

of the river, grid ref. SE 157654.

FIELD - Saturday 24 October
Nottinghamshire, Sherwood Forest area. Slug search

Leader: Chris du Feu
(01427 848400) (home)

In spite of the profusion of visitor centres, country parks, Major Oak and stately homes, the Sherwood Forest and Dukeries area of Nottinghamshire is not well recorded as far as molluscs are concerned. This visit to the Sherwood Forest Country Park aims to lighten this mollusc-recording black spot. We will give particular attention to searching for *Malacolimax tenellus*. This species is known only from two other sites in the county - both a few kilometres away, in diametrically opposite directions but still within the old forest and parkland area of the county.

Meet at the visitor centre at 10:00h. The car park, a few metres away, is at SK 626676.

The visitor centre with cafe and toilets will be open all day.

This field visit is included in the park's programme of activities and there is the possibility that members of the public may join us for the morning, afternoon or even the whole day. To allow members of the public to join us for an afternoon only, we will begin the afternoon mollusc-crawl again at the visitor centre at 13:00h. If you can only manage half a day, please feel free to join us then.

INDOOR - Saturday 7 November

Regional meeting at Leeds Museum Discovery Centre, Carlisle Road, Leeds LS10 1LB

Further details on the Society Web Site or from Adrian Norris
(01132 745244) (home)

The Discovery Centre is about 20 minutes' walk from Leeds railway station, detailed directions available on the Web Site. Bus 28 runs from the Headrow to a stop at the bottom of Chadwick Street. By car, head out of Leeds on the A61 Hunslet Road and turn down Sayner Road following signs for the Royal Armouries; there is free parking at the Centre.

Arrangements have been made to open the Leeds Discovery Centre from 10:00h until 17:00h to give all members time to visit the collections as well as attend or view the main displays and events of the day.

A programme for this meeting has not been arranged as yet and a number of possible subject areas are being considered. However, members and visitors alike will have their first opportunity to look at the Museum's large and important mollusc collection which holds material collected by Sylvanus Charles Thorp Hanley, Fred Taylor, William Nelson, A.G. Stubbs, Terry Crowley, Mrs M. Fogan, L.W. Stratton and many more. As part of the displays available on the day it is also hoped to include material now held in the Conchological Society's Archives which are held for safe keeping at the West Yorkshire Archive Service which is situated within Leeds.

WKSHP - Saturday 28 November

Annual Molluscan Workshop

This meeting is being held by kind invitation of Judith Nelson at Hilbre House, Pembroke Road, Woking, Surrey GU22 7ED

(01483 761210) from 10:00h prompt until approximately 17:00h
Please note Hilbre is a non-smoking property

Those attending should please bring a microscope and lamps (a few microscopes are available if booked in advance), Petri dishes or other dishes for sorting purposes, a fine water colour paint brush (00), tweezers/forceps, dissecting tools, if possible an extension lead and/or double electric plug, books to help identification, and a packed lunch. Coffee, tea and biscuits are provided.

As numbers for the workshop are limited, please confirm any booking made by 1 November so that it can be checked whether there are any places vacant. Those NOT confirming by 1 November will be taken as not wishing to attend and their place will go to someone else. No reminders will be given.

A fee of £5 will be charged to cover expenses. PLEASE BOOK EARLY.

The programme for November 2009 is as follows but subject to change: small marine bivalves and helicid land snails. Other items may be brought for identification. If you would like any other subjects dealt with, please contact Judith.

NHM - Saturday 12 December

14:00h in the Dorothea Bate Room [Palaeontology Demonstration Room], preceded by Council meeting.

Guest speakers at 14:00h:

Graham Long (Fordingbridge) and June Chatfield (Alton)

Non-marine Molluscs of Hampshire

NHM - Saturday 30 January 2009

11:00h in the Dorothea Bate Room [Palaeontology Demonstration Room]
Please note the revised start time. No Council meeting.

Please bring plenty of exhibits and demonstration material. There will be a lunch break at about 13:00h. Lecture to start at 14:00h. The programme is still at the planning stage but will probably include exhibits and demonstrations of small molluscs.

Members are encouraged to bring specimens of any Mollusca for identification, a X20 binocular microscope will be available if needed.

Guest speaker at 14:00h:

Nathalie Yonow (University of Swansea)
Sea slugs of the Red Sea

FIELD - Wednesday - Sunday 8-11 September 2010 [provisional]

Isles of Scilly

Marine meeting. Joint meeting with the Porcupine Marine Natural History Society
Co-ordination and contact for details: Andy Mackie <Andy.Mackie@museumwales.ac.uk>

This is advance information on a proposed joint meeting with Porcupine in the Scillies. The entire meeting is expected to run from Monday 6 September until Monday 13 September, but the best tides for shore work are 8-11 September.

Accommodation on the Scillies in very short supply, so if you are planning to attend this meeting, early booking of your accommodation is vital.

Updates or further details of meetings will be posted on the Conchological Society's website (www.conchsoc.org) as they become available.

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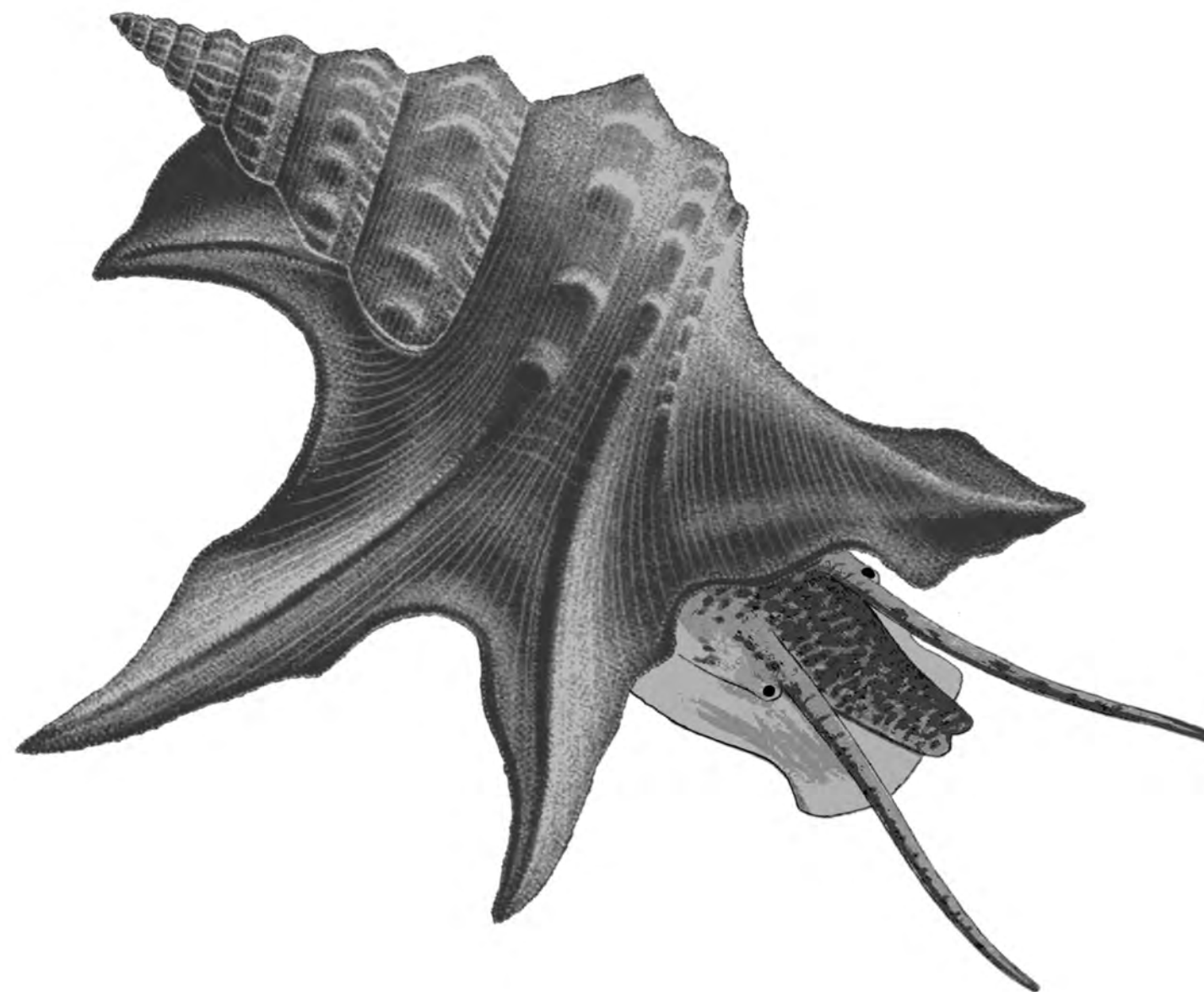
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Mollusc World

ISSUE No.20

JuLy 2009



ISSN 1740-1070

THE MAGAZINE OF THE CONCHOLOGICAL SOCIETY OF GREAT BRITAIN & IRELAND

Editorial



I would like to begin my first editorial with heartfelt thanks (which I am sure echoes the thanks of many members) to Ian Killeen for his six years as editor, from his conception of

the idea to evolve Mollusc World from 'The Conchologists' Newsletter', a publication which itself had a distinguished history stretching back over the previous 40 or so years, into the modern publication that it now is. This edition is no exception. The importance of 'tapping in' to local knowledge to enrich mollusc recording is exemplified in probably the first live discovery of the Jewel Box Clam *Pseudochama gryphina* on British shores. Our Society has not missed out on the celebrations of the bicentenary of Charles Darwin's birth - after all the excitement on television and in the museums, did you know that Charles Darwin also had trouble breeding snails (for those of us who have tried and had problems in this area, it's nice to know we are in good

company!) - read more in Aydin Örstan and Robert Dillon's interesting contribution. In addition an exciting indoor Conch Soc meeting in Leeds in November has just been announced - put the date in your diary and look out for more news of the content and timing of this meeting on our website as it becomes available. You will have noticed a change in the paper used to produce the magazine cover, which ensures that we only use paper from sustainable sources in its production. Finally, in order to aim for a timely publication of Mollusc World 21 in November, please send any contribution intended for that issue to me to arrive by 30 September at the latest to ensure inclusion.

Peter Topley

Mollusc World

This magazine is intended as a medium for communication between members on all aspects of Molluscs from archaeology to life in the sea, field collecting at home and abroad and even eating molluscs. If you look back on the content over the last three years we include articles, field meeting reports, research news, results from the mapping schemes and identification keys. We welcome all contributions in whatever form they arrive.

How to submit articles:

Copy (handwritten, typed or electronic) should be sent to the Editor at the address below. If sending electronic copy using e-mail please include a subject line "Mollusc World submission". When emailing several large file attachments, such as photos, please divide your submission up into separate emails referencing the original article to ensure receipt. Electronic submission is preferred in Microsoft Word, but if other programmes (e.g. Works) are used, please indicate the programme used with the accompanying e-mail.

Images and Artwork may be digitised, but we recommend that a digital image size no larger than 8" x 6" and 300 dpi be sent with your submission. For line art we recommend that you send hard copy, all originals will be treated with care and returned by "snail-mail".

Please send articles to:

Peter Topley, c/o The Hon. General Secretary, Miss R.E. Hill
447b Wokingham Road, Earley, Reading RG6 7EL
email: molluscworld@ntlworld.com

About the 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 over 300 members worldwide.

Members receive two publications *Journal of Conchology* which specialises in Molluscan Biogeography, Taxonomy and Conservation and *Mollusc World*, our newsletter for members. New members are always welcome to attend field meetings and indoor meetings before joining.

How to become a member

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

Ordinary membership	£33.00
Family/Joint membership	£35.00
Institutional membership (UK & Ireland)	£47.00
Institutional membership (Overseas)	£50.00
Student membership	£15.00

Payments in sterling only, to membership secretary at address below. For UK residents we suggest payment by standing order, and if a UK tax payer, please sign a short statement indicating that you wish the subscription to be treated as Gift Aid. It is no longer necessary to sign a formal declaration.

Another simple and secure way of paying for both UK and overseas members is by credit card online via PayPal from <http://www.conchsoc.org/storefront/seesubs.php> Overseas members may also pay using Western Union, but a named person has to be nominated, so please use the Hon Treasurer's name, Pryce Buckle.

Design by Emma Pitrakou

Printed by Henry Ling Ltd

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Letter from your President Bas Payne

Dear Conch Soc members

I feel very honoured - and not a little apprehensive - at having been elected as your President at the last AGM. As many of you don't know me, I thought I should introduce myself to you.

I have been a member of Conch Soc for around 15 years. I have mostly been involved with marine molluscs, and do quite a lot of collecting on beaches, and sorting through shell sand and struggling to identify tiny shells. As one of my daughters lives in Australia, I have become interested also in Australian sea shells (the picture shows me and one of my grand-daughters sorting shells from a beach near Sydney).

In professional life (I'm still working), I work as a scientist for English Heritage. By training I'm an archaeologist and a zoologist. I started by working on animal bones from archaeological sites, but now deal more generally with science, archaeology and building conservation and history.

I'm particularly committed to building links between amateurs and professionals - I believe this has much to offer for increasing our understanding and enjoyment of molluscs and their shells. One important element of this is amateur involvement in research. Amateurs have contributed far more than they sometimes realise to our knowledge of molluscs, and there is a great deal that we can do which is interesting and worthwhile without needing sophisticated equipment - often things that professionals can't do because they can't spend the time, or revisit a study site as often and for as long as a particular project really needs.

I'm committed also to conservation; for molluscs, as for the historic environment, to conserve things effectively we need to understand and appreciate them.

I start without any very specific personal aims for CS for the next three years; many good things are already happening. I hope we can encourage more members to take an active part in the Conch Soc's activities - not just by coming to meetings and field meetings, but also by using and contributing to our publications and the web site, and to activities like recording.

I hope very much that you will suggest other things that are important to you and that you think are important. Please write to me, e-mail me or 'phone me with any comments or suggestions. They will be very welcome, and I promise to reply (and will try to reply as quickly as I can).

With all good wishes for the summer field season,

Happy Shelling,

Bas Payne

e-mail: president@conchsoc.org.uk; **phone:** work hours: 0207 973 3321; evenings 0207 706 3512; weekend: 02392 232 011; **mob:** 07889 808 183



Bas and his grand-daughter sorting shells

Some introductory thoughts from the new Editor of Mollusc World.

Peter Topley

I have been interested in molluscs from the age of 11 and joined the Conchological Society as soon as I could in 1970 when I was 12. In this I was encouraged by my parents (the photo on page 4 shows my mother and I at Robin Hood's Bay in Yorkshire, in 1970). My interest has always been balanced with other priorities in my life such as a career in another part of science and my additional 'career' as a husband and father of two children who are now beginning to make their own way in the world. I have never considered myself an 'expert', but instead as being on a kind of life long pilgrimage. I started out by just loving the beauty of shells. Over the years I have grown to appreciate many aspects of Conchology including ecology and behaviour as well as historical aspects. Although my main focus has been on non-marine molluscs (both British and foreign), I also take an interest in the marine side of things as well and the occasional bit of palaeontology, but I don't, as they say, 'get out into the field' as much as I should!

As far as Mollusc World is concerned, I believe that it should continue to complement both the Journal and the Society's web site. This magazine needs to remain accessible (i.e. readable and maintaining interest) to as many members as possible and also act as a bridge



through to the academic coverage of the Journal. What this means is that Mollusc World should continue to evolve, but must maintain the interests of the Conch. Soc. (ie the members) at its heart. In a future issue I may be using a more formal survey setting to ask for ideas of where you think the magazine could go in terms of content and design. In the meantime, I am always open to suggestions!

There is an excellent series of obituaries of well known conchologists on our web site, extracted from the Journal (see the article by Pryce Buckle in this issue). The item about the late Ronald Winckworth by Arthur Ellis, written

in 1950, says in one place about him: 'Setting himself the highest standard, he expected the same of others, and while ever ready with encouragement or commendation, he was intolerant of anything slipshod or superficial.' Whilst I would not want either of the last two epithets to be applied to this magazine (although things will, I am sure, 'slip through' from time to time), the fear of 'not being tolerated' has probably made many of us at some time or other hesitate before putting pen to paper. So if you have something to say that may be of interest to members or subscribers (or to others to whom the magazine is passed) - especially if you have not contributed anything before - don't be put off submitting something of your own (however slight). Everyone should have a chance to contribute. The magazine is what you make it

The wonder of molluscs and their shells never goes away - I have tried to return, time and again to the beginning moment of my interest as a boy of eleven on a beach in the Isle of Wight, discovering a Chinaman's Hat shell in a rock pool and hold it there in my mind. Somewhere in the middle of all the recording and conservation work that the Society does we need to recapture this sense of wonder and convey it to others. We are privileged to share an interest in this important and exciting group of invertebrates and that privilege is open to all, especially if we are determined to communicate it.

Charles Darwin the malacologist

Aydin Örstan¹ and Robert T. Dillon, Jr.²

Charles Darwin, whose 200th birthday the world celebrated in February of this year, may have been the last complete biologist. His research interests spanned the entirety of the life sciences as they were known in his day, from his taxonomic studies of barnacles in *Monograph on the Subclass Cirripedia* (1851) through his *Descent of Man* (1871) and *The Power of Movement in Plants* (1880). Darwin's first publication³ was a ripping-good adventure story featuring 'atmospheric dust with infusoria.' And his last publication, a four-paragraph communication appearing just two weeks before his death in 1882, was a work of freshwater malacology⁴.

Darwin seems to have become interested in molluscs soon after he initiated his studies on the 'transmutation of species,' the phrase he used to describe evolution in his notebooks. One of the earliest letters in the Darwin Correspondence Project⁵ was sent by the paleontologist Searles V. Wood on 5 June 1846 (Letter 983) in response to an inquiry by Darwin⁶ regarding the 'variations among the Mollusca.' In that letter, Wood explained to Darwin his opinion that the shells of fossil molluscs were more variable than those of extant species.

But the focus of Darwin's malacological research rapidly

turned toward the biogeography and dispersal of freshwater and terrestrial species. He had a copy of the geologist Samuel P. Woodward's *Manual of the Mollusca* (1851-1856) and corresponded with Woodward on the distributions of a variety of species (Letters 1890, 1928). He also initiated experiments with land snails to elucidate the dispersal mechanisms that may have brought them to oceanic islands.

In a letter of 23 May 1855 to his cousin William Darwin Fox (Letter 1686), Darwin intimated plans to test the survival of land snails in sea water to determine if they could withstand long transoceanic voyages: 'I am going to try land-snail shells & their eggs also. [sic] in sea-water.' Over the next two seasons, he attempted to raise snails, apparently as subjects for these experiments. On 14 July 1855, he wrote to his naturalist neighbour John Lubbock (Letter 1831): '... I got yesterday some more & enough specimens of *Helix pomatia* for my Snailery.' But his efforts at snail husbandry seem to have been less than successful. In a letter dated 9 October 1856 to an unidentified correspondent who may have offered him snails, Darwin wrote (Letter 1972): 'Next summer would not be at all too late, & if you can remember it, I shd be extremely glad to get some for my experiments. I have

been myself keeping *Helix Pomatia* in confinement all summer, but they have not laid a single egg, so that I have not at all profited by my scheme.'

His inquiry of 3 October 1856 to Fox reveals the scope of his interests when he writes about birds and molluscs together in the same paragraph, as well as his frustrations (Letter 1967): 'One other question, you used to keep Hawks, do you at all know, after eating a Bird, how soon after they throw up the pellet? No subject gives me so much trouble & doubt & difficulty, as means of dispersal of the same species of terrestrial productions on to oceanic islands.—Land Mollusca drive me mad, & I cannot anyhow get their eggs to experimentise on their power of floating & resistance to injurious action of salt-water.'

Why did land snails drive Darwin 'mad?' His 29 September 1856 letter to the American geologist James D. Dana (Letter 1964) lays out Darwin's problem plainly: 'I know that you are not a believer in the doctrine of single points of creation, in which doctrine I am strongly inclined to believe, from general arguments; but when one goes into detail there are certainly frightful difficulties. No facts seem to me so difficult as those connected with the dispersal of Land Mollusca.'

Darwin's central thesis, that all organisms have diverged from common ancestors, required that they originate at single points, and disperse throughout the world. So if a convincing case could be built for land snails, surely to be ranked among the most disadvantaged of the world's dispersers, perhaps the remainder of the worldwide biota might fall into line.

Darwin seems to have found some relief for his land snail 'madness' in 1857, perhaps by experimenting with *Helix pomatia* supplied to him by colleagues. In another letter to Fox dated 8 February 1857, he reported (Letter 2049): 'I have just had a *Helix pomatia* withstand 14 days well in Salt-water; to my very great surprise.' He revealed additional results to the geologist Charles Lyell on 11 February 1857 (Letter 2050): 'I have just had *Helix Pomatia* quite alive & hearty after 20 days under sea-water; & this same individual about six-weeks ago had a bath of 7 days.'

It was sometime during this very period that Darwin received his first letter from his fellow naturalist Alfred Russell Wallace⁷. It is thus not surprising that land snails figured prominently in his reply of 1 May 1857 (Letter 2086): 'One of the subjects on which I have been experimentising & which cost me much trouble, is the means of distribution of all organic beings found on oceanic islands &

any facts on this subject would be most gratefully received: Land-Molluscs are a great perplexity to me.'

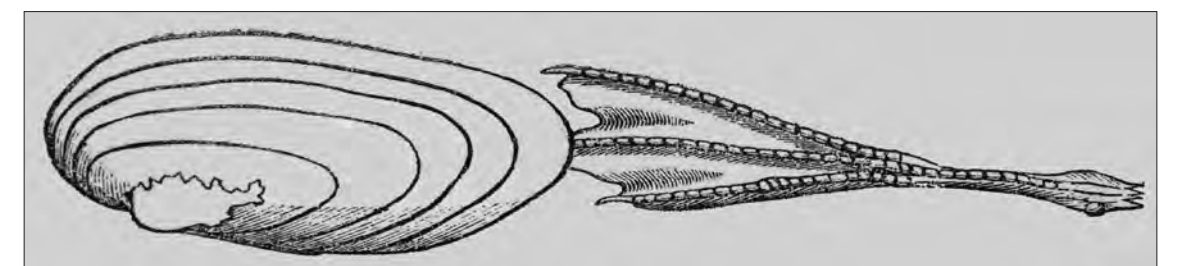
By the time the *Origin of Species* was published in November of 1859, Darwin had developed several plausible mechanisms by which land snails might be dispersed (first edition, Chapter XII): 'Now it is notorious that land-shells are very easily killed by salt; their eggs, at least such as I have tried, sink in sea-water and are killed by it. Yet there must be, on my view, some unknown, but highly efficient means for their transportal. Would the just-hatched young occasionally crawl on and adhere to the feet of birds roosting on the ground, and thus get transported? It occurred to me that land-shells, when hibernating and having a membranous diaphragm over the mouth of the shell, might be floated in chinks of drifted timber across moderately wide arms of the sea.'

He then summarized the results of his experiments: 'And I found that several species in this state [of hibernation] withstand uninjured an immersion in sea-water during seven days: one of these shells was the *Helix pomatia*, and after it had again hibernated I put it in sea-water for twenty days, and it perfectly recovered. As this species has a thick calcareous operculum, I removed it, and when it had formed a new membranous one, I immersed it for fourteen days in sea-water, and it recovered and crawled away: but more experiments are wanted on this head.'

In the same chapter, Darwin also discussed his studies in a closely related topic, the distribution and dispersal of freshwater molluscs: 'Some species of fresh-water shells have a very wide range, and allied species, which, on my theory, are descended from a common parent and must have proceeded from a single source, prevail throughout the world. Their distribution at first perplexed me much, as their ova are not likely to be transported by birds, and they are immediately killed by sea water, as are the adults.'

Darwin then went on to relay a number of anecdotes regarding the attachment of juvenile freshwater molluscs to the feet and feathers of waterfowl, concluding his lengthy paragraph with 'Sir Charles Lyell also informs me that a *Dyticus*⁸ has been caught with an *Ancylus* (a fresh-water shell like a limpet) firmly adhering to it.'

Darwin's fascination with the biogeography and dispersal of molluscs brought him back to the subject of freshwater malacology in 1878 when he published in *Nature*⁹ a short note and a copy of the letter sent to him by an Arthur H.



Gray describing a surprisingly large unionid mussel attached to the toe of a duck shot in Massachusetts (Fig. 1). And it culminated in 1882, with his *On the Dispersal of Freshwater Bivalves*, also published in *Nature*¹⁰.

Darwin opened this, the last paper he would publish before his death, with 'The wide distribution of the same species, and of closely-allied species of freshwater shells must have surprised every one who has attended to this subject.' After reviewing his observations of 1859 and 1878, Darwin wrote: 'I am now able to add, through the kindness of Mr. W. D. Crick, of Northampton, another and different case. On February 18 of the present year, he caught a female *Dytiscus marginalis*, with a shell of *Cyclas cornea*¹¹ clinging to the tarsus of its middle leg.' Darwin went on to relay additional data about this now most illustrious of all fingernail clams, which was large (0.45 inch), viable (dropping from the bug only after five days) and fertile (bearing two juveniles). He then added several anecdotes about other individual sphaeriids found attached to the digits of amphibians, and finished with a charming observation: 'Lastly, my son Francis, while fishing in the sea off the shores of North Wales, noticed that mussels were several times brought up by the point of the hook; and though he did not particularly attend to the subject, he and his companion thought that the shells had not been mechanically torn from the bottom, but that they had seized the point of the hook.'

Darwin laid the groundwork for the study of molluscan dispersal, which continues as an area of active research today¹². In 1883, 16 months after Darwin's death, the island of Krakatau between Sumatra and Java was split open by a devastating volcanic eruption that also exterminated all life forms that were then present on the island. The five species of land snails that had been recorded on the island before the eruption have not recolonized it, but as of 1985, 19 other species of land snails were known from the four present day islands¹³. Two of them were first recorded on one of the islands in 1908, 25 years after the eruption. Wind-borne transport on leaves and rafting on floating objects have been postulated to be the most likely mechanisms that may have brought the snails to the Krakatau Islands¹³. Darwin would have been pleased.

And Darwin's research in malacology has subsequently connected him, in an interesting and unexpected way, to the life sciences of the 21st century. The 'Mr. W. D. Crick of Northampton' who sent Darwin his report of the fingernail clam pinched on the water bug leg was Walter Drawbridge Crick (1857-1903), the grandfather of Francis H. C. Crick, who (with James Watson and Maurice Wilkins) shared the 1962 Nobel Prize for elucidating the structure of DNA¹⁴.

At the outset of this article, we characterized Charles Darwin as 'the last complete biologist.' Chief among the reasons that there can be no more such protean figures

must be the 20th century explosion of molecular biology, which has expanded our discipline in directions Darwin could never have imagined. It is a source of some inspiration to us that one can trace a path from Darwin to DNA through the great man's last paper and the humble discipline of malacology.

Notes

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²Department of Biology, College of Charleston, Charleston, South Carolina, USA. DillonR@cofc.edu

³Chapter 1 of Darwin's *Voyage of the Beagle* (1839) included a long paragraph about "infusoria" (primarily diatom frustules) in dust that accumulated on the Beagle while crossing the Atlantic.

⁴We've taken a bit of license with this paragraph. Darwin had a couple publishing credits prior to *Voyage* and several posthumous papers after his 6 April 1882 paper on freshwater bivalve dispersal. For Darwin's complete bibliography, including open-access pdf versions of his books and the papers mentioned here, see: <http://darwin-online.org.uk/contents.html>.

⁵All of the letters to and from Darwin cited here are available at the Darwin Correspondence Project: <http://www.darwinproject.ac.uk>. The letter numbers are those used by DCP.

⁶According to DCP, Darwin's letter to Wood is missing.

⁷According to DCP, Wallace's letter, dated 10 October 1856, is missing.

⁸*Dytiscus* is a genus of large, predatory water bugs. Although spending the majority of their lives swimming gracefully through the water column, they may on occasion take to the wing, flying like balsa-wood airplanes with rubber bands. The misspelling of the name wasn't corrected until the fourth edition of *Origin*.

⁹Darwin, C. 1878. Transplantation of shells. *Nature* 18:120-121.

¹⁰Darwin, C. 1882. On the dispersal of freshwater bivalves. *Nature* 25:529-530.

¹¹The genus *Cyclas* has since been synonymized under *Sphaerium*. Today this common European "fingernail clam" is generally referred to as *Sphaerium corneum*.

¹²For more modern reviews see W. J. Rees. 1965. The Aerial Dispersal of Mollusca. *Proceedings of the Malacological Society* London 36:269-282 and Dörge, N., Walther, C., Beinlich, B. & Plachter, H. 1999. The significance of passive transport for dispersal in terrestrial snails (Gastropoda, Pulmonata). *Zeitschrift für Ökologie und Naturschutz* 8:1-10.

¹³Smith, B. J. & Djajasasmita, M. 1988. The Land Molluscs of the Krakatau Islands, Indonesia. *Philosophical Transactions of the Royal Society B* 322:379-400.

¹⁴Ridley, M. 2004. Crick and Darwin's shared publication in *Nature*. *Nature* 431:244.

Figure caption

Figure 1: The drawing from Darwin's 1878 paper showing the unionid mussel attached to the toe of a blue-winged teal (*Anas discors*). Reprinted by permission from Macmillan Publishers Ltd: *Nature* 18:120-121, copyright 1878.

The Girdled Snail in Hampshire – an interesting mode of dispersal *June Chatfield*

The Girdled snail (*Hygromia cinctella*), a rapidly expanding introduced species, is now well established in Alton and other parts of Hampshire. The snail could be reliably found only from the west country until about the 1990s and the beginning of its expansion was captured in the map published in *The Atlas of Land and Freshwater Molluscs of Britain and Ireland* by Michael Kerney (Harley

Books, 1999) (page 193). It was found alive in Flood Meadow, Alton, on 9th April 2006 and has continued to occur in my garden in Ashdell Road, Alton, seen on 1st May 2006. Also in Alton, several live specimens were seen attached to bollards in the car park of Sainsbury's supermarket on 23rd October 2006. I quickly went home and returned with a camera. This part of the car park is particularly devoid of vegetation for either food or shelter. I presume that the snail originated from the garden and front drive of one of the shoppers and arrived at the car park stuck under a wheel arch. Wet weather and the disturbance of the journey would have brought the snails into activity

and exploring the car park. It could be that the shoppers returned before the snails did and with their car habitat gone, they then ascended the bollards. Examination of the car park on subsequent days did not reveal the snails, so they may have been taken by birds, or crushed on the ground. Car park bushes in Fordingbridge provided the first county record of this snail for Hampshire, where they were found by the Rev. Graham Long. Another Hampshire record from a garden in Winchester was made by John Glasgow on 28th August 2006, who brought the living specimens for checking. The Girdled Snail is up to 1cm across and the periphery of the shell has a sharp keel that is marked out in white (See also other articles relating to this snail in previous editions of *Mollusc World*, e.g. issue 10.22 and 12.21).

Figures 1 and 2: Coming to a supermarket near you. Girdled Snail on posts in the car park of Sainsbury's, Alton. Photos by June Chatfield
(From the 2006 Annual Report of the Alton Natural History Society)



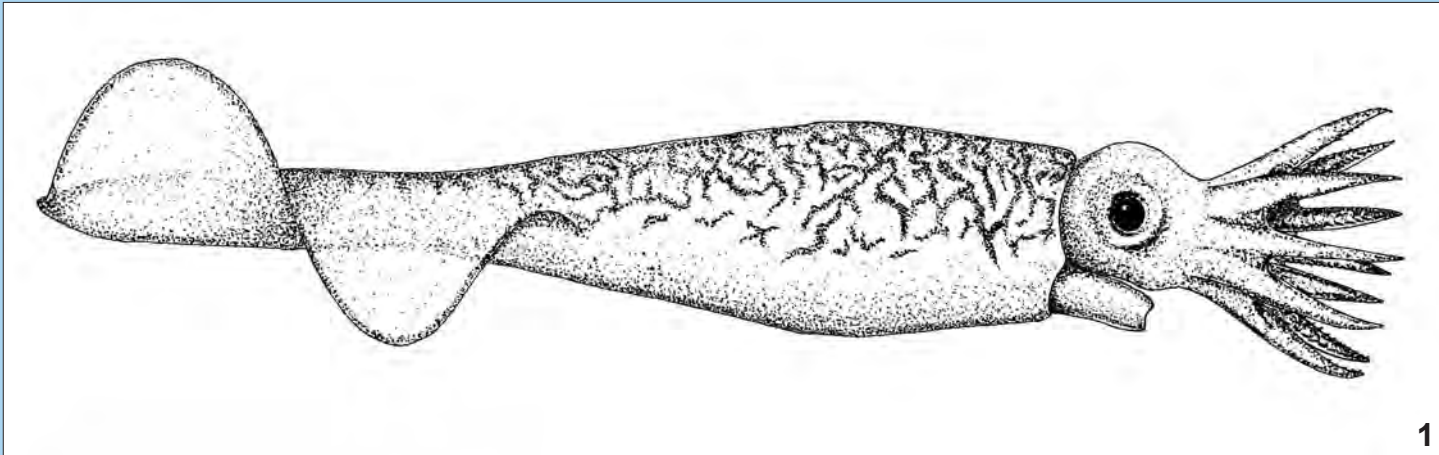
New Life Member: Miss Judith Nelson *Julia Nunn*

Judith joined the Society in 1974 but it was an event two years earlier which tipped her into the world of conchology. As a Norton-trained nanny working in New Zealand it was her responsibility to take her

charges out for a daily walk. She recalls one afternoon when she and some children gathered large quantities of beached shells which had been cast up by a storm. They went home with a pushchair full to the brim. Shortly after Judith visited the Tourist Bureau at Napier and saw an advertisement for a shell collection which was available for viewing. Judith viewed it and was so captivated by the amazing shells and their stories that she

was hooked. She started her own collection of New Zealand shells and sent them home to England. She did the same during her spell in Australia. When she returned to England she was already a member of the Society and not long after, started attending meetings in London and helping out at tea-time. She also turned her conchological attentions to British shells and regularly attended field meetings. For at least the past 25 years Judith has been an invaluable and essential part of Society meetings – the organiser and provider of refreshments (and good cheer) at London indoor meetings; and a kind and considerate host to annual Society workshops at her home in Woking. The Council unanimously felt that her long service to the Society should be recognised by the award of life membership. Judith - many thanks!

Photo by Jan Light.



Belemnites *Neale Monks*

Belemnites are common fossils, and most collectors will have a few of these distinctive bullet-shaped fossils in their collections.

In fact belemnites have been recognised as something other than mere stones for thousands of years. Because of their remarkably phallus-like shape, the Ancient Egyptians associated them with male fertility god Min. Mediaeval Scandinavians believed that elves used them as candles, while in England they were called Devil's thunderbolts and were thought to have been formed during lightning storms.

Belemnites even had magical uses. In pre-industrial England, one remedy for eye infections of horses was to grind up belemnites and blow the dust into the animal's eyes.

But what sort of animals were belemnites? Where did they live and what did they eat? What was the function of that heavy, conical calcite structure we know today as the belemnite guard?

Fossils

When belemnite fossils are found, it is usually only the calcitic guard that is present. That the thing is made from calcite is unusual; most cephalopod shells are made from aragonite. This holds true for nautilus shells and cuttlefish shells today, and ammonite shells in the past as well.

In fact the chambered part of belemnite shells were made from aragonite and greatly resembled the chambered shells of other cephalopods. The calcitic guard itself fitted over the tip of the phragmocone. But aragonite is less stable than calcite, so the aragonitic part of the belemnite shell tends to be missing. By contrast calcite is very durable indeed: the author recalls finding hundreds of belemnite guards reworked into Pleistocene boulder clay at a quarry near Cambridge. Not only had these belemnites survived the tens of millions of year from the Late Jurassic, they had also put up with being rolled about by a glacier!

The chambered part of the shell is known as the phragmocone. It consisted of small chambers connected by a single strand of tissue, the siphuncle. As new chambers

were added to the shell the siphuncle removed water from the chamber and allowed gas to diffuse in, so providing buoyancy for the animal.

In front of the phragmocone was an aragonitic spoon-like extension called the pro-ostracum that covered the mantle cavity. Unlike ammonite shells, which are external, all three parts of the of the belemnite shell were internal.

Morphology

Occasionally fossils are found not only with the belemnite shell intact but also with traces of the soft body parts such as muscles and arms. These reveal that belemnites were broadly squid-like in shape.

The phragmocone was in the middle of the animal, with the pro-ostracum projecting forwards above the mantle cavity. The guard was at the back of the animal, and worked as a counterweight, being used to balance the weight of the head and arms in front of the phragmocone. Without the guard, the belemnite would have tipped over, head downwards, and been unable to swim properly.

Grooves on the left and right hand side of many belemnites have been taken as evidence of fins, the grooves likely being where the muscles were attached to the guard. By analogy with modern squid it is probable these fins were used in several different ways. When the belemnite was moving slowly, the fins would undulate and allow the animals to advance backwards and forwards, hover, or turn around. Where water currents were strong, the fins could be using for gliding. Like other



Fig 1: Illustration of the Jurassic belemnite *Cylindroteuthis puzosiana*

Fig 2: Comparing a life-size model belemnite with the common fossil find. The fossil belemnites are actually only a small part of the animal, since the soft tissue would have decayed away.

cephalopods belemnites had a jet propulsion system that allowed them to move backwards very quickly, and to reduce drag the fins would be curled up against the body. The pro-ostracum lay above the mantle cavity. Its function was most likely skeletal and essentially similar to the rod-shaped pen inside a modern squid, keeping the body stiff so that its streamlined shape was maintained. At least from the mantle cavity forwards, the body of a belemnite likely resembled the body of a squid rather closely, with the internal organs above the mantle cavity, the gills floating in the mantle cavity, and the head and arms in front of the mantle cavity. By contracting the muscular walls around the mantle cavity water could be squeezed out through a mobile nozzle called a siphon, and the resulting jet of water would provide propulsion.

Predators and prey

Very occasionally fossils are found that feature parts of the body other than the skeletal remains. These so-called 'soft body fossils' have revealed that belemnites had an ink sac and arms covered with small hooks rather than suckers. The function of the ink sac was to make it easier for the belemnite to escape from predators. We know that at least some of the great marine reptiles of the Mesozoic ate belemnites because belemnite guards have been found in the stomachs of fossil ichthyosaurs. Unlike modern dolphins and whales, these reptiles hunted by sight rather than echolocation. *Ophthalmosaurus* for example is an ichthyosaur that had very large eyes that probably helped them find their prey at night or in deep water. One uncanny similarity ichthyosaurs shared with dolphins and whales is the tendency to evolve a long beak armed with small conical teeth. Seemingly this jaw design works equally well whether you're snapping up slippery, fast-moving belemnites or squids!

Plesiosaurs and pliosaurs have also been found with belemnite guards and hooks in their stomachs, so these are known to have eaten belemnites as well. Sharks and other large fish ate them too; one famous fossil shark from Germany has a stomach that contains at least 250 belemnite guards!

It seems unlikely these animals digested the guards; after all, they're mostly calcite and thus indigestible and being rather solid spikes could potentially harm the body organs as they moved along the digestive tract. Instead these predatory animals regurgitated the belemnite guards after they fed, in much the same way owls cough up the bones of their prey as owl pellets. Sometimes you can find these regurgitated masses as jumbled aggregations of guards mixed up with fossilised squid and belemnite hooks. Curious scratch-like marks on the belemnite fossils are now understood to be traces of the stomach acids that etched them while they were in the predator's stomach.

Ecology

Belemnites themselves captured and ate small animals, likely fish and other belemnites. The hooks on their arms would work well for gripping slippery, slithery prey. What belemnites didn't have are suckers on their arms, so in this

regard they were very different to modern squids and cuttlefish. It isn't known for sure if they are arms that could be rapidly extended like those squids and cuttlefish use to capture their prey.

Analysis of the oxygen isotopes incorporated in the calcium carbonate used by the belemnite to build its guard give another interesting insight into its ecology. Oxygen-16 is the standard sort of oxygen, accounting for just under 99.8% of the oxygen in the sea. Oxygen-18 is the next most common isotope, at about 0.2% concentration. What is particularly important for geologists looking at ancient climates is that the ratio of oxygen-16 to oxygen-18 depends in part on temperature: the colder the water, the more oxygen-18 there will be.

Because of this, as the belemnite grew, the calcium carbonate deposited as 'growth rings' would record the ambient oxygen isotope ratio at the time. In exactly the same way that tree rings can reveal whether a tree experienced a favourable year or a harsh year, the growth rings on a belemnite guard can be examined to determine how cold or warm the water was at the time.

The results are interesting, revealing that many belemnites were sometimes exposed to cold water conditions and at others to warm water conditions. Some argue this reflects migration up and down the water column between colder deep water currents and warmer surface water currents. Others suggest belemnites stayed at the same depth throughout their lives, but migrated between colder and warmer parts of the sea at different stages of their life. One broad consensus is that the cycling between cold and warm water conditions was an annual one, and by counting up the number of cycles you can estimate the age of the belemnite. If that's the case, belemnites appear to have lived for several years rather than the one or two typical of modern squid. Squid live fast and die young: they grow quickly and once sexually mature mate, lay their eggs, and die. At places where squid spawn, the seafloor can be literally covered with thousands of dead squid.

But did belemnites engage in the same sorts of mass breeding events as modern squid? Huge collections of belemnite guards can be found at certain horizons, referred to by geologists as 'belemnite battlefields'. But were these signs of love not war? Did belemnites mate in groups and the die shortly after laying their eggs? No-one really knows for sure, but this is certainly one interpretation of these belemnite battlefields.

The Aulacocerida

The Triassic cephalopods known as aulacocerids were the ancestors of the belemnites and represent a half-way house between them and the orthocone nautiloids. Like orthocone nautiloids they had long, conical shells with external ornament, typically longitudinal ribbing. But like the belemnites they were also equipped with guards around the tip of the phragmocone. Unfortunately not much is known about the aulacocerids, though it is assumed that they broadly occupied the same sort of ecological niches as the later belemnites.

Jurassic belemnites

Belemnites became very common and diverse during the Jurassic. In the United Kingdom there are many good places to find Jurassic belemnites, including species like *Cylindroteuthis puzosiana* from the Oxford Clay and the many species of *Hastites* and *Passaloteuthis* that can be seen in the famous Belemnite Marls of Lyme Regis.



The typical Jurassic belemnite guard is bullet shaped with a deep conical recess into which the phragmocone fitted. Some species were also quite large; the guards of *Cylindroteuthis puzosiana* can get to about 15-20 cm in length, and the biggest belemnite guard known belongs to *Megateuthis gigantea*, specimens of which can exceed 45 cm in length. Deducing how big these belemnites actually were in life is difficult, but conservative estimates put the guard at about one-fifth the length of the whole animal. This would make adult *Cylindroteuthis puzosiana* up to a metre in length, and *Megateuthis gigantea* has been estimated at being slightly over three metres in total length.

Cretaceous belemnites

Many Cretaceous belemnites resemble their Jurassic forbears, but species of *Duvalia* are very distinctive. These belemnites didn't have a conical guard but a slightly curved and flattened one that looked much like the blade of a bowie knife. Quite why this particular shape evolved is not at all clear!

Duvalia isn't present in the UK, but many other Cretaceous belemnites are very commonly found here including the very abundant little belemnite *Neohibolites minimus*. These can be found in the Gault Clay and are remarkable for their delicate construction and beautiful semi-transparent, amber-coloured preservation. They are only a few centimetres long, and in life these little belemnites were likely no more than 10-20 cm in length.

Where Jurassic belemnite guards are usually bullet-shaped, Cretaceous belemnite guards often have a distinctive tear-drop appearance, with the thickest point not at the front where the guard meets the phragmocone but much further back. In effect this would be moving the centre of mass further back, away from the pivot point that is the phragmocone. Did this provide the belemnite with some functional advantage, such as better



manoeuvrability or the ability to counterweight the head-end of the animal using less calcite than otherwise?

Biostratigraphy

By comparison with ammonites, the value of belemnites for biostratigraphy is often said to be rather low. The problem is that belemnites tend to all look very similar, and there is nothing like the variation that there is with ammonites. But while working at the Natural History Museum in London, the author was able to use some belemnite guards to date a rock sample brought in by an oil prospecting company. The rock itself was so coarse that other fossils were lacking, and even the microfossils didn't offer much help. But the belemnites were reasonably well preserved, and although the rock couldn't be dated precisely, at least a ball park figure could be offered. One of the best known examples of a belemnite that has been widely used for biostratigraphy is the Mid



Fig 3: *Cylindroteuthis puzosiana* (Late Jurassic)

Fig 4: *Neohibolites minimus* (Early Cretaceous)

Fig 5: *Acrocoelites* (Early Jurassic)

Cretaceous species *Praeactinocamax plenus*, formerly known as *Actinocamax plenus*. The Plenus Marls that extend across much of Europe are named after this species, and are used to determine the boundary between the Cenomanian and Turonian stages. Another example of a belemnite used is *Belemnitella mucronata*, from which comes the Mucronata Zone of the Maastrichtian (Late Cretaceous).

Extinction

Belemnites no longer swim in the sea. Quite why they died out at the Cretaceous-Tertiary boundary is a complete mystery. There were of course many different things happening during the Late Cretaceous, including climate change and changes in sea level. Various catastrophic events going on at the time included the infamous asteroid impact at Yucatan, Mexico and the massive volcanic eruptions in India that now form the Deccan Traps. Any of these might have been responsible for the final extinction of the belemnites at the K-T boundary.

But belemnite diversity was declining throughout the Late Cretaceous. It's worth mentioning that at the same time the diversity of true squid was steadily increasing during this phase as well. Was this simply a case of belemnites dying out as the more advanced cephalopods took over?

Comparisons with modern squids

Belemnite-like squids have appeared throughout the Cainozoic, including some species that are still alive today. Strikingly belemnite-fossils referred to as *Bayanoteuthis* are known the Eocene, and some researchers consider them to be the last survivors of the belemnites that somehow made it through the K-T boundary. Others have interpreted them as fossils from some other type of cephalopod, or even a completely different type of organism such as a sea pen (a type of coelenterate).

The modern squid *Spirula spirula* doesn't have a guard, but some of its close relatives such as *Spirulirostra* did. Cuttlefish sometimes have belemnite-like spikes at the end of their shells, and several squid have non-calcified but otherwise strikingly guard-like structure known as rostra that project from the back of the pen. In the case of large squids such as *Onychoteuthis* and *Moroteuthis*, the rostrum is made from chitin and supports the fins. Like ammonites, belemnites are remarkable for being so familiar as fossils yet very mysterious as living things.

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Regional Meeting at Cardiff November 2008

June Chatfield



A Conchological Society symposium was held at Amgueddfa Cymru - National Museum Wales in Cardiff, 15-16 November 2008, and organised by Ben Rowson: there were 26 participants. Lecture presentations were given on both days together with two workshops and an opportunity to see and use the Melvill-Tomlin collection of shells, assisted by the Collections Manager Harriet Wood. J R le B Tomlin had a long association with the museum in Cardiff that began when he was Senior Assistant Master at Llandaff Cathedral School in 1888-1899. Tomlin's collection and conchological library, the most

comprehensive in private hands in the country, came to the museum in the 1950s and Tomlin was a key figure in the British conchological world of the first half of the twentieth century. He had a long period of membership of this Society, joining in 1886, that lasted until his death in 1954. He held office as President (twice) and Editor of the *Journal*. Cardiff was therefore an appropriate venue for the Symposium.

Britain's Carnivorous Slugs and Snails

Ben Rowson, National Museum Wales

Ben Rowson has previously worked on Streptaxidae, a family of tropical carnivorous snails but this presentation investigated the British species that have adopted a carnivorous diet. Animal food is taken by the large arionid slugs and by glass snails of the family Zonitidae. Some work has been done investigating the taking of earthworms by *Oxychilus*. However it is in the slug family Testacellidae that the obligate carnivores are to be found. *Testacella* burrows underground and feeds on earthworms that are impaled by the sharp needle-like radula teeth. The brown *T. maugei*, has a south western distribution and is found in gardens in the Cardiff area. The other two species are more generally distributed in Britain but *T. scutulium* (the one with the yellow foot sole) is not well known in Wales.



Another carnivorous slug, the Ghost Slug (*Selenochlamys ysbryda*) was first found in Cardiff in 2007. It also lives underground and eats earthworms and originates from Turkey and Georgia. Specimens (alive) were on display. It is white in colour and has no eye spots.

zebra Mussels (*Dreissena polymorpha*) IN Cardiff Bay: a Case Study

Muriel Alix, University College, Cardiff

This is an introduced species of freshwater mussel that can give problems as it is highly invasive with its pelagic larva and can build up to high densities. It came to Britain attached to boats in the nineteenth century and it attaches with byssus threads to boats, buoys, harbour walls and pipes. The interest in studying Zebra Mussels relates to the new barrage across Cardiff Bay that has created a 200 hectare freshwater lake. A project from 2001-2003 looked at the invasion of the new habitat, recording distribution, density, biomass, life history information and also investigated their impact on plankton and oxygen levels and looked for possible deterrents.

The Zebra Mussel is distributed by its pelagic larva so plankton samples were taken every two weeks around the bay in 2006-2008. These showed annual peaks in larval presence. Research took place to investigate the pattern of colonisation using artificial substrata for settlement, including some with an antifouling agent. Field work in Cardiff Bay with sonar techniques found only seven sites of suitable hard benthic substratum. Settlement rates varied being high in 2007 and low in 2008, perhaps due to the cool summer.

Marine Molluscs of Caves and upper Shore Crevices

Jan Light

At the interface between land and sea there is *Cingula trifasciata* that occurs on the tops of rocky shores but also occurs on the landward side of the Fleet, a tidal lagoon, in Dorset where it is interstitial amongst the shingle. The Fleet is also a classic site for *Truncatella subcylindrica* also living among shingle at the top of the shore and below the brackish water plants *Halimione* and *Sueda*. Another mollusc known in the Fleet is *Paludinella littorina*. This was refound in the 1980s after a gap of 100 years and lived alongside *Truncatella* in shingle. The apex is never dark and the animal is white but is difficult to identify in the field because of confusion with *Littorina saxatilis*. *Leucophytia bidentata* looks like grains of rice and has a

white shell and body. It occurs on salt marshes low down the shore but also under slabs and in shingle. *Myosotella* spp. (*M myosotis* and *M denticulata* that is more marine) have brown shells but are similar in shape to the above. *Ovatina ovata* is a marine species of caves. It shuns light and so occurs in rock crevices.

Paludinella littorina - see J. Conch: 37: 551 (2002) occurs under *Halimione* at the edge of the Fleet. It also occurs in high-water caves in the chalk and under boulders resting on moist sediment at Whitecliff Bay on the Isle of Wight, a site described by Edward Forbes in the nineteenth century. Humid weather conditions and the right state of the tide are necessary to see it as it comes out briefly to feed on wet rock just as the tide goes out.

Recording, Mapping and Encyclopedias

Steve Wilkinson, JNCC

A demonstration was given of the use of the NBN Gateway for data and also access of information for local sea areas with an explanation of how the incoming data is checked for errors and identifying when there is a need to request voucher material. Thence followed a demonstration of the encyclopedia of text and images of marine molluscs that is planned for the Society's website.

J R le B Tomlin's residence in Reading and St Leonards near Hastings and his connection with the local museums

June Chatfield, Haslemere Educational Museum

Tomlin's link with Cardiff is well-known but nothing has been published of his time in Reading. Whilst curating the shell collection at Reading Museum in the 1990s and researching its history I came across many lots of shells labelled in Tomlin's hand-writing and also reference to his position as Honorary Curator of Conchology from 1909 until he left the area, recorded in annual reports of the Reading Museum.

As is generally known, Tomlin came into an inheritance in the early twentieth century enabling him to give up school teaching in Derbyshire in 1901 and devote the rest of his life to conchology. Around this time he married and set up home at Stoneley, 42 Alexander Road where he lived from 1906 until 1912 when he moved to Lakefoot, 120 Hamilton Road, Reading, addresses given in the *Journal of Conchology*. Both of these houses still exist and were duly photographed. It is possible that Reading was chosen as a place to settle because of its good railway connections taking Tomlin to Conchological Society meetings in Manchester and Leeds and Malacological Society meetings and the British Museum (Natural History) in London.

The late Mrs Nora McMillan, a protégée and close friend of Tomlin (she joined the Society in 1930) told me that he rarely spoke of his Reading days and she did not know that he had been a Curator of Conchology at the museum. However she did say that he left Reading for St Leonards because a relative that he did not care for had come to live next door. I was able to verify that information and identify the house (118 Hamilton Road) using the local

Directories for the early 1920s in the Reading Library. In 1923 he moved to Fairfield, 23 Boscobel Road, St Leonards, also close to a railway station so that he could continue to work as a Research Fellow at the British Museum (Natural History) and attend society meetings in London. Hastings Museum has a small shell collection and he donated a few non-marine shells. It was to the house in Boscobel Road that he received Mrs McMillan and doubtless other members of this Society. This was his home until his death in 1954. It is now a residential home for the elderly.



Molluscs, Churchyard use and Wildlife Management: Two Bedfordshire Examples

Peter Topley

The churchyards studied were All Saints, Clifton and St Mary's, Potton. Most molluscs were found associated with the wall and verge, including the BAP species *Truncatellina cylindrica* that was found with stonecrop (*Sedum*) near the base of the wall. Here there remained a small strip of unimproved grassland that was south-facing. Threats to its survival included wall re-pointing in 2005, overgrowth of vegetation such as ivy and elm, dumping of wood shredding and the use of herbicides. Twenty other molluscs were found here including *Helicella itala* and *Helicodiscus singleyanus*

All Saints at Clifton is an ancient church with Victorian additions and 'well-kept' grounds that are used for fetes

and weddings. It is an old churchyard with burials from the seventeenth to the nineteenth centuries and there is a new graveyard from the late nineteenth century to the present time. Twenty two species of molluscs were found in 2007 and 2008, including *Lehmannia valentiana*, *Limacus flavus* and *Boettgerilla pallens*, all three associated with human habitation and *Pupilla muscorum*, a species more typical of unimproved calcareous grassland.

The DTI British Bivalve Project

Graham Oliver, National Museum, Wales

This is a web-based taxonomic guide. The need for information relates to the projected environmental impact of oil and gas exploration as companies are moving to investigate sites in deeper waters. Very little is known of life below 200m depth and there is no comprehensive guide to deep sea taxa. In British waters the majority of specimens collected are juveniles that are difficult to determine and there are many conflicts in nomenclature, making lists of species difficult to achieve. The 200 mile economic zone around the British Isles goes from the intertidal down to abyssal habitats. Features that emerge are the northern taxa occurring at greater depth of water in the south (decreasing latitude). Unrecognised species are coming up in many of the environmental impact surveys. There is therefore a need for illustrations of growth series and living specimens, not just the shells. Other fields of study are molecular systematic and phenotypic variation within the species and the possibility of hybrids.

Workshops

One workshop was on slug identification and demonstrations of dissection with a set of handouts that included the more recently recognised introductions. This was led by Ben Rowson, ably aided by Roy Anderson and Adrian Norris.

The second workshop was on the identification of Pyramidellids, using reference material from the Melvill-Tomlin collection and stereomicroscopes. This was led by Jan Light.

One of the highlights for me was the display of selected letters from the Tomlin archive that are now being curated by Jennifer Gallichan. Amongst these were letters to Tomlin from W Eyerdam, Adele B Koto and Alfred Koto from the United States who exchanged with Tomlin. They also exchanged shells with R H Moses, a Conchological Society member in London who knew Tomlin. The collection of R H Moses went to Haslemere Educational Museum in Surrey but without an archive of correspondence so some useful background information on these collectors came from the Tomlin archives. A nice bonus from the meeting.

Figure 1: Amgueddfa Cymru - National Museum Wales (photo: Peter Topley)

Figure 2: Talk in progress, Cardiff

Figure 3: examining live slugs, Cardiff

Figure 4: workshop, Cardiff (Photos figs 2-4: Ben and Rhian Rowson)

Marine Recorder's Report 2008

Jan Light

For a variety of reasons it has been a quiet year on the marine recording front. To start with, a number of regular record contributors were out of action, and to all those who were prevented from getting out into the field I wish them better luck in 2009. I include myself in this, having experienced the great inconvenience of a broken wrist! Nevertheless the absence of a few key people does highlight an increasing problem the Society has with recording, at least on the marine side. When I took over the post as Recorder in 1991, the membership of the Society stood at 460 and there were more members in the Society who were actively recording marine molluscs. Coupled with this, there has been a decline in the number of marine field meetings and attendance has also waned. Both these factors feed back into the recording schemes, although records from individual field work and a certain amount of academic and contractual survey activity have always formed an important part of the spectrum of sources of records made available to the Society's recording scheme.

Early in January a rather interesting find was made by Steve Trehwella, a Dorset man with a strong involvement in local marine conservation issues and activities, who regularly walks stretches of the Dorset coast in search of unusual flotsam and strandings. He found an item, which forms the basis of a separate article in this issue, in the form of a broken plastic fish box at Chesil Cove. This was to yield three species of sea slug, including the rare *Hancockia uncinata*, and a bivalve species, *Pseudochama*

Sea Area	SA28	SA28
Type	NEW	post-1950
Species	<i>Favorinus branchialis</i>	<i>Pholadidea loscombiana</i>
Location	Strangford Lough	Straidkilly
Date	2008	2008
Recorder	JDN	JDN
Status	Live	Live
Sea Area	SA29A	SA29A
Type	NEW	NEW
Species	<i>Partulida spiralis</i>	<i>Hermæa bifida</i>
Location	Ballycastle	Rinagree
Date	2008	2008
Recorder	JDN	JDN
Status	Live	Live
Sea Area	SA33	SA34
Type	NEW	post-1990
Species	<i>Aeolidiella sanguinea</i>	<i>Aeolidiella glauca</i>
Location	The Hassans, Mulroy	Murles Point
Date	2008	2008
Recorder	Bernard Picton	JDN
Status	Live	Live

gryphina, which I believe to be new to the list for the British Isles and possibly northwest Europe (see page 17 in this issue). Julia Nunn lists new records for Ireland, (see figure 1), and singles out *Pholadidea loscombiana* as noteworthy. Several live animals were found in sandstone at a site on the east Antrim coast, this being a first sighting for the whole of Ireland since its original record at the turn of the 19th century.

There are more new marine records to come from Ireland, resulting from work that was carried out as part of the Sublittoral Survey Northern Ireland which was a partnership between the Northern Ireland Environment Agency and National Museums Northern Ireland (Ulster Museum). The two year project (2006-2008) aimed to gain information on the current status of Northern Ireland Priority Species. Much of the Northern Ireland coast was last surveyed during the Northern Ireland Sublittoral Survey (1982-86) and consequently there was very little recent information on these species. Five key areas were targeted: Rathlin Island, The Skerries, Strangford Lough, Carlingford Lough and the Maidens. Sixty-five post-1990 or new records have been collated. Of these the following are particularly noteworthy (see figure 2) :

Doris ocelligera was found in May 2004 living in Lyme Bay, Dorset during the Society's joint meeting with Porcupine Marine Natural History Society. The first specimen was obtained by dredge by Celia Pain, and the remaining two by diving by Lin Baldock. *D. ocelligera* is pale yellow all over, with very spiculate tubercles, each tipped with a conspicuous brown mark. These three animals were identified by Julia Nunn, confirmed by Bernard Picton. They are the first records for the British Isles. Julia is writing this record up as a note for the Society's Journal.

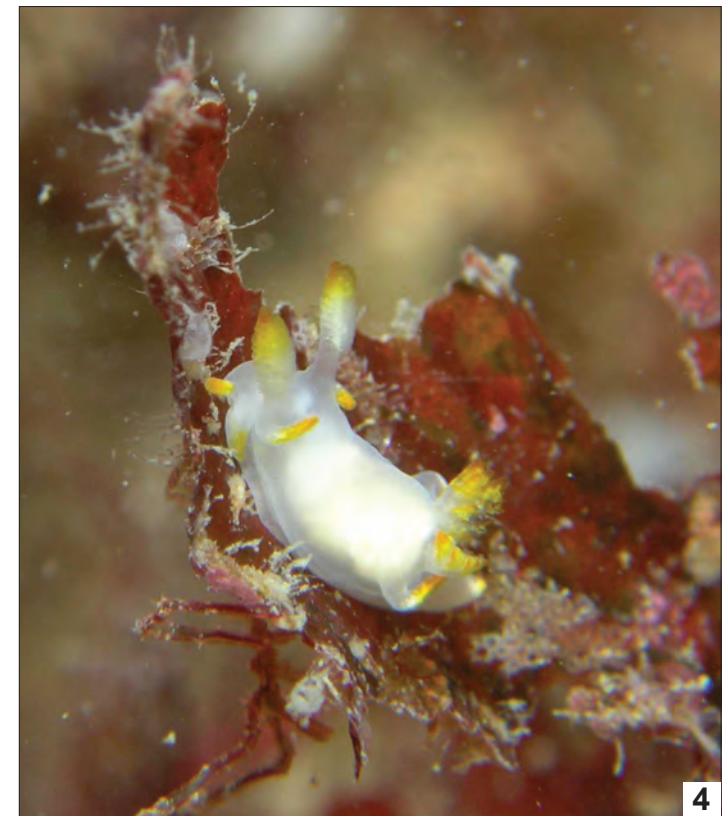
On 2nd April, Terry Wimbleton reported a mature live individual of *Mya arenaria* on the shore at Langstone Bridge, Langstone Harbour, Havant. The species was hit hard in the severe winter of 1962-63 and according to Terry, who has recorded regularly over many years on Hampshire shores, had not been recorded as a live sighting since.

Hancockia uncinata features again in this report with the first record for Scotland made by Jim Anderson in September 2008. He found the species in the Sound of Mull, and according to Bernard Picton who confirmed the identification, early autumn is the time to record the species, certainly from Bernard's experience in Ireland. Jim Anderson is a diver who has a special affinity for nudibranchs. He has passed all his records for 2008 to the Society for incorporation into its database, which I gratefully acknowledge, and his stunning picture gallery can be viewed at www.scottishnudibranchs.co.uk In addition to *Hancockia*, Jim recorded two other nudibranchs which represent new records. *Dendronotus lacteus* (Thompson, 1840), a taxon subsequently synonymised with its congener *D. frondosus*, was reinstated by Mikael

Sea Area	Record	Species	Area	Year	Recorder
28	NEW	<i>Caloria elegans</i>	Maidens	2006	Bernard Picton & Jen Jones
28	NEW	<i>Cuthona rubescens</i>	Strangford Lough	2006	Bernard Picton
28	NEW	<i>Doto tuberculata</i>	Maidens	2007	Bernard Picton
28	NEW	<i>Okenia elegans</i>	Strangford Lough	2007	Colin Ferguson
28	NEW	<i>Onchidoris depressa</i>	Maidens	2006	Bernard Picton
29A	NEW	<i>Aegires punctilucens</i>	Skerries	2006	Claire Goodwin
29A	NEW	<i>Cuthona caerulea</i>	Skerries	2006	Bernard Picton
29A	NEW	<i>Doto hydrallmaniae</i>	Skerries	2006	Bernard Picton
29A	NEW	<i>Doto hystrix</i>	Rathlin	2006	Bernard Picton
29A	NEW Ireland	<i>Doto sarsiae</i>	Rathlin	2007	Bernard Picton
29A	NEW	<i>Eubranchnus vittatus</i>	Rathlin	2007	Claire Goodwin
29A	NEW	<i>Flabellina pellucida</i>	Rathlin	2006	Bernard Picton
29A	NEW	<i>Lutraria lutraria</i>	Skerries	2006	Claire Goodwin
29A	NEW	<i>Okenia pulchella</i>	Rathlin	2007	Claire Goodwin
29A	NEW	<i>Philine pruinosa</i>	Cushendun	2006	Claire Goodwin



Tholleson in 1998 on the basis of the results of allozyme electrophoresis. Anderson first found the species on the west Scottish coast in 2002, and two sites in his 2008 data have now brought the species to my attention. I thank Jim for allowing the use of his image of the species, characterised by its opaque white colour with dark purple-blackish blotches in contrast to *D. frondosus* which is brown, Figure 3.



There are two additional nudibranchs which are new to the British Isles. David and Sarah Kipling found and reported to the Sea Slug Forum a species which was identified by Bernard Picton as *Trapania tartanella*. It was found on a wreck near the Manacles in Cornwall in September 2007. Bernard had seen the species in northwest Spain and Portugal, but no further north and I thank David for allowing the use of his image to accompany this report, Figure 4.



During a Seasearch survey in October 2008 Mark Warren observed an unfamiliar sea slug which was identified as *Discodoris rosi*, Figure 5. Found in 20m of water off St Mary's in Scilly this species had not been recorded further north than the north coast of Brittany. As it is a large and conspicuous species (the Scilly individual was 25cm in length) Bernard Picton believes the find may represent a true range extension. Another diver observed another individual in the vicinity which suggests a population

may have established itself at the site. Bernard goes on to say, 'The Scilly Isles are probably one of the places we can expect species crossing the English Channel to be seen first, if global warming continues to affect the North

Atlantic by warming. It was first described from Galicia, NW Spain as recently as 1979, indeed I saw it there myself in 1978. At the time I identified the sponge it was feeding on as *Microciona strepsitoxa*, a red encrusting sponge on which it is reasonably well camouflaged. Since then it has been reported from a few scattered sites throughout the Mediterranean Sea and here on the Sea Slug Forum as far north as Belle-Ile in Southern Brittany. The sponge seems to have a more northerly distribution in Britain and Ireland, so perhaps that made it possible for the nudibranch larvae to get started once they had somehow crossed the English Channel.'

At the beginning of this report I lamented the paucity of records for 2008 and what I perceive to be a declining level of marine recording activity in the Society. This can only partially be addressed by the membership. At the time of compiling this report, a draft Data Sharing Agreement has been drawn up by Julia Nunn for consideration and circulation to Council. There are numerous biological recording centres (LRCs, Wildlife Trusts and MarLIN for example) as well as other web-based bulletin boards and recording fora, and it is evident that many records are going to these 'reservoirs' in the first instance. I regard it as a matter of high priority that the Society now engages with the wider recording community and approaches these external agencies in order to set in motion a reciprocal process of data exchange, in order to build up our recording scheme as the prime source of marine mollusc records for the United Kingdom. It is to be hoped that the Recording Manual, due to be published later this year, will act as a stimulus and a resource for those people both within the Conchological Society and outside it who are collecting marine mollusc data. I thank all those who submitted material for inclusion in this report. All the records mentioned are new information to the Society's Marine Census.

Figure 3: *Dendronotus lacteus* from West Scotland (photo Jim Anderson)

Figure 4: *Trapania tartanella* from Cornwall (photo David Kipling)

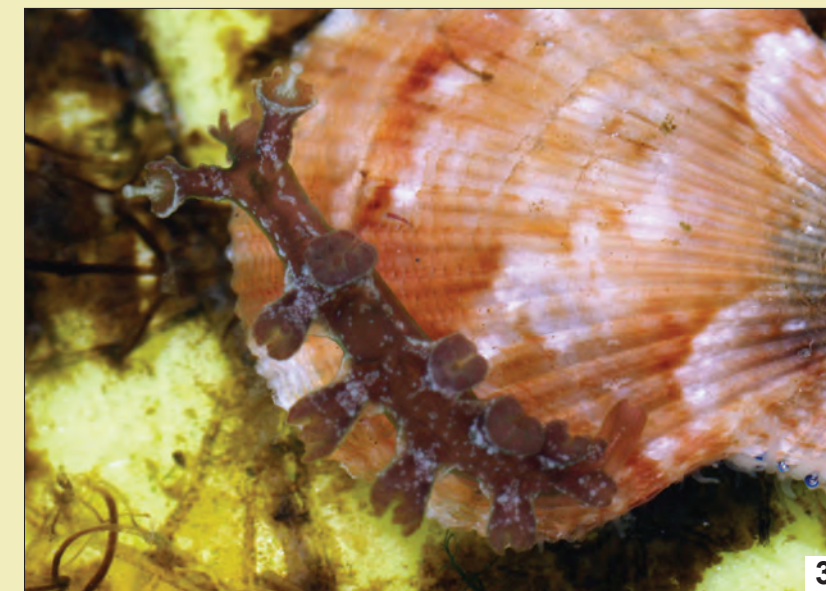
Figure 5: *Discodoris rosi* off St Mary's, Scilly (photo Mark Warren)

Old fish boxes and hidden jewels – a first record of *Pseudochama gryphina* from northwest Europe.

Jan Light

The Superfamily Chamoidea contains a group of bivalves, commonly known as jewel box clams, which live with one valve cemented to a hard substrate such as coral, rock or other shells. They have been confused with oysters and spiny oysters (*Spondylus*) and are highly variable in form because the lower valve conforms to the substrate whilst the upper valve erodes, losing colour and sculpture in the process. This is not a speciose group of bivalves and most species (including the larger ones) are tropical and live in shallow water. European Seashells (Poppe & Goto, 1993) includes two jewel box clams, *Chama gryphoides* and *Pseudochama gryphina*. Their distributions are given as Gibraltar south to Senegal with Indian Ocean occurrences for Dar es Salaam and Mauritius for the former, and Portugal south to Angola for the latter. Both occur in the Canaries and the Mediterranean. So a record for the latter off Chesil Beach is something of a leap in distribution.

Steve Trehwella, a Dorset man with a strong involvement in local marine conservation issues and activities, regularly walks stretches of the Dorset coast in search of unusual flotsam and strandings. On 11th March he was walking the shore looking for fresh seafans washed up in the severe storm the night before, when he found a broken plastic fish box at Chesil Cove (SY682733). There were hydroids on the box, but he noticed only one shell, with animal, which was attached in the grooves of the box handle. This he carefully removed and subsequently removed the shell with forceps, sending it to me with a tentative identification of *Chlamys distorta* (hunchback scallop). It was immediately evident that it was something rather different (see photos) and after looking at the literature I have concluded the shell is *Pseudochama gryphina*. To the best of my knowledge this is the first record of the species for Britain and Ireland and possibly northwest Europe.



A couple of months earlier Steve had found an old plastic crate cast up on Chesil Beach. This crate was supporting a more diverse fauna which included *Aequipecten opercularis*, *Heteranomia squamula*, and three species of goose barnacle (*Lepas pectinata*, *L. anatifera* and the buoy barnacle *Dosima fascicularis*). The latter is a pelagic species which makes its own float, thus mimicking the lifestyle of *Janthina*. However it also attaches to hard surfaces. In addition three nudibranch species were observed on bryozoans attached to the crate: *Hancockia uncinata*, *Eubranthus pallidus* and *Facelina auriculata*. These sea slug identifications were confirmed by Bernard Picton.

For a number of years now, seasoned beachcombers around the British Isles have been recording an increasing number of true southern species which are beyond their northern limit of geographical distribution as recognised hitherto. Steve's discoveries show that beached debris is as worthy of investigation as the more traditional strandline.

Figure 1: Chesil litter
Figure 2: *Pseudochama gryphina*
Figure 3: *Hancockia uncinata*
Figure 4: *Eubranthus pallidus*
Figure 5: *Facelina auriculata*

Book review

Cuba, the landshells paradise

Adrián González Guillén.

Greta Editores, Lleida, Spain. ISBN: 978-84-933615-0-1. Price c.£73.00.

The island of Cuba has one of the most diverse and important land snail faunas in the world, exhibiting a high degree of endemism (the book states that of the 1406 species described from Cuba an estimated 96% of these are found nowhere else). The pulmonate fauna includes such well known species as the 'Cuban versions' of the Florida tree snail *Liguus fasciatus* (Müller, 1774) with several forms unique to the island and the also very variable and colourful *Polymita picta* Born, 1780. The operculate molluscs include the intriguing *Blaeospira echinus* Wright & Pfeiffer, 1862 with its delicate uncoiled and spiny shell (see figure 1), the again very variable *Viana regina* (Morelet, 1849) where the male shells exhibit an apertural notch

and the many species of the elongated Urocoptidae including the spectacular *Callonia ellioti*, Poey, 1857 (see Figure 2). This fauna has long been in need of a popular book that introduces this fascinating fauna to the general interested reader and this is such a book.

Adrián González Guillén is clearly passionate about both the land where he lives and the land molluscs that are found there. This comes across in the English translation which is placed side by side with the original Spanish (an idea which perhaps has its origins in much early books such as da Costa's ...Testacea Britanniae of 1784, where French and English were used in a similar way, in that case to try to increase the interest to

a potentially international list of sponsors). The book begins with an interesting introduction to a distinguished history of Cuban non-marine conchology, which includes some well known Conchological figures of the past such as Carlos de la Torre (1858-1950). There follows an introductory chapter to land molluscs which includes an interesting illustration of columella patterns in three Cuban landsnail genera. Next is a chapter on the evolutionary diversity of Cuban molluscs, including descriptions of habitats and pictorial distribution charts of some major groups. This is not a book that concentrates on systematic taxonomy but rather focuses on describing how different species of land molluscs have adapted to the diverse habitats found in the large island of Cuba and the problems facing some of them as they struggle to survive alongside the encroachment of man and introduced



species, and this is reflected in the subsequent chapters. Interestingly, regarding the conservation of molluscs, the author states: 'Not many people are aware that it was in Cuba where the first efforts regarding the conservation of land molluscs were carried out (1942-1943), long before the Conchological Society of Great Britain and Ireland in 1948.' I am uncertain of the significance of the date 1948 to the society in relation to our recording scheme that dates back to our origins in 1874; perhaps

someone with more knowledge of the history of the Conc. Soc. is able to draw some light on this?

At the end of the book are a series of 25 plates of a small selection of the vast landsnail list of this country. Part of the problem of illustrating more of them is stated by the author in the case of the family Urocoptidae: 'We have not included more photographs...due to the difficulties identifying their species' and sites the existence of just two copies of an

unpublished monograph on this family by Paul Bartsch from 1943. I do have some doubts about the durability of the binding of the book and the book is a paperback, which makes it a little on the expensive side. However the real glory of this book are the numerous excellent colour photographs of living molluscs in their natural habitats, many taken by the author. Although this book is not primarily an identification manual, and some of the English translation could be more precise, I would recommend this book, a labour of love, to anyone interested in molluscs as an engaging introduction to the land snails of Cuba.

Accompanying this review are three photographs of living Cuban landsnails, not from this volume but taken on a recent expedition to Cuba (The photographs were by Adrián González Guillén, Oscar Pentón and Simon Aiken, and appeared courtesy of Simon's Specimen Shells Ltd).

by Peter Topley

Figure 1: *Blaeospira echinus infernalis* (Torre & Bartsch, 1941)

Figure 2: *Callonia ellioti* (Poey, 1857)

Figure 3: *Zachrysia guanensis guanensis* (Poey, 1858)



Annual General Meeting

27th March 2010

Members are reminded that they can nominate candidates for election to the Council.

Rule No. 12: 'Candidates for nomination to Council shall be paid-up Members of the Society when nominated and when the votes are counted at the Annual General Meeting and shall be nominated by two Members. Nominations, other than those made by Council, shall be sent in writing to the Hon. General Secretary at least three months before the Annual General Meeting and shall be accompanied by a signed declaration of the candidate's willingness to serve'.

Note: Nominations must be received by the Hon. General Secretary NOT LATER THAN 30th November 2009.

Non-Marine Recording – Activity and Highlights 2008

Adrian Norris, Non-Marine Recorder.

The highlight of the year was without doubt, the publication of the description of a new slug *Selenochlamys ysbryda* Rowson & Symondson, 2008. Recorded from an urban garden in Cardiff, Glamorgan (VC41) in September 2007, this remarkable new slug has already been noted at several other sites, both pre-dating and post-dating its publication in the *Journal of Conchology*. It has been recorded from Caerphilly in 2006 and Gorseinon in 2008, both of which are also in Glamorgan.

The occurrence of this remarkable genus in Britain is just the latest in a series of discoveries of introduced species which have been spreading rapidly throughout the British Isles. The reported introduction of this species may be a timely warning about the continuing dangers of global warming. The erratic weather patterns experienced in recent years may result in the spread of other less desirable species across long-established natural ecological barriers. Fortunately, all the species reported so far have been relatively harmless and pose no apparent threat to our native flora and fauna. We must all be vigilant, however, as the accidental or even deliberate introduction of species may bring diseases of man, animals or crops. If some of the more notable pest species cross long-established ecological barriers un-noticed and become well-established and thus difficult to eradicate, an ecological disaster, even if only on a small scale, could result. The rapid spread of such species as *Hygromia cinctella*, which has now reached as far north as Glasgow, and *Boettgerilla pallens*, which in less than 40 years has spread throughout Britain, even reaching as far north as Sutherlandshire, shows how fast even small species can spread given the right climatic conditions.

Over the past year, thanks to the co-operation of the two Irish recorders, Roy Anderson in Belfast and Evelyn Moorkens in Dublin, I have been working on updating the VC records for the 40 Irish vice-counties, particularly with respect to the segregate species within the larger *Arion* complex, as well as *Balea*, *Euconulus*, the Physidae and the brackish-water species. This has resulted in over 300 new VC records, which do not appear to have been reported previously. A further 22 English, 2 Welsh and 57 Scottish new VC records have also been added to the vice-county recording system. Work continues on the inputting of both old and new records into Recorder 6 and, since my last report to Council in the spring of 2008, I have added over 40,000 records into the database, which currently stands at over 90,000 records.

I would like to take this opportunity to thank both members and non-members for supplying records for the mapping scheme. Without their dedication to fieldwork and the accuracy of their identification and recording skills, the mapping scheme would be limited in its value to the wider community.

New VC Records 2008

EM = Evelyn Moorkens
GAH = G.A. Holyoak
IK = Ian Killeen
RA = Roy Anderson

South Devon (3): *Theba pisana*, Dawlish Warren (SX984790) 16.09.2008 David Bolton Conf. Mary Seddon
East Suffolk (25): *Sphaerium nucleus*, White Cast Marshes, Carlton Colville (TM507920) 28.05.2007 D.J. Howlett
East Norfolk (27): *Sphaerium nucleus*, Damgate Marshes, Acle (TG417098) 01.09.2006 D.J. Howlett; *Stagnicola palustris* seg., Hecklingham Marshes (TM391998) 03.08.2006 D.J. Howlett
West Norfolk (28): *Acicula fusca*, Potters Fen SSSI (TF884118) D.J. Howlett 10.08.2006, *Vertigo angustior*, Bradley Moor, Dereham TG013117 10.08.2006 D.J. Howlett
Cambridgeshire (29): *Myxas glutinosa*, Swaffham Bulbeck (TL5563) 1822, L. Jenyns (Bath Museum) Conf. R.C. Preece; *Lehmannia valentiana*, Papworth Everard (TL283633) 05.04.2006 Chris du Feu
West Gloucestershire (34): *Paralaoma servilis* Bristol (ST576721) 14.09.2008 T. Smith Conf. A. Norris; *Arion rufus* seg. Minchinhampton (ST8799) 08.2008 D. Robinson
Warwickshire (38): *Hygromia cinctella*, Birmingham, Eastside, River Rea site (SP081869) M. Bloxham 31.05.2008 Conf. A. Norris
Staffordshire (39): *Limacus maculatus*, Silverdale (SJ825462) 03.10.2008 J. Fleming Conf. A. Norris
Shropshire (40) *Arion vulgaris*, Market Drayton (SJ674345) 06.10.2008; *Lehmannia valentiana*, Stoke on Tern (SJ658273) 06.10.2008; *Limacus maculatus*, Child's Ercall (SJ664250) 06.10.2008 all T. Crawford
Glamorgan (41): *Selenochlamys ysbryda*, Canton District, Cardiff (ST1676) 28.09.2007 B. Rawson & W.O.C. Symondson
Breconshire (42): *Vertigo geyeri* Craig y Ciliau NNR nr Llangatock, Powys. (SO193157) A. Godfrey 27.07.2007 Conf. A. Norris
West Lancashire (60): *Hygromia cinctella*, Salmsbury, Preston (in flood debris) (SD578297) 3.2004 Carl Ruscoe Conf. A. Norris
Yorkshire, South-east (61): *Musculium transversum*, *Physella acuta* Thormumbald Drain, Boreas Hill Farm Bridge, Paull. (TA186258) 02.02.2008 W.R. Dolling. Conf. A.Norris
Yorkshire, North-west (65): *Spermodea lamellata*, Deepdale Wood nr Barnard Castle (NZ0216) T. Wardhaugh 20.04.2002
Durham (66): *Lehmannia valentiana*, Seaham (NZ430494) A. Norris 28.05.2008
Kirkcudbrightshire (73): *Arion flagellus*, Gatehouse of Fleet (NX606561) 24.05.2007; *Boettgerilla pallens*, Barhill Wood (NX687508) 25.05.2007 all A.T. Sumner; *Cochlicella barbara*, nr Monreith (NX3838) 15.06.2008 Mike Rutherford Det A. Norris
Wigtownshire (74): *Kobeltia owenii*, *Oxychilus helveticus*, St Ninian's Cave (NX431366) 27.05.2007; *Arion flagellus*, *Limacus maculatus*, Garlieston (NX477462) 27.05.2007 all A.T. Sumner
Ayrshire (75): *Kobeltia hortensis* ss, *K. distinctus*, Dundonald Castle (NS3634) 15.09.2004, RA
Lanarkshire (77): *Euconulus trochiformis*, Leadhills (NS885145) 30.05.2007 A.T. Sumner; *Hygromia cinctella*, Glasgow (NS553671) 22.09.2008 Richard Weddle Det Mike Rutherford
Peeblesshire (78): *Carinarion silvaticus*, *Kobeltia distinctus*, *Deroceras panormitanum*, *Euconulus fulvus* ss, *Lehmannia valentiana*, *Limacus maculatus*, *Tandonia sowerbyi*, Jubilee Wood (NT255394) 12.08.2007 A.T. Sumner & B. Colville
Berwickshire (81): *Arion ater* ss, *Arion rufus* ss, *Kobeltia distinctus*, *Boettgerilla pallens*, *Cochlicopa lubricella*, *Euconulus fulvus* ss, Pease Dean (NT7970) 09.09.2007 A.T. Sumner
East Lothian (82): *Succinea putris*, Brock Wood, E. Lothian (NT660747) 13.09.2008 A.T. Sumner Det. A. Norris
Stirling (86): *Balea heydeni*, Mugdock Castle Dunes (NS549771) 06.09.2008 Adrian Sumner
East Perthshire (89): *Limacus maculatus*, Pitlochry (NN939580) 16.08.2007 A.T. Sumner

Kincardineshire (91): *Kobeltia distinctus*, Stonehaven (NO863862) 28.03.2006 A.T. Sumner
Angus (90): *Carinarion silvaticus*, Camperdown Park, Dundee (NO3633) 14.09.2004 RA
South Aberdeenshire (92): *Kobeltia distinctus* Ruthrieston, Aberdeen (NJ927044) 29.03.2006 A.T. Sumner
Moray (95): *Arion ater* ss, *Carinarion silvaticus*, Strathnairn (NH683336) 09.06.2007 A.T. Sumner
East Inverness-shire (96): *Arion ater* ss, *Kobeltia distinctus*, Carrbridge (NH9022) 11.06.2007 A.T. Sumner
South Ebuades (102): *Euconulus trochiformis* (NR283414), *Vallonia pulchella* (NR305446), *Valvata piscinalis* (NR303447), *Physa fontinalis*, *Gyraulus albus*, *Sphaerium corneum*, *Pisidium milium*, (NR391683), *Armiger crista* (NR286729) all Isle of Islay, 07.2004 Martin Willing
East Ross (106): *Boettgerilla pallens*, *Deroceras panormitanum*, Tain (NH781822) 17.07.2007; *Kobeltia distinctus*, Strathpeffer (NH483583) 28.07.2007 both A.T. Sumner
Sutherland (107): *Boettgerilla pallens*, Helmsdale (ND027152) 22.07.2007 A.T. Sumner
Caithness (109): *Arion ater* ss, *Kobeltia distinctus*, Caithness (ND1944) 24.07.2007 A.T. Sumner; *Cochlicopa lubricella* Scrabster (ND099702) 26.07.2008 R.C. Preece
Orkney Island (111): *Carinarion circumscriptus*, *Balea perversa*, Kirbuster (HY282255) 04.08.2008; *B. heydeni*, *Limacus maculatus*, Melsetter, Hoy (ND270895) 31.07.2008; *Kobeltia distinctus*; *Euconulus fulvus* ss, *Spermodea lamellata*, Berriedale Wood, Hoy (HY203013) 27.07.2008; *Stagnicola* agg. Sanday, Orkney (HY688411) 03.08.2008 all R.C. Preece
South Kerry (H1): *Otina ovata*, Murreagh Point (V398779) 22.07.1989 Dr J.D. Nunn; *Leucophytia bidentata*, Portmagee (V400746) 18.04.1992 Dr S. Smith; *Arion ater* ss, *Kobeltia distinctus*, Rossbehy (V648909) 07.04.1996; *Balea heydeni*, *Euconulus alderi*, Derrynane House (V5358) 12.04.1996 all RA; *Ventrosia ventrosa*, Fenit (Q719157) 14.08.1996 Dr Brenda Healy; *Hygromia cinctella* nr Lough Caragh (V742913) 19.08.2004 R.C. Preece
North Kerry (H2): *Ventrosia ventrosa*, Drongawn L. (Q836497) 1996 Dr Brenda Healy; *Arion ater* ss, Connor Pass (Q480052) 08.04.1996, *Carinarion silvaticus*, Ross Castle, Killarney (V948884) 09.04.1996 RA; *Testacella scutulium* Killarney National Park (V958906) 14.04.2002 Martin Cawley; *Gyraulus laevis*, *Kobeltia distinctus*, Castlegregory (Q6115) 04.2003 EM; *Vertigo pusilla*, Beal Point (Q8948) 08.2003 EM & IK
West Cork (H3): *Otina ovata*, Spring Pool, Carrigathorna, Lough Hyne (W103270) 11.07.1975 Mr J.A. Kitching; *Leucophytia bidentata*, Whirlpool Cliff, Lough Hyne (W112284) 1980 Dr D. Minchin; *Arion ater* ss, White Strand, 2.5km SE of Ballinspittle (W610430) 14.07.2000; *Balea heydeni*, Sandy Cove, 3km S of Kinsale (W637468) 17.07.2000; *Kobeltia distinctus*, (W199779), *Euconulus fulvus* ss, (W200779), Cascade Wood, Ballyyoumey 26.04.2007 all RA; *Boettgerilla pallens*, Glinny-Boulalag Mixed Farm (W6658) 05.2004 EM & IK
Mid Cork (H4): *Leucophytia bidentata*, Roches Point (W767609) 19.04.1995 Dr S. Smith; *Ashfordia granulata*, Garretstown (W6043) 28.03.1999, *Planorbarius corneus*, *Acroloxus lacustris*, Kinsale marsh (W65) 29.01.1999; *Kobeltia distinctus*, Blarney Castle (W601752) 10.07.2000; *Arion ater* ss, Courtapteen (W635464) 16.07.2000; *Testacella scutulium*, 19.07.2000, *Carinarion circumscriptus*, 25.01.2002, *Kobeltia hortensis* 27.09.2006 Boolepatrick nr. Blarney (W605758); *Carinarion silvaticus*, *Balea heydeni*, Curraghbinny nr. Crosshaven (W793622) 20.07.2000; *Semilimax pyrenaicus*, Ballintemple (W710718) 25.01.2002 all RA; *Physella acuta*, Glinny-Boulalag Mixed Farm (W6759) 05.2004; *Arion flagellus*, Riverstick (W6759) 05.2004 all EM & IK; *Arion rufus*, River Lee at Cork City (W668716) 28.09.2006 RA
East Cork (H5): *Leucophytia bidentata*, Saleen (W871674) 1893 R.A. Phillips; *Arion ater* ss, *Kobeltia distinctus*, *K. hortensis*, Fota Wildlife Park, Foaty Island (W785707) 11.07.2000 all RA; *Arion flagellus*, Middleton (W8772) 06.2003 EM & IK
Waterford (H6): *Otina ovata*, Dunmore East (S689006) 18.04.1995 Dr S. Smith; *Arion ater* ss, *Kobeltia hortensis*, Tramore, gardens (S586018) 08.1990, *Carinarion circumscriptus*, Passage East (S682113) 23.08.1990 all RA
South Tipperary (H7): *Arion ater* ss, Longfordpass Bridge (S246606) *Balea heydeni*, Glengar Wood (R930186) 31.07.2005 RA
Limerick (H8): *Vertigo moulinsiana*, *Vertigo angustior*, Curragh Chase (R4148) 28.05.2005 EM; *Dreissena polymorpha*, Bunlicky Bridge, Ballincur Creek (R555556) 02.10.2008 RA
Clare (H9): *Otina ovata*, Fanore (M133070) 26.04.1979 Dr Brenda Healy;

Arion ater ss, Finavarra (M264126) 11.05.1991 RA; *Ventrosia ventrosa*, Cloonconeen Point (Q836496) 1996 Dr Brenda Healy; *Carinarion silvaticus*, Pinnacle Well (M200094) 04.05.1996; *Balea heydeni*, Ballyallabanth (M222048) 06.05.1996; *Kobeltia hortensis*, *Lehmannia valentiana*, Lisheen House, New Quay (M282120) 28.09.2007 all RA; *Dreissena polymorpha*, Scarriff (R644840) 06.2001 D. Minchin & F. Lucy; *Arion flagellus*, *Kobeltia distinctus*, Doughmore (Q9969) 05.2004 EM
North Tipperary (H10): *Kobeltia hortensis*, *K. distinctus*, *Carinarion circumscriptus*, Solsborough, Nenagh (R860790) 13.04.1996; *Anisus vortex*, *Euconulus alderi*, Portland Park Callows, R. Shannon (M883064) 23.05.2003 RA
Kilkenny (H11): *Boettgerilla pallens*, *Ashfordia granulata*, River Nore (S46) 07.07.1991 EM; *Dreissena polymorpha*, Graiguenamanagh (S709435) 06.2001 D. Minchin & F. Lucy
Wexford (H12): *Leucophytia bidentata*, *Otina ovata*, Carnsore Point (T120036) 06.1976; *Ventrosia ventrosa*, Lady's Island Lake (T009065) 1996 Dr Brenda Healy; *Arion ater* ss, Lady's Island Lake (T0805) 06.08.2001 RA
Carlow (H13): *Dreissena polymorpha*, Carlow (S716766) 06.2001 D. Minchin & F. Lucy; *Arion ater* ss, Whitemill Bridge, Clashavey River (S873627) 14.05.2003 RA
Leix (H14): *Boettgerilla pallens*, *Ashfordia granulata*, Durrow sq. (S47) 12.07.1991 EM
South-east Galway (H15): *Ventrosia ventrosa*, Bridge L. (M342128) 1996 Dr Brenda Healy; *Myosotella denticulata*, Carrowmore, Kilcolgan (M345181) 11.04.1997 Dr S. Smith; *Arion ater* ss, Friar's Island (M935134) 23.05.2003; *Euconulus alderi*, Pollnacknockaun Wood (M741016) 25.05.2003; *Kobeltia hortensis*, *K. distinctus*, *Carinarion circumscriptus*, *Balea heydeni*, *Zenobiella subrufescens*, Garryland Wood (M414035) 23.09.2007; *Dreissena polymorpha*, Portumna Forest Park (M833026) 25.09.2007 all RA; *Sphaerium nucleus*, Cregaclare South Turlough (M476116) 14.03.2006 Dr C. Williams; *Oxyloma sarsii*, R. Shannon N of Banagher (N0029) 30.07.2004 GAH
West Galway (H16): *Otina ovata*, Ballyhowan (Bunnahawn) (L9920) 01.04.1978 Dr Brenda Healy; *Ventrosia ventrosa*, Lettermullen (L826213) 1990 Dr S. Smith; *Arion ater* ss, Barna House (M246230) 24.05.1997; *Carinarion circumscriptus*, *Euconulus fulvus*, *Balea heydeni*, Kylemore Lough (L7558) 22.04.1999 all GAH; *Kobeltia distinctus*, *Ashfordia granulata*, N of Galway (M301296) 10.2000 EM; *Dreissena polymorpha*, Lough Corrib (L9861) 06.2006 EM & IK
Offaly (H18): *Carinarion fasciatus*, *Kobeltia distinctus*, Charleville Estate (N3122) 11.2002 EM; *Arion rufus*, *Carinarion circumscriptus*, *Euconulus fulvus*, Charleville Wood (N3122) 24.05.2003 RA; *Dreissena polymorpha*, Grand Canal (N3525) 04.2003; *Musculium lacustre*, Grand Canal, Dangan (N447276) 03.2003; *Pisidium moitessierianum*, Grand Canal, Cartland Bridge (N598323) 03.2003 all EM & IK
Kildare (H19): *Planorbarius corneus*, Leixlip (N93) 22.02.2001; *Zenobiella subrufescens*, Rye water valley (N9937) 19.02.2002 EM & IK; *Lehmannia valentiana*, Newbridge (N808152) 08.2002 EM; *Physella acuta*, Ardclough (N9326) 03.2003 EM; *Euconulus fulvus*, N of Castledermot (S7887) 14.05.2003 GAH; *Arion rufus*, *Kobeltia distinctus*, Hybla Wood (N700124) 13.04.1996; *Arion ater* ss, *Euconulus alderi*, Louisa Bridge, Royal Canal (N992368) 26.09.1981; *Kobeltia hortensis*, *Balea heydeni*, Newbridge Fen (N773155) 06.04.2002; *Carinarion circumscriptus*, *C. silvaticus*, Grand Canal near Sallins (N895235) 27.05.2006 all RA
Wicklow (H20): *Boettgerilla pallens*, Knocksink Wood (O21) 03.05.1988 EM; *Anisus vortex*, S. of Dublin (O2414) 18.05.1999; *Milax gagates*, Rossbeigh dunes (V646922) 07.04.1996; *Arion ater* ss, Little Sugarloaf (O258146) 23.03.2002; *Arion rufus*, Bray Head (O278174) & *Carinarion silvaticus*, (Arklow sands) (T252728) 23.10.2005; *Deroceras agreste*, Buckroneys dunes (T295797) 22.10.2005; *Kobeltia distinctus*, *Ashfordia granulata*, Greystones (O293130) 26.08.2006; *Balea heydeni*, Powerscourt (O209163), 01.12.2007; *Radix auricularia* 18.02.2007, *Lehmannia valentiana*, Powerscourt (O212163) 15.03.2008 all RA
Dublin (H21): *Leucophytia bidentata*, Dublin Bay, Dublin (O264350) 1816 Mr W. Turton Conf. RA; *Balea perversa*, Golden Ball (D22) R.J. Welch 11.12.1910 Conf. RA; *Ventrosia ventrosa*, North Bull (O244371) 1975 Dr Brenda Healy; *Arion rufus*, *Kobeltia hortensis*, *K. distinctus*, *Carinarion fasciatus*, *Euconulus fulvus*, Luttrellstown House (O0537) 26.09.1981; *Lehmannia valentiana*, Portmarnock Strand (O246220) 24.04.1982; *Arion ater* ss, North Bull, Raheny (O224340) 30.08.1997; *Physella acuta*, Glasnevin Lily Pool (O153374) 15.01.2000; *Oxychilus n. helveticus*; R. Dodder, Orwell Rd. (O158297) 09.04.2002; *Balea heydeni*, Great Baily, Howth Head (O29523654) 17.02.2007 all RA; *Pisidium*

pseudosphaerium, Royal Canal, Confey (O008370) 05.2003; Grand Canal, Herbert Place (O171331) 10.2003 both EM & IK; *Arion flagellus*, *Zonitoides arboreus*, Rathfarnham (O1328) 04.2004 EM
Meath (H22): *Anodonta anatina*, R. Nore, Blackshade Bridge (N6846) 29.08.1999 EM; *Euconulus alderi*, Mell Landfill Site (O075740) 14.09.1998; *Arion ater* ss, Clogher Head beach (O162838), *Arion silvaticus* Kells (N724772) both 25.03.2000; *Arion distinctus*, Kells (N7475) 12.08.2008, *Sphaerium nucleus*, Mell Landfill pond (O073758) 08.10.2008 all RA
Westmeath (H23): *Pisidium henslowanum*, Royal Canal, Kilpatrick Bridge (N407513) 05.2003; *Musculium lacustre*, Royal Canal, E of Mullingar (N448519) 05.2003; *Pisidium moitessierianum*, Royal Canal, Kilmore Bridge (N732415) 04.2003 all EM & IK; *Arion flagellus*, *Vertigo moulinsiana*, Lough Owel (N4256) 04.2004 EM
Longford (24): *Arion ater*, *Carinarion circumscriptus*, Ballymahon (N149559) 25.05.1991 RA
Roscommon (H25): *Euconulus alderi*, Annaghmore (M9084) 23.08.2001 RA; *Ferrissia wautieri*, Black Lough (M9586) 28.10.2006 EM & IK
East Mayo (26): *Arion ater*, *A. rufus*, *Kobeltia distinctus*, Rahans House (G238179) 2002 RA; *Kobeltia hortensis*, L. Carra (M1970) 15.10.2003; *Euconulus fulvus* Knockmore Bay, Lough Conn (G228081), *Carinarion circumscriptus*, Lough Mask, Inishcoog (M1361), *Euconulus alderi*, Lough Carra S of Muckloon (M1974), *Balea heydeni*, Keel Bridge (M167671), *Myxas glutinosa*, Inishard, L. Mask (M126596) all 05.2003 GAH
West Mayo (H27): *Leucophytia bidentata*, Mullaranny (F834061) 28.07.1910 Mr N. Colgan; *Ventrosia ventrosa*, Shraigh Beach, Blacksod (F726269) 27.07.1995 Dr Brenda Healy; *Myosotella myosotis*, Moy Estuary (G248266) 17.09.1997 Dr S. Smith; *Hydrobia neglecta*, Leam Lough, The Mullet (F6527) 26.08.2000 Dr J.D. Nunn Conf. RA; *Euconulus alderi*, E of Formoyle (G0522) 19.05.2003, *Balea perversa* Keem, Achill (F5504) 02.07.2003, *Carinarion circumscriptus*, Islandeady Lough (M0887) 28.09.2003 all GAH; *Balea heydeni* (L714851) 29.06.2002, *Mesaron fuscus* (L664860) 13.10.2002, *Euconulus fulvus* (L700869) 14.10.2002, *Arion rufus*, (L714853) & *Kobeltia owenii* (L697867) 14.10.2002, *K. hortensis* (L714852) 28.06.2002 all from Clare Island; *Carinarion silvaticus* Roonagh Pier (L745809) 12.10.2002; *Kobeltia distinctus*, Knockmore nr Foxford (G2208) 18.05.2003; *Arion ater* ss, nr Louisburgh (L831827) 28.06.2002 all RA; *Gyraulus laevis*, nr Kinnadooh (L7370) 08.1999 EM; *Arion flagellus*, Killyary Harbour (L8463) 04.2004 EM & IK
Sligo (H28): *Leucophytia bidentata*, Strandhill beach (G602358) Mr R.J. Welch 1931; *Myosotella myosotis*, Ballysadare Bay (G6430) Dr D. Cotton 08.03.1995; *Balea heydeni*, *Arion ater* ss, Striff Wood, Lough Gill (G7934) 03.08.2000; *Kobeltia distinctus*, *Carinarion silvaticus*, Cloverhill Lough (G673282) 18.07.2008 all RA; *Dreissena polymorpha*, Lough Key (G8206) 05.2001 D. Minchin & F. Lucy
Leitrim (29): *Arion ater* ss, Swiss Valley, Glencar (G7543) 28.07.1999; *Kobeltia distinctus*, *Balea heydeni*, Glencar (G7643) 25.07.2000; RA & GAH; *Mesaron fuscus*, Cloontyprughlish, Glenade (G770480) 16.08.2005 RA; *Euconulus fulvus*, *E. alderi*, North end of Glenade Lough (G8146) 2000; *Carinarion circumscriptus*, Garadice Park (H1911) 28.08.2000 all GAH
Cavan (30): *Arion ater* ss, *Kobeltia distinctus*, *Carinarion silvaticus*, Lough Ramor (N632835) 25.03.2000 RA; *Balea heydeni*, *Euconulus fulvus* Virginia Woods (N5987), *E. alderi* Lough Oughter at Inishconnel (H3507) all 13.08.2001; *Anodonta anatina*, Lough Oughter (H3406) 26.08.2001 all GAH
Monaghan (H32): *Semilimax pyrenaicus*, Lough Bawn (H7210) 11.08.2006 EM & IK
Fermanagh (H33): *Euconulus fulvus*, Ely Lodge Forest (H179516) 24.04.1976; *Carychium minimum*, Drumard, Tamlaght Bay (H269409), *Carinarion circumscriptus*, Castle Coole (H263417), *C. silvaticus*, Lattone Lough (G9945) all 04.1977; *Arion ater* ss, *Kobeltia distinctus*, Boa Island (H081620) 05.05.1995; *Euconulus alderi*, Upper Lough Erne (H366237) 31.03.1997; *Tandonia sowerbyi*, Hanging Rock (H109364) 23.05.2000; *Oxychilus draparnaudi*, Crom Castle (old) (H361245) 27.06.2000; *Planorbarius corneus*, Castle Lough (H399193) 06.06.2008; *Sphaerium nucleus*, Upper L. Erne (H395225) 12.06.2008; *Bithynia leachii*, L. Erne (H336311) 15.06.2008 all RA; *Balea heydeni*, S of Cladagh Bridge (H127356) 21.05.2000 GAH;
East Donegal (H34): *Carinarion silvaticus*, Cloghan (H0498) 30.05.1976; *Euconulus fulvus*, Glenmore Demesne (H1996) 23.09.1978; *Carinarion circumscriptus*, Castle Wray (C2114), *Balea heydeni*, Bogay House (C3516), both 09.12.1978; *Zenobiella subrufescens*, Ballybane Glen

(C6345) 25.08.1979; *Kobeltia distinctus*, Whitefield (C4838) 12.05.1979; *Physella gyrina*, Harvey's Pt., L. Eske (G967846) 09.08.1997; *Arion ater* ss, Streedagh Estuary (G641506) 20.07.2008 all RA
West Donegal (H35): *Otina ovata*, Rosapenna (C1037) Mr W.J. Walker 1902; *Balea heydeni*, Horn Head (C026404) & *Carinarion circumscriptus*, Ards Forest Park (C050346) both 28.07.1974; *Tandonia sowerbyi*, Arranmore Island (B6815) 26.05.1976; *Carinarion silvaticus*, Lough Finn (B9001) 01.06.1976; *Deroceas panormitanum*, Gartan Lough (C0616) 28.05.1978; *Milax gagates*, nr Dunlewy (B9319) 23.08.1978; *Lymnaea stagnalis*, Loughan nr Ballyhiernan (C1943) 24.08.1978; *Tandonia budapestensis*, Fintragh House (G6876), *Kobeltia distinctus*, Rushen Park, Teelin Bay (G5877) both 04.08.1979; *Myosotella myosotis*, Magheraroarty (B8933) 01.09.1979; *Arion ater* ss, Maghera dunes (B7209) 13.09.1979; *Euconulus fulvus*, Corravaddy Forest (C155069) 11.06.1998 all RA; *E. alderi*, Sheskinmore Lough (G696959) 02.08.1999 GAH; *Vertigo lilljeborgi*, Procklis Lough (B936257) 06.2003 EM; *Dreissena polymorpha*, Donegal (G899605) 06.2001 D. Minchin & F. Lucy
Tyrone (36): *Euconulus fulvus*, nr Cookstown (H791806) 02.07.1974; *Balea heydeni*, Brantry Lough (H749534) 09.08.1974; *Tandonia sowerbyi*, *Carinarion silvaticus*, Lisdivin House (C375049) 30.10.1974; *Tandonia budapestensis*, *Carinarion circumscriptus*, Killyfaddy Lough (H518541) 23.11.1974; *Milax gagates*, Altgolan (H223760) 01.07.1978; *Arion ater* ss 25.04.1979, *Kobeltia distinctus*, 03.04.1991 both Loughry Agricultural College (H818745); *Euconulus alderi*, *Carinarion fasciatus*, Strabane Glen ASSI (H3598) 01.03.1992; *Kobeltia hortensis*, Drum Manor Forest Park (H765774) 22.09.1994; *Arion rufus*, Crilly House (H696497) 29.11.2002; *Anodonta anatina*, L. Neagh (H954810) 08.05.1007 all RA
Armagh (37): *Euconulus fulvus*, *Carinarion silvaticus*, Argory Moss (H880578) 15.12.1974; *Columella aspera*, Clare Glen (J020455) 02.03.1975; *Aplexa hypnorum*, Brackagh Bog pools (J019509) 22.07.1977; *Arion ater* ss, *Kobeltia hortensis*, *K. distinctus*, Annagarriff NNR (H905614) 20.04.1991; *Euconulus alderi*, Outlack Bog (H905400) 17.03.1992; *Succinella oblonga*, Harper's Bridge Quarry (H676606) 03.06.1999; *Arion rufus* Mullabrack Parish Church (H958423) 28.11.2002; *Balea heydeni*, Loughgall Country Park (H903517) 15.04.2008 all RA; *Kobeltia owenii*, Marlacoo Lake (H982447) 15.08.2008 A. Norris
Down (38): *Otina ovata*, Ballymacormick Point (J532838) 28.01.1916; *Balea perversa*, Millisle Seafront (J5975) 21.09.1913 Mr A.W. Steffox Conf. RA; *Euconulus fulvus*, Seaforde Demesne (J407427) 01.11.1973; *Carinarion silvaticus*, Bohill Wood (J397463) 02.11.1973; *C. circumscriptus*, Killynether Wood (J473721) 10.11.1973; *C. fasciatus*, SW of Kilkeel (J296132) 26.12.1973; *Balea heydeni*, Castleward (J577496) 18.02.1974; *Arion ater* ss, *Kobeltia hortensis*, *K. distinctus*, Ballywalter (J630678) 24.05.1986; *Euconulus alderi*, *Carinarion owenii*, Belvoir Forest (J335693) 27.03.1991; *Arion rufus*, Cairnshill (J355687) 15.06.1991; *Arion vulgaris*, Belvoir View Park, Belfast (J350694) 15.03.1992; *Semilimax pyrenaicus*, Belvoir Park (J333693) 02.01.1990; *Hydrobia neglecta*, Ann's Point, Strangford L. (J557688) 12.06.2001; *Ventrosia ventrosia*, Cadew Point Lagoon (J517634) 11.09.2001; *Physella gyrina*, New Quoile Bridge (J482457) 10.07.2004 all RA
Antrim (39): *Leucophytia bidentata*, Port Ganny, Giant's Causeway (C9444) Mr R.J. Welch 13.06.1931; *Carinarion silvaticus*, Portmuck Bay (D462023) 08.1973; *Milax gagates*, Garron Point (D298230) 17.11.1973; *Balea heydeni*, (J411995), *Euconulus fulvus*, (J408993) both Glynn Hill Woods 24.11.1973; *Tandonia sowerbyi*, Murlough Bay (D191425) 27.08.1974; *Anisus vortex*, M1 Bridge, R. Lagan (J295675) 15.02.1975; *Limacus flavus*, Belfast Botanic Gardens (J336724) 20.11.1975; *Euconulus alderi*, *Arion ater* ss, *Kobeltia distinctus*, Lagan Meadows (J335703) 07.11.1981; *Arion rufus*, Craigahullier Quarry (C882388) 09.07.1991; *Hygromia cinctella*, Hilden Court, Lisburn (J279655) 04.06.1999; *Arion vulgaris*, Riverside, Antrim (J151859) 06.06.2006; *Kobeltia hortensis* Muckamore, Antrim (J164853) 10.07.2006; *Anodonta anatina*, L. Neagh (J116713) 11.05.2007 all RA
Londonderry (40): *Balea heydeni*, Drumnacanon Bridge (C914043) 15.09.1966; *Euconulus fulvus*, Springhill Estate (H865827) 25.03.1973; *E. alderi*, Crumlin Cottage (H890776) 06.07.1974; *Carinarion circumscriptus*, Banagher Glen (C671049), *C. silvaticus*, Dungiven Priory (C6920820) both 24.07.1974; *Arion ater* ss, Hell's Hole, Binevenagh (C713323) 13.07.1991; *Kobeltia distinctus*, Maydown (C4720) 24.06.1991; *Anodonta anatina*, L. Neagh (H969901) 30.07.1992; *Arion rufus*, Portstewart (C7936) 19.07.1999; *Oxychilus draparnaudi*, Mountsandel, Coleraine (C848317) 14.03.2002 all RA; *Vertigo geyeri*, Kilcragagh, Moneyneany (H733996) 28.07.1999 GAH

Society Website 2009 Pryce Buckle

Websites have a tendency to change quickly as the amount of information contained in them increases. Ours is no exception. This article is an update of the information that introduced the redesigned website in *Mollusc World*, issue 17 (July 2008). The design and navigation have changed very little since then, but the content has increased, so I would like to bring some of the new items to your attention.

Eminent Conchologists:

Regular visitors to the Society website will have noticed that since October 2008, a section has been introduced covering eminent conchologists and Conchological Society members. It provides biographical details, and wherever possible, a bibliography of their papers, lists of species they introduced, and photographs of them. The majority of the content has been extracted from obituaries in past issues of *Journal of Conchology*. Some articles lack photographs of their subject; offers of loans of relevant photos in order that I may scan them for inclusion would be appreciated. Even if they are old and partially damaged, I may be able to 'Photoshop' them. The section is still under development, and is likely to take some time to complete — I have only looked at the main obituaries in volumes 21 to 35 so far.

Access to the section has been moved from the central part of the Home page, where it was originally, to the menu on the right, in order to make more room on the Home page. It may also be reached from the Site Map button, as may all other sections.

Finding the Abstract of a paper published in Volume 37, 38 or 39 of Journal of Conchology:

Abstracts of all papers and details of communications published in *Journal of Conchology* Volumes 37, 38 and 39 are available on the website. If you are looking for a particular paper and cannot remember which volume it was in, first try entering brief details such as the name of the species or the author's name in the Search box in the top right corner of the opening (Home) page at www.conchsoc.org - that could find it straight away.

Atomz, the providers of the search facility, send me a weekly report with details of the searches that have been

made in the week. The report helps me to discover what subjects people are looking for, enabling me to consider what visitors might like to see added to the site. Based on Atomz's reports, the Search facility does not appear to be used very much - an average of 19 searches a week over the last 10 weeks. Google Webmaster Tools informs me that we had 10,981 visitors to the site during the same period, who each viewed an average of 3.58 pages. These statistics (correct at the time of writing this article) suggest that **either** everything being sought is readily available and easily found, **or** that people are not looking for specific information and are only browsing. You will be surprised at the amount of molluscan information there is available on the site. Give it a try by entering the name of a species or of a person, or a field meeting location (or indeed, anything you like). It sometimes even works if you slightly misspell it! You will be presented with a list rather like the one you get from any other search engine, but this list comprises only the information that is available from our website. Click on the title to go straight to the information, or click on the back button of your browser to go back to the Home Page.

However, to return to the Abstracts - they are listed in page number order within the volume, and the list is available from the right hand menu on the Home Page, below *Journal of Conchology*. When at the list, if you know the page number or notice the paper you want in the list whilst scanning it, just click on the title of the paper, and you immediately arrive at the full Abstract.

Do not be dismayed by the length of list of papers and the fact you may not know the page number nor the title of the paper you are looking for - help is at hand in the form of an Index to each volume. The Index is available by clicking on the text link in the third line of the List of Abstracts, or on the button in the left menu on the List of Abstracts page, which also includes links to the other volumes.

The Index opens in a separate tab in the browser, making it easy to move between the List and the Index if you need to. Once you have found the

relevant page number, go back to the List and click the title - that will take you to the full Abstract.

The Index is in three sections, the same as in the Journal. The first of these is an index of authors that not only includes the main author, but all co-authors of the paper are also included in the list. The second part is a taxonomical index that includes **in bold** new taxa described in the volume, as well as genus and species of all others to which reference is made, together with families of those mentioned. The third section is a geographical and general index arranged alphabetically by geographic locality. One or other of these sections will point you to the page number of the paper you are seeking, so that when you return to the List of Abstracts with the page number, and click on the title you will arrive at the full abstract. If you cannot find it in that volume, try the others.

Field Meetings and photos:

Random photos from field meetings are included - more for entertainment than for information, although if there is a report of the field meeting available on the site, the photo will provide a link to it. Due to the random nature of the selection process, a particular photo may appear more than once on the page. Click on the 'new view' link to see another selection.

The reports of field meetings are in Portable Document Format (pdf) and are extracted from *Mollusc World* in most cases. I have provided details about pdf files whenever one is referenced on the website, and how to obtain a free reader if you do not have one; however, most modern computers come supplied with one.

Where are the links to the photos? One is from the Programme of Meetings page using the menu to the left; another is included in the Field Meetings page (accessed from our Home Page) and includes links to reports of recent field meetings; the Site Map provides further links.

Please send me more good quality photos showing people in action or specimens found (or both) together with details of meeting at which they were taken and subject, and I will do my best to include them. However, photos can take up a lot of bandwidth if sent by email, and even on broadband may

take a long time to send, so burning them on a CD-Rom and sending them by 'snail mail' will probably be preferable.

Special offers:

The Society is sometimes able to negotiate special discounted prices or reduced rates on books, etc. When we do, details are provided in the Special Offers page that can be reached from the button in the bottom left corner of the Home page.

Common species associated with particular habitats:

Many species of mollusc are associated with particular habitats, and these pages enable you to reach a list of the commoner species found in the habitat that interests you. The first page has images of the three basic habitats - land, freshwater and marine. By clicking on one of these, you reach more images: this time they are more specific. In this

way, you will continue until you reach a list of the common species associated with the habitat. You may also reach the habitat you require via the Site Map.

In conclusion:

I hope that you will find the new sections informative and that this article will enhance your enjoyment of the website. The site is there for enjoyment, not just as a source of information, although as you will find when you explore it, there is a lot of information contained in it. I would like to take this opportunity of thanking all those who have provided information, text, photos and ideas. Some of it is the result of my efforts, and I accept responsibility for any errors or omissions, but for the most part I have only put the pieces together - many people have provided the pieces and I thank them all.



Treasurer's Report for the year 2008

Pryce Buckle Hon. Treasurer

The following is a summary of a verbal report given at the AGM. I normally present the Financial Statements and Notes at the AGM, and answer any questions that arise. However, in view of the current financial climate I wanted to put the Statements in context.

You will see from the Statements appended, that at the end of 2008 we made a loss of £2315 after making grants and donations of £2500 during the year.

I am completely comfortable with that. Making grants and donations for projects promoting the objectives of a charity is one of its major responsibilities. In awarding a Research Grant, preference is given to projects that focus on molluscan biogeography, ecology, taxonomy, conservation or palaeontology.

Most applicants for grants are Ph.D. students, but anyone may apply, and details are available from the Hon. General Secretary. Some of you will recall the question that was put a few years ago, 'Where will the young conchologists of the future come from?'

Well, my answer is 'From these students and others like them'. They frequently present their work to us in the form of articles in the Journal or Mollusc World, or as talks at our indoor meetings, and sometimes both.

It is my belief that we should continue to make grants for as long as we are able. We are not a business that needs to make a profit for its shareholders – we are a charity.

Having said that, we need to examine where the funds come from in order to make the grants.

Fees and subscriptions have fallen by £1594 since 2006, a fall of nearly 12% over 2 years. In 2006 the net loss of members was 40; in 2007 the net loss was 23; in 2008 there has been a net gain of 5.

Income from investments in the same period held steady, and up to February of this year (2009), there has been very little change due to the fact that about half our investment is in Unit Trusts based on bonds, which are at fixed rates. However, I expect to see a marked decrease in the other half, when dividends are declared in May, as

these are based on shares.

Legacies and donations amounted to £3,881 from Stella Davies by way of £2000 legacy and the sale of her natural history library and papers. Without such generosity, we would be hard pressed to function.

Let us now look at where the money went.

I have already mentioned the grants and donations.

Publication costs increased by approx. 17% in the year, but these costs do vary from year to year depending on how many parts of the Journal are printed and paid for in the year. Taken over a six-year period, the increase was only 1% above the average.

One new item was the advertisement placed in British Wildlife Magazine in order to raise the Society's profile and in an effort to recruit new members. That cost £716 including the design (£140). It is difficult to know how effective it was at raising our profile, but we have not seen many new members. Towards the end of 2008, and in the first few months of this year, there has been an apparent increase in the number of subscriptions being paid via PayPal. I do not know whether these are people renewing on the internet because they find it more convenient, or

are genuine new members, possibly as a result of the raised profile.

Conclusion

2009 is likely to be a very difficult year for all of us, including the Society. Our main objective must be to recruit and retain members. The best way is 'word of mouth'. Advertisements,

leaflets and posters are all very well in their way. Now that we have them, we need to make use of them at appropriate locations, but we also need to 'spread the word' and stress all the benefits of meetings, workshops, talks and publications that membership offers.

For many members outside the south-east of England, the publications are the primary reason for maintaining their membership, apart from wishing to support the Society, particularly if, as they get older, they cannot take as active a part in field meetings as they did previously.

Financial Statements for the year ended 31 December 2008

Statement of Financial Activities

	Note	2008	2007
Incoming resources			
Fees and subscriptions		£11,897	£12,935
Investment income	1	£5,771	£5,639
Income from activities for generating funds		£322	£195
Other incoming resources		£99	£31
Donations and legacies		£3,881	£116
Total incoming resources		£21,970	£18,916
Expenditure			
Publications costs		£18,663	£15,970
Stationery, postage and advertising		£1,590	£975
Meetings costs		£884	£2,280
Sundry expenses and fees		£648	£390
Grants	2	£2,500	£500
Total expenditure		£24,285	£20,115
Net incoming/(outgoing) resources		(£2,315)	(£1,199)
Gains / (Losses) on revaluation		(£11,022)	(£1,832)
Net movement in funds		(£13,337)	(£3,031)
Fund balances brought forward		£117,011	£120,042
Fund balances carried forward		£103,674	£117,011
Balance Sheet at 31st December 2007			
		2008	2007
Fixed Assets			
Investments at market value	3	£76,463	£87,485
Total fixed assets		£76,463	£87,485
Current Assets			
Debtors	4	£1,690	£1,000
Cash at bank and in hand		£36,608	£38,562
Total current assets		£38,298	£39,562
Short term creditors	5	£10,716	£9,665
Net current assets/(liabilities)		£27,582	£29,897
Total assets less current liabilities		£104,045	£117,382
Provisions for liabilities	6	£371	£371
Net assets		£103,674	£117,011
unrestricted income funds			
Total funds		£103,674	£117,011

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. 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:	2008	2007
Stock listed on recognised stock exchange	£5,320	£5,151
National Savings Income Bond	£451	£488
Total	£5771	£5,639

Note 2. Grants awarded:	2008	2007
Research grant - A. Zienitz (2007 - UNITAS award)	£1,000	£500
Prehistoric Society	£1,500	£500
Total	£2,500	£500

Note 3. Investments:	2008	2007
Market value at beginning of year	£87,485	£89,317
Net gain/(loss) on revaluation	(£11,022)	(£1,832)
Market value at end of year	£76,463	£87,485

Note 4. Analysis of debtors:	2008	2007
Tax recoverable	£400	£1,000
NHM meetings for 2009 paid in advance	£1,290	£1,000

Note 5. Analysis of creditors and accruals:	2008	2007
Publications accruals	£7,756	£5,748
Meetings costs accrual	£1,400	£2,100
Subscriptions in advance	£1,560	£1,817
Total	£10,716	£9,665

Note 6. Provision for liabilities	2008	2007
Marine fieldwork provision	£371	£371

Pryce Buckle Honorary Treasurer
N. Light Honorary Examiner

Wanted: *Nassarius nitidus* for a phylogeographic study. *Naiara Albaina*



Nassarius (Hinia) nitidus (Animalia; Mollusca; Gastropoda; Prosobranchia; Caenogastropoda; Neogastropoda; Nassariidae) is a marine inhabitant of soft-bottom habitats with a published range that presumably covers most of the Temperate Northern Atlantic marine realm (Black and Mediterranean Seas, Atlantic Ocean, North Sea). For years, its taxonomic status (as a true species or as a simple variety of the widespread *Nassarius reticulatus*) has been the subject of some debate, now definitely solved. Due to this taxonomic uncertainty, the actual distribution and abundance of *N. nitidus* cannot be easily extracted from published records. In fact, there is evidence that some studies purportedly focused on *Nassarius reticulatus* may in fact have examined *Nassarius nitidus* (for an example see <http://www.cvo.wur.nl/default.asp?ZNT=S2T2O-1P74>). Similar at first sight, several morphological features distinguish these 2 congeners. Two traits are particularly distinctive of *N. nitidus*: a purplish coloration of the inner shell, and a translucent callus. In the Atlantic, they also tend to occupy different habitats because *N. nitidus* is often restricted to muddy, sheltered locations inside lagoons and at the brackish reaches of estuaries.

As part of my PhD work, I am currently studying the phylogeography of this largely neglected component of the coastal communities of Europe. This study involves obtaining DNA data from specimens collected throughout the species range. I already have samples from several areas along Europe. However, I still lack samples for important portions of its presumed range. Specifically, I have been unable to get any sample from the British Isles. This situation is rather inconvenient because *N. nitidus*

was originally described from England by Jeffreys (individuals extracted from Thames and Orwell rivers, 1867; Jeffreys' description can be found in page 350 of his vol IV, a drawing is included in his plate 59 on vol V; both volumes available free from <http://www.biodiversitylibrary.org/bibliography/4110>) and later used by Collyer for his work on the Crouch and Rouch rivers (in 1961). Despite these earlier, pioneer works, the current distribution of *N. nitidus* in the British Isles seems rather uncertain. I would like to encourage the members of the Conchological Society of Great Britain and Ireland to go through their collections in search of records of this species and/or any potential misidentification with *N. reticulatus*; any information of a recorded occurrence of this species from the British Isles (or even elsewhere) would be very welcome. Also, anyone willing to collaborate in the phylogeographic study by sending samples, please contact me at the address below for details.

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Figure: Comparison of *Nassarius reticulatus* (left) and *N. nitidus* (three specimens on right) collected from the northeastern coast of Spain (Photo, Naiara Albaina). The scale is in cm/mm.

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Diary of Meetings - Conchological Society

Programme Secretary: Ron Boyce, 447c Wokingham Road, Earley, Reading, Berkshire RG6 7EL

IMPORTANT: Please remember to inform the leader if you are attending a field meeting. If you are held up in traffic or your public transport is delayed, it may be possible to ring the Programme Secretary on 0794 109 4395 on the day of the meeting for information on the location of the field site being surveyed.

Indoor meetings at the Natural History Museum will take place in the Dorothea Bate Room [Palaeontology Demonstration Room] at the end of Gallery 30, unless otherwise stated. Please note the earlier start times, and also the long indoor meetings in October and January with an early start time of 11:00h. Please bring plenty of exhibits and demonstration material. The Programme Secretary will be happy to receive any offers to lead field meetings or suggestions for speakers for indoor meetings.

Key to meetings:

NHM = Natural History Museum, London, indoor meeting
FIELD = Field Meeting at outdoor location
WKSHP = Workshop on Molluscan topic
yCS = Yorkshire Conch. Soc. events

FIELD - Saturday 4 July
Yorkshire, Kettlewell area
Joint meeting with Yorkshire Naturalists' Union
Leader: Adrian Norris (01132 745244) (home)

This meeting in VC64 is being held at Kettlewell by kind permission of the National Trust. Meet at 10:30h just inside the entrance to the National Trust area on the western side of New Bridge, Kettlewell, Grid Reference SE 967723. The NT property is situated on the west bank of the River Wharfe on the outskirts of the village. Kettlewell is known to be one of the busiest villages of the Yorkshire Dales with large numbers of visitors descending on the area, particularly at weekends. A small public car park is situated at the entrance to the village. If this is full,

alternative car parks can usually be found as some local land owners open their fields to raise money for charity. The main area to be visited is an area of limestone grassland and crags, with springs and flushes facing north-east. However, public footpaths run alongside the river between Kettlewell and Starbottan, a return journey of approximately 10 kilometres, and the Dales Way footpath runs along the western side of the river northwards and the eastern side south. Further footpaths climb the east facing slopes of Knipe Scar and down to Hawkswick.

Maps: Explorer Series No. OL30 Yorkshire Dales Northern & Central areas;
Landranger Series No. 98 Wensleydale & Upper Wharfedale.

The tea and meeting will be at 16:30h. The site for this meeting will be announced at the start of the meeting, and this information should be available earlier via the YNU Website.

FIELD - Saturday 11 July
Loddon Bridge/Sandford Mill
Freshwater meeting
Leader: Rosemary Hill (0118 9665160) (home)

This meeting gives an opportunity to sample the River Loddon further downstream than at the 2007 meeting and to look at additional gravel pit lakes of different stages of development in Dinton Pastures Country Park. It is hoped that it may be possible to extend the species list, particularly for *Pisidium* spp. Should the weather become unpleasantly hot it may be possible to continue to examine material indoors.

Meet at 10:30h at the bridge over the River Loddon on the A329 at the public footpath sign next to the petrol filling station (SU 766716), nearly opposite the multiscreen cinema. This will provide a brief opportunity to re-sample the site next to the bridge to see if there have been species changes since the 2007 floods. Or, for those coming by car, at 10:00h at Loddon Bridge Park and Ride (parking spaces have been reserved next to the small

office) (SU 768717) signposted from the end of the A329M (first exit northbound after the M4 exits). This car park is behind, but separate from, the multiscreen cinema car park. For those coming by train the easiest station is Earley. Walk to the end of Station Road then turn left down Wokingham Road (A329) until the river is reached (about 20 mins). Please inform the leader if you intend to come. A short Council meeting will be held if required during this meeting.

yCS - Saturday 5 September
Walden Dale, VC65.
Contact: David Lindley (0113 2697047) (home), david.lindley3@btinternet.com

Meet at 10:30h in West Burton village centre by the village green, grid ref. SE 017866.

FIELD - Friday 18 to Monday 21 September

Isle of Skye
Marine meeting
Co-ordination and contact for details: Celia Pain
PLEASE REGISTER YOUR INTEREST AS SOON AS POSSIBLE
(01634 261147) (home), (07795 966963) (mobile), C. Pain<tp006f6896@blueyonder.co.uk>

Accommodation should be sought in the Broadford area. Cottages on Skye tend to be small and are in very short supply, so if you are planning to attend this meeting, early booking of your accommodation is vital. Meet in the seaside car park just off the A850 at Broadford, grid ref. NG 643235, at 09:00h on Friday 18 September to deal with health and safety matters and discuss details of the shore visits. Provisionally these are:

Friday 18 September: Camus Croise and Ornsay 17 miles south of Broadford along the A851, grid ref. somewhere near NG 699116, at 11:30h [low tide 13:30h]

Saturday 19 September
Strollamus, 7 miles north of Broadford at 12:10h [low tide 14:10h]

Sunday 20 September either Claiggan, Ardmore or Camalaig

fairly near Dunvegan, 80-ish miles N of Broadford at 13:00h [low tide 14:40h]

Monday 21 September Camus a'Mhor-bheail 50 miles N of Broadford: A87 nearly to Portree then double back down the B883 along the coast, at 13:30h [low tide 15:30h]

For further details please visit the web site or contact Celia.

There may be the opportunity of some non-marine work on 15-16 September; those interested should contact Ron Boyce [0118 935 1413]. Also, for those who are interested and already on Skye, a shore visit to Torrinn, grid ref. somewhere near NG 572214, 6 miles SW of Broadford along the A881 [low tide 12:50h] may be organised on Thursday 17 September; if interested please contact Celia.

NHM – Saturday 3 October
11:00h in the Dorothea Bate Room [Palaeontology Demonstration Room]
Please note the revised start time. No Council meeting.

Please bring plenty of exhibits and demonstration material. There will be a lunch break at about 13:00h. Lecture to start at 14:00h.

The morning's activities will include exhibits and demonstrations on deep-water [shelf edge] marine molluscs and freshwater molluscs, and other options still at the planning stage. Members are encouraged to bring specimens of any Mollusca for identification, a X20 binocular microscope will be available if needed.

Guest speaker at 14:00h
Luciana Genio (University of Leeds)
Recent researches on Bathymodiolus in NE Atlantic cold seeps

NHM – Saturday 17 October
11:00h in the Board Room of the Natural History Museum
Full day meeting of Council only.

yCS - Saturday 17 October
Upper Nidderdale, VC64.
Contact: David Lindley (0113 2697047) (home), david.lindley3@btinternet.com

Meet at 10:30h in the car park in Pateley Bridge on the south side