochlicopa cf. lubrica</i>	Slippery snail
<i>Cornu aspersum</i>	Common garden snail
<i>Deroceras invadens</i>	Tramp slug
<i>Deroceras reticulatum</i>	Grey field slug
<i>Discus rotundatus</i>	Rounded snail
<i>Hawaiiia minuscula</i>	Minute gem snail
<i>Hygromia cinctella</i>	Girdled snail
<i>Lauria cylindracea</i>	Common chrysalis snail
<i>Limacus maculatus</i>	Green cellar slug
<i>Limax maximus</i>	Leopard slug
<i>Monacha cantiana</i>	Kentish snail
<i>Musculium lacustre</i>	Capped orb mussel
<i>Oxychilus alliarius</i>	Garlic snail
<i>Oxychilus cellarius</i>	Cellar glass snail
<i>Oxychilus draparnaudi</i>	Draparnaud's glass snail
<i>Oxychilus navarricus</i>	Glossy glass snail
<i>Oxychilus spp.</i>	Glass snail
<i>Pisidium sp.</i>	Pea mussel
<i>Potamopyrgus antipodarum</i>	New Zealand mud snail
<i>Trochulus hispidus</i>	Hairy snail
<i>Vallonia excentrica</i>	Eccentric Grass Snail
<i>Vitrina pellucida</i>	Winter semi-slug
<i>Zonitoides arboreus</i>	

table 2: Full list of species recorded during the field meeting at RHS Wisley.

Other incidental wildlife records:

<i>Australopacifica atrata</i>	Flatworm
<i>Kontikia ventrolineata</i>	Flatworm
<i>Oxidus gracilis</i>	Greenhouse millipede
<i>Ommatoiulus sabulosus</i>	Striped Millipede
Unknown	terrestrial nemertean
<i>Turdus philomelos</i>	Song Thrush

Reference

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Non-Marine Recorder's Report 2019

Ben Rowson

The decade ended with yet another warmer than average year throughout the UK. It was also (according to the UK Met Office) a wetter than average year in many places, even some that saw more than the average number of days of sunshine. All conducive to mollusc recording, as a good set of Society field meetings attest! It was a year that saw a substantial accumulation of records, if relatively little drama in the data.

Activity

The NBN was updated with the Society's 2018 non-marine data in March 2019. Between March 2019 and February 2020, over 6000 records were received and entered into the Recorder 6 database, representing no fewer than 70 vice-

counties of the UK. Around 300 records were received from the Republic of Ireland, all of slugs recorded in 2018 (John Hutchinson). Most of the UK records were made by members fresh from the field, including from Society field meetings in Gloucestershire (Keith Alexander & John Fleming), Shropshire (Mags Cousins), Scilly (Peter Topley), Wisley (Imogen Cavadino), and Knepp (Tom Walker). Others came from Natural England surveys (Mags), a BioBlitz (Peter), and the Brought to the Surface freshwater snails project (Harry Powell, Martin Willing, myself and others). Impressive totals of over 1000 records for 2019 came from Adrian Sumner (all from Scotland) and Chris du Feu (almost all of slugs). Older data added included 550 records from G. W. Pitchford, a Nottinghamshire naturalist

active between 1948 and 1972, thanks to Chris who input the data from Pitchford's notebooks.

A number of errors in the Society's dataset were spotted and corrected this year. The most significant alert was raised by Adrian, who pointed out that the NBN's map for the Slender Amber Snail *Oxyloma sarsii* was at odds with the restriction of this species to southern England and western Ireland. This was mainly due to records imported between 2013 and 2017 under an incorrect synonym (*O. elegans* auct. Brit. non Risso), and has now been corrected. A few off-shore strays and other erroneous older records were corrected after being pointed out by Ian Smith, Tom, or Imogen. Most seem to have been typos or *lapsus calami*, but a few are more subjective. An isolated record of *Theodoxus fluviatilis* from Lanark, apparently deliberately omitted by Kerney (1999) was presumed incorrect. However, following Adrian's discovery of shells from Lanark in the National Museums of Scotland, Edinburgh, he has plans to investigate the area.

At the November 2019 Regional Meeting in Cardiff some of the issues with NBN (and mapping more generally) were discussed with Sophia Ratcliffe of the NBN Trust. At Bas Payne's invitation, Sophia kindly agreed to speak to the Society's Conservation & Recording Committee, whose members were given a demonstration and various insights into the process. In particular there was discussion of marine/terrestrial/freshwater species (and the few which

straddle this), and the distinction between live, shell, and fossil records. The Committee are working to resolve these issues, some of which also affect iRecord verification and the UK Species Inventory at the Natural History Museum. The goal is to allow more informative NBN Atlas maps, and more efficient and accurate recording. Not all problems can be solved immediately but we can be confident of getting there in future years.

On iRecord this year, an additional 3000 records were verified, mainly from 2019 but with a few remaining from 2014-2018. This brings the Society almost up-to-date with submissions at the start of 2020. As in previous years, iRecord submissions came from all parts of the UK (Fig. 1), most concerning common and conspicuous species, with an estimated error/rejection rate of roughly 7%. However, the iRecord data does include a few correct records of more esoteric species, including 11 of the Mud Pond Snail *Omphiscola glabra*, a species for which post-2000 records are scant. I am very grateful to Chris and Imogen for handling most of the slugs submitted to iRecord in 2019. Imogen's own iRecord survey of garden Cellar Slugs (*Limacus*) for RHS also produced a good response, with over 250 records in 2019. So far the results seem to confirm that *L. maculatus* is much commoner than *L. flavus*, with records in a ratio of roughly 15:1.

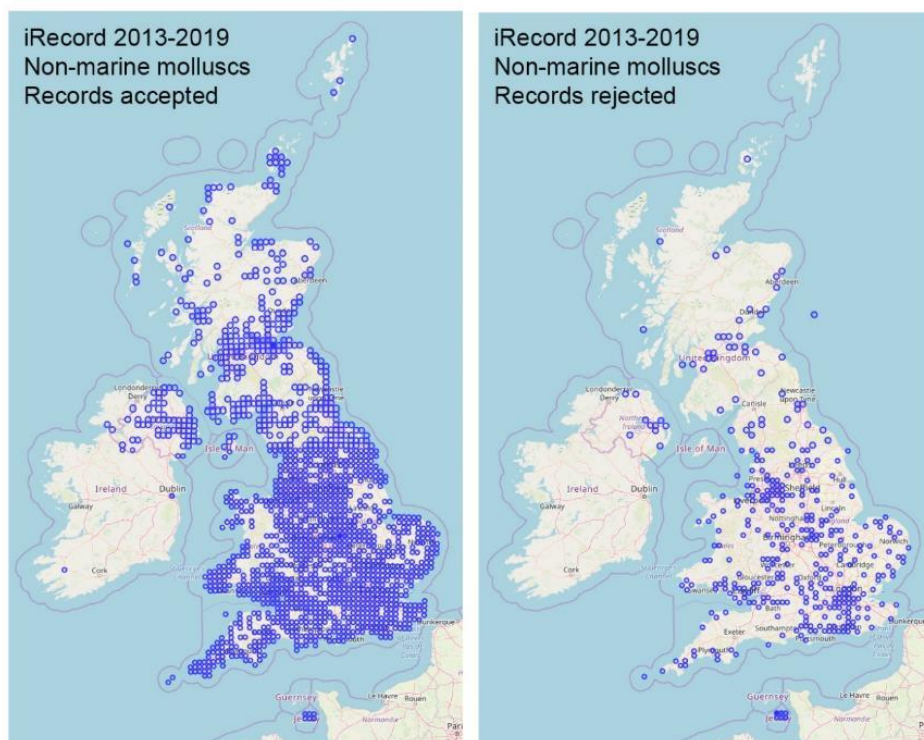


figure 1: Total non-marine mollusc records verified on iRecord since 2013. To date 24,029 records have been accepted (93%) and 1,855 rejected (7%).

Highlights

Eight new VC records were noted in 2019, half of them of slugs: *Limacus maculatus*, Landguard Observatory, East Suffolk (VC25), 21/3/2019, Nigel Odin/Ian Killeen; *Viviparus viviparus*, Lochmaben, Dumfriesshire (VC72), 5/7/2019, Jim Logan (via iRecord; Fig. 2); *Arion owenii*, Saltburn Gill, North-east Yorkshire (VC62), 19/8/2019, Tony Wardhaugh (confirmed by Adrian Norris); *Sphaerium nucleus*, Woolhampton, Berkshire (VC22), 3/10/2019, Gustav Clark; *Selenochlamys ysbryda*, Treborth Botanical Gardens, Caernarvonshire (VC49), 11/11/2019, Tom Harrison; *S. ysbryda*, Ivybridge, South Devon (VC3), 8/12/2019, Ian Mason. *Menetus dilatatus*, Ynys Hir,

Ceredigion (VC46) 29/6/2019 and *Anisus vortex*, Parc Menai, Caernarvonshire (VC49) 14/9/2019, were two new VC records for the Society found during Brought to the Surface training courses.

Other notable records included the first record of the pestiferous *Tandonia budapestensis* from the Scilly Islands (Peter Topley, during the field meeting), and the nuisance *Corbicula fluminea* in Cardiff Bay, a second site in Wales (by the Brought to the Surface team). *Phenacolimax major*, *Malacolimax tenellus* and *Arion fasciatus* were all reported from Essex, a region in which each is scarce (the first via iRecord by Christian Gaster, the others by Simon Taylor). A

find of *Ena montana* in Gloucestershire by Sophie Harris is not from a new area but, like *O. glabra* mentioned above, this is a declining species for which post-2000 records are few. *Azeca goodalli* was a highlight from the field meeting at Wenlock Edge, Shropshire (Mags Cousins). It was also gratifying to receive several good records for *Pisidium* species from Adrian Sumner, most checked by Martin Willing. Such data are valuable in helping build a picture of distributions.

Finally, the ghost slug, *Selenochlamys ysbryda*, seems to have had a bumper year, with 19 records received (equalling the previous annual maximum). As usual, most were chance finds by members of the public who send in photographs for verification. The many sightings in the south are probably due to the very wet, almost frost-free last quarter of the year. However, the appearance of the species in North Wales and the West Country are further signs of a possibly accelerating spread.



figure 2: Some non-marine highlights of 2019: *Viviparus viviparus*, Dumfriesshire (Jim Logan); *Tandonia budapestensis*, Scilly (Peter Topley); *Selenochlamys ysbryda*, Glamorgan (Chris Wright-Davies); *Corbicula fluminea*, Cardiff Bay (Harry Powell).

A recent use of the Society’s data by researchers

As ever we are grateful to all those who submitted records. Any record can potentially be useful long after submission, and in ways not previously thought of. Two papers using the Society’s data have just been published by Outhwaite et al. (2019, 2020) (one of the 2019 co-authors being former Hon. Recorder Adrian Norris). These show how good Recording Schemes can contribute to the estimation of long-term trends in invertebrate site occupancy (if not abundance), and even ultimately political action.

The 2020 paper suggests an interesting contrast in occupancy within non-marine molluscs over the last 50 years (Fig. 3). Overall, terrestrial molluscs show a relatively

stable trend, typical of other terrestrial invertebrates (bees, craneflies, moths etc.). In contrast, our freshwater molluscs show an overall decline. They appear to have recovered less well than other freshwater invertebrates (mayflies, stoneflies, caddis etc.) since widespread water quality improvements beginning in the early 1990s (Outhwaite et al., 2020). For recorders, revisiting old sites provides new information, and helps ensure future studies of this type are as accurate as possible.

Addendum

All the iRecord data from 2013-2019 referred to has now been uploaded, and appears as part of the Society's data on NBN.

References

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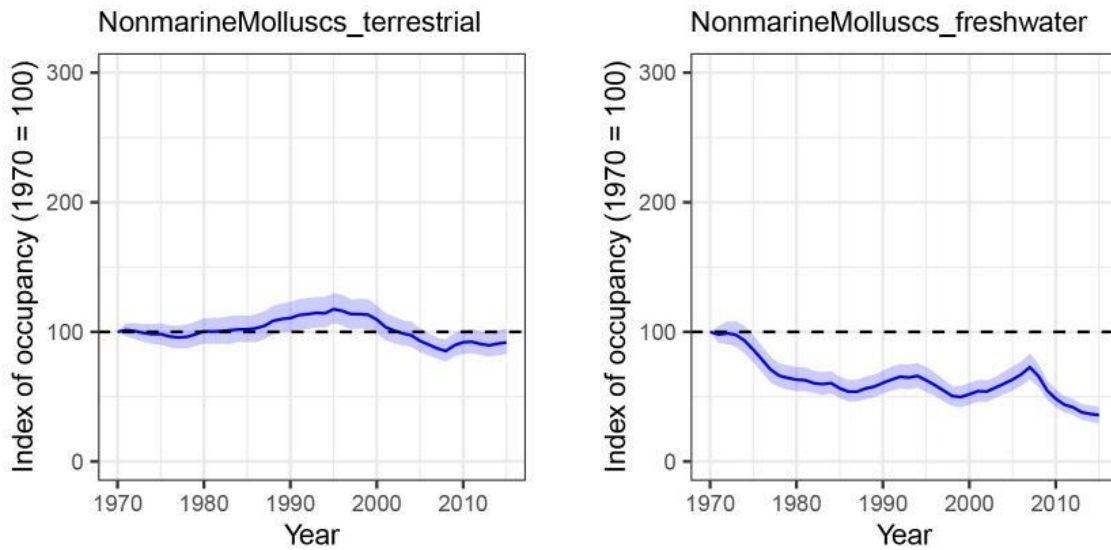


figure 3: Average site occupancy (% of 1km grid squares occupied) of non-marine molluscs over the last 50 years (from Supplementary Figure 1 of Outhwaite et al., 2020). Blue line, mean; shaded area, 95% credible intervals.

Conchological Society of Great Britain & Ireland: Report of the Council 2019

Council Positions

Dr MJ Willing began his second year as President of the Society. The following Society Officers were elected: Hon. General Secretary Miss R E Hill, Hon. Treasurer Mr N Light, Hon. Membership Secretary Ms B M Eastabrook, Hon. Editor (*Journal*) Ms AM Holmes, Hon. Editor (*Mollusc World*) Mr P Topley, Hon. Marine Recorder Mr S. Taylor, Hon. Non-Marine Recorder Dr B Rowson, Hon. Conservation Officer Dr M J Willing, Hon. Programme Secretary Dr S Payne and Hon. Webmaster Ms P Lightfoot. New Ordinary members of Council were: Prof RAD Cameron, Ms ICN Cavadino, Dr IJ Killeen. Mr R Carr, Dr C Gleed-Owen and Dr T M Walker began their second year. Mrs M Cousins, Mrs H Shaw and Mr T J Tamblyn began their third year.

Publications

Two issues of the *Journal of Conchology* (Volume 43: 3-4) and three issues of *Mollusc World* (Numbers 49-51, March, July and November) were published. The Society's website www.conchsoc.org continues to provide information on the Society's news, activities, and details of field and indoor meetings. Interesting mollusc photos are posted on the front page and contributions continue to be welcomed by the Webmaster. Work on a new website is underway and should be completed soon.

Other Council Matters

Four Council meetings were held. Amongst the matters considered by Council were: digital publication of the *Journal of Conchology*, especially the delays in achieving this; Society finances and the need for a new Treasurer;

Safeguarding policy; reprinting the Land Snail *identification* leaflet; Non-marine record requests; sales of second hand books; requests for mollusc records; Society expenses for travel to Council committee meetings; Society rule changes; and the creation of a Publications Services Manager as a new Officer.

Two applications for research grants were received in 2019 and one grant has been awarded: Rahul Jaitly (University of Exeter) on Predator Defences of Caribbean Reef Squid (*Sepioteuthis sepioidea*).

The deaths of the following members were announced at Indoor Meetings: Pryce Buckle, member since 1981 and former Treasurer and first Webmaster. Arthur Raymond Walker, member since 1980 (possibly not continuously).

I would like to thank all members of Council and Society volunteers for their contributions without which the Society could not achieve its aims. If anyone would like to help in the running of the Society, please contact the President or any of the Society Officers. In particular the Society would welcome anyone willing to take on all or part of the role of Treasurer with the support of the current Treasurer, Nick Light, who wishes to step down. This role has been made considerably easier now that a professional bookkeeping company is employed to do the accounts. If anyone is interested in assisting with the production of *Mollusc World* please would you contact the current Editor, Peter Topley.

Rosemary Hill,

Hon General Secretary March 2020

Ena montana - a national survey to up-date knowledge of its distribution and status

Keith Alexander



figure 1: *Ena montana* (Draparnaud, 1801) (shell height c. 16 mm). Nr.Danesworth, Glos., 1986.* (photos: the late Derek Rands)
*Scanned from 35 mm slides, 07/2017(Ed.); now in the archive of NMW Cardiff/Amgueddfa Caerdydd.

Introduction

The *Species Status Review* of non-marine Mollusca (Seddon et al 2014) assessed the British status of *Ena montana* as Near Threatened. This relatively large and distinctive snail is restricted to central southern and south-eastern England and was believed to be in slow decline with changes in land management. It was close to meeting the criteria for Vulnerable and with an apparent continued loss of hectads over the last 20 years a status of Near Threatened was justified. This is the largest of all the terrestrial molluscs listed as Threatened or Near Threatened in the Review and so the idea of starting a new initiative to up-date knowledge of its distribution and status in Britain began. The survey would focus on running targeted field meetings with the expectation that local recorders would be inspired to carry out follow-up surveys – it would include a training element, promoting empowerment, and also would try and attract people with a general interest in natural history and conservation, to promote molluscs as a feature of interest in the countryside and worthy of attention.

What is the current British range of *Ena montana*?

One of the attractive features of an *Ena montana* survey is that it lives in some of the most beautiful landscape of southern England. Its distribution was well-described by Boycott (1939) and Kerney (1999) pointed out that the greatest concentration of populations was in the Cotswolds. The distribution then extends southwards onto Mendip and eastwards across Somerset and into Wiltshire, possibly reaching into the fringes of Dorset. There are additionally four other, smaller concentrations: the *Helicodonta obvolvata*

country of the West Weald of Hampshire and West Sussex; the Chilterns, although apparently here split into two separate populations in the south-west (Berkshire, Oxfordshire and Buckinghamshire) and the north-east (Hertfordshire); and Suffolk. There is a single wood with *Ena montana* within the Forest of Dean, the closest the species appears to get to Wales.

Known habitat associations

Ena montana is principally a species of old broad-leaved woodland on well-drained calcareous soils (Boycott, 1939; Kerney, 1999). It is most readily found on the smooth-barked trunks of living beech, ash and sycamore trees which it ascends to browse on epiphyte growth. It may also be found amongst ground debris and amongst ground vegetation but is less easy to find here on demand. It is also said to occur in the base of ancient hedgerows (in Suffolk and on Mendip) and amongst hazel or ash scrub amongst limestone rocks (Mendip). Kerney (1999) also mentions one anomalous site at Buntingford, Herts, where it abounds in a roadside ditch among nettles and dumped rubbish. There remains much to learn however about seasonal patterns of activity, the potentially different habits of juveniles to adults, the conditions under which feeding takes place, in what situations they overwinter, etc. Although readily found while inactive on tree trunks there are notably few observations of active snails. The snails are presumably relatively long-lived as adults typically outnumber juveniles, but how long do they live? If they spend much of their time on tree trunks how far do they actually move within a lifetime? And how many individual trees do they climb, how high do they ascend, and how often do they move to alternative trees?

Immediate threats

The ancient woodland sites are reasonably secure these days although the impacts of active forestry operations are unclear. Woodland management and exploitation need not be damaging. Many of the known sites have had long histories of traditional woodland management such as coppicing and the species is known from a few ancient wood pasture sites in the Cotswolds. Killeen (1992) comments that the roadside hedge bank where it had been known near Lavenham in Suffolk since 1958 had been subjected to apparently regular and rather severe cutting which was placing this isolated colony at risk of extinction. Another Suffolk site – a grassy bank by arable fields also appears to have been lost. The remnant populations which have persisted in this very agricultural area appear to be under severe threat from modern unsustainable and destructive agriculture. While ancient hedges now have some legal protection from total destruction this does not prevent severe damage from agricultural sprays, excessive cutting/trimming and/or general neglect. Hedgerow maintenance is all-too-often seen as just an unnecessary chore by many modern farmers and cutting can be very insensitive to wildlife and conservation interests.

Trial surveys in the Gloucestershire Cotswolds

Besides supporting the largest extent of *Ena montana* habitat in the country (Kerney, 1999) the Cotswolds were my home for nearly 25 years and the area had been well-explored by a very active county recorder (the late David Long) supported by myself, John Fleming and others, and so

were an obvious starting point for the project. The first field meeting was held in memory of David who had died in the autumn of 2017. David had carried out a detailed mollusc survey of Workman's Wood in 1978 (Long, 1980) and this provided a baseline for the 2018 field meeting. The meeting details were announced in the Gloucestershire Naturalists' Society News and the Gloucestershire Invertebrate Group Newsletter as well as Mollusc World and attracted a relatively large gathering comprising five Conch Soc members and 10 members of GIG and GNS (Alexander & Fleming, 2019a). A follow-up meeting in another area of the Cotswolds in 2019 again attracted 10 local people, but not all the same individuals (Alexander & Fleming, 2019b). While the 2018 gathering had found *Ena montana* mainly on the trunks of mature beech trees, all specimens found in Standish Woods in 2019 were concentrated in a large stand of young ash trees within the overall beech matrix. Some variation in preferences was evident and light levels may provide a clue, with the epiphyte food growing better under well-lit conditions it makes sense for the snails to favour the better-lit tree trunks.



figure 2: a) searching for molluscs at the field meeting to Workman's Wood in 2018. (photo: Colin Twissell); b) *Ena montana* on tree trunk, Workman's Wood.

The two field meetings are judged to have been very successful. In addition to confirming the continued presence of *Ena montana* in the sites visited, we have been able to generate data on their localisation within the areas explored and make valuable observations on their behaviour and preferences. We have been able to show the species to local naturalists with different interests (ie not primarily conchologists) and to discuss its ecology and conservation requirements with them. The GNS county ant recorder has become especially interested and it is hoped that he will maintain this interest and generate new records.

Expanding the effort to other known areas

At its meeting in Cardiff in November 2019 the Society's Conservation & Recording Committee agreed to adopt the Cotswold *Ena montana* survey as a national Conchological Society project. Keith Alexander will lead the project but work through local recorder networks to target the other parts of the country within the known range of the snail. Some exploratory work has begun in the Mendip area of Somerset in preparation for a field meeting in 2020 although this undoubtedly will be postponed due to the coronavirus outbreak. There appears to be no county recorder for this area but hopefully the first field meeting will draw in some local enthusiasts from local natural history and conservation groups.

Help needed

If anyone is willing to help with this project in other areas of the country please could they contact the project leader Keith Alexander (e-mail: keith.alexander@waitrose.com; landline 01872 271186). The greatest need is for local contacts in Suffolk, Hertfordshire, the BBONT area, and Wiltshire. Please do help if you can, even if only to suggest sites for field meetings and other people who might be interested in helping.

Acknowledgements

The Cotswold surveys have been supported by the Gloucestershire Wildlife Trust and the Cotswold Team of the National Trust; The GNS ant recorder Tony Taylor deserves an apology for his name appearing as 'John' in the 2019 field meeting report. The Woodland Trust have been very helpful in the initial exploration of the potential in the Mendip area.

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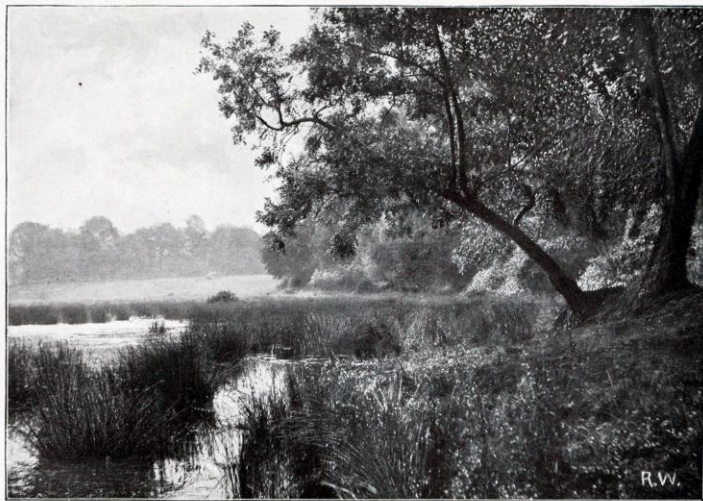
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figure 3: *Ena montana* on Ash trunk, Standish Wood, May 2019.

The Molluscs of Bushy Park, Dublin – a century on

Evelyn Moorkens & Ian Killeen



Upper end of the Marsh, Bushy Park, Dublin.
The home of the smaller Hyaliniae, Helices, Vertigos and Planorbs.

figure 1: Robert Welch's photograph of Bushy Park from Welch & Stelfox (1904).

Bushy Park in south Dublin has attracted the interests of malacologists from the beginning of the 20th century. *The Mollusca of Bushy Park, Dublin* was A.W. Stelfox's first molluscan paper, written when he was only 21, in collaboration with Robert Welch and published in the *Irish Naturalist* in 1904 (figure 1).

Bushy Park is located in Terenure in south Dublin and has a history going back to 1700 when Arthur Bushe of Dangan, Co. Kilkenny, built 'Bushes House' on a site of 4 hectares. The name was changed to Bushy Park in 1772 and in 1791 it was bought by Abraham Wilkinson who added almost 40 hectares to the estate. He gave it as a dowry to his daughter Maria when she married Robert Shaw in 1796. George Bernard Shaw was a distant relative, his grandfather being a nephew of Sir Robert Shaw (1st Bart). The Shaws were connected with Bushy Park until 1951 when the estate was sold to Dublin Corporation. In 1953, the Corporation sold 8 hectares to the Sisters of Religious of Christian Education but later re-acquired 2 acres of woodland in 1993. Today, Bushy Park covers an area of 20.5 hectares much of which comprises football pitches and ornamental ponds. However, extensive areas of woodland remain, particularly along the southern and eastern margins where the park forms a boundary with the River Dodder. There are ponds with marshy surrounds at the south-western end. For a detailed map, see: <http://www.dublincity.ie/recreationandculture/dublincityparks>.

The habitat as described by Welch & Stelfox in 1904 (figure 1) included features which are no longer present. This included an area of marsh fed by shallow ponds beside the house, a narrow ridge of limestone debris, and an unwooded, 30 foot high grassland scarp on boulder clay with species such as *Anacamptis pyramidalis*. In a subsequent short note on additional species (Stelfox & Welch 1908) state that the marsh had been entirely altered by a drain opened out to the Dodder. The original marsh is shown in a beautiful photograph by

Welch in the 1904 paper. From this photograph it is deduced that the large concreted ponds now lie in the location of that original marsh and ponds. The steep bank is still in place but there is little evidence of any calcareous grassland flora.

Welch & Stelfox found 46 species of molluscs on their first visit to Bushy Park in September 1903, and a further 16 were added when Welch returned with Praeger in April 1904. A further 2 species were added in 1908. This brought the total number of species to 64, over half of the known Irish fauna at that time. The list is shown in Table 1. The nomenclature follows Anderson (2005). Some species recorded by them have now been split, but where possible we have assigned them to the most likely segregate, e.g. the *Carychium* species from the marsh is almost certainly *C. minimum*. The pea mussels (*Pisidium* spp.) could also be treated as more recent segregates given that their taxonomy was very poorly understood at the time of the original survey. Two species (not shown in Table 1) were found by Welch & Stelfox and while it may be presumed that the *P. pusillum* refers to *P. personatum*, the *P. fontinale* could be anything. The study of *Pisidium* became a lifelong interest of Stelfox, and in an appreciation of him after his death, A.E. Ellis (1972) wrote: 'Stelfox's greatest contribution to the study of Mollusca was his paper on *The Pisidium fauna of the Grand Junction Canal in Herts and Bucks* (1918), which revolutionised the hitherto very unsatisfactory treatment of the genus and furnished the basis upon which all future specialists on this genus have built'.

The molluscs of Bushy Park were recorded again on 10 April 1968 by Adrian Norris during a Conchological Society field meeting to Ireland. He recorded 43 species (Table 1), but most were land snails and slugs (38 species) (Norris pers. comm.).

On 06 March 2011, the mollusc fauna was again recorded during a field excursion of the Dublin Naturalists' Field Club (figures 2 and 3). A total of 59 species were recorded during this visit (Table 1), representing a third of the currently known Irish land and freshwater mollusc fauna of 177 species. Since 1904, a total of 85 species have been recorded: 26 freshwater and 59 terrestrial, and there have been both losses and gains during that time.



figure 2: Recording aquatic molluscs from the lake at Bushy Park, 2011.



figure 3: Recording snails in the more natural wet woodland habitat, Bushy Park 2011.

There are two conspicuous groups of losses. The first is the species that were recorded by Welch & Stelfox as being associated with the marsh, and these include *Aplexa hypnorum*, *Anisus leucostoma*, *Vallonia pulchella*, *Vertigo antivertigo* and *V. substriata*. Given their comments on the drainage of the marsh, all of these species may well have disappeared early in the 20th century, and would certainly have been lost by the time the marsh was replaced by the concreted ornamental ponds. The second group are the three xerophilic calciphile helicids (*Cerņuella virgata*, *Cochlicella acuta* and *Helicella itala*) which ‘swarmed on the boulder clay scarp after a summer shower’ (Welch & Stelfox 1904). Interestingly all three were also recorded by Norris in 1968, suggesting that their apparent disappearance is relatively recent, perhaps as a result of activities associated with the upkeep of the park.

Two other uncommon species were not recorded in 2011, *Leiostyla anglica* and *Acricula fusca*. The former was recorded by Welch & Stelfox (1904) ‘in one greenhouse, and a few in woods in damp moss’, and by Norris in 1968 ‘came from an area of marshy woodland between the top footpath and the river’. *Acricula fusca* was only recorded by Norris (1968) ‘in a shallow marshy area close to the banks of the river’, although Welch & Stelfox had earlier suggested that there were most suitable habitats for the species. It is possible that more detailed sampling would locate one or both of these species. The same is true of several of the more common species not found in 2011 such as *Punctum pygmaeum* or *Arion ater* for example.

The additions fall into three groups: species which are introductions to Ireland since 1908 or 1968, those which have been recently segregated, and those which are either recent arrivals or were overlooked in previous surveys. The introductions comprise *Potamopyrgus antipodarum*, *Physella acuta*, *Boettgerilla pallens*, *Deroceras panormitanum*, *Lehmannia valentiana* and *Tandonia budapestensis*.

The most surprising additional species recorded was *Merdigera obscura* on the grassy bank at the north-eastern end of the park. This snail is now quite rare in Ireland, having shown a severe decline of 75% in its recorded distribution since 1980, and which resulted in its classification in the Red List of Irish non-marine molluscs (Byrne *et al.* 2009) as

Endangered under IUCN criteria. It is highly unlikely that this is a recent colonist of Bushy Park. This is in contrast to *Ashfordia granulata* which was not recorded in either of the previous surveys but is now one of the commonest snails in the damp shaded habitats of the park, and is therefore unlikely to have overlooked. This very local species is also in the Red List, as Near Threatened on the basis of a 25% decline since 1980 and also taking into account the global importance of the Irish population of this species.

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Table 1: List of mollusc species recorded from Bushy Park, Dublin. (the table is continued on the following page)

	Welch & Stelfox 1904	Norris 1968	DNFC 2011
Aquatic molluscs			
<i>Valvata piscinalis</i>	X		X
<i>Valvata cristata</i>	X (1908)	X	X
<i>Potamopyrgus antipodarum</i>		X	X
<i>Bithynia tentaculata</i>	X		X
<i>Galba truncatula</i>	X	X	X
<i>Lymnaea palustris</i> agg.	X	X	
<i>Lymnaea stagnalis</i>	X		X
<i>Radix balthica</i>	X		X
<i>Aplexa hypnorum</i>	X		
<i>Physa fontinalis</i>	X		X
<i>Physella acuta</i>			X
<i>Planorbis carinatus</i>	X		X
<i>Anisus leucostoma</i>	X		
<i>Gyraulus albus</i>	X		X
<i>Bathymphalus contortus</i>	X		X
<i>Hippeutis complanatus</i>	X		X
<i>Acroloxus lacustris</i>	X		
<i>Ancylus fluviatilis</i>		X	X
<i>Sphaerium corneum</i>	X		X
<i>Musculium lacustre</i>	X		X
<i>Pisidium casertanum</i>			X
<i>Pisidium milium</i>	X		X
<i>Pisidium nitidum</i>			X
<i>Pisidium obtusale</i>			X
<i>Pisidium personatum</i>			X
<i>Pisidium subtruncatum</i>			X
Terrestrial molluscs			
<i>Acanthinula aculeata</i>		X	
<i>Acricula fusca</i> ¹		X	
<i>Aegopinella nitidula</i>	X	X	X
<i>Aegopinella pura</i>	X	X	X
<i>Arion (Carinarion) agg.</i>	X		
<i>Arion (Kobeltia) agg.</i>	X	X	
<i>Arion ater</i> agg.	X	X	
<i>Arion circumscriptus</i>		X	
<i>Arion distinctus</i>			X
<i>Arion hortensis</i>			X

	Welch & Stelfox 1904	Norris 1968	DNFC 2011
Terrestrial molluscs	(continued)		
<i>Arion intermedius</i>	X		X
<i>Arion subfuscus</i>	X	X	X
<i>Ashfordia granulata</i>			X
<i>Balea heydeni</i> ²	X		X
<i>Boettgerilla pallens</i>			X
<i>Candidula intersepta</i>		X	X
<i>Carychium minimum</i>	X	X	X
<i>Carychium tridentatum</i>		X	X
<i>Cecilioides acicula</i>	X		
<i>Cepaea hortensis</i>		X	X
<i>Cepaea nemoralis</i>	X	X	
<i>Cermuella virgata</i>	X	X	
<i>Clausilia bidentata</i>	X	X	X
<i>Cochlicella acuta</i>	X	X	
<i>Cochlicopa lubrica</i>	X	X	X
<i>Columella edentula</i>	X	X	X
<i>Cornu aspersum</i>	X	X	X
<i>Deroceras laeve</i>	X		
<i>Deroceras panormitanum</i>		X	X
<i>Deroceras reticulatum</i>	X	X	X
<i>Discus rotundatus</i>	X	X	X
<i>Discus rotundatus</i>	X	X	X
<i>Euconulus fulvus</i>	X	X	
<i>Helicella itala</i>	X	X	
<i>Lauria cylindracea</i>	X	X	X
<i>Lehmannia marginata</i>	X (1908)		
<i>Lehmannia valentiana</i>			X
<i>Leiosstyla anglica</i>	X	X	

	Welch & Stelfox 1904	Norris 1968	DNFC 2011
<i>Limacus maculatus</i> ³	X	X	X
<i>Limax maximus</i>	X		X
<i>Merdigera obscura</i>			X
<i>Nesovitreia hammonis</i>	X		
<i>Oxychilus alliaris</i>	X	X	X
<i>Oxychilus cellarius</i>	X	X	X
<i>Oxychilus draparnaudi</i>	X	X	X
<i>Oxyloma elegans</i>	X	X	X
<i>Punctum pygmaeum</i>	X		
<i>Succinea putris</i>	X	X	
<i>Tandonia budapestensis</i>		X	X
<i>Tandonia sowerbyi</i>	X		X
<i>Trochulus hispidus</i>	X	X	X
<i>Trochulus striolatus</i>	X	X	X
<i>Vallonia costata</i>	X	X	X
<i>Vallonia excentrica</i>			X
<i>Vallonia pulchella</i>	X		
<i>Vertigo pygmaea</i>	X		
<i>Vertigo antivertigo</i>	X		
<i>Vertigo substriata</i>	X		
<i>Vitreia contracta</i>		X	
<i>Vitreia crystallina</i>	X	X	X
<i>Vitrina pellucida</i>	X		X
<i>Zonitoides nitidus</i>	X		
Totals Aquatic/Land:	62	43	59

¹ In a shallow marshy area close to the banks of the river (Norris pers. comm.).

² Recorded by Welch & Stelfox as *B. perversa*.

³ Recorded previously as *Limacus flavus*

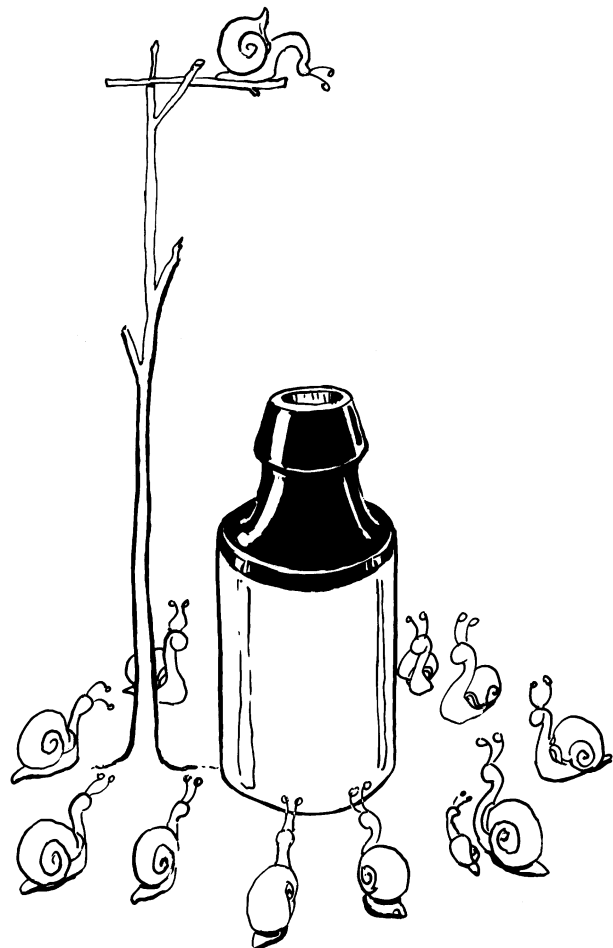
The snail in the beer bottle... Gordon Collett

I have just finished a series of funny pictures for a book on Contract Law, including the posthumously most famous snail in British history, the one from the ginger beer bottle in Donoghue vs Stevenson:-

...and thus, in *Donoghue v Stevenson*, one Mrs. Donoghue sued for the nervous shock she suffered on the discovery of a snail in her ginger beer bottle when out on a date in a Paisley café, and thereby created the tort of negligence....*

It isn't very scientific, but may offer some light relief!

*This was a landmark court decision in Scottish and English law by the House of Lords (1932). It laid the foundation of the modern law of negligence, establishing general principles of the duty of care. [Ed.]



Honorary Treasurer's Report on the Financial Statements to 31st December 2019

The Society has had a good year in 2019 with funds of £122,689, being a gain of £11,149 in the year. Our overall income in the year at £17,821 was £424 below 2017. Subscription income fell by £202 to £12,554 but as we continue to operate at break even before grants and revaluation gains or losses, we see no reason at present to change subscription levels.

Publication costs have increased this year with some more colour in the Journal, environmentally friendly packaging for Mollusc World and increase distribution costs. We started to update the website architecture to meet changing security requirements 2018. This project was delayed but we now expect it to be concluded in 2020 and we anticipate further costs of up to £2,000. We employed a professional bookkeeping company in 2019 at a cost of £822. This ensures our books are maintained on a current accounting system and improve our controls. It should also increase the range of candidates for Honorary Treasurer as detailed bookkeeping skills will not be needed.

Our investments generated income of £4,455 and they followed market performance in the second half of the year and we had to write them up by £12,509, more than recovering the £8,263 written off in 2018. We anticipate the market will remain volatile until the country has reached new agreements with our trading partners, so we should be prepared for further fluctuations.

My thanks to Rupert Honnor, our honorary examiner for giving his time and expertise to examine the accounts.

Our healthy reserves will enable us to continue to meet our charitable objectives in 2020 and beyond.

Nick Light
Honorary Treasurer
6th February 2020

STATEMENT OF FINANCIAL ACTIVITIES

	Note	2019	2018
Incoming resources			
Fees and subscriptions		£12,554	£12,758
Investment income	1	£4,455	£4,359
Income from activities for generating funds		£531	£214
Other incoming resources		£27	£30
Donations and legacies		£254	£888
Total incoming resources		£17,821	£18,245
Expenditure			
Publications costs		£14,851	£11,374
Stationery, postage and advertising		£267	£332
Meetings costs		£870	£864
Sundry expenses and fees		£374	£4,948
Membership Services		£1,397	£1,371
Bookkeeping		£822	£0
Grants	2	£1,000	£3,980
Total expenditure		£19,181	£22,659
Net incoming resources		-£1,360	-£4,414
Gains on revaluation		£12,509	-£8,263
Net movement in funds		£11,149	-£12,677
Fund balances brought forward		£111,540	£124,217
Fund balances carried forward		£122,689	£111,540

Balance Sheet at 31st December 2019

		2019	2018
Fixed Assets			
Investments at market value	3	£117,807	£105,298
Total fixed assets		£117,807	£105,298
Current Assets			
Debtors	4	£1,105	£1,000
Cash at bank and in hand		£8,629	£10,973
Total current assets		£9,734	£11,973
Short term creditors			
	5	£4,852	£5,731
Net current assets		£4,882	£6,242
Total assets less current liabilities		£122,689	£111,540
Unrestricted income funds		£122,689	£111,540

NOTES TO THE FINANCIAL STATEMENTS

ACCOUNTING POLICIES

General

- These statements have been prepared in accordance with Financial Reporting Standard for Smaller Entities (FRSSE) and the Charities SORP (Statement of Recommended Practice)
- Investments are valued at market value on 31st December.
- No trustee has received any remuneration during the current or previous year. Some expenses incurred on behalf of the Society have been reimbursed.

Funds

- All Society funds are unrestricted funds
- The accounts include transactions, assets and liabilities for which the Charity can be held liable.



Note 1. Investment income from:	2019	2018
Stock listed on recognised stock exchange	£4,455	£4,359
Total	£4,455	£4,359

Note 2. Grants awarded:

2018 - National Museum of Wales		£1,500
2018 - Matthew Law		£700
2018 - John Hutchinson		£780
2018 - Peter Barfield		£1,000
2019 - Rahul Jaitly	£1,000	
Total	£1,000	£3,980

Note 3. Investments:

Market value at beginning of year	£105,298	£113,561
Net gain/(loss) on revaluation	£12,509	-£8,263
Market value at end of year	<u>£117,807</u>	<u>£105,298</u>

Note 4. Analysis of debtors:

Tax recoverable - Gift Aid	£1,105	£1,000
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Note 5. Analysis of creditors and accruals:

Grants	£1,000	£2,480
Subscriptions in advance	£2,932	£3,251
Membership Services	-£920	
Total	£4,852	£5,731

Note 6. Sundry Expenses

In 2018 £4,550 was spent on updating the website Structure. This project has been delayed but should be completed early in 2020 at an estimated further cost of up to £2,000. No payments were made in 2019.	£374	£4,948
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Undoubtedly the Society's marine recording highlight of the year was its week long field excursion in the Isles of Scilly, held at the end of September. Although not unfamiliar ground to the Society, the intention was to seek to confirm interesting records from the recent past as well as to investigate the intriguing absences from the islands' fauna and, of course, to add any new or additional taxon records that could be obtained. Some of the absences are striking, especially *Littorina littorea* (L., 1758), *Buccinum undatum* L., 1758, *Patella depressa* Pennant, 1777 and *Crepidula fornicata* (L., 1758), although the latter may be less surprising giving the equal absence of any native oysters *Ostrea edulis* L., 1758 (no live specimens of the non-indigenous *Crassostrea gigas* (Thunberg, 1793) were found either, despite significant colonisation in mainland Cornwall nowadays). Mussels were nowhere abundant and only very sporadically present in numbers. Specimens were found corresponding to the typical forms of both *Mytilus edulis* L., 1758 and *Mytilus galloprovincialis* Lamarck, 1819 and it was noted that their distribution tended to be on the outer part of the archipelago.

One of the species for which further Scillonian records were sought was the generally elusive *Paludinella globularis* (Hanley in Thorpe, 1844), previously reported from the underside of boulders and cobbles in the splash zone of sheltered shores. Several sites were checked, without success, before Bas Payne uncovered specimens crawling on the underside of a large cobble at Porth Cressa. He collected them as vouchers but then the still-open container blew over in the wind and they were lost. Bas was unable to find any further specimens but fortunately had photographed the originals in situ and the image was good enough for a positive determination to be made (figure 1).



figure 1: *Paludinella globularis* (pale orange specimens) with juvenile *Myosotella myosotis* and a *Littorina saxatilis* looming for scale. Porth Cressa, St. Mary's, Scilly 01/10/2019. (photo: Bas Payne)

Historically, Scilly is noted as a locality for the attractive little trochid *Jujubinus striatus* (L., 1758) but during the 2019 excursion only fragments of dead shells were found despite examination of seagrass beds, the species' favoured habitat, when exposed by the low spring tides. There are several post-millennium records of live specimens of the species throughout the islands so unless there has been some recent damage to the local populations then it was simply a case of not looking in the right place at the right time for those of us looking for it during the week. Recent records from south Cornwall indicate that populations there remain

healthy. Coincidentally, late in 2019, live records of the species from the southern end of the Isle of Man were received from Peter Duncan, Senior Marine Environment Officer for the Department of Environment, Food and Agriculture in the Isle (figure 2). The species had previously been observed on the island but not formally recorded, so in terms of 'dots on maps' this represents a significant range extension.



figure 2: Three Isle of Man *Jujubinus striatus* on a Manx 5p piece. (photo: Peter Duncan)

Returning to Scilly, recording any polyplacophoran other than *Lepidochitona cinerea* (L., 1767) proved impossible until the last good spring tide, when the present author found a specimen of *Callochiton septemvalvis* (Montagu, 1803) (figure 3) under a rock richly coated in coralline algae and colonial tunicates. This species has been recognised as having a wide distribution around British and Irish shores (Seaward, 1982 & 1990) but is nowhere common with, until recently, very few records from the North Sea. Scottish diver Chris Rickard makes some very valuable molluscan observations and recently recorded *C. septemvalvis* off Macduff on the southern shore of the Moray Firth. Online reports of this record prompted discussion which unearthed a further observation from Pennan, Aberdeenshire made by current Society Council member Ian Smith back in 1971. Any further observations, particularly from between the Isle of Wight and Aberdeen, would be most welcome.



figure 3: *Callochiton septemvalvis*, Gweal Neck, Bryher, Scilly. 01/10/2019.

David McKay, based on the Moray Firth, continues his extensive recording efforts primarily of northern offshore species through his links within the Scottish fishing industry. As usual David provided a barrage of records in

2019 including notable finds such as *Beringius bogasoni* Warén & Smith, 2006 from the Rockall Trough (only his 4th observation of the species), *Torellia delicata* (Philippi, 1844) from the Wyville Thomson Ridge, the deepwater naticid *Bulbus smithii* T. Brown, 1839 from the Faroe-Shetland Channel (figure 4) and *Karnekampia* [*Chlamys*] *sulcata* (Müller, 1776) from the western edge of Rockall Bank. As often happens, David also found some specimens requiring further study, many falling into the ‘LWB’ (little white bivalve) category: a possible *Limatula margaretae* Allen, 2004, as is often the case represented by a single valve (determination subsequently supported by Graham Oliver); a left valve of what looks to be *Abra tenuis* (Montagu, 1803) but reliably taken from 186 metres deep off the Hebrides; an inflated, inequilateral specimen from off Rockall which may be the galeommatid *Syssitomya pourtalesiana* Oliver, 2012; plus another specimen from the northern North Sea which is just a complete mystery.



figure 4: *Bulbus smithii*, a deepwater Naticid, from the Faroe-Shetland Channel (height 18.3 mm).

Some may be aware of David’s success in recovering ex-pisces records from the stomach contents of haddock, *Melanogrammus aeglefinus* (Linnaeus, 1758); as a gulping bottom feeder the fish can often be found to contain complete molluscan specimens. The gut of one particular haddock, caught from just west of the Porcupine Seabight and so fairly well out into the northeast Atlantic, revealed that the animal had been feeding extensively on the pteropod *Clio pyramidata* (L., 1767) by yielding a large number of shell fragments (figure 5).



figure 5: *Clio pyramidata* fragments from the stomach of a haddock caught just west of Porcupine Seabight. (photo: David McKay)

At the end of August the Society visited the shore at Titchfield Haven with new member Peter Barfield, who discovered the presence of the non-indigenous species

Arcuatula senhousia (Benson, 1842) and *Acanthocardia paucicostata* (G. B. Sowerby II, 1834) there in recent years (Barfield, 2017) (Barfield et al., 2018). Both were found during the visit: *A. senhousia* alive but in small numbers and *A. paucicostata* only as shells but not uncommonly and still hinged, including juveniles. Elsewhere other non-indigenous species continue to arrive with the report of *Theora lubrica* Gould, 1861 (figure 6), originally from the West Pacific, recorded in Lowestoft harbour (APEM, 2018). Faasse et al. (2019), in reporting a further observation of the species in Dutch waters, observe the difficulty in its determination from the related *Abra nitida* (Müller, 1776); it may be that, despite the two species’ different preferred habitats, occurrences of *T. lubrica* have been misidentified and indeed specimens may even reside in reference collections labelled incorrectly as either *A. nitida* or the similar and often confused *Abra alba* (Wood, 1802). APEM (2018) note however that the species is opportunistic and tolerant of reduced salinity and both high organic content and pollution in its infaunal substrate, tending to occur in disturbed environments where much of the native fauna has been extirpated. [see also page 23. Ed.]

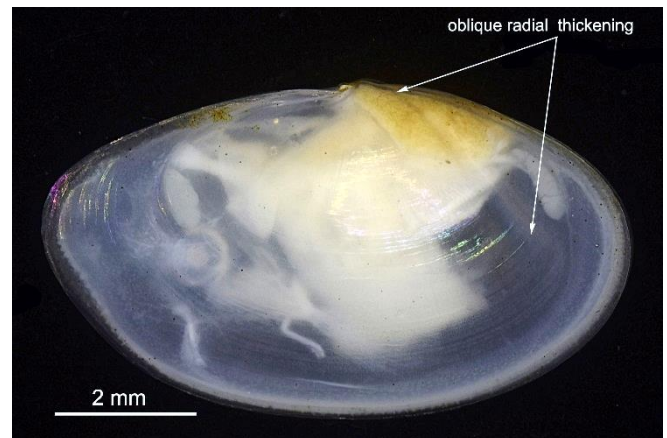


figure 6: *Theora lubrica*, exterior RV view. (photo: Graham Oliver)

Joining the queue of potential UK colonizers is another brackish/marine bivalve, *Mulinia lateralis* (Say, 1822), a mactrid species which should be easier to recognise as it bears only a passing resemblance to the related *Macra stultorum* (L., 1758). Although there are no current UK records it has recently been found, again in Dutch waters, at densities approaching 6000/m² (Craeymeersch et al., 2019). Like *T. lubrica* it is an opportunist, thriving in areas of reduced salinity with poor water quality and even short spells of anoxia. Native to the northwest Atlantic, it is assumed to have arrived on the other side of the ocean via international shipping.

Not to be outdone, there are potential gastropod colonizers also established just across the Channel and, having established populations there, all indications would be that they can be expected on UK shores in due course. One such species is *Ocenebrellus inornatus* (Récluz, 1851), native to Japan but reported by Titselaar (2019) as being present ‘in bulk’ associated with oysters at Yerseke, Zeeland, Netherlands. It resembles *Ocenebra erinaceus* (Linnaeus, 1758) but grows to >60mm with impressively flared varices (figure 7).

The diving community again provided a range of sublittoral records, particularly opisthobranchs. While they sometimes use the term ‘nudibranch’ in a rather blanket sense, it was interesting to see divers reporting records of non-nudibranchs such as the *Laona ventricosa* (Jeffreys, 1865) noted by Kirsty Andrews (well, actually by her dive buddy)

in the Sound of Mull. 2019 seemed to be a good year for the sacoglossan slug *Calliopaea bellula* d'Orbigny, 1837 (figure 8) with a small flurry of reports including one from off Paignton, south Devon, by diver Tamsyn Mann. The species specialises in eating the eggs of opisthobranchs, so a rise in records of it hints at a successful year for opisthobranchs generally. Tamsyn also recorded the widespread but under-recorded nudibranch *Geitodoris planata* (Alder & Hancock, 1846) from off Babbacombe, south Devon.

Recently joined Society member Andrew Wright demonstrated that shore work can be just as rewarding by finding valves of the rarely encountered and tiny bivalve *Coracuta obliquata* (Chaster, 1897) in shell grit collected at Northam Burrows, north Devon. Admittedly the species is known to inhabit the waters around Lundy but nevertheless it is a one which very few will have encountered and even fewer will have recognised when sorting shell grit.



figure 7: *Ocinebrellus inornatus*, Yerseke, Zeeland, Netherlands. (photo: Freek Titselaar)



figure 8: The sacoglossan slug *Calliopaea bellula*.

(photo: David Fenwick)

Digitisation of Paper Records:

Further to the sister articles published in *Mollusc World* last year (Goodwin, 2019) (Taylor, 2019) the Society's attention is again drawn towards efforts being made to establish a group to work through the Society's extensive archive of recording cards and other data held solely on paper in order to transfer the data to a digital format which can then be held in the Society's electronic dataset and shared online via the NBN Atlas. While a very small group exists and has made progress, further volunteers are sought to assist in this important project. As expressed in the articles, it can be interesting and fulfilling work and can be conducted entirely at the individual's own pace. If enough volunteers are found then it would be wonderful to hold a training workshop.

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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 (2016). 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 on page 35).

Mr P. Barfield [redacted]
 Mr P. Farmer [redacted]
 Mr C. Briden [redacted]
 Mr O. Wilson [redacted]
 A B C E F G Mb Mf Nb Nf P W Z
 Ms S. Darwin [redacted]
 A B C E G Mb Nb Z



Codes after a member's contact details denote their interests:
A Applied conchology (shell artefacts, shell money, cooking, decorations etc); **B** Conchological books;
C Conservation; **E** Ecology & pollution; **F** fossils;
G General malacology including genetics and physiology;
Mb British marine; **Nb** British non-marine; **Nf** Foreign non-marine; **P** photography; **W** conchological poetry & prose;
Z captive breeding of molluscs.

Changes of address etc

Mr C. Walton: [redacted]
 Dr K.N.A. Alexander, [redacted]
 Mr M. Szekeres, [redacted], HUNGARY

A single left valve of the bivalve *Theora lubrica* Gould 1861, length 10 mm, was found by the author at Granton Harbour, Edinburgh, NT238771 on 27/05/2020 (figure 1). Images posted on *British Marine Mollusca* Facebook group were identified by Fabio Crocetta and confirmed by Simon Taylor and Graham Oliver. *T. lubrica* is superficially similar to *Abra nitida* (Müller, 1776) with which it has been formerly confused, but differs mainly in having an internal ridge anteriorly and small differences in the hinge, for illustrations and detailed description see Faasse *et al.* (2019) *Theora lubrica* in the Netherlands. *Basteria* 83 (1-3): 52–58. This species, commonly known as Asian semele, is a small infaunal bivalve native to the Northwest Pacific, tolerating brackish and polluted conditions in estuaries and harbours; it is invasive and has been reported in Europe e.g. in the Netherlands (Faasse *et al.*, 2019), recently in England (Simon Taylor, pers. comm.)² and now in Scotland. Granton Harbour is a small Harbour on the Edinburgh Coast, on the south side of the Firth of Forth, near to major international ports at Grangemouth, Rosyth and Leith, which suggest a possible route of introduction. Scotland's Environmental and Rural Services have been notified.



figure 1: *Theora lubrica*, Granton Harbour, Edinburgh.

¹ National Museum of Scotland, National Museums Collection Centre, 242 West Granton Road, Granton, Edinburgh, EH5 1JA. trichopria@gmail.com. ² See also the Marine Recorder's Report (page 21) [Ed.].

Molluscs on the Move

Graham Long

Last November, Australian port officials acted immediately when they discovered at least 30 unwanted immigrants in a consignment of high-class vehicles from Europe. They had spotted *Xerolenta obvia* (*Helicella obvia*) within the grills of some of the 900 Mercedes Benz being imported through Melbourne, Brisbane, Fremantle and Port Kemble in New South Wales. The Australian attitude to illegal immigrants is well known. No questions asked. The whole consignment of cars with the snails was sent back to Europe for deep cleaning. An expensive exercise for someone, the fear down under being that the snails might be carrying several varieties of hostile spores and rust, or that they may be infected with Protostrongylidae larvae that could get into sheet and goats.

That report took me back to finding *Hygromia cinctella* in a Fordingbridge the car park alongside the Hampshire Avon in 2004. Since then it has spread and is now found on almost every site examined in the area. Some at least of this dispersal is down to the dumping of garden waste. Very soon after finding it in Fordingbridge, I came across it in my son's garden in High Wycombe and in that of a friend in Brighton. In 2008, a car from the Romsey area parked on rough grassland in the New Forest as part of the Hampshire Fungi Group outing. It had well over 20 *Hygromia cinctella* glued around its radiator grill. A score or more hitch-hikers ready to be taken wherever the car went, be it the New Forest or Newcastle, the South Coast or Scotland. Not all molluscs need helping wheels to get about. In the March 2011 issue of *Mollusc World*¹ R. J. Driscoll provided a graphic account of a water beetle coming to light in Norfolk carrying 13 or more *Ancylus fluviatilis* and a single specimen of *Acroloxus lacustris* on its elytron. His article referred back to H.W Kew's 1893 volume 'The Dispersal of Shells' which includes the statement "The fresh-water

limpets ... sometimes ride upon the backs of large flying water beetles."

In 2016 while pond dipping with friends in the west of the New Forest we caught a diving beetle that looked somewhat odd. Close examination showed that it was carrying a cluster of minute limpets on its wing cases. More enthusiastic dipping revealed a very large population of limpets in this seasonal pond, but only of one species. Rosemary Hill subsequently identified them as *Ferrissia wautieri* for which ID I am most grateful.

In the 1970's a Dutch conchologist found *Ferrissia* in several ponds in Guernsey. There was local scepticism, the doubts being how they got there. Perhaps beetle transmission is as good an answer as the movement of aquatic plants which was, I recall, discounted at the time.



figure 1: Diving beetle with *Ferrissia wautieri* on its wing cases, New Forest.

¹ Driscoll, R.J. (2011) Freshwater limpets on a water beetle. *Mollusc World* 25: 8–9. [Ed.]

Parting words from a retiring officer.

The mid-1980s were an environmentally depressing time. The rigours of the EU's Common Agricultural Policy and generous 'tax-break' forestry schemes seemed an unstoppable force wreaking wide scale environmental damage across much of Britain, Ireland and elsewhere in Europe. Habitat loss and destruction created a dire situation across the country with the eutrophication of rivers and lakes and relentless 'improvement' of wild flower meadows, draining of wetlands, ploughing-up of chalk grasslands for arable agriculture and monoculture forestry plantations advancing across huge swaths of mountain and moorland. It was against this backdrop that I saw, first-hand, molluscan declines and losses; I was worried! In early 1984 I raised my concerns at a Society council meeting, feeling that we should be doing something to protect habitats and their molluscan species. I recall Peter Negus (then *The Conchologists' Newsletter* Editor) suggesting that if I felt strongly about the matter then I should take on a conservation role for the Society. This suggestion was supported by Council and so I began my time in the newly established Conservation Officer post. There isn't space here to summarise the wide and varied conservation work undertaken by the Society since then. Perhaps one of our most important contributions was in providing information and species suggestions used in the development and subsequent evolution of numerous upgrades of Priority Species lists and Action Plans (now existing for each country within the UK). The priority lists and overlapping European Union 'Habitat and Species Directives' (EUHSD) Mollusca formed the basis for meetings of several specialist Steering Groups (figure 1). It was here that Society members worked with representatives from the governmental conservation agencies to plan and review the conservation action plans. In approximately the last 25 years these have allowed huge progress to be made in understanding the distribution, ecology and threats to some of our rarest and most threatened species. Disappointingly with relentless funding and staffing cuts, the steering groups were disbanded. A future Society aspiration maybe for the CRC to try to resurrect these valuable forums, possibly assisted by social media platforms.



figure 1: Steering Group from Oct 2009 (L to R: David Heaver (Natural England), Martin Willing, Evelyn Moorkens, Ian Killeen, Adrian Fowles (Countryside Council for Wales, later NRW).

Two years ago, when elected Society President and finding myself with two Society positions, I decided that, after 36 years in post, it was high time to step aside to allow an enthusiastic successor to take things forward, in new

directions with fresh ideas (so not expecting much then!). Finding that I needed more help, in 2018, newly elected Council member Mags Cousins kindly offered to act as a 'conservation support'. At the Council meeting in January 2019 I announced my resignation but, with only three months before the AGM, there was insufficient time to nominate and elect a suitable replacement. I therefore offered to continue in-post for a final transition year and to chair a final 'valedictory' meeting of the Conservation and Recording Committee (CRC). Following a notice placed in *Mollusc World* in March 2019 (49: 2) Mags asked to be considered for the post. At the Conservation and Recording meeting in November 2019 the Committee gave its warm support for her nomination to be recommended for approval by Council to stand as a candidate for election at the 2020 AGM (see further on this matter below).

Gulf Wedge Clam (*Rangia cuneata*) – a news update

I described the Conchological Society's on-going involvement with *Rangia cuneata* in two previous reports (*Mollusc World* 45: 24; 47: 27). The clam is a native of the southern States coast of the Gulf of Mexico where it lives in lagoons and shallow coastal waters. The clam was first detected in Europe in Belgium in 2005, since when it has established itself in at least 11 countries across about 2,000 km of the continent extending from Estonia westwards to eastern England. In *Mollusc World* 47 it stated, "one of the keys to understanding *Rangia* colonisation is to know when they arrived at sites rather than simply when they were discovered". This earlier report explained that Dr. Phil Hollyman (then at School of Ocean Sciences at Bangor University) had planned an MSc project to undertake sclerochronological (shell sectioning to study incremental growth lines which can be used to age a shell) studies of *Rangia* taken from populations across Europe. The successful student applicant undertook work throughout much of 2018 and so it is now possible to provide a short summary, kindly been provided for inclusion in this report by Dr. Hollyman:

Rangia cuneata project summary: In 2018, a student at Bangor University (Siobhan Noade) undertook an MSc project looking at the non-native clam *Rangia cuneata* in European waters. The aim of the project was to determine the age and growth of this species and how this varies between locations that have wild populations. Samples were gratefully received from Belgium (Antwerp Harbour), Estonia (Parnu Bay), Russia (Vistula Lagoon), Sweden (Braviken Bay), France (Normandy), Germany (Brunsbüttel Harbour) and the United Kingdom (South Forty Foot Drain). This sample collection effort was coordinated by Martin Willing and gave good coverage of all of the documented locations of *R. cuneata* populations in Europe to date. Sclerochronological methods were employed to age individual animals by counting and measuring the internal growth lines within the shells. The oldest specimens (from the UK) were found to be 10 years of age, which indicates that the first establishment may have been as early as 2008, even though the first sighting was not until 2015. In each location studied, the earliest establishment based on the age of the collected specimens was several years before the first sighting. As the longevity of *R. cuneata* appears to be a maximum of ~10 years, the actual date of establishment may be earlier still, as past specimens may well have died

before the samples for this project were collected. Von Bertalanffy growth relationships determined that the samples from the UK displayed the fastest growth out of all measured populations and the L_{∞} was also the highest in the UK at 49.3 mm shell width (lowest was Germany at 31.3 mm). The range of sizes and ages identified at several sites indicates that either there have been several introductions, or more likely, the populations of *R. cuneata* in some places are self-sustaining and are able to reproduce.

Differences in the morphology of *R. cuneata* between sites were also found using multivariate and allometric approaches. Combinations of shell length, width, height and weight all display significant differences between certain sites. Environmental conditions dependent on geographic location are likely to influence the growth and morphology of *R. cuneata*. Salinity and temperature are two factors which may have an influence on the establishment and growth of a population, due to the thermal and salinity tolerances of *R. cuneata* larvae and adults. It is likely that the bivalve established itself at European sites due to either shipping activity or oyster farming practices, both of which are possible for the identified populations. Further sampling of both dead and live specimens would be necessary in order to decisively determine the period of time in which this species became established within identified sites, along with length frequency of a larger number of samples to conclude whether these populations are truly self-sustaining. Laboratory-based experiments of spawning and larval survival would also be of great benefit to elucidate the environmental conditions conducive to the establishment of this species. The work outlined here is currently being prepared for submission to an academic journal.

Coul Links – A report update with a happy ending!

Last year (*Mollusc World* 50: 22) I described threats to an extensive area of protected dune slacks and grasslands at Coul Links on the Dornoch Firth in north-east Scotland. In 2018 Highland Council had approved plans for the development of an 18-hole, 32-acre golf course on the site. Following numerous objections to the scheme sent by a wide range of conservation organisations (including The Conchological Society), in late August 2018 the Scottish Government ‘called in’ the plans. A protracted public inquiry held in 2019 allowed detailed scrutiny of the environmental impacts. There was delight in February 2020 when Scottish Government announced that the Coul Links scheme had been rejected. Despite the fact that the plan might have supported economic growth, the government said that the “likely detriment to natural heritage is not outweighed by the socio-economic benefits of the proposal”. A full article can be read at: https://www.bbc.co.uk/news/uk-scotland-highlands-islands-49733098?mc_cid=9c42c9eabc&mc_eid=de03685390.

One wonders whether the decision to protect the Coul Links dunes may have been influenced by the fate of the protected Forevan Links dune system at Menie in Aberdeenshire. This is where Donald Trump controversially won permission to build a golf course in 2008. Despite promises to avoid significant environmental damage, in 2019 Scottish Natural Heritage recommended that the developed area lose its protected SSSI status due to loss of many designated features. To read more about this sorry episode visit: <https://www.theguardian.com/uk-news/2019/jun/28/dunes-at-trump-golf-course-in-scotland-to-lose-protected-status>.

***Anisus vorticulus* eDNA project**

Work to develop an eDNA water test to detect the presence of the endangered and protected little whirlpool ram’s-horn snail *Anisus vorticulus* was discussed in previous reports (*Mollusc World* 45: 25 – 26; 47: 28; 50: 25). In 2018 ‘phase 1’ water testing was trialled at Hooe Level on the Pevensey Levels (figure 2), an area where 65 ditches had been surveyed for the snail earlier in the year for Natural England. This area had previously also been fully surveyed by the Environment Agency in 2007 and found to be something of a ‘hotspot’ for the snail. In early October Inga Zeisett assisted by Evan Jones, collected water samples from 5 ditches (4 supporting *A. vorticulus*). Encouragingly the test results, released in early 2019, demonstrated the detection of the snail even when present in low numbers. Additionally, a site not found to support the snail earlier in the year, also recorded a positive. It may have been that the ditch had supported low snail numbers earlier in the year or that water containing the snail’s DNA had been carried by water movement from an adjacent ditch. Unfortunately, in addition to the positive results, non-specific DNA was amplified in a few water samples. Due to time and other constraints the project was paused during much of 2019, but resumed in January 2020. Molecular markers have now been developed that successfully detect *A. vorticulus* DNA from water even when the snail is present in low numbers. Unfortunately the initial technique required the sequencing of the DNA products obtained which is a costly and time-consuming process but work is now underway to develop more species specific probes that work without this process. Once this has been achieved, a second phase of testing is planned using water samples from Pevensey Levels and other *A. vorticulus* sites in the West Sussex and Norfolk.



figure 2: An *Anisus vorticulus* ditch on Hooe Level, Pevensey Levels.

British Wildlife

Three molluscan ‘Wildlife Reports’ were published in 2019 [*British Wildlife* 30 (3): 215 – 218; 30 (6): 449 – 452; 31 (2): 136 – 139.]. As in previous years, these were able to cover a wide range of terrestrial, freshwater and marine molluscan news issues, partly drawing upon papers, reports and articles from *Mollusc World* and *The Journal of Conchology* and so publicising the Society’s work to a wide, environmentally involved audience.

Medmerry

Further involvement (see *Mollusc World* 50: 24) with the Medmerry managed coastal retreat (the largest such scheme in Britain and Ireland) (figure 3) took place in 2019 and early 2020. In March 2019 I attended the first Medmerry Monitoring Conference in Selsey, an Environment Agency organised event. Here presentations summarised work undertaken before and following the ‘breach event’ in 2013, when a huge area of low-lying land on the Selsey Peninsula was opened to the sea (<https://ea.sharefile.com/d-sbd66095012448f5b>). Molluscan work undertaken in 2018 was the only systematic invertebrate survey of the area; the summary findings were incorporated into wider-ranging reports delivered by both the RSPB and Environment Agency.



figure 3: A view of the Medmerry reserve.

In early 2020 further surveys monitored distribution changes of the original colonists and to spot the arrival of new species. A surprising new record was of the edible oyster *Ostrea edulis*, a cluster of which were found attached to a concrete sluice (figure 4). Some of the specimens were well-established adults with shell lengths up to ca 11 cm. Animals of this age may be at least 5 years old (Richardson *et al* 1993) suggesting that these individuals may have resulted from oyster larvae that were carried into Medmerry shortly after sea water entered the area.

In February 2020 an updated presentation on the Medmerry molluscan project was delivered to The Sussex Biodiversity Seminar in Haywards Heath to an audience of about 150 Sussex recorders and naturalists.

Regular monitoring surveys habitats present at Medmerry are planned as a Conchological Society – RSPB collaboration. A Society field meeting is planned for mid-August 2020.



figure 4: An oyster, *Ostrea edulis*, from Medmerry.

Chinese Mystery Snail, *Cipangopaludina chinensis* – a news update

One highlight of the Ben Rowson’s 2018 non-marine recorder’s report (*Mollusc World* 50: 16 – 17) was the worrying discovery by Evan Jones of *C. chinensis* living in a ditch on Pevensy Levels, East Sussex (figure 5). In July 2019 Evan and I revisited the area to assess the situation. We discovered that the snail is now living in about 0.5 km of ditch but has not yet colonised adjacent ditches. The presence of juvenile snails confirmed snail breeding as did the release of young from several captive females. The live snails were mostly confined to the muddy cattle-trampled ditch shallows with population density in some places estimated at about 30 m⁻². *C. chinensis* has also colonised other European countries with a first record from the Netherlands in 2007; by 2016 at least 12 populations had been located on the River Meuse floodplain (Collas *et al* 2017); a first Belgium population was discovered in 2017.



figure 5: A *Cipangopaludina chinensis* lying in the shallow margin of a ditch on Pevensy Levels.

In late 2019 the governmental Non-Native Species Secretariat (NNS) commissioned a NRR (Non-native Species Rapid Risk Assessment). A first draft was produced by Evan and me in early 2020 with publication anticipated later in the year. NRRAs have also been produced for nine other non-native British Mollusca:

1. *Corbicularia fluminea* (Asian Clam)
2. *Crassostrea gigas* (Pacific Oyster)
3. *Crepidula fornicata* (Slipper Limpet)
4. *Dreissena polymorpha* (Zebra Mussel)
5. *Dreissena rostriformis bugensis* (Quagga mussel)
6. *Potamopyrgus antipodarum* (New Zealand Mud Snail)
7. *Rangia cuneata* (Gulf Wedge Clam)
8. *Rapana venosa* (Rapa Whelk)
9. *Ruditapes phillipinarum* (Manilla Clam)

To view these, visit:

<http://www.nonnativespecies.org/index.cfm?pageid=143>

Brought to the Surface – a search for some ‘in-betweeners’ species

Mollusc World 48: 3 included a short introduction to ‘Brought to the Surface’ - a Heritage Lottery Funded project to produce a new Field Studies Council ‘Aidgap’ guide to the fresh and brackish water gastropods of Britain and Ireland. Throughout 2019 numerous trips (chiefly in Wales) were undertaken by Ben Rowson and Harry Powell to source live specimens for photography and DNA analysis. Work in Sussex was undertaken to obtain a suite of brackish and upper-shore taxa,

the ‘in-between’ species living in interface habitats lying between either land and sea or fresh and salt water. In July Evan Jones and I visited sites to try to obtain live *Hydrobia acuta neglecta* from a small brackish lagoon site lying behind the beach near Pevensey and also from brackish abandoned river meanders of the River Cuckmere. Careful microscopic examination of numerous live specimens from both sites failed to locate the snail, all material being from the superficially similar *Ecrobia ventrosa*. A later Sussex-based trip with Ben and Harry in early September 2019 was planned to target a trio of rare and elusive species; *Truncatella subcylindrica*, *Auriculinella bidentata* and *Heleobia stagnorum*. We had success at Pagham Harbour finding *T. subcylindrica* buried in upper shore gravels at Church Norton Spit and *A. bidentata* beneath cobbles at Pagham Spit Lagoon (figure 6).



figure 6: *Auriculinella bidentata* from Pagham Spit Lagoon, Pagham Harbour.

The following day an inflatable 2-man canoe was used to reach inaccessible areas of a brackish lagoon on the margins of Chichester Harbour where numerous *Heleobia stagnorum* were found, reconfirming the presence of one of the UK’s rarest gastropods at its only known UK site (figure 7). Further to the west lie Farlington Marshes, a site where freshly dead (but never live) *H. stagnorum* were found in the early 1970s. Sampling in all accessible lagoons failed to find even dead shells. Brackish ditches at Pagham Harbour and Farlington Marshes also produced numerous *Ecrobia* / *Hydrobia* specimens but careful laboratory examination of live animals again demonstrated that all animals were, as with the samples collected in July in East Sussex, *Ecrobia ventrosa*. The failure to find *Hydrobia acuta neglecta* appears to confirm this snail is much rarer than *E. ventrosa*.



figure 7: Collecting *Heleobia stagnorum* at Chichester Harbour. Ben Rowson in inflatable boat.

Desmoulin’s Whorl Snail *Vertigo moulinsiana* – some conservation news

Vertigo moulinsiana is a wetland snail protected as a European Union Habitat & Species Directive (EUHSD) Annex IIa species and one assessed with a threat status of ‘Vulnerable’ in the GB non-marine molluscan status review (Seddon *et al* 2014). Since that date work (such as on the Wiltshire / Hampshire River Avon and River Kennet and Lambourn) has shown the significant further decline of the snail in some parts of England and Wales. The Society is involved with several projects and initiatives concerning the snail some of which include:

a) Natural England Habitat Restoration in the River Avon catchment. In February 2019 I was asked to offer help to Natural England in relation to a conservation programme being undertaken on the middle, upper and source areas of the Wiltshire River Avon (figure 8). The work aims to restore the catchment, to create a resilient wetland habitat landscape along the river margins and floodplain to enhance the whole wetland community focusing on certain species including *V. moulinsiana*. Help was given in several ways; by providing survey reports and other information for survey areas. In early September 2019 Mags Cousins led a training *V. moulinsiana* training event at Pewsey for Natural England staff and others including from the Wiltshire Wildlife Trust (WWT). Although unable to attend I provided a *V. moulinsiana* training PowerPoint (covering ecology, distribution, conservation and survey techniques), a field work recording sheet and an identification guide allowing surveyors to distinguish *V. moulinsiana* from similar species. The meeting successfully field-trialled the survey techniques at a WWT reserve and in following days at other former *V. moulinsiana* sites in the area. The Society will continue involvement with this catchment restoration programme in 2020.



figure 8: A *Vertigo moulinsiana* site on the River Avon near Amesbury.

b) Conservation work at Burton Mill Pond and Chingford Pond. I have written before (*Mollusc World* 45: 27; 50: 24) about Burton Mill and Chingford ponds, two inter-connected water bodies of regional importance as supporting the largest populations of *Vertigo moulinsiana* in Sussex (figure 9). I attended meetings of the Burton and Chingford Local Nature Reserve Management Advisory Committee in May and October 2019. At Burton Mill Pond 2019 saw the start of a programme to clear the encroaching willow and alder increasingly shading the pond margins making the habitat less suitable for the snail and other open-fen invertebrates and plants. Visits were also undertaken in 2019 to inspect the margins of Chingford

Pond to assess the re-development of the marginal fen vegetation which was lost together with the population of *V. moulinsiana* when water levels in the pond were raised during a restoration programme in 2015. The LNR committee and Natural England are hopeful that the snail will be returned to Chingford Pond from the adjacent Burton Mill Pond once marginal fen conditions have recovered.



figure 9: A view of Chingford Pond near Petworth, West Sussex.

c) Natural England ‘Favourable Conservation Status’. Natural England (National HQ in Worcester) are producing Favourable Conservation Status documents for a selection of declining species. These aim to relate the current range of a species with historic data and to then formulate a national target for it (e.g. area and range of occupation) including a recovery target if the has shown a significant historic decline. The Conchological Society has been invited to review a final draft and suggest corrections, modifications and additions. When the document arrives later in 2020 the Conservation Officer will circulate to interested Society members to obtain opinions and feedback before the document is returned to Natural England.

National Biodiversity Network (NBN)

a) NBN membership. The Conchological Society makes extensive use of the National Biodiversity Network (NBN) Atlas platform, especially the marine and non-marine recorders who periodically submit their latest data. In April 2019 the Council decided that the Society would become, at no cost, an NBN member organisation. This provides us with a website page where we can post information about Society meetings, projects and social media links. It is planned to make use of the page once the updated Society website is activated in 2020.

b) NBN Sensitive Species Policy. My last report described the NBN ‘sensitive species policy’ (SSP) and the mollusc species recommendations proposed by the Society. We suggested that locational data should be restricted (at different levels) for the non-marine *Margaritifera amargaritifera*, *Helix pomatia*, *Lauria sempronii* and *Vertigo modesta*. We also felt that the suggested inclusion of the marine *Pecten maximus*, *Aequipecten opercularis* and *Ostrea edulis* as sensitive species was not justified. In 2019 our suggestions were circulated by NBN to the various governmental conservation bodies (Natural England, Countryside Council for Wales, Scottish Natural Heritage and the Joint Nature Conservation Committee). Some initial feedback was received in late 2019 with some bodies questioning some of our proposals; discussions on which species should be included on the final country lists and what level of locational site ‘blurring’ will continue in 2020. It is hoped to report on the final policy details in the 2020 Conservation Report.

c) NBN listed species with no records. NBN asked the Society to investigate why there were no map records for 27 non-marine species. Explanations could be provided for most species and these included the inclusion of (1) outdated or incorrect synonyms, (2) continental species erroneously included on the UK list, (3) non-native species previously recorded from single sites but which had since died out, (4) species only recorded in hot houses and (5) recently established non-natives. The presence of six species believed to have numerous Society records could not be explained; Ben Rowson is investigating further.

d) NBN discussions and help. See details discussed in notes on Conservation and Recording Committee below.

Conservation & Recording Committee

In November 2016 a reformed Conservation and Recording Committee (CRC) met for an all-day discussion meeting in Cardiff (*Mollusc World* 45: 22 – 27) and with a much-increased committee membership, a second CRC meeting took place in Cambridge in November 2017 (*Mollusc World* 47: 24 – 28). A third full-day meeting took place on a return to Cardiff in November 2019 being attended by 12 committee members (Keith Alexander, Robert Cameron, Mags Cousins, Ian Killeen, Evelyn Moorkens, Julia Nunn, Sebastian Payne, Ben Rowson, Mary Seddon, Adrian Sumner, Peter Topley and Martin Willing [in the Chair] with apologies from Simon Taylor and Adrian Norris. Most matters discussed are summarised below or appear as separate report sections.



figure 10: Members of CRC at the Cardiff meeting, Nov. 2019.

a) Conservation Projects. Several potential Society projects and matters relating to them were discussed; these are discussed in a project section below.

b) Non-marine recording & conservation in Britain. Ben Rowson provided a brief overview of recording work completed in 2018 and part of 2019 (mostly included in the 2018 and forthcoming 2019 Non-marine Recording reports). All remaining records received from Adrian Norris the previous recorder, had been transferred to NBN. A National Lottery grant had been obtained supporting the production of a new freshwater gastropod guide (in cooperation with the Field Studies Council and others); see *Mollusc World* 48: 3.

In terms of conservation it was noted with regret that the former ‘Priority Species Steering Groups’ no longer met. These involved Society specialists and invertebrate officers from the national conservation agencies to focus on national conservation priority and EUHSD Annex II and IV species. Following the CRC meeting I contacted the invertebrate officers for England and Wales to explore the

possibility of re-starting steering groups but a combination of staffing and funding cuts prevent group reformation. At 3 to 4-yearly intervals national conservation agencies report back to Europe on the conservation status of EUHSD Annex II and IV species, a process called 'Article 17 reporting'. Evelyn Moorkens assisted by the Conservation Officer offered to produce a summary of the current status assessments of species on the 2019 submission reports. This information might provide the Society with ideas for conservation actions.

c) Non-marine recording & conservation in Ireland.

Evelyn presented a short report summarising matters in Ireland. Few new records were submitted in 2018 – 2019 other than from a Bioblitz event. She reported that records were sent to her annually from the Biological Records Centre of Ireland but that the introduction of new GDPR regulations created difficulties in contacting recorders to query verifications. Reported conservation work entailed governmental / EU supported surveys and projects on the freshwater pearl mussel (*Margaritifera margaritifera*), Geyer's whorl snail (*Vertigo geyeri*), and the Kerry Slug (*Geomalacus maculosus*).

d) Marine Recording in Britain: Simon Taylor's notes reported that he had systematically examined the Society data set to correct obvious errors; Society members were asked to report further suspected issues. Marine data was last downloaded to NBN in 2018 with the next tranche planned for early 2020. Some minor iRecord issues were reported; most helpfully Ian Smith is now acting as an additional record verifier. It was noted that the continued Society use of Recorder 6 now requires an annual subscription.

e) Marine Recording in Ireland: Julia Nunn delivered marine news from Ireland, reporting the absence of specific marine mollusc projects in the ROI. In Northern Ireland CEDaR (Centre for Environmental Data and Recording) is evaluating priority species with plans to produce marine ID guides linked to a web site. The Department of Agricultural, Environmental and Rural Affairs in NI are also working on replacing their database, which holds mollusc records which will be uploaded to NBN. The National Biodiversity Data Centre Ireland is under threat from lack of funding. The Society would send a letter of support explaining how much their work was valued. Julia was planning to transfer her Irish marine records to the Marine Recorder.

f) IUCN European Red Lists. Mary Seddon reported the project's completion, which now included 3500 mollusc species, c.94% of which are endemic to Europe. This is the best dataset in the world to study European threatened species. The freshwater mollusc species were last assessed in 2008–10 and although requiring revision in 2020, a reassessment has yet to be approved (despite numerous threatened species on the Mediterranean margins). Errors in the IUCN mollusc database have resulted in a number of molluscs not in the UK fauna being listed as present. Mary will be providing the Society with species suggestions that might suggest further conservation projects.

g) NBN issues. The CRC afternoon session dealt solely with NBN issues and assisted by a background information pack prepared by Bas Payne allowed discussions of the practical use of the Atlas platform and difficulties and

application problems. A more detailed discussion summary will appear as a separate Mollusc World article.

h) How should Britain and Ireland be correctly referred in Society reports? There is some confusion as to how Britain and Ireland should correctly be referred by Society. Thus reference to the 'British Isles' meaning to include Ireland is not acceptable. Evelyn Moorkens and Julia Nunn would produce a guide sheet of recommended 'good practice' to clarifying the issue.

i) English (vernacular) names for non-marine species.

There have been calls (from Buglife and others) for the Society to produce a 'standard list' of agreed vernacular names for popular usage. There was insufficient time to complete discussions which will take place in a Council meeting.

j) New Society Conservation Officer: Following the Conservation Officer's resignation in January 2019 (effective from March 2020 AGM), Mags Cousins offered to be nominated for the post. The CRC discussed the offer (in Mags' absence) there being some concern that, as a Natural England employee, she might encounter occasional 'conflicts of interest' if the Society disagreed or objected to a Natural England policy. It was decided that such a situation might be easily resolved by delegation of possible 'conflict issues' to other Council members. With this matter resolved CRC endorsed a recommendation to Council to support the nomination.

Conservation Projects

Following the 2017 CRC meeting recommendation for the development of some specific conservation projects, possibly linked to individual species, a number are now either in operation or being planned. The Conchological Society has a relatively small membership and operates with a few active 'core' members. It is therefore important that it plans realistic and achievable projects that can be managed by a small number of volunteers. A possible solution to increase the project scope of the Society might be the employment of a part-time Project Officer. This idea was first suggested at the 2016 CRC meeting and then briefly considered again at the meetings in 2017 and 2019. A project officer could manage a wider range of projects hopefully raising the Society's profile and membership numbers; might increase membership revenue partly offset the officer's costs? This matter will be discussed at Council meetings in 2020.

a) Knepp Estate Projects

i) Further surveys of the estate: Two Knepp Estate Society field meetings in October 2017 (see *Mollusc World* 48: 18 – 21) and October 2019 have so far recorded >66 terrestrial and freshwater species. Although many potentially suitable areas of habitat were visited many more remain to be surveyed; not surprising on a 3,500-acre estate. Surveys will continue to systematically visit remaining areas.

ii) Successional change of molluscan communities: The Knepp Estate 're-wilding' means that former areas of intensively farmed arable or improved grassland have been left to revert to a more natural state. There are plans (led by Mike Allen) to select study blocks where periodic surveys, undertaken over many years, will monitor molluscan changes relating these to other factors including plant

community structure and other environmental biotic and abiotic conditions.

iii) Possible 'Mud Snail' *Omphiscola glabra* introduction and / or enhancement: The Pond Mud Snail *Omphiscola glabra*, a S41 Priority Species for conservation action in England, lives in low nutrient, temporary ponds, ditches and marshes. The snails survive periodic drought by remaining dormant, buried in mud until water returns. *O. glabra* has been the subject of at least two successful, well publicised conservation projects. These have not only boosted declining snail populations, restored or created new habitats but had considerable success in educating and engaging young people with hands-on classroom captive breeding. These include the 'Cornwall Marvellous Mud Snails' project (managed by Buglife with funding from the People's Postcode Lottery and Ernest Cooke Trust) <https://www.buglife.org.uk/projects/cornish-marvellous-mud-snail/> and in Scotland the similar 'Marvellous Mud Snail' project (with funding from National Lottery Heritage Fund and North Lanarkshire, Clackmannanshire & East Dunbartonshire Councils) <https://www.buglife.org.uk/projects/marvellous-mud-snails/>. *O. glabra* is locally present in temporary pools, often in open woodlands on the Weald clay of the Low Sussex Weald in sites very similar to many on the Knepp Estate. As part of their habitat enhancements, the estate has created many shallow scrapes which are subject to partial seasonal drought. If an *Omphiscola glabra* introduction programme was agreed at Knepp it would benefit from the now extensive Buglife experience and the Society would hopefully work in a partnership with them. Clearly any introduction would strictly adhere to the Society's yet to be agreed policies on introduction, reintroduction and translocation and only be considered following completion of a whole estate survey to confirm the absence of the snail there; this might not be for several more years.

b) Medmerry Coastal Managed Retreat - marine molluscan colonisation & successional studies. Regular monitoring surveys of the various marine habitats will be undertaken on at least a biannual basis with one offered as a field meeting option in 2020 [currently cancelled. Ed.]. Surveys undertaken between 2018–2020 provide information on the presence and distribution of species, allowing established population changes to be studied and new colonists to be identified.

c) Thames / Two-lipped Door Snail *Balea biplicata*.



figure 11: *Balea biplicata* from the Thames banks at a site downstream of Kew.

In the last century or so *B. biplicata* (figure 11) has undergone a significant decline in England. It was previously recorded living in a series of sites scattered across the country from Somerset to Cambridge with a core population in London. The snail has not, however, been recorded outside the capital since last seen in Cambridge in 1949; return visits have failed to rediscover the snail in any of the outlying sites. By 2011 *B. biplicata* was reduced to a

cluster of about 8 sites, all situated along a relatively short stretch adjacent to the upper tidal Thames in the Kew/Barnes areas. Since then it appears to have been lost from one of its former strongholds on Isleworth Ait and is imminently threatened by current development work at another site at Brentford. Most populations are also at risk from an increased incidence of flooding. A *B. biplicata* conservation project, running over several years is proposed, working in partnership with other NGOs and interested volunteers. This would firstly reassess the situation by revisiting all current and former London sites as well as recording other areas of potentially suitable habitat. Following this audit it is hoped that a conservation plan might be developed to at least maintain but hopefully enhance the snail's presence in London. A detailed rationale and proposal plan is appearing in a forthcoming *Mollusc World*.

d) What's Happened to the Mountain Bulin Snail *Ena montana*? *Ena montana*, a snail chiefly found in old deciduous woodlands, has a scattered distribution across southern England from the Cotswolds/Mendips (the main strongholds) through the Chilterns to Suffolk with a few outlying sites on the western South Downs. The progressive decline across the snail's range within the last 100 years has led to it being assessed as Near Threatened in a recent non-marine status review (Seddon *et al* 2014) which stated, 'it is close to meeting the criteria for Vulnerable under the area of occupancy'. A project, probably running over several years, is planned to update on the snail's current status by surveys of current and historic sites. Information obtained may be used to develop conservation management advice to maintain or enhance populations. The project, led by Keith Alexander, will be described more fully in a forthcoming *Mollusc World*.

e) Distribution of Toothed Top Shell *Phorcus lineatus* & Black-footed Limpet *Patella depressa* on the English South Coast. Bas Payne is coordinating on-going surveys to study the distribution of *P. lineatus* and *P. depressa* on the south coast. Both are 'southern species' reaching their northern limits on the southern and western coasts of Britain and Ireland; changes in distribution may reflect the effects of increased sea temperatures resulting from global warming.

Possible marine project: Simon Taylor suggested that a possible project might be based upon establishing a surveillance programme to keep a track on invasive brackish water species. This might involve liaison with European malacologists and the production of publicity material to assist identification.

Species translocation, introductions and reintroductions

Several of the above-mentioned projects and future Society initiatives may under carefully considered circumstances, consider the conservation use of **reintroduction**, **introduction** and **translocation** ('RIT'). The CRC meeting felt that a Society policy was required to guide these activities. Following the meeting Mags Cousins and I made further enquiries including with Buglife who have extensive RIT experience. The current IUCN translocation guidelines are available at <https://portals.iucn.org/library/efiles/documents/2013-009.pdf>. Help came from Craig Macadam of Buglife who sent us this feedback: '*The most comprehensive up to date interpretation of the IUCN*

guidelines in the UK is in Scotland where there is a code of practice for conservation translocations (<https://www.nature.scot/professional-advice/safeguarding-protected-areas-and-species/reintroducing-native-species/scottish-code-conservation-translocations>). This is what was used for *Omphiscola glabra* and is now used for all translocations and reintroductions. This document explains the difference between native and non-native in terms of the legislation, and provides a step by step checklist to determine what information is required for any introduction or translocation. When Natural England consulted on conservation translocations a couple of years ago the Wildlife and Countryside Link response was essentially to adopt the Scottish system’.

A small Society working group will take these matters forward in 2020 to formulate proposals for Council to consider and endorse.

European Habitat Action Plan for European Dry Heaths

A short piece on molluscan presence on heathlands was sent to Michael Edwards who is coordinating input on heathland invertebrates for the ‘EU Habitat Action Plan: Action plan to maintain and restore the habitat type 4030 European dry heaths to favourable conservation status’. When completed a final plan document will be posted into a future Conservation Officer’s Report.

The Abu Dhabi Call for Global Species Conservation Action.

Mary Seddon forwarded details of the above-mentioned initiative and following discussion at the December 2019, Council agreed to endorse Society support. When confirming this we stated, “ In discussing this matter, the Conchological Society of GB and Ireland shares the Species Survival Commission’s concerns about the importance of action to reduce loss of biodiversity; however we feel that it is important to place greater emphasis on the need to protect habitats and ecosystems rather than focusing on particular iconic large species.” To read more visit: <https://www.iucn.org/species/about/species-survival-commission/ssc-leadership-and-steering-committee/ssc-leaders-meeting-2019/abu-dhabi-call-global-species-conservation-action>.

Species Champions

In October 2019 Buglife approached the Society to see if we would consider joining the ‘Species Champions’ initiative. This project, run by the Rethink Nature partnership (a group of NGO wildlife organisations), seeks to get Members of Parliament to ‘adopt’ a species; by late 2019, 59 MPs had signed up. It is hoped that MPs help to raise awareness of their adopted species and act as advocates for them both in Parliament and their constituencies. The Society briefly considered this idea at the CRC meeting with further discussion at the January 2020 Council meeting. It was agreed that we would register our interest once we had been assured by Buglife that no species had previously been ‘discredited’ as a result of links to an MP; assured that this had never been the case, we registered our interest. Candidates species do not necessarily have to be rare or endangered, but might be chosen because of their links to a specific habitat which in itself might need protection. Attempts by Buglife to find an MP to ‘adopt’ the freshwater pearl mussel *Margaritifera margaritifera* (from a constituency supporting the species)

had failed otherwise the Society would have suggested this species. It was agreed that the cheese snail *Helicodonta obvolvata* might be a suitable choice being an iconic vulnerable species, dependent upon some of the ‘best’ ancient beech and ash woodland sites on the western South Downs (all lying within the boundaries of the South Downs National Park) (figure 12) and whose survival is dependent on sustainable woodland management practices. *H. obvolvata* also lives within a number the constituencies of MPs who have not yet become species champions. For more information visit: www.buglife.org.uk/specieschampions.



figure 12: *Helicodonta obvolvata* and an example of its habitat: hanger woodland on the South Downs near Midhurst.

The A27 Arundel Bypass Impact Studies: provision of molluscan information

In March 2019 I was contacted by a representative from WSP, a consultancy working for the Highways England and dealing with the environmental impact of route options for the proposed A27 Arundel Bypass in West Sussex. They requested help in confirming specimen identification of suspected *Mercuria similis* and information on the historic distribution of this snail and *Anisus vorticulus* within a zone of the Arun valley potentially affected by road works. Help was given in return for (1) supply of all molluscan survey data and permission to submit these to both the Society Non-marine Recorder and Sussex BRC; (2) full acknowledgement of the Conchological Society’s help in all reports/communications and (3) that the molluscan-related text in any final report would be available to check accuracy and fair interpretation. After these terms were agreed I was able to provide identification confirmations and supply *A. vorticulus* survey data (mostly from previous work undertaken for Arun District Council) in the impact zone of the Lower Arun valley. These suggested that the presence of *A. vorticulus* was most unlikely in the impact area but that *M. similis* would be present. Work on the bypass scheme impact study is ongoing and feedback will be supplied to the Society when available.



figure 13: a *Mercuria similis* site close to Arundel. An area potentially threatened by a road improvement scheme.

Assistance to PhD student studying freshwater gastropods in Cambridgeshire.

The Society was contacted by a PhD student from Aberdeen University starting research involving freshwater gastropods. These studies were planning to investigate connectivity between a few Cambridgeshire fens (Wicken, Holne, Woodwalton and Chippenham). The student was given help and assistance between January and April 2019 in locating identification guides, advice on survey techniques and the storage of specimens. A significant proportion of the help related to specimen identification. To provide the best specialist advice for certain taxa I was able to coordinate additional support from Ben Rowson and Ron Carr who were able to undertake detailed examination of (a) *Planorbis carinatus* / *planorbis* & *Anisus leucostoma* agg. and (b) *Stagnicola fusca* / *palustris* respectively. I handled the rest of the material. The student, who joined the Society, has been contacted for an update and when received a research summary may be reported in *Mollusc World*.

Freshwater Expert Group (Wales)

The Conchological Society was invited by Buglife (Cymru) to attend the first meeting of the 'Freshwater Expert Group' held in Cardiff in July 2019. The meeting set out to get some initial answers to a series of questions; what are the priority freshwater species and habitats in Wales and what are the priority freshwater issues facing freshwater conservation in the country? Following this the forum focussed upon what actions are planned. The Society was represented by Ben Rowson. Accompanying my apologies for absence, notes were sent drawing attention to the conservation importance of three freshwater Mollusca, the nationally important populations of freshwater pearl mussel *Margaritifera margaritifera*, glutinous snail *Myxas glutinosa* and depressed river mussel *Pseudanodonta*

complanata. Further biannual meetings of the group are planned.

Associations with other organisations

The Conchological Society has active associations with many other conservation organisations particularly Buglife, the RSPB, Invertebrate Link (IL)* and the Wildlife Trusts. The Society provides IL with an annual report to be distributed to its members; that sent for the November 2019 meeting (attended by Mags Cousins) consisted of an amalgamation of the two census recorders' reports and that of the Conservation Officer. Additionally, the Conservation Officer is a member of the Arun & Rother Rivers Trust (ARRT); this provides numerous opportunities to become involved in river catchment discussions where molluscan assessments and conservation issues are of relevance.

* Invertebrate Link: further information at <https://www.royensoc.co.uk/invertebrate-links/>

Acknowledgement

Mags Cousins is thanked for her help and support in the ongoing role of Conservation Officer 'support colleague'.

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Hon. Treasurer – could you fill this role and help your Society?

The Conchological Society cannot run without the essential and valuable work of a treasurer.

If you are concerned about our future and might be interested in supporting us by taking up this voluntary role to become part of the heart of our work, please contact us. Our current Hon. Treasurer, Nick Light has provided a summary below of what is involved. He is happy to provide any further information and also to offer initial support to make any handover go smoothly (for contact details see page 31).

The Treasurer's role.

There are three main aspects to the treasurer's role.

- (1) To maintain the books and produce the annual accounts.
- (2) Advise Council members on the financial implications of the decisions they consider.
- (3) To manage the Society investments and keep them secure.

Bookkeeping is undertaken for the Society by a professional accountant who maintains the books, prepares annual accounts and ensures subscription receipts are notified to CIRCA who maintain our membership records. The treasurer pays the bills and controls all outgoings e.g. grants. This involves about 50 payments a year. In January each year it takes a couple of days to review the accounts, notes and a report and to prepare documents for the examiner to review and to prepare and submit a Gift Aid Tax repayment claim.

Advice to Council requires you to attend occasional meetings in London during the winter months. Most issues can also be dealt with by e-mail and it is not essential to attend every meeting. If required, the treasurer (as is the case with other officers and council members of the Society) may claim reasonable travel expenses for meetings attendance (max. £100/meeting).

The investments require very little work. I do a quarterly valuation to ensure I know how the value is changing.

It can appear a bit daunting at first but if you can deal with things as they come in, it quickly becomes a routine.

You can keep up to date anywhere, where you have your computer and an internet connection. Very little paper is involved!

Nick Light *Honorary Treasurer*

The slugs and snails in my garden

Jim Logan

At the start of the Coronavirus lockdown, our local environmental recorder, Mark Pollitt, of the South West Scotland Environmental Information Centre suggested that, as they were restricted to their house and garden, the wildlife recorders should see what wildlife – birds, plants, animals and invertebrates they could find in their gardens and record them on a special section of iRecord. My garden is about 46 x 11 metres with a small wood 7 x 11 metres at the end.

After I had recorded the wildflowers and birds in my garden, I started looking under paving stones and logs and was surprised at the number of snails and slugs I found. I have never really looked at land slugs and snails being more interested in marine and freshwater molluscs. I had an attempt at identifying the slugs and snails that I found. I knew three of the snails, *Cornu aspersum* (figure 1), *Cepaea nemoralis* and *C. hortensis* and I managed to put names to some of the slugs. I entered them on iRecord. There Chris de Feu checked my slug identifications and gently corrected them. I bought the Field Studies Council *Slugs of Britain and Europe* and managed to identify a few other slugs correctly (figures 2–4). Ben Rowson confirmed my snail identifications on iRecord and named the one, *Oxychilus alliarius* (figure 5), which I could not name. In addition Peter Topley identified *Trochulus striolatus* from an e-mailed image (figure 6).

Acknowledgements

Thanks are due to Mark Pollitt for suggesting this idea and to Chris de Feu, Ben Rowson and Peter Topley for their help.

<i>Deroceras invadens</i>	tramp slug
<i>Deroceras reticulatum</i>	netted field slug
<i>Ambigolimax</i> sp	Balkan threeband slug or Iberian threeband slug
<i>Limacus maculatus</i>	green cellar slug
<i>Arion flagellus</i>	green soled slug
<i>Arion subfuscus</i>	dusky Arion
<i>Arion owenii</i>	tawny soil slug
<i>Tandonia budapestensis</i>	Budapest keeled slug
<i>Cepaea nemoralis</i>	brown lipped snail
<i>Cepaea hortensis</i>	white lipped snail
<i>Cornu aspersum</i>	garden snail
<i>Oxychilus alliarius</i>	cellar snail
<i>Trochulus striolatus</i>	strawberry snail



figure 2: *Deroceras reticulatum*.



figure 3: *Deroceras invadens*.



figure 4: *Limacus maculatus*.



figure 5: *Oxychilus alliarius*.



figure 1: *Cornu aspersum* aestivating.



figure 6: *Trochulus striolatus*.

50 years ago: from *The Conchologists' Newsletter* (no. 34, September 1970)

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

Conchological Society meeting at Manchester University Museum

18th April 1970

Nora F. McMillan

...The President, Mr T. Pain, presented a congratulatory address to the Society's senior member, Dr J. Wilfred Jackson¹, in anticipation of his 90th birthday (on June 15th)...Dr Jackson thanked the President for their kind thought, and said he was delighted to be able to attend this meeting...[He] had just finished giving the Meeting a talk which had begun with an account of the events leading up to the founding of the Society in 1876 by four Yorkshire conchologists, namely J.W. Taylor, W. Nelson, H. Crowther and W. Denison Roebuck...

Dr Jackson then went on to give personal reminiscences of many of the older conchologists: R.D. Darbishire; Melville, that mighty collector not only of shells but also of flowering plants; Robert Standen (whose only child Dr Jackson married) and others, making these well-known names suddenly spring to life for us. In autobiographical vein, Dr Jackson told us that he was not really a Mancunian at all but had been born in Scarborough in 1880, though he added that his family had moved to Manchester when he was still very young. He related how he had watched Queen Victoria's Golden Jubilee celebrations in Manchester in 1887, had seen Buffalo Bill's Wild West Show, and had seen Queen Victoria open the Manchester Ship Canal in 1894. It was on Mafeking Night [17th May 1900²] that he had first met Robert Standen who was to become his father-in-law and life-long friend. In 1904 he had visited Ireland for the first time and had worked at the little biological station then functioning at Larne, Co. Antrim. In Ireland too he met Robert Welch, that doughty champion of Irish natural history, who became a firm friend.

100 years ago: from *The Journal of Conchology* (August 1920, vol. 16 (4), p. 125)⁴

Prior to *Conchologists' Newsletter*, the *Journal* featured items that today might have been included in the pages of *Mollusc World*.

EDITORIAL NOTES⁵

Mr. J. D. Dean sends the transcript of some interesting notes by Miss K. Haddon, which appeared in the *Proceedings of the Zoological Society* for 1915, relating to the preying of the glow-worm larva upon snails. This habit has been already described by Newport and others, but their accounts do not tally. Miss Haddon says: 'Newport describes the bite of the larva as causing great pain to the snails, whereas Fabre, in a popular article on the subject, says that the snail is anaesthetised by the bite. My observations were carried out with a Zeiss binocular, the larvae being placed with some moss in a shallow glass dish, and supplied with small snails. The snail apparently is found quite by chance, and if hungry, the larva at once fastens on its prey. Bending its head down, it cuts its way into the snail, which promptly withdraws into its shell, the larva following. If left undisturbed, the larva feeds continuously, and is frequently

from **The medicinal snail** Charles Pettitt

In France, snails were dried and concocted into cough lozenges. For consumptive diseases of the lungs, the snails were not only eaten but also crushed and rubbed on the back and chest, the snail juice being extolled by some as superior to cod liver oil.

...In South Hampshire snails were made into a poultice with soaked bread crusts and applied 'to help weak eyes.' Gloucestershire yields two typical recipes: to cure earache a snail was pricked and the froth which exudes dropped into the ear as it falls: and also a sufferer from 'ague' in this county would often wear a live garden snail in a bag around the neck for nine days. The bag would then be opened and the snail thrown on the fire when it would 'shake like the ague', thus curing the patient.

Field meeting to the White Bog, Killough, Co. Down, N. Ireland.

Nora F. McMillan and L.D. Harfield

It is not often that field meetings of the Conchological Society are held in Ireland, but on May 28th, and again on June 1st 1970 Mr A.W. Stelfox, now in his 86th year, but still an active conchologist³, led parties to the White Bog. The white Bog, so called because of the *Chara*-marl underlying the peat, is the site of a late-glacial lake-deposit and the main purpose of our visits was to obtain more material of *Pisidium vincentianum*. In this we were unfortunately unsuccessful, but thanks to Prof. G.F. Mitchell and Mr Craig who accompanied the June party, useful palaeobotanical data were gathered.

joined by others until the snail is finished. Wishing to see more clearly the method of this procedure, I supplied small slugs as food instead of snails. The larva bit the slug on the visceral hump, but the slug with a twist of its body slipped away, leaving a mass of mucus over the head of its enemy. In the next attempt the attack was more fortunate, the larva striking right into the pulmonary cavity of its victim, but either the food was not to its taste or else it was not hungry, as it shortly let go, and the slug, which had previously been lethargic, glided off apparently undisturbed. These observations show that, in these cases at any rate, there is no anaesthetising. Newport also observed some dark-coloured fluid which flowed from the mouth of the larva at the time of the attack, and apparently acted as a poison, for the snail was much more affected by the bite of the larva than a mechanical injury, such as the piercing of a needle.'

¹ See: Brian Goodwin's articles from 2012–13 on J. Wilfred Jackson (*Mollusc World* 30: 24–27 and 32: 26–28) for more biographical detail.

² In December 1983 I was at a gathering where my 90-year-old grandmother was sitting next to another elderly lady. Following a pause in the conversation, she turned to her and said 'do you remember the relief of Mafeking?' See also www.historytoday.com/archive/relief-mafeking. [Ed.]

³ The same issue includes a note on a paper in *Irish Naturalist* (16:9) reviewing this naturalist's pioneering genetical studies on *Cornu aspersum*.

⁴ Many thanks to Tom Walker for this extract from the *Journal of Conchology*. [Ed.]

⁵ The Editor was J. R. le B. Tomlin, M.A., F.E.S.

About the Conchological Society

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

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

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Copy (via e mail, typed or handwritten) should be sent to the Hon. Magazine Editor (contact details above). If sending copy using e-mail please include a subject line 'Mollusc World submission'. When emailing several large file attachments, such as photos, please divide your submission up into separate emails referencing the original article to ensure receipt. Electronic submission is preferred in Microsoft Word. Images and Artwork may be digitised, but we recommend that a digital image size 200Kb- 1Mb (JPEG preferred) be sent with your submission. All originals will be treated with care and returned by post if requested. Authors should note that issues of the magazine may be posted retrospectively on the Conchological Society's web site. **Copy intended for the November 2020 issue should be with the Hon. Editor prior to 30th September 2020**; inclusion in a particular issue is at the Hon. Editor's discretion and depends upon the space available but contributions are always welcome at any time.

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