

The Conchologists' Newsletter

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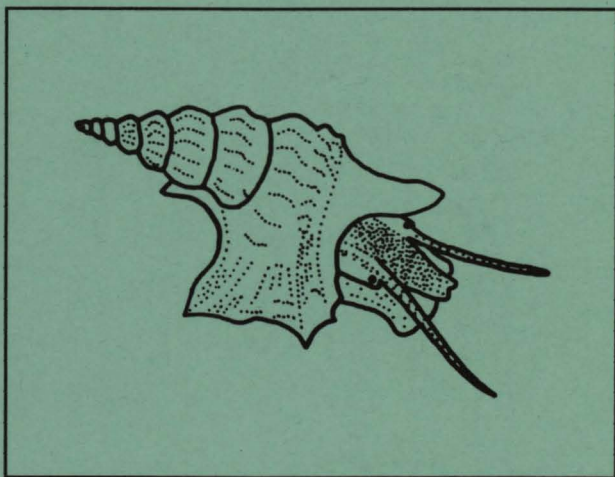
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A proposed key to the identification of the razor shell genus *Ensis* found in the British Isles

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Eaton, Norwich

Who would have expected that the annual holiday to the seaside would lead to a new hobby in middle age? Like many children I used to collect shells and remember being fascinated by razor shells because of their distinctive rectangular shape compared with the circular and spherical shapes of other shells found on the seashore. In the late 1980s I helped voluntarily on nature reserves and became interested in snails, mainly because it is a minority interest compared with wild flower identification. Then my interest in shells was rekindled when I was living in King's Lynn in 1991 and started to visit the nearby North Norfolk coast, approximately twenty miles away. After this family holidays took on a new image as I took every opportunity to further my hobby. My research was helped by visits to Cornwall, Devon, Dorset, Northumberland, Wales, Scotland and Italy, although my wife did limit my time on the Venetian Lido beach as she felt we were missing the culture and romance of Venice! Friends living abroad also helped by sending me razor shells from Naples and eastern USA.

Initially I was collecting shells at random along the North Norfolk coast from Snettisham to Brancaster, but my scientific background eventually led to more serious study. A work colleague, David Guntrip, took some of my shells to show to Jan Light at a Conchological indoor meeting. She pointed out that one of the razor shells was a recent immigrant, *Ensis americanus*, which had been first found at Holme-next-the-Sea, North Norfolk, by D. J. Howlett (1990). In 1982 the American species *Ensis directus* (syn. *E. americanus*) was found off the German Bight (Cosel et al., 1982) and was probably introduced in larval form in ship ballast water. It subsequently spread north and south along the coast to Denmark and the Netherlands, and has been found since on both sides of the Channel. I found my first specimens at Heacham, North Norfolk in November 1991 and I have since traced it as far

up the east coast as Sutton-on-Sea, Lincolnshire (1993). This discovery sparked my enthusiasm and I began to specialise in *Ensis*. During 1991 I collected three species in the Hunstanton area in the form of dead shells at the high tide line. These were identified as *Ensis siliqua*, *Ensis arcuatus* and *Ensis americanus*.

My interest then led to my reviewing the literature on razor shells, in particular *Ensis*. The genus *Ensis* consists of about fourteen extant species worldwide. The latest shell guides (Collins Pocket Guide, 1996, and Fish and Fish, 1996) describe three species of *Ensis* around Britain. These are *Ensis ensis* (Linnaeus, 1758), *Ensis arcuatus* (Jeffreys, 1865) and *Ensis siliqua* (Linnaeus, 1758). However, present evidence now shows there may be six species. The other three are the recent newcomer *Ensis americanus*, (Binney, 1870), *Ensis phaxoides* (Van Urk, 1964) and *Ensis minor* (Chenu, 1843). Tebble (1966) disagrees with Van Urk (1964) over the presence of *E. minor* in the British Isles. Shelagh Smith (1970) presents evidence from the shells she collected from the south side of the Firth of Forth to support Van Urk.

This dispute and personal correspondence with Shelagh Smith (November 1993 and June 1994) inspired me to visit this area of Scotland in July 1994. I collected many fine specimens from Aberlady Bay and Gullane but I have only recently found time to measure these and formulate a key to identification. Previous keys have used the size, shape and curvature of the shells, but in order to distinguish the six species attention needs to be paid to the muscle scars. I have adapted Van Urk's key (1964) to cover just the species found in the British Isles. I felt there was a need for a new identification key for the *Ensis* species found around these islands, especially as the recent immigrant *E. americanus* has spread around the coast from Norfolk, south and west as far as Rye, and north as far as the Humber (J. Light, personal communication, April 1997). Also there is the continuing controversy over whether *E. minor* is present in Scotland as found by S. Smith and possibly elsewhere such as Studland Bay, Dorset. Van Urk (1964) shows the need to distinguish it from *E. siliqua*. The validity of a separate species *E. phaxoides* needs to be established too.

Key to the British Isles species of *Ensis* (after Van Urk)

- 1a. Anterior end of shell rounded. Shells up to about 10 cm at most 2
- 1b. Anterior end of shell truncated 3
- 2a. Edges parallel. Shell tapering slightly or not at all posteriorly. Posterior adductor scar at a distance equal to 1.5 to 2 times its length from pallial sinus *E. ensis*
- 2b. Ventral edge more strongly curved than the dorsal edge. Shell tapering markedly posteriorly. Posterior adductor scar at a distance approximately equal to its length or (often) less, from pallial sinus..... *E. phaxoides*
- 3a. Anterior adductor scar of about same length as ligament (not more than 5 mm longer, except in young specimens). Shell distinctly curved. Length/height ratio 6:1 *E. americanus*
- 3b. Anterior adductor scar 1.3 to 1.4 times as long as ligament. Length/height ratio 8:1 4
- 4a. Anterior adductor scar truncated posteriorly..... *E. arcuatus*
- 4b. Anterior adductor scar rounded posteriorly 5
- 5a. Anterior pallial scar parallel and very close to anterior edge (half or less than half the distance between ventral pallial scar and ventral edge). Anterior adductor scar not broadened much posteriorly *E. minor*
- 5b. Anterior pallial scar more distant from anterior edge. Anterior adductor scar broadening posteriorly *E. siliqua*

This key was adapted from that given by Van Urk (1964).

The genus *Ensis* is placed in the family Cultellinae which is included in the superfamily Pharidae by von Cosel (1986). The larger grouping for razor shells is the Solenacea. The genus is a rapid burying bivalve and can be distinguished from *Solen marginatus* by having two vertical and two horizontal teeth in its left valve which interlock with one vertical and one horizontal tooth in the right valve. *Solen marginatus* has only one tooth in the left valve and no horizontal teeth. The hinge in *Ensis* is very near the anterior end and there is an external ligament. There are two adductor muscle scars in each valve. The anterior adductor scar

and the posterior adductor scar are both near the dorsal edge. As I previously stated the main differences between the species besides shell dimensions and curvature are found in the muscle scars. In order to distinguish between the six species of *Ensis* found around these islands I have divided them into three pairs of species. Figure 1 uses *E. siliqua* for illustration purposes to present the basic anatomy.

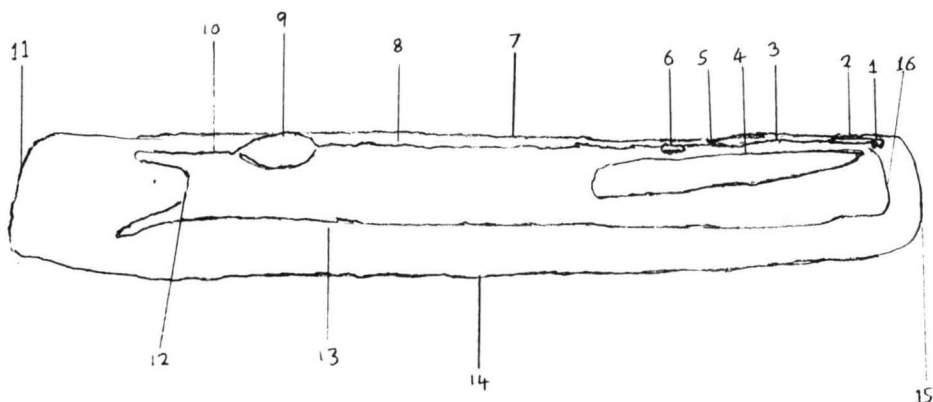


Fig. 1. Typical *Ensis* (*Ensis siliqua*)

1. vertical teeth. 2. horizontal teeth. 3. ligament groove. 4. anterior adductor scar. 5. ligament insertion. 6. anterior foot retractor scar. 7. dorsal edge. 8. dorsal pallial scar. 9. posterior adductor scar. 10. dorsal pallial scar. 11. posterior edge. 12. pallial sinus. 13. ventral pallial scar. 14. ventral edge. 15. anterior edge. 16. anterior pallial scar.

Description of typical *Ensis*: *Ensis* has two vertical teeth and two horizontal teeth in the left valve and one vertical tooth and one horizontal tooth in the right valve. The teeth mesh together and prevent slippage along the length of the animal (anterior-posterior axis). The beak is small and at the anterior end of the shell. Anterior and posterior ends both gape. In the live animal there are four apertures in the mantle. These are an anterior aperture for the foot, two posterior apertures and a fourth aperture is found on the ventral side.



Fig. 2. *Ensis ensis*

Description of *Ensis ensis*: Small slender (up to 100 mm length), ventral and dorsal edges curved and parallel, tapering slightly towards the posterior end. The anterior edge is rounded. The foot is a reddish colour.

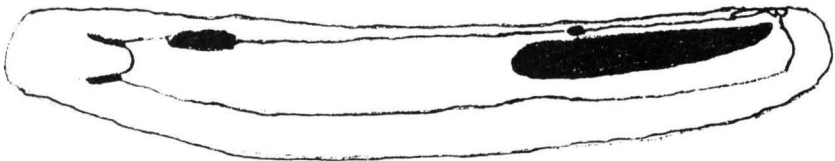


Fig. 3. *Ensis phaxoides*

Small (up to 100 mm in length), moderately slender to rather broad, slightly to moderately curved, ventral edge more strongly curved than the dorsal edge, the ventral edge approaches the dorsal producing a most pronounced taper. Anterior end is rounded.

	<i>Ensis phaxoides</i>	<i>Ensis ensis</i>
1. Length: breadth ratio	rather broad	very slender
2. Edges	ventral edge more strongly curved	ventral and dorsal edges curved and parallel
3. Taper	marked	slight
4. Posterior adductor scar	at about its length or less from own pallial sinus	at about one and a half times its own length from pallial sinus
5. Foot retractor (anterior)	often immediately posterior to the ligament insertion	posterior to the ligament insertion

An explanation is needed before examining the next two species. One distinction between *E. minor* and *E. siliqua* is the anterior pallial scar is much closer to the anterior end than the ventral pallial scar is to the ventral edge in *E. minor* (Van Urk, 1964). This is shown in figure 4. The distance *a* was measured from a point halfway along the anterior pallial scar (see figure 4) to the anterior edge. The distance *b* was measured from the ventral pallial scar opposite the end of the horizontal teeth to the ventral edge. The ratio *b:a* was then calculated for each shell.

From measurements on shells from the Firth of Forth I found that where the ratio *b:a* was greater than 1.5, the other characteristic *E. minor* features occurred in over ninety per cent of cases.

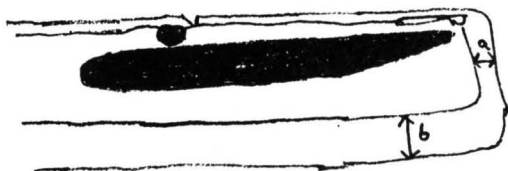


Fig. 4 The anterior end of *Ensis minor* or *Ensis siliqua*

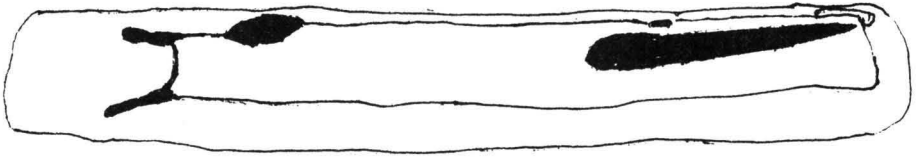


Fig 5 *Ensis siliqua*

Description of *E. siliqua*: Elongate shell up to 215 mm in length. Straight dorsally and ventrally. Anterior pallial scar often slightly nearer to the anterior edge than ventral pallial scar is to the ventral edge ($b:a$ 0.8 to 1.3) in the anterior region of the shell. Anterior adductor scar broadens posteriorly. Posterior gape oval.

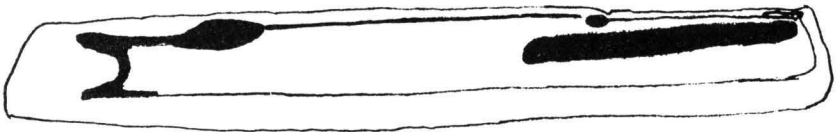


Fig 6 *Ensis minor*

Description of *E. minor*: Elongate shell up to 170 mm in length. Straight dorsally and ventrally. Anterior pallial scar parallel to and much closer to anterior edge than ventral pallial scar is to ventral edge ($b:a$ 1.5 to 2.2) in the anterior region of the shell. Posterior gape compressed. Anterior adductor scar not much broadened posteriorly.

	<i>Ensis siliqua</i>	<i>Ensis minor</i>
1. Anterior pallial scar	a) diverging from anterior end b) close to anterior end $b:a$ 0.8 to 1.3	parallel to anterior end closer to anterior end $b:a$ 1.5 to 2
2. Anterior adductor scar	broadened posteriorly	not much broadened posteriorly
3. Posterior adductor scar	at less than its own length from pallial sinus	at own length or more from pallial sinus
4. Posterior gape	oval	compressed

Van Urk (1964) says that in *E. minor* the fourth aperture is absent or joined to the pedal aperture. This may be incorrect as when specimens are extracted from their burrows the pallial join is often ruptured (Atkins, 1937). The fourth aperture is characteristic of many Cultellinae and is found in *E. americanus* so it is likely to be found in all *Ensis* species.



Fig. 7 *Ensis arcuatus*

Description of *E. arcuatus*: Straight or slightly curved dorsal edge, curved ventral edge. Truncated anterior and posterior edges. Anterior adductor scar one and one third times length of ligament. Length to breadth ratio 8:1. Foot retractor scar posterior to ligament insertion. Posterior adductor scar at about its own length from pallial sinus. Pallial sinus U-shaped, not pointing to posterior adductor scar. Colour fleshy pink with brown periostracum.

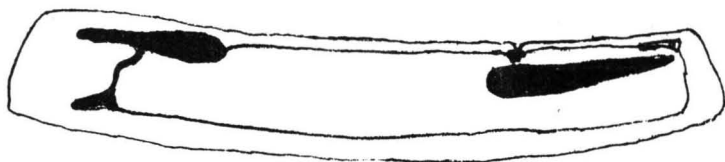


Fig. 8 *Ensis americanus*

Description of *E. americanus*: Length to breadth ratio 6:1. Curved ventral edge, slightly curved dorsal edge. Truncated anterior and posterior edges. Anterior adductor scar as long as ligament or only slightly longer. Foot retractor scar opposite to ligament insertion. Posterior adductor scar very close to the pallial sinus, nearly bordering it. Pallial sinus reversed 'S' shape, pointing to posterior adductor scar. Colour greyish violet with olive green periostracum.

	<i>Ensis arcuatus</i>	<i>Ensis americanus</i>
1. Length: breadth ratio	8:1	6:1
2. Anterior adductor scar	one and one third ligament length	1.1 times length of ligament
3. Foot retractor scar	posterior to ligament insertion	opposite ligament insertion
4. Posterior adductor scar	at its own length or more from pallial sinus	very close or joined to pallial sinus
5. Pallial sinus	'U' shaped	reversed 'S' shaped pointing to posterior adductor scar

I offer this as a tentative key and will welcome reactions. The best time to collect razor shells is at the equinoxes when there is a low spring tide. They are found on gently sloping beaches and on sand banks. *E. americanus* is found in more brackish water like estuaries. On a final note my most fascinating time researching razor shells was on Saundersfoot beach, Pembrokeshire, April 1995. I had read about fishermen catching bait by walking backwards to observe the razor shells spouting water from their key holed shaped burrows and then, by putting salt down the burrow, the shell would rise to the surface after a short wait. To actually watch fishermen doing this was amazing and they were willing for my wife and I to participate. I now realise the significance of the phrase 'Happy as a clam at high tide' (*Brewer's Dictionary of Phrase and Fable*, 1978). The molluscs are only dug from their bed of sand at low tide, so at high tide they are quite safe from molestation. Naturalists from Aristotle and Pliny have been fascinated by razor shells because of their active lifestyles and I too share this wonder.

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Slugs making friends

Last week I was innocently conducting a late-night search of my garden for slugs to further the efforts of a nature recording scheme affectionately known as 'Slug Safari'*. We had been warned to expect unexpected behaviour in slugs, so I was only pleasantly surprised when I saw a slug with a new-found friend.

The slug, under 5 cm in size and probably an *Arion*, was retracted with a small spider sitting on it and covering the slug's rear half. During the ten minutes for which I watched the curious pair, there was no obvious movement from either slug or spider (including the spider's mandibles). I decided to leave them alone and continue with my slug catching.

What were the spider and slug doing? In a telephone discussion, Brian Eversham noted that harvestmen have been known to feed on dead slugs and also wondered if spiders might drink the mucus from live slugs. Perhaps the spider was hunting the small mites which infest slugs or maybe it was about to digest the slug itself?

Does anyone have an explanation for this intriguing pair of friends?

Craig Uttridge

Everton, S. Yorks

*See the article 'Slug Safari' by Chris du Feu of Queen Elizabeth's High School, Gainsborough, on page 21.

Collectors in East Africa No. 27: Åke Holm (1909-1989)

B. Verdcourt

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Åke Holm, a professional biologist and taxonomist and one of the most celebrated and respected experts on spiders, was born in Norrtälje on 3 February 1909, the son of a postmaster, Karl Holm, and his wife Sigrid (née Kindström). He was intimately connected with Uppsala where, over a century and a half before, Linnaeus had invented the binomial system of nomenclature. He obtained his Licentiate of Philosophy at Uppsala University in 1936 and a PhD in Zoology in 1940, becoming a lecturer there in the same year. From 1947 to his retirement in 1975 he was curator at the Zoological Museum of the University and, since he was almost alone, his knowledge of zoology became extensive. His interest was, however, focused on the Arachnida and by 1960 he was an international authority. Undoubtedly he was the most important worker on spiders that Sweden has ever produced; his interest was not purely taxonomic, in fact his doctoral thesis was partly devoted to the embryology of spiders and he remained deeply interested in this topic. He used time lapse photography for studies on the development of eggs of various spiders and microdissection methods for experimental embryology. His main taxonomic interest was in the subfamily of Linyphiidae-Erigoninae – very small spiders of great taxonomic difficulty. His papers were illustrated by his own fine drawings.

He worked on the spider fauna of the Torneträsk area in the northern part of Norrbotten near the Norwegian border east of Narvik and other parts of the Swedish high mountain region. In 1954 he visited Spitzbergen and W. Greenland in 1962. Much earlier he had named up or revised collections from the arctic regions, some made in the last century, and had become the foremost specialist on the arctic spider fauna.

In 1937-38 he made his first expedition to East Africa and

concentrated on the spiders of Mt Elgon. He visited many other mountains when he was leader of the 1948 Swedish East Africa Expedition. The Swedes have had a long and highly successful record of expeditions to the mountains of Africa but rarely have such expeditions resulted in a more impressive array of publications both zoological and botanical. He returned to Africa many times and described a large number of new spiders from his collections. There is no doubt but that he enjoyed travelling and later he visited Ceylon (1974), Thailand (1979) and Malaysia (1981, 1984 and 1987) where he investigated a genus of primitive spiders. He was in fact planning to return there at the time of his death.

Since his searches for spiders were conducted in leaf litter and other microhabitats, he naturally encountered many other invertebrates. He made a large collection of snails in East Africa which I named up as well as I could. Unfortunately, the fluid used for preserving spiders is highly unsuitable for preserving molluscan shells and much of the collection was not in good condition. To describe new species of shelled molluscs one needs both the shell and the animal or it can be done without the animal; it cannot be done, however, without the shell. He usually put all his finds, whether empty or not, into the fluid. It would have been so much more useful if the dead shells had been kept dry, but it must be remembered that collecting snails was a very secondary consideration from his main task. Nevertheless Prof. Adams and I described ten new species from Holm's collection and a great deal of geographical distribution data was added for known species.

He continued to work after his retirement and at the time of his death was engaged in a revision of *Callitrichia*. Holm was not a narrow specialist but his interests extended to insects and plants. A caring man with a gentle humour he was much revered by his students for his help and inspiration.

I am very grateful to my friend Dr Inga Hedberg (whose husband Olov was botanist with the 1948 expedition) for searching out obituaries and translating them for me.

List of molluscs described from material collected by Åke Holm in East Africa

- Gulella (Molarella) aekei* Verdc. (1985). Kenya, Mathews Range, Warges, *Holm* 335* (Stockholm, holotype). Not separable from *Gulella copiosa* (Preston).
- Gulella (Molarella) aversostriata* Verdc. (1985). Kenya, Mt Elgon, Kaptega R., *Holm* 383 (Stockholm, holotype). Same.
- Gulella (Paucidentina) bujukui* Adam (1981). Uganda, Bujuku Valley, towards Mt Speke, 4000-4100 m, *Holm* 86 (Stockholm, holotype). Same.
- Gulella dolichos* Verdc. (1985). Kenya, Mt Marsabit, Lake Paradise, *Holm* 152 (Stockholm, holotype). Same.
- Gulella holmi* Adam (1981). Uganda, Mt Elgon, 2160 m. *Holm* 46 (Stockholm, holotype); Mt Elgon, east side, N. of Suam R., 2320 m, *Holm* 90 (Stockholm, paratype); same locality but 2350 m, *Holm* 93* (Brussels, paratype); Mt Elgon, east side, 2400 m., *Holm* 122 (Stockholm, paratype). Same.
- Gulella (Silvigulella) lacus-paradisiaci* Verdc. (1985). Kenya, Mt Marsabit, Lake Paradise, *Holm* 152 (Stockholm, holotype). Same.
- Gulella ngorongoroensis* Verdc. (1985). Tanzania, Ngorongoro Crater rim, *Holm* 223 & 224 (Stockholm, holotype and paratype). Same.
- Gulella shoaensis* Verdc. (1985). Ethiopia, Shoa, 90 km W. of Addis Ababa, *Holm* 162 (Stockholm, holotype). Same.
- Gulella* Pfr. subgenus *Sphincterocochlion* Verdc. (1985).
- Gulella (Sphincterocochlion) sphincterocochlion* Verdc. (1985). Uganda, Ruwenzori, Bujuku Valley, Kyanasabu Camp, *Holm* 28 (Stockholm, holotype). Same.
- Ptychotrema tshibindanum septentrionale* Verdc. (1985). Ethiopia, Shoa, 90 km W. of Addis Ababa, *Holm* 162 (Stockholm, holotype). Same.

*Holm numbers actually refer to 'lots' and can cover from one to many species; also some appear to have been used twice, for example I have seen *Holm* 93 from the Cherangani Hills in Kenya.

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- Verdcourt, B., 1986. Vertiginidae and Valloniidae from Åke Holm's and Åke Anderson's East African Collections. *Conch. Newsl.* 99: 397-403.
- Verdcourt, B., 1987. A note on *Gulella excrucata* Connolly (Streptaxidae). *Conch. Newsl.* 103: 48-51.

□

The carrier shells – Xenophoridae

Fred Pinn

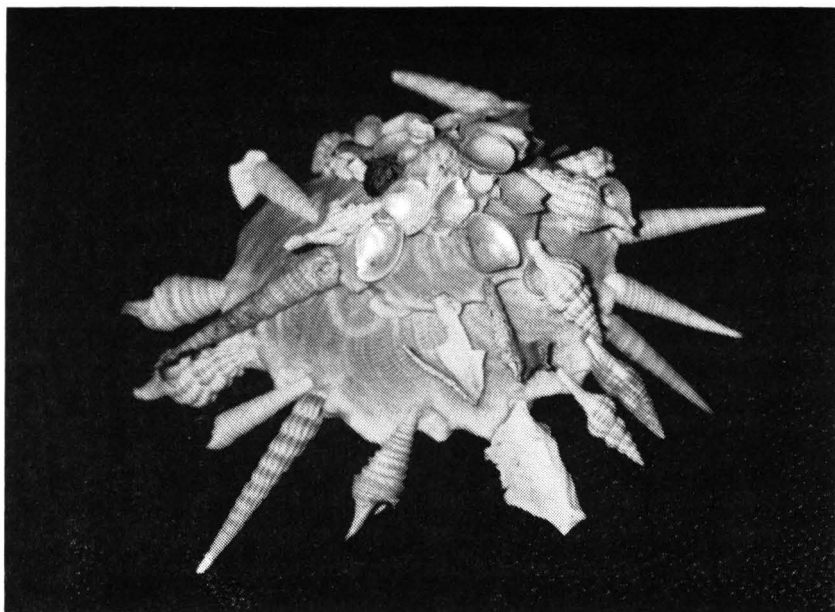
[REDACTED], London [REDACTED]

The carrier shells belong to that small group of mollusca which are considered 'strange beasts' that astonish and puzzle at the same time. They also create disunity and contradictions among researchers, as will be seen below. The Greek name *xenophora* (from *xenos* = stranger and *phoros* = carrier) indicates their peculiar habit of cementing dead shells and other objects to their own shells. Indeed, they are among the most remarkable of all gastropods, because they are able 'deliberately' (as it would appear to the observer) to camouflage themselves; and 'deliberate' seems to imply a process of intelligent thinking as different from 'instinctive' activity.

Most species, with a few exceptions, live at moderate to considerable depths down to 300–400 meters on sandy bottoms. They are all restricted to warm waters such as the Indo-Pacific region, the Mediterranean, the coast of West Africa, Australia and New Zealand.

The 'deliberate' act of camouflaging itself and the choice of 'decoration' is determined by the environment of *Xenophora* at the bottom of the sea. Roughly speaking, the family has been divided into two groups: the 'conchologists' and the 'mineralogists' (also called 'geologists'). Some do not seem to be particular at all and take what is going: whole shells, broken shells, pebbles, and bits of coral, though whether these and barnacles are picked up or whether they settle of their own accord is debatable.

The process of attaching debris begins as soon as the first whorl has been formed. A *Xenophora corrugata* with a diameter of 2 cm can already be loaded with 3 large grains of sand, 9 small pebbles, 1 small sun dial and 1 bivalve, both properly attached, and 2 barnacles on top of the shell but worked in with the pebbles, and it may already have lost 2 other shells – the whole looks from all angles just like a small pile of rubbish.



Xenophora spp. collecting mainly gastropods and bivalves

The attachment takes place at the edge of the shell, so that as it grows it incorporates whatever has been attached as part of the shell. This can clearly be observed, for instance, in places where a pebble has been broken off. As the whorls become larger and broader so the objects carefully chosen also increase in size; a *Xenophora* with a diameter of 6.5 cm may thus be enlarged by 4.5 cm and extend to 11 cm. A detailed description of how the foreign bodies are attached by *Xenophora* to its shell is given by C.M. Yonge and worth quoting in full:

This is an account of *Xenophora conchyliophora*, a shallow water species which was observed in an aquarium. In this Florida carrier shell, the process of attaching foreign objects to the shell involves their manipulation by both the head and the foot. Continuing in the words of the observer, Paul Shank, 'After rubble is finally jockeyed into a suitable position the job is still not finished. The *Xenophora* then carefully cleans all the area coming in contact with the mantle to ensure a tight joint during the process of cementing it fast. Gaps are checked between the mantle and rubble and filled in by sticking pieces of sand and tiny pieces of debris to the mantle edge by cleaning them and placing them with the proboscis, one piece at a time. Occasionally, it sticks its head and proboscis under rubble for support and very gently rocks the shell to and fro, evidently checking rubble for security of attachment. The means of attachment is a secretion produced by a pedal gland. With the larger pieces of rubble the mollusc remains stationary for over ten hours to assure a tight bond before resuming its food hunting.'

But *Xenophora* has another surprise in store: it not only selects the right size to suit the size of its shell, it also cements them on in a methodical way, namely, with the inside of the bivalves up to show their emptiness. Similarly gastropods are attached with their aperture visibly open from above though not quite as systematically as the bivalves. The message in each case is quite obvious: 'Don't bother to come any nearer, there is nothing edible here.'

Although all this is clearly an astonishing and successful attempt of *Xenophora* to disguise itself as a rubbish dump of

broken and dead shells and other debris, there are naturalists who reject the camouflage idea for one reason. Most species of *Xenophora* live at such great depths that no light penetrates. Since they cannot be seen in the dark they do not need camouflage. There are, however, other creatures down there which seem to be able to see all right and even produce their own lighting systems, so we do not really know how much can be seen and by which species. The camouflage theory remains convincing and must be accepted until the contrary has been proven.

Seeing a *Xenophora* standing on a flat surface, one is reminded of a house on stilts, and that goes for the 'shell collectors' as well as the 'pebble collectors.' In fact, a well-constructed *Xenophora pallidula* looks like a safety cage such as deep sea divers use against sharks. It is also reminiscent of the habit of *Murex pecten* (the Venus comb) which moves about openly, feeding under the protection of its long and downward turned spines which form a safety cage. Since *Xenophora* lives on a sea bottom strewn with shells and pebbles, it can easily find a firm substrate from which the shell or pebble attachments raise it by a $1\frac{1}{2}$ to 2 cm. Added to this is the space allowed by the concave base of the shell enabling the animal sufficient room to explore the area within the range of its cage. It is this cage protection which allows *Xenophora* to spend long periods in the same spot until it has thoroughly emptied it of available food particles.

The idea of *Xenophora* harbouring feelings of inferiority and therefore trying to improve its outward appearance by 'decorating' itself with shells and stones can be ignored as Tucker Abbot said, quoting B.R. Bales' observation: 'It is generally admitted that the camouflage of *Xenophora* is for protection rather than ornamentation, for it would be inconceivable that a female *Xenophora* would call over the back fence to her girlfriend with "Come and see the perfect dream of a shell I picked up today and tell me if I have it on straight."'

The same *Xenophora conchlyiophora* revealed under close observation yet another rare characteristic. Having foraged with its proboscis for microscopic plant food, or in deep waters most likely for organic debris, and collected it by means of the protruding

radula and digested it, *Xenophora* 'appears to have the unusual habit of burying its faeces: the foot makes the hole and the proboscis later covers it over. It has been suggested that this is a device to prevent the animal being detected by smell. It could equally be a means of keeping the area clean during the apparently long periods that these animals remain stationary.' (Yonge)

It has been said that *Xenophora* attaches bivalves with their concave side down to enable the animal to move smoothly across the ocean floor. In fact, it need not worry about impediments because it does not crawl at all but advances by leaps and bounds: *Xenophora* has a carneus operculum of an irregular ovate shape which it uses to seal its aperture but also inserts into the sand to act as anchor. The animal then moves 'by the same sudden convulsive process that occurs in *Aporrhais* and strombids. Despite the appreciable weight of all the added material, the shell is lifted clear of the bottom by the action of the powerful pillar-like foot' and pulled forward, thus lurching to a new feeding area.

There are only three genera of carrier shells: *Xenophora*, *Tugurium* (syn. *Onustus*) and *Stellaria* with 20-30 species - nobody seems to know the exact number. Woodward in 1890 knew of only nine. Of these only *Xenophora* covers itself with 'foreigners' from the first to the last whorl. *Tugurium* and *Stellaria*, however, limit their architectural activities to the two top whorls. It is anybody's guess why they give up after that. If the theory of strengthening the shell is at all valid, these two genera - considering their delicate shells, particularly *Tugurium* - would need strengthening more than *Xenophora*.

Just as the malacologists are in doubt as to the number of species, so they also cannot make up their minds regarding the superfamily to which it belongs. It is at present placed in the superfamily Crepidulacea, but many still put it in the Strombacea (Tucker Abbot), and even in Calyptraeacea (Lindner).

The place in a superfamily, the number of species, the purpose of 'decoration', and the depth of the habitat may be confusing, but occasionally the very existence of shells or pebbles on *Xenophora* has been misinterpreted. Unforgettable is the story of the young,

enthusiastic but rather uninformed shell collector who was given a carrier shell covered in 'debris'. He immediately decided to clean the shell and with his pocket knife removed every particle to the last grain of sand and then proudly showed the naked specimen to the donor! Similarly painful was the discovery, this time by a well-informed collector, of a perfect specimen of a juvenile *Conus bengalensis* collected and cemented to a *Xenophora konoi*. To break or not to break ... He didn't.

The carrier shells are known to be the first shell collectors in the world. They started more than 100 million years ago and have never stopped collecting to this day .

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Bulletin of the Russian Far East Malacological Society

Members with an interest in Northern Pacific Molluscs may be interested in a new journal, the *Bulletin of the Russian Far East Malacological Society*, volume one of which was published in April 1997.

The journal is bilingual in nature, though mostly in Russian – four articles in the first issue appear in Russian with English summary, and two articles in English with Russian summary. The standard of translation, however, appears to be quite variable and in places questionable. Perhaps the most useful article in this issue is an annotated list covering 67 species of fresh and brackish water molluscs from the Southern Kurile Islands – this article does in appear in English.

The *Bulletin* is printed on poor quality paper and financial difficulties prevented the first issue from including any plates. The only illustrations are line drawings of two newly-described species of the genus *Conventus*. However, the publishers hope to be able to include plates in future issues.

Anyone interested in this new journal should contact: The Russian Far East Malacological Society, c/o Alexander I. Kafanov, Institute of Marine Biology, 17 Palchevsky Str., Vladivostok, 640041, Russia.

Subscriptions to the Society are quoted at US\$5 per quarter year (\$2.50 students, post-graduates and amateurs), but the frequency of publication is not given.

Kevin Brown

Isleworth

Slug Safari

Chris du Feu

Queen Elizabeth's High School, Gainsborough DN21 2ST

For some six years, Queen Elizabeth's High School has operated what is now called its Sixth Form Complementary Studies programme. The aim of this has been to broaden the education of Sixth Form students by providing courses which include material different from that which they encounter as part of their academic A Level courses. Students opt for whichever courses best suit their needs. The courses may be half, one, two or three terms in length. These courses are based partly on practical needs (for example, First Aid, Information Technology) and partly on staff interests. The present choice includes Young Enterprise, Japanese, Car Maintenance, Green Issues, Food & Hygiene, Philosophy, Community Service and Slug Safari.

Slug Safari was born out of a rooming clash and an inspirational chance observation of a Tree Slug (*Limax marginatus*) in an unexpected habitat, but it has now been established as one of our regular courses, offered every other half term. The prime initial aim of Slug Safari was merely to record the current distribution of slugs in the catchment area of the school. However, there are many other points that students are made aware of during their 'safari'. Apart from keen conservationists, few people seem to be aware of the existence of species distribution recording; still fewer are aware of the work which organisations must do in order to produce the dot maps, and perhaps none realise how much the mapping schemes rely on the amateur. We record habitats and map references where we find the slugs, and spend a good deal of time poring over the slug key (Eversham, 1988) to identify species. All these operations broaden the education of our students and increase their awareness of the natural world about them and of our impact on it.

On the face of it, slugs are a pretty poor choice for a subject of

study. They have a bad press, they are stickily slimy, many are pests, and people can find them revolting. Even amongst conchologists, particular interest in slugs seems to be uncommon! However, all these things can make slug recording more motivating because so many slugs are simply under-recorded. This makes it fairly easy to 'add a dot' to the national map. By chance, the school is in a national slug-recording black spot which makes new records even easier to find. Undoubtedly students (and adults) do find new records motivating. Such new records would be much harder to find with species groups which enjoy relatively more interest – such as birds. Some groups are difficult to observe – mammals for instance are largely nocturnal, hard to trap and bring into school for identification. No problem with slugs! Other groups are seasonal. Butterflies, for instance, would prevent winter operations; slugs can be found throughout the year.

Equipment needed for slug recording is minimal – a 10x hand lens is generally adequate – and no expensive moth traps or mist nets needed. Legislation does not cover any slug species (perhaps it should!). Slugs are widespread and often abundant. They are very common in gardens and it is easy to find half a dozen species within a matter of minutes. Slugs are also excellent for coming to grips with problems of species identification. There are around 30 species in Britain, not too many to confuse the beginner but enough to provide a challenge. Although the majority of individuals are easy to identify, some can be very difficult indeed and demand all the critical skills that students can muster.

Initially I had expected that Slug Safari might have a run of a year or two, then wither because all the local slugs had been found. Not so! The maps show the numbers of species recorded in the sixteen 10 km squares centred on the school. There is clearly much more scope even for basic recording. However, perhaps surprisingly, slug distributions are changing fairly fast and new records (or absences) are likely to occur annually. Our first particularly interesting slug was *Deroceras caruanae*. Its first British record was in 1931. Before the publication of the *Atlas* (Kerney, 1976) it was commonly recorded in the south and western half of the country, but only sporadically elsewhere. Since the

1970s it has spread across most, if not all, of the country and can be as numerous as the common *Deroceras reticulatum* in some places. Students are rather impressed by the way this creature has marched across the country!

Even more impressive was our recent find of the Spanish Slug, *Limax valentianus*. This was only its 16th recorded 10 km square in the country, and none have been found further north. More interesting was that a student found it in a place which we had searched many times before. This last find made it to the local press. Paradoxically, in spite of the low public profile that slugs generally have, an unusual slug discovery has curiosity value and is of interest to the local press and also publicity to the school.

Lesson plans? The following approach has worked well in a half-term course. The first session starts by giving students the background to distribution mapping and ensuring they can record habitat and map references reliably. Next comes basic slug identification. I always bring some slugs collected from the garden the night before (my garden has never failed to provide at least seven species from three groups). Students first identify the major groups (keeled, semi-keeled and not-keeled – we have yet to find any shelled slugs) and once this is over it is over to species identification using Brian Eversham's key. A large collection of assorted slugs is useful here. The mere act of sorting them into types is an excellent introduction to identification. The first session finishes with brief instructions about collecting slugs and a request that they collect some from their gardens or elsewhere for the next session.

Thereafter, learning is hands-on. At first, I may have to identify some of the trickier specimens or point out diagnostic features. Some slugs are very difficult indeed and it has been of immense benefit to have been able to call upon various experts in these cases.

It is important that records be incorporated into the national database and, for the students, even more important that they know their records are being used. All our records are stored in a

database. At the end of each year, records are submitted to the local and national mollusc recorders. I am very grateful for the full and encouraging acknowledgement and feedback we receive from these people. It really does make a difference to the students and to the perception of Slug Safari by the school. The course has certainly permeated the consciousness of the rest of the staff. Colleagues, kneeling on the cricket field to pick up some broken glass before a fixture, were hailed from afar with shouts of 'Slug Safari?'.

What of the future? There now seems no shortage of opportunities for Slug Safari beyond mere distribution mapping. It would be nice to build a good photographic archive to aid identification. The progress of our Spanish Slug colony must be recorded. Relative abundance of different slugs according to habitat would be interesting to study. The annual cycle of slug abundance is not well recorded. Is the apparent lack of species in the north and west of our area an artefact of recording effort? Indeed, almost any field of slug study is uncharted territory – the opportunities await.

Acknowledgements

I am most grateful to Stella Davies, Brian Eversham, Michael Kerney and John Redshaw for their continued support, advice, encouragement and help – all well beyond the call of duty – and to the curriculum management team at Queen Elizabeth's High School for allowing Slug Safari on to our timetable.

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Appendix

Notes on the observed status of slugs in the Lincolnshire/ Nottinghamshire borders area

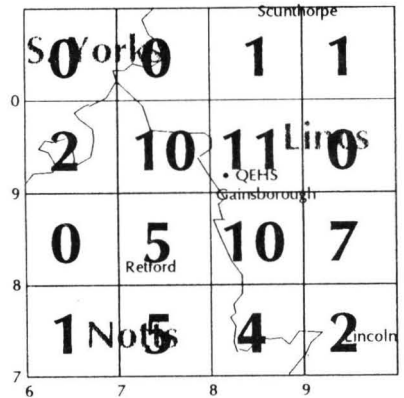
Species	Squares recorded			Notes
	1976 <i>Atlas</i>	Slug <i>Safari</i>	Total	
<i>Arion ater</i>	13	7	13	Only a dearth of pupils in SK67, 68 and 69 prevents 'completion' of the map.
<i>Arion subfuscus</i>	5	6	9	Seems to be widespread though not abundant. Certainly under-recorded.
<i>Arion fasciatus</i>	10	7	11	Probably under-recorded. Until recently confused with the next two species.
<i>Arion circumscriptus</i>	3	4	5	—
<i>Arion silvaticus</i>	2	2	4	Less common in gardens than the former two species. More searching is needed in other habitats.
<i>Arion hortensis</i>	0	5	5	Not separated from <i>A. distinctus</i> in the 1976 <i>Atlas</i> .
<i>Arion distinctus</i>	0	10	10	Much commoner than <i>A. hortensis</i> in this area.
<i>Arion intermedius</i>	13	3	13	We have only rarely found this small slug. All records are from woodland rather than gardens.
<i>Milax gagates</i>	2	3	5	We have not found any of these until very recently. It is certainly less common than the other keeled slugs.
<i>Tandonia sowerbyi</i>	5	6	10	—

<i>Tandonia budapestensis</i>	4	7	8	Abundant in many places and probably seriously under-recorded.
<i>Boetgerilla pallens</i>	0	2	2	Two records only – firsts for both Lincolnshire and Nottinghamshire. Even though it is spreading, it is rarely abundant.
<i>Limax maximus</i>	10	6	12	As for <i>Arion ater</i> , more effort needed. Not recorded in only 4 squares.
<i>Limax flavus</i>	3	4	7	Probably much more common than it appears. It seems to be highly nocturnal and often roosts in inaccessible places by day.
<i>Limax maculatus</i>	0	2	2	The 'Irish Yellow Slug' has been mistaken in some places for <i>L. flavus</i> . These records are the first for Nottinghamshire and Lincolnshire.
<i>Limax marginatus</i>	0	3	3	Thinly spread in the relatively dry East Midlands but where it does occur (large, old, damp woodlands) it can be abundant.
<i>Limax valentianus</i>	0	2	2	The Spanish Slug. First records for Nottinghamshire and Lincolnshire.
<i>Deroceras laeve</i>	7	6	8	Not very common in gardens, small and probably overlooked.
<i>Deroceras caruanae</i>	0	7	7	Very common in many places. The gaps are probably recent under-recording.
<i>Deroceras reticulatum</i>	15	8	15	The commonest slug, but one which has still eluded us in SK67.
<i>Testacella haliotidea</i>	2	0	2	None recorded by Slug Safari – not for want of trying! <i>Atlas</i> records are from before 1950.

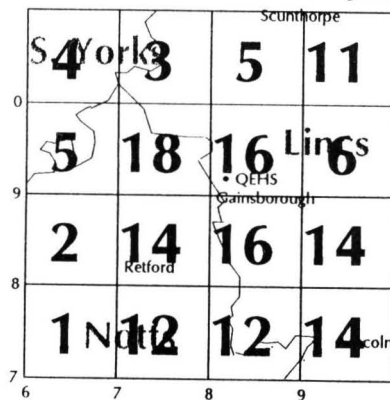
Numbers of Slug Species recorded per 10km square
1976 Atlas of non-marine mollusca.



Numbers of Slug Species recorded per 10km square
Additional records, Slug Safari.



Numbers of Slug Species recorded per 10km square
Combined records - 1976 Atlas & Slug Safari.



Mollusc food: the results of a literature search

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In the process of analysing the results of some research into snails in coppiced woodland, I felt a desire to know more about the food preferences of the species I had found. Not being able to find a simple answer, I decided to carry out my own literature search and collate the results which are presented in the following table.

It is by no means a complete survey, nor does it cover all species, but might be useful as a basis for further work. Most of the entries I have been unable to verify myself. On the odd occasion where I have observed a species feeding (for example, I observed one *Limax tenellus* devour one quarter of another *L. tenellus* in the space of ten minutes) then I have put the number (1) in the comments column. A number (2) indicates that the results came from a scientific study, usually either faeces analysis or laboratory study. The rest are from odd observations I have come across. The comments column tries to offer a little more specific data where known.

The lack of crosses against some species means that I have found no reference to the type of food they eat. The general indication seems to be that most small litter-dwelling species probably eat fungal hyphae, algae, litter, bacteria and powdery lichens. However, this is too vague to put on the table. If anyone can offer any additions, or knows of relevant papers which I have missed, I should be very pleased to hear from them. I have not included freshwater snails, but details of these can be found in the paper by Reavell (1980).

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(Table 1. Food preferences of molluscs, overleaf)

Table 1. Food preferences of molluscs

Species	Live higher plant	Dead Plant	Cryptogams(rarely)	Leaf litter	Fungus(commonly)	Lichen	Live Animal	Dead animal	Live Snails/eggs	Algae	Protozoa/bacteria	Comments
<i>Pomatias elegans</i>												
<i>Acicula fusca</i>												
<i>Carychium tridentatum</i>												
<i>Cochlicopa lubrica</i>		+			+							
<i>Columella aspera</i>												
<i>Vallonia excentrica</i>												
<i>Acanthinula aculeata</i>												
<i>Ena obscura</i>						+						
<i>Punctum pygmaeum</i>												
<i>Discus rotundatus</i>	+	+		+	+	+	?	+		+	+	2
<i>Vitrina pellucida</i>								+	+			(snail eggs)
<i>Vitrea crystallina</i>							+					
<i>Vitrea contracta</i>							+					
<i>Nesovitrea hammonis</i>		+			+			+				
<i>Aegopinella pura</i>												
<i>Aegopinella nitidula</i>	+	+	+				+		+			80%plant 10%snail, arthropod
<i>Oxychilus draparnaudi</i>		+	+			+	+		+			(Snail eggs)
<i>Oxychilus cellarius</i> /sp		+	+	+	+	+	+	+	+			2(sn. eggs, small worms, snails)
<i>Oxychilus alliarius</i>		+	+	+	+	+	+	+	+			2(Snail eggs)

Species	Live higher plant	Dead Plant	Cryptogams(rarely)	Leaf litter	Fungus(commonly)	Lichen	Live Animal	Dead animal	Live Snails/eggs	Algae	Protozoa/bacteria	Comments
<i>Oxychilus helveticus</i>		+		+					+			
<i>Euconulus fulvus</i>												
<i>Cecilioides acicula</i>												
<i>Cochlodina laminata</i>		+			+	+		+			+	2
<i>Macrogastra rolphii</i>												
<i>Clausilia bidentata</i>		+			+	+					+	2
<i>Monacha cantiana</i>	+				+							2(esp. nettles)
<i>Monacha cartusiana</i>		+										2(dead grass)
<i>Trichia hispida</i>												
<i>Trichia striolata</i>	+	+		+	+			+				2
<i>Cepaea nemoralis</i>	+	+	+			+						(senescent grasses)
<i>Cepaea hortensis/sp</i>	+											
<i>Helix aspersa</i>	+	+				+				?		(Garden damage)
<i>Arianta arbustorum</i>	+	+	+		+							2(netles, dog's mercury)
<i>Helicigona lapicida</i>	+	+				+						(Sedum acre, mostly lichen)
<i>Helix pomatia</i>	+											
<i>Balea perversa</i>						+						
<i>Pyramidula rupestris</i>						+						
<i>Helicodonta obvoluta</i>						+						(not higher plants)

Species	Live higher plant	Dead Plant	Cryptogams(rarely)	Leaf litter	Fungus(commonly)	Lichen	Live Animal	Dead animal	Live Snails/eggs	Algae	Protozoa/bacteria	Comments
Arion subfuscus	+				+	+		+				
Arion ater	+	+		+				+				(Garden damage)
Arion intermedius					+	+						
Arion hortensis	+											(Crop pest)
Arion fasciatus	+											(crop pest)
Limax tenellus					+	+	+					1(other slugs)
Limax marginatus					+	+				+		
Limax maximus						+			+			(slugs, voracious carnivore)
Limax cinereoniger					+	+						
Geomalacus maculosus						+			+	+		(other slugs)
Deroceras agrestis	+					+						(crop pest)
Testacella									+			(worms, slugs, centipedes)
Deroceras reticulatum	+											(crop pest)
Milax budapestensis	+											(crop pest)

Conchological Society of Great Britain and Ireland

MINUTES

**1078th (Ordinary) meeting held on 11 October 1997 in the
Demonstration Room of the Natural History Museum
starting at 2.30 p.m.**

Announcement of death: The death of Mr Roger Tallack, member since 1989, was announced.

In the chair: Mr B. Eversham with 41 members and friends present.

Apologies for absence: Mrs McMillan, Dr Verdcourt, Mr Crowley, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Mr Negus, Miss Sawyer, Dr Preece, Dr Chatfield, Mr Dance.

Minutes of the last meeting (of 3 May 1997): Read and accepted.

Matters arising: None.

Nomination and election of new members: Seven full members and three student members were nominated and elected:

Full:

Mrs L.M. Cresswell, [REDACTED], Tarves,
Aberdeenshire [REDACTED]

Dr R.M. Hampson, [REDACTED], Oldham, Greater
Manchester [REDACTED]

Dr C.O Hunt, Dept of Geography, Huddersfield University,
Queensgate, Huddersfield HD1 3DH.

Mr L. Press, [REDACTED], Edinburgh, Midlothian
[REDACTED]

Mr D. Rawlingson-Plant, [REDACTED]
Colchester, Essex [REDACTED]

Mr W.G. Champkin, [REDACTED] Kempston, Beds. [REDACTED]

Dr E.J. Sears, [REDACTED] Hitchin, Herts [REDACTED]

Students:

Miss S. Tandy, [REDACTED] Wrexham, [REDACTED]

Miss A. Watson, [REDACTED] St Albans, Herts [REDACTED]

Mr J.F. Corr, [REDACTED], Huddersfield [REDACTED]

Announcements and correspondence:

The next field meeting is Blockley Quarry, Gloucestershire, Leader: David Long. The next indoor meeting is a joint meeting with the Linnean Society, the Malacological Society of London and the Society for the History of Natural History. The meeting is entitled 'Malacological Pioneers: Gentlemen and Players' and is to be held on 22 November at the Linnean Society meeting rooms in Piccadilly.

Lecture of the day:

Speaker: Peter Morden (Natural History Museum, London)

Title of talk: *Land Molluscs of the Azores*

Any other business: None.

Meeting closed at 5.35 p.m.

Chairman

Appendix: Members' exhibits

- | | |
|--------------------------|--|
| P.T. Wimbleton | <i>Ensis americanus</i> (Gould in Binney 1870) from Winchelsea Sands, Sussex and Seeland Island, Denmark.
British Mollusca from Sussex, Hampshire and Dorset including <i>Pseudamnicola confusa</i> (Frauenfeld 1863) and <i>Anisus vorticulus</i> (Troschel 1834). |
| Miss Pat Hill-Cottingham | <i>Segmentina nitida</i> in Somerset.
<i>Physa</i> sp. in Somerset. |
| J.E. Reynolds | 1. Institutional Members' publications and other correspondence
2. 'Snaily Things' by J. Pedley for sale.
3. Books for sale. |
| C. Street | Shetland gastropods. |
| S.M. Davies | Some slugs' eggs. |
| Mike Weideli | Marine Atlas on CD-Rom. |
| Kevin Brown | 1. Book: Okutani, T., Tagawa, M. & Horikawa, H., <i>Bivalves from Continental Shelf and Slope around Japan</i> . |

2. Book: *Gastropods from Continental Shelf and Slope around Japan* (same authors)
 3. Book: T. Habe, *Shells of Japan*.
 4. Japanese marine shells.
 5. Press cuttings.
 6. *Bulletin of the Russian Far East Malacological Society*.
- M. Seddon Molluscan Biodiversity Project in East Africa.
B. Colville Molluscs of the Azores – book and some snails.
D.C. Long Fossil Conacea from French early Eocene.
 Hygromia cinctella from VC33.
R.E. Hill Shell grotto article in *Gardens Illustrated*.
Steve Tracey Early Eocene Turridae from Saint-Gobain
 Forest, near Laon, France.
P. Dansey Vancouver, BC and Vancouver Island shells.



Friday 23 – Sunday 25 October 1998

The Snail Course

Tutor: June Chatfield

Juniper Hall Field Centre

Dorking, Surrey RH5 6DA

Tel. 01306 883849

Price: £102 (residential)

£78 (non-residential)

Diary of Meetings

Conch. Soc. Field Meetings for 1998 are listed separately.

Saturday, 20 June, Sherburn in Elmet: Yorks. Conch. Soc. field meeting. Sherburn ponds. Joint meeting with freshwater biological section of Yorks. Naturalists Union. Meet at lay-by by church, SE 486333 at 11.00. Contact: David Lindley [REDACTED]

Saturday, 5 September, Kettlewell: Yorks. Conch. Soc. field meeting. Kettlewell cron sites. Joint meeting with freshwater biological section of Yorks. Naturalists Union. Meet at car park in Kettlewell, SD 968723 at 11.00. Contact: David Lindley [REDACTED]

Saturday, 3 October, Low Dalby: Yorks. Conch. Soc. field meeting. Calcareous springs in Dalby Forest area. Meet at car park in Low Dalby, SE 856875 at 11.00. Contact: David Lindley [REDACTED]

Saturday, 10 October, London. Conch. Soc. indoor meeting. Martin Willing (West Sussex): Biodiversity Matters – What's been going on? The Natural History Museum at 14.30.

Saturday, 24 October, Leeds: Yorks. Conch. Soc. Annual Meeting and presidential address. Leeds City Museum at 13.00.

Saturday, 7 November, London. Conch. Soc. indoor meeting. Georges Dussart (Canterbury): After Boycott ... The Natural History Museum at 14.30.

Saturday, 21 November, Cardiff: Exploring Tomlin's Legacy. An introduction to the Melville-Tomlin Collection and an opportunity to examine specific groups of interest. National Museum of Wales, Cardiff. All day. Contact Alison Trew [REDACTED]

Saturday, 28 November, Woking: Conch. Soc. Molluscan Workshop. Contact: Judith Nelson [REDACTED]

Saturday, 12 December, London. Conch. Soc. indoor meeting. A review of molluscan survey progress. Chaired by Ian Killeen (Felixstowe). The Natural History Museum at 14.30.

□

Field Meetings 1998

Hon. Programme Secretary:
(Position currently vacant)

Important

*Please remember to inform
the leader if you are attending
a field meeting.*

Friday, 12 June – Sunday, 14 June

Torquay area, Devon

Leader: Rupert Honnor

A marine field meeting based in the Torquay area of Devon, to help survey some empty 'squares' in the DOMMIC Atlas. I recommend the Landranger 202 Torbay & South Dartmoor map.

Friday, 12 June. Meet at Broadsands car park, south of Paignton (grid ref. SX 896973) at 12:00 (low tide 14:30), to work north over sands to Saltern Cove. Followed by Durl Head, Brixham (car park grid ref. SX 941562) at 14.30 to work south towards Sharkham Point.

Saturday, 13 June. Meet at car park near Coleton Fishacre (grid ref. SX 910512) at 12:30, to work Ivy Cove (low tide 15:00). Followed by Hope's Nose, Torquay (road, grid ref. SX 944635) at 15:00.

Sunday, 14 June. Meet at car park in Shaldon (grid ref. SX 937718) at 13:00 to work outer shore (low tide 15:30). Followed by work either inside the River Teign mouth on The Salty (no move required), or at Maidencombe (car park, SX 926684) at 15:30.

Contact the leader for further details. Accommodation plentiful in the area.

Saturday, 4 July

Mottisfont Estate, Hampshire

Leader: Martin Willing (Home: [redacted])

The National Trust property at Mottisfont Abbey comprises over 650ha of land at the confluence of the rivers Test and Dun. This field meeting will focus on the aquatic molluscs of the floodplain drains and the rivers themselves, visiting first the Test and the abandoned water garden area, followed by an afternoon excursion along the Dun. The fauna is largely unknown at present and the recording work will therefore be of great value to the Trust in informing its land management for nature conservation. Bring lunch or use pub.

Meet at 10:30 a.m. in the National Trust car park at Mottisfont Abbey. By train: Dunbridge Station between Salisbury and Romsey. By road: A3057 Romsey to Stockbridge road, with standard National Trust sign at junction with minor road to the Abbey. OS Grid Ref. SU328268 – Landranger map 185: Winchester & Basingstoke.

Saturday, 18 July

Berkshire

Leader: Michael Weideli [REDACTED]

The meeting will be surveying various sites for the West Berkshire Mollusc survey. It is intended to visit a variety of land and freshwater habitats for which there are no records.

Meet at the Chieveley Services on the A34/M4 (Junction 13 – OS Grid Ref. SU481725) at 10:30 a.m. The services are accessible from both directions on the M4, and also from the A34.

Anyone coming by train should contact the leader, to arrange a lift from Newbury station.

Saturday, 8 August – Monday, 10 August

North Pembrokeshire

Leader: Sue Davies ([REDACTED]) *or Fishguard:* [REDACTED]

A joint marine and non-marine field meeting, based around Fishguard, to survey the molluscs in North Pembrokeshire, a relatively poorly known area. Please contact the leader for further details.

Initial meeting place: 9:00 a.m., Saturday at 'Swaythling', Penbank, Fishguard.

Sunday, 6 September – Friday, 11 September

Jersey

Leader: Ian Killeen ([REDACTED]) (k)

The aim of this meeting is to carry out marine recording for the DOMMIC project, although the itinerary is yet to be finalised. Compared with Guernsey and Herm, Jersey's marine mollusc fauna has received much less attention, and this meeting will provide potential for obtaining up-to-date and new information. There is a large tidal range and a diversity of rocky and sandy shores, with the island effectively covered by six of the DOMMIC recording 'squares'.

It is important that all those interested in attending should contact the leader in advance so that they can be put on the mailing list for further information.

Members should make their own arrangements for travel and accommodation. Although Jersey is small, vehicles will be required to travel to sites. Those not wishing to take vehicles should consider car-sharing. The cost of car hire on Jersey is £15-24 per day.

Useful phone numbers:

Jersey Tourist Office: 01534-500700; Condor Ferries: 01305-761551

Sunday, 11 October

Ashted Common and Woods, Surrey

Leader: June Chatfield

An autumnal non-marine field meeting to examine Ashted Common and Woods, near Epsom, Surrey. Details in the September Newsletter.

Saturday, 17 October

North Downs – Box Hill and Colley Hill

Leader: Keith Alexander

Chalk downland molluscs: the Box Hill grasslands are being restored to a quality flower-rich sward under a nature conservation grazing regime. The morning visit will examine how the molluscs have fared after periods of coarsening sward and scrub development. After lunch we will visit Colley Hill where the grasslands have remained in better condition over the same period. A particular emphasis will be to search for any remaining populations of *Helicella itala*. Bring lunch or use local pubs.

Meet at 10:30 a.m. in the National Trust car park off the lower zig-zag road leading up to the hilltop. By train: Box Hill station at West Humble on Waterloo to Dorking line. By road: NT signed off Buford Bridge roundabout on A24 between Leatherhead and Dorking. OS Grid Ref. TQ 176519 – Landranger map 187: Dorking, Reigate and Crawley.

Other events 1998

Saturday, 21 November: 'Exploring Tomlin's Legacy'

An Introduction to the Collections in the National Museum of Wales, Cardiff

Venue: National Museum of Wales, Cardiff.

There is a limit of 16 members to be included on this visit, so places will be allocated on a first come, first served basis. Please contact Alison Trew at the Department of Biodiversity and Systematic Biology, National Museum of Wales, Cathays Park, Cardiff CF1 3NP, Tel. 01222-573244 with your name, daytime telephone number and your priority area of interest. You will be contacted to confirm your place.

Saturday, 28 November: Molluscan Workshop

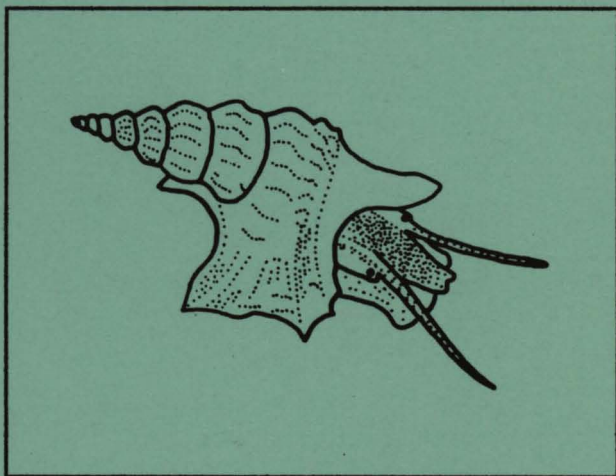
Venue: in the home of Judith Nelson in Woking ☐ An excellent opportunity to meet and discuss those difficult specimens! ☐

The Conchologists' Newsletter

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Prehistoric Shells from Eton

Janet Ridout Sharpe

, Wallingford, Oxon

Two samples of silt containing the shells of freshwater and land snails were received for analysis from the Oxford Archaeological Unit's excavations at Eton in 1997. Both samples came from near the Thames between Dorney and Boveney, where a new international boating lake is to be created for Eton College.

Sample 1 (some hand-picked shells and approximately 30 g dry weight of silt) came from a trench which had revealed a shelly horizon beneath a layer of burnt flints lying in a shallow hollow. The flints were attributed to the Bronze Age and this sample probably dates to the Neolithic/Bronze Age. Sample 2 was silt (approximately 730 g dry weight) recovered from the skull of a horse which was found in a former channel of the Thames and buried when the river changed its course; it is prehistoric, probably Bronze Age/Iron Age.

Both samples were examined with the aid of a hand lens and low power microscope and all the shells were removed, identified and counted. The results are shown in Table 1. Shell numbers represent the minimum number of individuals present; this is usually (but not always) the number of shell apices. The large number of some species, especially *Bithynia tentaculata*, reflects large numbers of tiny juveniles and hence thriving populations. The valves of bivalves may become separated after death and although some of the tiny pea shells (*Pisidium casertanum*) remained intact, most of the bivalve shell counts represent single valves and may be an overestimate as some of these valves may form pairs. The large freshwater mussels (*Anodonta* or *Unio* sp.) are represented only by tiny fragments of nacre or mother-of-pearl.

Thirty-six species were recovered, with 23 species from Sample 1 and 32 species from the larger Sample 2. Eighteen of the species are represented in both samples. The relative proportions of different species within Samples 1 and 2 are represented by percentages of each assemblage.

In both samples, *Bithynia tentaculata* was the most frequent species (29.58% in Sample 1 and 24.55% in Sample 2). This freshwater snail and its less common relative *B. leachii* are gill-breathers which require a permanent water supply; they are typical of rivers and streams. Other freshwater species indicative of running water are *Theodoxus fluviatilis*, *Valvata cristata* and *V. piscinalis*, all of which were relatively frequent in both samples. The freshwater limpet, *Ancylus fluviatilis*, present in Sample 2, requires clean running water.

Most of the bivalves are also indicative of permanent running water; of those listed in Table 1, only *Pisidium casertanum* occurs in both flowing and stagnant water and also occurs in marshes. This was the only bivalve represented in the assemblage from Sample 1.

The planorbid or ramshorn snails are catholic in their habitat preferences and most can be found in still or running water. Most are restricted to permanent bodies of water and live among waterweeds. These species occur in both samples but overall are relatively more frequent in Sample 1 (15.49%) than in Sample 2 (8.82%). *Armiger crista* is represented by the variety *laevigata*, in which the characteristic transverse ridges on the shell are reduced. The lymnaeid or pond snails prefer slow-moving or still water and these species are represented by only 2.10 and 2.39% in Samples 1 and 2, respectively. Some lymnaeid species can live out of water and are associated with marshes, and these include *Lymnaea truncatula*, *L. glabra* and *L. palustris*. Another snail associated with marshes and riverside vegetation is the amber snail *Succinea putris* (1.41 and 1.88% in Samples 1 and 2, respectively).

The remaining species are land snails but most of these are associated with damp conditions and can be found in marshes, such as *Cochlicopa lubrica*, *Vallonia pulchella*, *Aegopinella nitidula*, *Oxychilus cellarius*, *Trichia striolata* and *Arianta arbustorum*. Some of these are also associated with damp woodland, as is *Discus rotundatus* and *Cochlodina laminata*.

As environmental indicators, therefore, the assemblage from Sample 2 suggests permanent, relatively fast-flowing water as

might be expected of a former channel of the Thames. Although permanent running water is also indicated by the assemblage from Sample 1, the relatively high proportion of planorbids and low frequency of nerites (*Theodoxus fluviatilis*) indicate a slower-flowing tributary or drainage ditch running into the Thames. In both samples, riverside marshes and vegetation are shown by the land snail assemblage and by the amphibious *Lymnaea* species. The presence of woodland nearby is indicated by *Discus rotundatus* and *Cochlodina laminata*.

Valvata macrostoma, two specimens of which were recovered from Sample 1, today appears to be mainly restricted to Hampshire, Sussex and East Anglia. Likewise, *Lymnaea glabra* and *Gyraulus laevis* are now found mostly in the north of Britain and the distribution of these species may have become more restricted since prehistoric times. Overall, however, the assemblage is typical of the Thames today. A recent survey by the Conchological Society (*Conchologists' Newsletter*, No. 143, December 1997: 889–895) in the Thames Water Park east of Reading recorded the following species in or by the River Thames: *Theodoxus fluviatilis*, *Viviparus viviparus* (not represented in the Eton samples), *Valvata piscinalis*, *Bithynia tentaculata*, *B. leachii*, *Potamopygus antipodarum* (introduced from New Zealand in the mid-nineteenth century), *Lymnaea peregra*, *Planorbis planorbis*, *Gyraulus albus*, *Ancylus fluviatilis*, *Acroloxus lacustris*, *Unio pictorum*, *Sphaerium* spp., *Pisidium* spp., *Vallonia pulchella* and *Oxyloma pfeifferi*. Additional species found in a ditch (perhaps analogous to Sample 1) included *Bathyomphalus contortus*, *Planorbarius corneus*, *Succinea putris*, *Cochlicopa lubrica* and *Trichia striolata*. One species which this survey failed to find was *Gyraulus acronicus* which is restricted to the River Thames and its tributaries: two specimens of this shell were found in Sample 2 from Eton.

[This is a slightly amended version of an article published in the *South Oxfordshire Archaeological Group (SOAG) Bulletin*, No. 52 (1997): 33-35.]

Table 1: Freshwater and land snails from prehistoric deposits at Eton

Species	Sample 1		Sample 2	
	No.	%	No.	%
Gastropoda				
<i>Theodoxus fluviatilis</i>	4	2.82	163	13.94
<i>Valvata cristata</i>	8	5.63	61	5.22
<i>V. macrostoma</i>	2	1.41		
<i>V. piscinalis</i>	19	13.38	184	15.74
<i>Bithynia tentaculata</i>	42	29.58	287	24.55
<i>B. leachii</i>	9	6.34	98	8.38
<i>Lymnaea truncatula</i>	1	0.70	6	0.51
<i>L. glabra</i>			2	0.17
<i>L. palustris</i>	1	0.70	2	0.17
<i>L. stagnalis</i>	1	0.70		
<i>L. peregra</i>			18	1.54
<i>Planorbarius corneus</i>	4	2.82	2	0.17
<i>Planorbis planorbis</i>			1	0.09
<i>P. carinatus</i>	4	2.82		
<i>Anisus leucostoma</i>	1	0.70	1	0.09
<i>Gyraulus albus</i>	6	4.23	22	1.88
<i>G. acronicus</i>			2	0.17
<i>G. laevis</i>	3	2.11	46	4.11
<i>Armiger crista</i>	1	0.70	14	1.20
<i>Bathyomphalus contortus</i>	3	2.11	13	1.11
<i>Ancylus fluviatilis</i>			8	0.68
<i>Acroloxus lacustris</i>			1	0.09
<i>Succinea putris</i>	2	1.41	22	1.88
<i>Cochlicopa lubrica</i>			5	0.43
<i>Vallonia pulchella</i>	4	2.82	15	1.28
<i>Discus rotundatus</i>	1	0.70	3	0.26
<i>Aegopinella nitidula</i>			2	0.17
<i>Oxychilus cellarius</i>	4	2.82	7	0.60
<i>Cochlodina laminata</i>			2	0.17
<i>Trichia striolata</i>	14	9.86	44	3.76
<i>Arianta arbustorum</i>	2	1.41		
<i>Cepaea hortensis</i>			1	0.09
Bivalvia				
<i>Unio/Anodonta</i> sp.			1+	0.09
<i>Sphaerium corneum</i>			15	1.28
<i>Pisidium amnicum</i>			49	4.19
<i>P. casertanum</i>	6	4.23	70	5.99
TOTAL	142	100.00	1169	100.00

Marine recording: New initiatives and directions

Jan Light

Godalming, Surrey

The last time I wrote for the *Conchologists' Newsletter* on this subject was to report on the results of a questionnaire in 1992 (Volume 7, Pt 1, No. 123). On this occasion I write with news of moves which I hope will prove to be advantageous for the image and performance of the Society's marine recording schemes, as well as providing benefits to members.

Several initiatives are currently underway in the UK which are designed to assess marine biodiversity and to use the information obtained to improve marine environmental understanding, education, conservation and management. Two key national ones are:

- The National Biodiversity Network (NBN)
- The UK Marine Life Information Network (*MarLIN*)

The second of these will be based at the Marine Biological Association in Plymouth and aims to make full use of records and associated information through a co-operative programme of data input and development of facilities to access remote datasets. The project is committed to a sensitivity with regard to data ownership and confidentiality, and access to information will be given at an aggregated level.

In order to raise the profile of the Conchological Society's Marine Recording Scheme and meet the challenge of *MarLIN*, the Society has invested in a computer for the purposes of storing all marine mollusc records. This will improve access to information for members, the conservation agencies, researchers and education purposes generally, and, within strict protocols to be laid down, for commercial users. It is intended that we retain the initiative in marine mollusc mapping in the UK, and ownership and management of our own computer database should streamline

greatly the process of data storage, management and retrieval. This Society is the only organisation actively promoting the collation of a national dataset of marine mollusc distributional records. The strengths of our Marine Recording scheme are its longevity, in-house expertise and commitment, system of refereeing of records and requirement for voucher specimens, and access to a customised computer programme, RECORDIT, written by Michael Weideli, which is linked to a mapping programme, DMAP. Weaknesses inherent in our scheme have been the dispersed nature of the Society's record cards and archival material, and varying levels of commitment by Sea Area Representatives (SA Reps) and the non-uniform coverage nationally.

The publication of *Distribution of the marine molluscs of north west Europe* (Seaward 1990) effectively marked the end of an era of marine recording focused at national level. Since that time regional and sea area atlases have been set up as projects by some SA Reps and the Society is promoting the DOMMIC project to map the marine molluscs of the English Channel and its associated coasts. Since the extension of the area 'recorded' by the Conchological Society to include sea areas of continental Europe, and the lapse of certain British Isles representatives, it has been necessary to effect a degree of centralisation of the scheme. (The Non-marine Mollusc Recording scheme has always been centralised.)

Shortly after the Society agreed the purchase of the equipment I wrote to all the SA Reps and to some other members who have contributed to our marine recording in the past. As a result of the replies I received from the questionnaire I circulated, several members will be attending a training workshop to be held in Godalming over the weekend of 31 October 1998. During the weekend participants will receive tuition and will have plenty of time to use the RECORDIT programme on training machines provided. Future training workshops will be organised to meet demand.

This is an exciting new initiative for the Society and I am exploring all avenues to ensure its success. In addition to a role for

existing participants in marine recording (such as SA Reps) I would like to invite any members with an interest in computing and who might like to consider helping as a satellite data-input contributor, to get in touch with me. A computer with a minimum of 386 specification which supports Windows 3.1 or a later version is necessary. In addition to the advantages to the Society of a co-operative effort of data input, 'satellites' who take the RECORDIT/DMP software will be able to use it to run databases for their own records and collections. By the time this article is published there may still be places available on the October Workshop – please contact me for more information.

As with all database software, the format of the RECORDIT programme requires information such as locality and date, for example, to be entered into predetermined fields (boxes in the 'window' on screen). This implies that we should be looking for conformity in practices such as logging data, deciding what constitutes a 'site', and determining a suitable grid reference or set of lat./long. co-ordinates for that site. A set of guidelines for marine mollusc recording will be drawn up by a small working group and made available to members and the wider recording community. This will form the basis of a follow-up article on Marine Recording.

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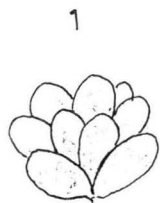
Collecting shells

Betty Lucas,
Southampton

I always liked shells and when I was quite young my father bought a collection from a second-hand shop. Later on, when I knew that I would be spending a great deal of time abroad and had no place suitable to leave them, I gave them to a school. I did not intend to start collecting again.

In 1959 I went for a long voyage with my husband who was Captain of a large cargo ship at that time. We loaded 6,000 tons of rice in Rangoon to take to Mauritius, to last them for six months. Mauritius is a beautiful place. One sees first the white beaches, made of powdered coral, bleached by the sun. Behind them are feathery *Casuauna* trees with bright yellow weaver birds and ...breasted Madagascan fodies flying around them. The centre of the island is mountainous. All along one side of the island there is a coral reef and the sea inside this is a lovely aquamarine colour and outside a deep blue. As you may expect, it is a wonderful place for shells. Many beaches are private. As you can imagine, I just had to start collecting again! We met kind people who gave me shells, and a few I bought, but a good number I found. Cowries were common, including Tiger Cowrie (*Cypraea tigris*), the Arabian Cowrie (*C. arabica*) and the Humpback Cowrie (*C. mauritanus*) named after the island. There was also the Egg Cowrie (*Ovum ovum*), Harps and Bubble Shells.

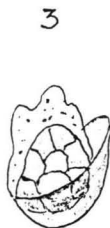
From Mauritius we went to Lindi in Tanzania where cargo ships went for cashew nuts – another good place for shells and generally considered to be the back of beyond, where we could hear lions roaring when ashore at dusk. Cone shells were frequent there and a large Birch Cone, *Conus betulinus*, was just rolled to my feet! Hebrew Cones, *Conus ebreus*, were frequent, so-called because the markings on them are similar to Hebrew writing. A sand spit was covered with Gold-ringer Cowries (*Cypraea annulus*) while Tun and Bonnet Shells were frequent, but this was the place for Cone Shells.



Cluster of egg capsules brooded by female.



Each capsule contains many eggs.



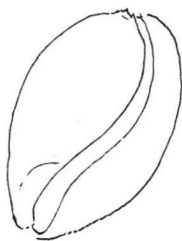
The veliger stage is free-swimming.



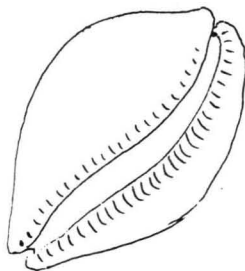
at 4 weeks



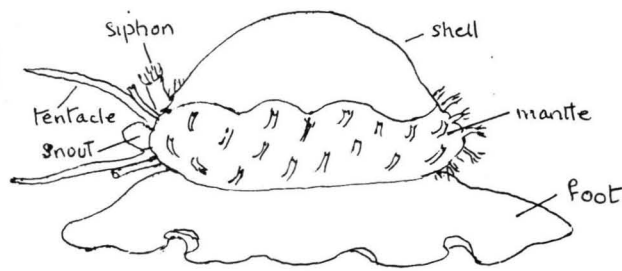
3 months.



6 months

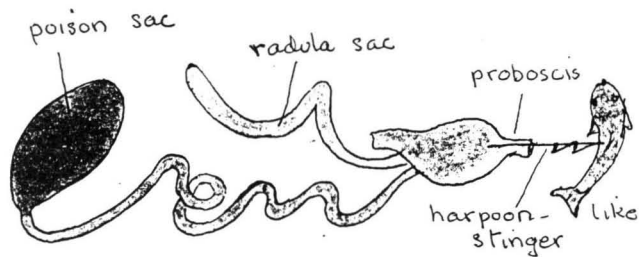
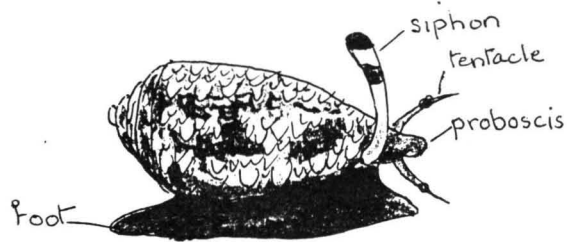


Adult



Tiger Cowrie with fleshy mantle partly covering shell. When disturbed, its mantle contracts revealing glossy shell.

Fig. 1. Development of a cowrie (drawing by Betty Lucas)



LIVING TEXTILE CONE

DETAILS OF POISON APPARATUS
much enlarged.



GENERAL CONE

MARBLE CONE

PONTIFICAL CONE

Fig. 2. Cone shells (drawing by Betty Lucas)

In 1961 my husband retired and in 1965 we were allowed to go for a voyage on a cargo ship paying only for our food, so we opted to go to Australia. Here we visited Victoria, Tasmania, New South Wales and Queensland, finding shells in all of these places. In Tasmania we found a shop which had a few shells in the window. I enquired if they were for sale. It turned out that they were 'bait' to find people who were interested in shells. The shop owner showed us his shells, but when it came to selling, with most he would not part, and others he gave me!

Long Island, off the coast of Queensland, was a most interesting place for shells. If you do not mind being bitten by sand flies and, where there is a mangrove area behind the beach, dig where the shingle is piled up, you will find a great variety of small and medium-sized shells: cowries, sundial shells, vase shells and abalones. The Donkey Abalone (*Haliotis assina*) is beautifully marked outside and pearly within. But I always think of Australia as the home of the volutes.

In 1980 we visited Western Australia and found more shells. We also found some on a cruise to the Caribbean. The best place was on a visit to the Gambia in Africa, mainly for birds. On a beach here a Gambian woman was selling baler shells of a kind only found in Gambia and Senegal. I bought a large one and gave her what she asked for it. It had a small piece broken off and she insisted on giving me a smaller perfect one as well, and would take no more money.

I spent some years in India and some months in Karachi (Pakistan). I have always tried not to buy shells that were taken alive as they should be left in their habitat to reproduce. In both these places I was able to get shells which had been washed up. In Bombay an Indian woman used to collect shells from a distant beach, then came into the town and sat on the pavement to sell them. In Karachi a large family lived in makeshift huts at the back of the beach and made their living out of selling shells and making earrings and necklaces out of the small ones.

I also collected shells on British beaches and had a fairly comprehensive collection, which I have given to a school.

Shell collecting has given me a great deal of pleasure, especially in finding out about them and their lifestyles. The more one finds out about any subject, the more interesting it becomes.

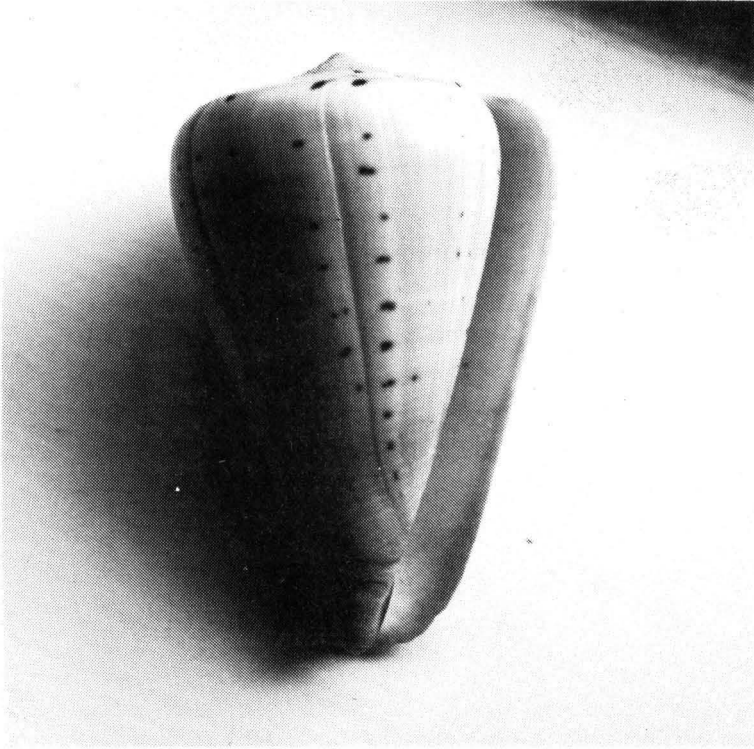


Fig. 3. The Birch Cone which rekindled the interest in shells



Fig. 4. Mrs Lucas' collection

Footnote:

Mrs Lucas is having problems with her sight and will be disposing of her collection, which is catalogued and housed in two cabinets. Most of the shells have locality details. Mrs Lucas was a member of the Southampton Natural History Society and used to give talks on shells, especially to local schools. The illustrations are some of her hand-drawn and painted visual aids.

June Chatfield.

□

Freshwater mussels eaten in Ireland

John Lucey

[REDACTED], Kilkenny, Ireland

The most frequent question asked about freshwater mussels is: are they edible? To which the answer must be a qualified yes, the assumption being that because they are called mussels they will taste as good as their marine namesakes which, apparently, they do not.

The two large mussel species *Margaritifera margaritifera* and *Anodonta cygnea* have been tried as food in Ireland in former times. The first of these is, as its scientific name implies, a prolific pearl producer and it was probably while tasting the mussel for food that early man discovered the hidden gems. The flesh of the pearl mussel has been described as 'extremely bad unsavory and unwholesome' (Copping 1740), 'of an insipid disagreeable taste' (Harris 1744) and 'seldom eaten' (Dubourdieu 1802) although it was said that 'As an article of food it gained popularity only among the peasantry, for the reason that it required very high flavouring to make it palatable' (Bassett, 1886). The last reference, however, may in fact be a case of mistaken identity, for while it was made regarding the pearl mussel *M. margaritifera*, is more likely to have pertained to the swan mussel *A. cygnea*.

That *A. cygnea* was eaten by people in Ireland in the past is mentioned, *inter alia*, by Piers (1682), Thompson (1856), Tate (1866), Lovell (1884) as well as Scharff (1892) and it would appear that it is the more palatable of the two mussel species. It is likely that, as was the case with *M. margaritifera*, it too was sampled as a food item rather than having been a staple of the diet; at least two of the other nineteenth-century references, and possibly the third, are based on Thompson (1856) who reported that it was eaten by the 'peasantary' who lived near a lake in county Leitrim where it was plentiful. The source of this information to Thompson, who died in 1852 and whose work appeared posthumously, was the surgeon and antiquary William Wilde (1815-1876), father of the poet and playwright Oscar, who was appointed medical commissioner for the Irish Census in 1841.

It is possible therefore that the greatest human consumption of the mussel coincided with the period of the Great Famine (1845-52), which was still raging one hundred and fifty years ago, when the poorest regions such as Leitrim were severely affected. We know that in some areas the rivers and lakes were intensively fished and crowds would travel from far inland to collect 'shell-fish', including limpets, on the coast (McHugh, 1994). The earlier reference by Piers (1682) is just in passing when he says, regarding county Westmeath, 'they are not found any where in great plenty, nor are those that are found much eaten, altho' said to be harmless by such as have eaten them'.

It is unlikely therefore that *Anodonta* was a regular food item at any time in Ireland but rather had been sampled as an article of food, as had *Margaritifera*, and might have been used in some areas in desperate times such as when the potato crop, the dietetic staple of the poor, failed.

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Conchological Society field meeting in the Durham area, 23-25 May 1998

Ron Boyce

, Earley, Reading

Seven members of the Society attended this three-day meeting in what was to prove practically the only dry spell in an otherwise unrelenting round of changeable weather. The arrangement to meet each day at Sainsbury's in Newton Grange worked well, and enabled us to avoid Durham city centre when driving to sites.

Our first site on the Saturday morning was an area of mixed valley woodland along the South Burn below Waldrige Fell, upstream from the road bridge. This is an area of extremely variable soil acidity, which was noticeable as we descended the fell from Waldrige village. There was once a coal mine at the top of the hill and more coal mines in the villages upstream, and it is only within the last few years that the water in the stream valley has begun to run clear. More recently there was an open cast site fairly close to the stream valley, but this does not seem to have affected the local hydrology.

The vegetation along the stream was mixed oak and birch with some ash and rowan, while across the stream there was a mixture of birch and alder with large sedge tussocks. Out of the 26 molluscan species we found, three (*Columella aspera*, *Leiostyla anglica* and *Oxyloma pfeifferi*) were not recorded in a recent mapping scheme (Lowe, 1989).

In the afternoon we went to Raintonpark Wood, an area of mature woodland between the River Wear and the motorway. Near the river, vegetation caught in the branches of trees indicated there had been recent flooding, but the molluscan fauna seemed not to have been affected. The site is on a steep slope with large oak, beech and sycamore trees and there are signs that stone was quarried here in the nineteenth century.

Near the river there is a wide range of tall-herb vegetation and a tiny pocket of marshland. The marsh was difficult to reach, so I was sampling it using a kitchen sieve on a twelve-foot telescopic

pole. One of my netfuls recovered a planorbid, but that wasn't all it contained. There was what looked like a tiny elver *Anguilla anguilla*, but what was strange about this animal was that its head was slightly wider than its body, it had a large mouth and bulging eyes. In fact it fitted another taxonomic description altogether. 'I've caught the Lambton Worm', I said, handing the sieve round for inspection. I don't think my colleagues were convinced, however.



Fig. 1. Looking for slugs. Colin Gillard, Helen Weideli, Rosemary Hill and the author in Hawthorn Dene on 25 May 1998. Photo: M.D. Weideli

We found 38 molluscan species, of which those not mapped by Lowe for this 10-km square were *Acanthinula aculeata*, *Clausilia bidentata*, *Columella edentula*, *Monacha cantiana*, *Spermodea lamellata*, *Vitrea contracta*, *Planorbis planorbis*, *Arion subfuscus* and *Boetgerilla pallens*.

On Sunday we went to hunt for fossils in the Sunderland area on the Zechstein formation of the Permian limestone. A roadside

cutting near Hylton Castle yielded promising material, and a small amount was found in some loose rubble in the old quarry opposite the castle. In the afternoon we visited a known fossil site on Tunstall Hills, by special permission. The fossils are to be found in loose rocks in a small portion of a huge elder thicket on a precipitous slope. However, the grid square in which the fossil site lies is seriously under-recorded for live molluscs, so as well as looking for a few fossil mollusca, we left no stone unturned to hunt for recent material. We eventually came up with 16 species of which the most interesting and arguably the most attractive were *Candidula intersecta* and *Zenobiella subrufescens*.

On Monday we visited Hawthorn Dene, a woodland site in a deep gorge with several streams. We arrived somewhat later than we expected, and could not find Tony Wardhaugh who was travelling up independently from Middlesbrough. We sent out a search party, failed to find him, then the five of us who were present went down into the depths of the dene.

The site is on limestone and has some very tall trees of beech, sycamore, ash and elm and smaller specimens of yew, holly and privet. We found eighteen molluscan species in the upper third of the dene, including dead shells of *Vitrina pellucida* and live examples of *Arion subfuscus*, *Deroceras caruanae*, *Cochlicopa lubricella*, *Columella aspera*, *Leiostyla anglica*, *Lymnaea peregra* and *Vitrea crystallina* which were not mapped by Lowe for this square. Michael Weideli found *Acicula fusca* in a batch of leaf litter from this site; this species has not been seen here since the 1920s.

By this time it was early afternoon and three of the party needed to leave since they had massive distances to travel home. This left myself and Rosemary Hill to continue further down the dene. In the stream we found *Ancylus fluviatilis* which we had been specifically asked to look for. These were lovely large specimens and included a mating pair which we photographed. Other species that we found were *Arion distinctus*, *A. subfuscus*, *Cochlodina laminata* and *Oxyloma pfeifferi*, which were new, and *Aegopinella nitidula* and *Arianta arbustorum*, which weren't.

At a narrow footbridge we were graciously allowed to pass by a gentleman and a lady, who we later noticed were turning logs over. Our suspicions were aroused, and then confirmed; we had presumed, and then discovered, the presence of Dr Tony Wardhaugh. He had arrived about ten minutes before we had, found nobody, taken the path along the top of the dene and worked it from the seaward side. He had a list of 28 species including 11 which nobody else had found. These included *Deroceras reticulatum*, *Aegopinella pura* and *Potamopyrgus antipodarum* which were new to the square, and *Clausilia dubia* which is known to be here.

According to the Society's Non-Marine Recorder Dr Michael Kerney, 27 of our finds at this meeting are completely new records for their respective 10-km squares.

With many thanks to the members who attended the meeting and put in all the hard work, particularly on steep slopes and the wet bits; to Rosemary Hill for leading the meeting and arranging for a very enjoyable selection of sites; to English Nature for permission to work the fossiliferous rubble at Tunstall Hill; to Durham County Council, Durham Wildlife Trust and the National Trust for permissions to work the other sites; to Mark Richardson of Durham Wildlife Trust for coming to meet us all on site at Waldrige; to Jane Reynolds for organising our all-risks insurance; and to Helen Fothergill of the Geology department at Sunderland Museum and Art Gallery for useful advice and an annotated map of the Tunstall site.

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(Table on next page)

Table 1. Mollusca recorded in the Durham area, May 1998

Species	Location			
	Waldridge	Rainton	Tunstall	Hawthorn
<i>Acantinula aculeata</i>	S	L		L
<i>Acicula fusca</i>				L
<i>Aegopinella nitidula</i>	L	L		L
<i>Aegopinella pura</i>	L			L
<i>Ancylus fluviatilis</i>				L
<i>Arianta arbustorum</i>		L		L
<i>Ashfordia granulata</i>		L		
<i>Candidula intersecta</i>			L	L
<i>Carychium minimum</i>	L			L
<i>Carychium tridentatum</i>	L	L		L
<i>Cepaea hortensis</i>	L	L	L	
<i>Cepaea nemoralis</i>			L	L
<i>Clausilia bidentata</i>		L	L	
<i>Clausilia dubia</i>				L
<i>Cochlicopa lubrica</i>	L	L	L	L
<i>Cochlicopa lubricella</i>		L		L
<i>Cochlodina laminata</i>		L		L
<i>Columella aspera</i>	L			L
<i>Columella edentula</i>	L	L		L
<i>Discus rotundatus</i>	L	L	L	L
<i>Ena obscura</i>			L	
<i>Euconulus alderi</i>	L			
<i>Euconulus fulvus</i>	L	L		L
<i>Euconulus fulvus</i> agg.				L
<i>Helix aspersa</i>		L	L	L
<i>Lauria cylindracea</i>	L	L	L	L
<i>Leiostyla anglica</i>	L			L
<i>Lymnaea peregra</i>	L	L		L
<i>Lymnaea truncatula</i>	L	L		
<i>Monacha cantiana</i>		L		
<i>Nesovitrea hammonis</i>	L			
<i>Oxychilus alliarius</i>	L	L	L	L
<i>Oxychilus cellarius</i>		L	L	L
<i>Oxyloma pfeifferi</i>	L			L
<i>Planorbis planorbis</i>		L		
<i>Potamopyrgus antipodarum</i>		L		L

Species	Location			
	Waldridge	Rainton	Tunstall	Hawthorn
<i>Punctum pygmaeum</i>			L	
<i>Spermodea lamellata</i>			L	
<i>Trichia hispida</i>	L	L	L	L
<i>Trichia striolata</i>		L	L	L
<i>Vitrea contracta</i>		L		
<i>Vitrea crystallina</i>	L	L		L
<i>Vitrina pellucida</i>	S	S	S	S
<i>Zenobiella subrufescens</i>			L	L
<i>Arion ater agg</i>			L	L
<i>Arion ater ater</i>	L*			L
<i>Arion ater rufus</i>		L		L
<i>Arion circumscriptus</i>		L		
<i>Arion distinctus</i>	L			L
<i>Arion fasciatus</i>				L
<i>Arion intermedius</i>	L			L
<i>Arion subfuscus</i>	L	L		L
<i>Boettgerilla pallens</i>		L		
<i>Deroceras caruanae</i>				L
<i>Deroceras laeve</i>		L		
<i>Deroceras reticulatum</i>	L	L		L
<i>Limax maximus</i>		L		L
<i>Sphaerium corneum</i>		L		

L = Live, S = shell, * = on the open fell outside the wooded valley.

□

***Paludinella littorina* (delle Chiaje 1828)
at Brixham as a member of the
upper shore crevice fauna**

Jan Light

Godalming, Surrey

During the Conchological Society field meeting to the Torquay area in June 1998, the small marine prosobranch *Paludinella littorina* was found living in caves in the Brixham area. This is a second extant record for Devon, following an earlier find in September 1997 in a Chalk cave at Seaton (Killeen & Light 1998). This is the westernmost known population along the south coast of England and reaffirms a Marshall record (1913) for the species from Tor Bay (SX96).

Paludinella littorina lives in a diversity of habitats generally between HWNT and HWST. These include crevices in rock faces and on the shore, caves, under rocks and cobble and interstitially amongst shingle and organic detritus. The latter habitat has been extensively described for the Fleet in Dorset (Little et al. 1989) but features of the habitat for *Paludinella* in caves warrant description.

From observations made in caves in Pembrokeshire (Killeen & Light 1994) and Devon, several common factors emerge. The aspect of caves is sheltered: the caves do not open directly onto the incoming waves but are inclined in relation to the tideline. The caves may be deeply recessed or relatively shallow, but faces supporting colonies of *Paludinella* are usually inclined away from the plane of the cave aperture. The surfaces of the walls are colonised by green and red algal films and soft crusts, and *Lichina pygmaea* may be present in crevices in the rock. *Paludinella* lives near HWM and the width of its zone of colonisation may be quite narrow (15-30 cm). The small pulmonate *Otina ovata* is a frequent associate. Rock types seems to be important: *Paludinella* sites in caves are associated with lithologies which are foliated and fissile allowing the development of fissures and crevices. At

Brixham the rocks are Middle Devonian thinly bedded metamorphosed limestones with cm- to metre-scale horizontal and vertical faulting which is laterally continuous, and provides sufficient depth to allow protection from water action and fine detritus to accumulate. Seepage of freshwater is also a common factor in caves, and travertine deposition may also be present. The snails are more readily found on damp surfaces where numbers of the associated species, notably *Littorina saxatilis* and *Melarhapha neritoides*, occur at their maximum abundance levels. At Brixham the entrance to the cave was veiled by a curtain of water dripping from the cliff above. Humidity appears to be an important factor, too, in the success of locating *Paludinella* because searching during damp, cloudy weather has proved more productive.

In the 1950s two papers considered the crevice faunas of that tidal zone which forms the interface of intertidal animals of terrestrial origin and those which are truly marine (Glynne-Williams & Hobart 1952; Morton 1954). The latter work detailed the faunas of several habitats falling within distinct zones of the upper shore at Wembury in Devon. Despite a long-standing recognition of the distinct but relatively small malacofauna which can be found in crevices at HWM, it is a region of the shore that is frequently neglected during systematic recording. In order to sample this habitat efficiently it may be necessary to pry some small slabs of rock apart. (This should be carried out judiciously to minimise destruction. Both *Paludinella littorina* and *Truncatella subcylindrica* are listed in the Red Data Book (Bratton 1991) under category 3 – Rare, and the former is also protected under Section 5 of the Wildlife and Countryside Act, 1981. However, responsible sampling which has due regard to the extent of the habit *in situ*, is unlikely to have deleterious effects on crevice-dwelling populations of invertebrates.) If molluscs are observed in the field on the inner surfaces and edges of rock flakes, the best strategy is to brush the rock gently in a container of seawater, decant or sieve the water away and retain the sediment and animals for sorting under magnification later. Using this method, and depending on locality and season, any of the

following species might be recorded: *Acanthochitona crinitus*, *Patella vulgata*, *Littorina saxatilis*, *Melarhaphe neritoides*, *Cingula trifasciata*, *Onoba aculeus*, *Hydrobia ulvae*, *Paludinella littorina*, *Truncatella subcylindrica*, *Leucophytia bidentata*, *Ovatella myosotis*, *Otina ovata*, *Onchidella celtica*, *Lasaea adansoni*.

Good hunting.

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□

Austria, June 1998: Sacher Torte, Salzberger Nockerl, and Snails

Adrian Norris

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It was whilst sitting in the oldest inn in Salzburg (and reputedly the oldest in the whole of Central Europe), that I first contemplated writing a short note on the mollusca of Salzburg and the Salzkammergut.

St Peter's Stiftskeller, the inn in question, is known to have existed as an inn as far back as 803 AD. The sense of history and continuity, or was it the litre of house white wine plus the house speciality, Salzburger Nockerl, made me think of the many thousands of records which are made whilst on holiday that never get into publication in any form and are therefore lost forever.

The trip to Salzburg was without question a holiday, a week of culture, music and opera, followed by a week of gentle walks and lots of good food and wine on the shores of Lake Wolfgangsee.

Salzburg is dominated by two large hills, Monchberg and Kapuchinerberg, both of which are easily accessed within minutes of the town centre, too good an opportunity to miss, particularly straight after a heavy thunderstorm. A number of interesting snails soon came to our notice, my wife Barbara being quite good at spotting the unusual or different. These included British rarities such as *Vertigo angustior*, *Ena montana* and *Laciniaria biplicata*, as well as such local specialities as *Clausilia parvula*, *Perforatella incarnata*, *Perforatella umbrosa* and *Trichia unidentata*.

The forests around the village of St Wolfgang proved just as rich in mollusca, with several more specialities coming to light, some of which are very locally distributed. These included *Orcula dolium*, *Orcula doliolum*, and *Pagodulina pagodula*, all three of which belong to the family Orculidae which is unknown in Britain.

I was also very pleased to be able to find *Vertigo angustior* in several locations around the area, as well as *Vertigo pusilla* and *Vertigo antivertigo*. We also made a short visit to the Iron Age cemetery at Hallstatt, which is situated high above Lake Hallstatt.

The woodland varied considerably. The two hills of Monchberg and Kapuchinerberg in Salzburg were dominated by beech, whilst those around St Wolfgang and Hallstatt proved to be more mixed. The open countryside was heavily farmed but the land had not been drained or 'improved' in any way, with the result that the environment was rich and varied. The rivers proved to be too fast-flowing and the lakes too cold for most species of freshwater snail and, therefore, only four species were recorded, mainly from marshy areas by roadsides.

I am certain that we did not find all the land species known from the area but I am also certain that we found over two-thirds of those we thought possible. The *Collins Guide to the Land Snails of Britain and North-west Europe* by M.P. Kerney and R.A.D. Cameron, Collins 1979, does not include Austria, but with the aid of this volume it was possible to extrapolate a probable list of land snails for the area, and I was able to identify all the material found.

We found 65 species in total, 61 land snails and slugs and 4 freshwater species. I have listed on the next page all the species found with codes indicating how common each species was in relation to the site visited.

(Table follows)

List of Mollusca

Key:

1	Monchberg, Salzburg	A	Abundant
2	Kapuchinerberg, Salzburg	C	Common
3	St Wolfgang	L	Local
4	Hallstatt	S	Scarce
		R	Rare

<i>Cochlostoma (Cochlostoma) septemspirale</i> (Razoumowsky, 1789)	1A	2C	3C	4C
<i>Carychium minimum</i> Müller, 1774			3L	
<i>Carychium tridentatum</i> (Risso, 1826)	1S		3L	4S
<i>Succinea (Succinea) oblonga</i> Draparnaud, 1801			3R	
<i>Succinea (Succinea) putris</i> (Linne., 1758)	1L		3L	
<i>Cochlicopa lubrica</i> (Müller, 1774)	1S		3S	4S
<i>Cochlicopa lubricella</i> (Porro, 1838)			3R	
<i>Pyramidula rupestris</i> (Draparnaud, 1801)			3L	4LC
<i>Columella edentula</i> (Draparnaud, 1805)			3L	
<i>Vertigo (Vertigo) pusilla</i> Müller, 1774		2LC	3LC	4LC
<i>Vertigo (Vertigo) antivertigo</i> (Draparnaud, 1801)			3L	
<i>Vertigo (Vertilla) angustior</i> Jeffreys, 1830	1R		3R	
<i>Orcula (Orcula) dolium</i> (Draparnaud, 1801)			3LC	
<i>Orcula (Sphyradium) doliolum</i> (Bruguere, 1792)			3R	
<i>Pagodulina pagodula</i> (Des Moulins, 1830)			3LC	
<i>Chondrina avenacea</i> (Bruguere, 1792)		2L	3L	
<i>Vallonia costata</i> (Müller, 1774)		2S	3L	4S
<i>Vallonia excentrica</i> Sterki, 1892			3L	
<i>Acanthinula aculeata</i> (Müller, 1774)			3L	
<i>Ena (Ena) montana</i> (Draparnaud, 1801)		2L	3L	4C
<i>Punctum (Punctum) pygmaeum</i> (Draparnaud, 1801)			3S	
<i>Discus (Discus) rotundatus</i> (Müller, 1774)	1L	2L	3S	4C
<i>Discus (Discus) perspectivus</i> (Muhlfeldt, 1816)		2S	3S	4L
<i>Arion (Arion) ater v. rufus</i> (Linne., 1758)	1C	2C	3C	4C
<i>Arion (Mesarion) subfuscus</i> (Draparnaud, 1805)	1C	2C	3C	4C
<i>Arion (Carinarion) circumscriptus</i> Johnston, 1828	1L	2L	3L	
<i>Arion (Carinarion) sylvaticus</i> Lohmander, 1937				4S
<i>Arion (Kobeltia) distinctus</i>	1S	2S	3S	
<i>Vitrina (Vitrina) pellucida</i> (Müller, 1774)			3R	
<i>Semilimax (Semilimax) semilimax</i> (Ferussac, 1802)			3R	
<i>Vitrea (Vitrea) subrimata</i> (Reinhardt, 1871)			3S	4S

<i>Vitrea (Crystallus) crysallina</i> (Müller, 1774)				3R
<i>Aegopsis verticillus</i> (Ferussac, 1822)				3L
<i>Nesovitrea (Perpolita) hammonis</i> (Strom, 1765)				3R
<i>Aegopinella pura</i> (Alder, 1830)				3R
<i>Aegopinella nitens</i> (Michaud, 1831)				3S 4S
<i>Oxychilus (Oxychilus) cellarius</i> (Müller, 1774)				3R
<i>Oxychilus (Oxychilus) mortilleti</i> (Pfeiffer, 1859)				3S
<i>Zonitoides (Zonitoides) nitidus</i> (Müller, 1774)				3L
<i>Boettgerilla pallens</i> Simroth, 1912		2S		3S
<i>Limax (Limax) maximus</i> Linne., 1758	1C			3C
<i>Limax (Limax) cinereoniger</i> Wolf, 1803				3C 4C
<i>Limax (Lehmannia) marginatus</i> Müller, 1774	1A	2C		3S 4C
<i>Deroceras (Deroceras) laeve</i> (Müller, 1774)	1L			
<i>Deroceras (Agriolimax) reticulatum</i> (Müller, 1774)	1S			3S
<i>Euconulus (Euconulus) fulvus</i> (Müller, 1774)				3S
<i>Cochlodina (Cochlodina) laminata</i> (Montagu, 1803)	1C	2C	3C	4C
<i>Macrogaster plicatula</i> (Draparnaud, 1801)	1C	2A	3C	4C
<i>Clausilia parvula</i> Ferussac, 1807	1L	2LC	3L	4L
<i>Laciniaria (Ainda) biplicata</i> (Montagu, 1803)	1C	2C	3C	4C
<i>Bradybaena (bradybaena) fruticum</i> (Müller, 1774)				3S
<i>Helicella (Helicella) itala</i> (Linne., 1758)				3L
<i>Perforatella (Monachoides) incarnata</i> (Müller, 1774)	1C	2L	3C	
<i>Perforatella (Monachoides) umbrosa</i> (Pfeiffer, 1828)		2S	3S	4C
<i>Trichia (Trichia) hispida</i> (Linne., 1758)			3C	4C
<i>Trichia (Petasina) unidentata</i> (Draparnaud, 1805)	1S	2S	3L	4S
<i>Arianta arbustorum</i> (Linne., 1758)	1A	2A	3C	4C
<i>Helicigona lapicida</i> (Linne., 1758)			3C	
<i>Isognomostoma isognomostoma</i> (Schroter, 1784)		2R	3R	4R
<i>Cepaea (Cepaea) hortensis</i> (Müller, 1774)	1L	2L	3C	4C
<i>Helix (Helix) pomatia</i> Linne., 1758	1C	2C	3C	4C
<i>Bythinia tentaculata</i> (Linne., 1758)				4R
<i>Lymnaea (Galba) truncatula</i> (Müller, 1774)			3L	4L
<i>Anisus spirorbis</i> (Linne., 1758)			3L	
<i>Pisidium personatum</i> Malm, 1855			3L	

□

Shell collecting on Herm

Bill Pocock

[REDACTED], Farnham, Surrey [REDACTED]

In early May this year, my wife and I made our eighth visit to Herm, the small island off Guernsey in the Channel Islands. Our first visit was a day trip from Guernsey in May 1981. On that occasion, the weather was warm and sunny, the visit coincided with a good spring tide and the collecting at low water was superb. That day started a love for the island which has grown with subsequent visits. Whilst shells remain a prime interest, the peace and tranquillity, the birds, the wild flowers and the first class food, wine and service at the White House Hotel all add together to make Herm an idyllic holiday destination.

Whilst the quality of macro bivalve collecting at LWST on the sandy flats at Shell Beach during the first visit has never been repeated, subsequent visits have produced some more subtle finds and I hope that the following account will prove of interest.

1. Having found two odd valves of *Donax variegatus* on our first visit, but nothing since, we were delighted to find one fresh valve this year by rocks at the southern end at Shell Beach.
2. As in 1981, this year produced one very worn valve of *Mactra glauca*, again on Shell Beach.
3. The strandline at Shell Beach is always worth close examination for the unusual:
 - a) Both *Erato voluta* and *Simnia patula* have been added to the collection, species which I have not found elsewhere.
 - b) This year produced a number of complete flasks of *Gastrochaena dubia* with the shells still inside. Tebble suggests that this species bores into sand as well as rock. With some sand grains embedded in the flasks I assume that they are the linings of cavities excavated in loose sand.

- c) *Gari tellinella* and *Tellina donacina* are both very common in the strand line as dead paired valves. Without drawing any scientific conclusions, it was interesting to note the following statistics associated with Gastropod depredation (culprit assumed to be *Lunatia alderi* – bevelled holes and this species seen live on the beach).

	<i>Gari tellinella</i>	<i>Tellina donacina</i>
No holes	27	22
Hole in left valve	7	7
Hole in right valve	<u>12</u>	<u>2</u>
Total collected	46	31

I wonder whether any work has been done on valve preference?

4. Moving now to the west coast and the beaches either side of Hermetier. As a general comment it is worth mentioning that the vast area of sand and rock exposed at low tide provided first class collecting and should be visited as well as Shell Beach. Bivalves are particularly in evidence with: *Venus verrucosa*, *Venus casina*, *Venerupis rhomboides*, *Venerupis pullastra*, *Dosinia exoleta*, *Dosinia lupinus*, *Abra alba*, *Tellina donacina*, *Tellina crassa*, *Tellina squalida* and *Gari depressa* being some of the more common finds. However, the observation of note refers to a gastropod and more particularly to *Clathrus clathrus*.

Between Hermetier and the oyster rearing cages to the north (? *Crassostrea angulata*) is an area of flat fine silty sand with no rocks. In terms of vertical movement it is near low tide. In 1993 and again this year we saw numerous live *Clathrus clathrus*. On both occasions the weather was dull and overcast with periods of rain. The shells were half buried in the sand with spires uppermost. Whilst in some cases 25 mm adults were on their own, in most cases they were associated closely with one or two younger animals in the 7-15 mm range.

References

Tebble, N., 1966. *British Bivalve Seashells*. Page 175 has details on Gastrochaenacea.

To put the above report into the context of the total collecting picture for Herm, see also:

The Conchologists' Newsletter, Vol. 8, Part 3, No. 142, p. 845 for Christine Street's comments on Herm.

Porcupine Newsletter, Vol. 5, No. 10 and Vol. 6, No. 5 for accounts on the September 1994 joint Porcupine/Conchological Society excursion which included Herm.

□

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Conserve, not preserve!

Suppliers of equipment, etc. useful to members

Bibby Sterilin Ltd, Tilling Drive, STONE, Staffs ST15 0SA; Tel. 01785 812121; disposable petri dishes, the 25-compartment one being especially used for storage and/or sorting (minimum order one case of 120 dishes).

Biotec, 31 Atherfield Road, REIGATE, Surrey RH2 7PR. Tel. 01737 240578; Microslides and associated equipment.

Brunel Microscopes Ltd, Unit 12, Enterprise Centre, Bumpers Way, Bumpers Industrial Estate, CHIPPENHAM, Wilts SN14 6QA; Tel. 01249 462655; a good range of microscopes and accessories.

Daco Marketing Ltd, 7 Christchurch Road, FOLKESTONE, Kent CT20 2SJ; Tel. 01303 226137; Manufacturers of a wide range of plastic boxes.

Davcaps, PO Box 48, HITCHIN, Herts SG4 9BT; Tel. 01462 433210; Gelatine capsules.

Endecotts Ltd, 9 Lombard Road, LONDON SW19 3BR; Tel. 0181 542 8121; excellent, but expensive, test sieves.

Fisher Scientific UK, Sales Department, Bishops Meadow Road, LOUGHBOROUGH, Leics LE11 5RG; Tel. 01509 231166; Endecotts Ltd test sieves; minimum order £50 – the approximate cost of one quality stainless steel sieve (if you telephone them they will send a photocopy of the relevant page(s) from their bulky catalogue).

GB Nets, Gill Baldwin, 45 Burnley Road, TODMORDEN, Lancs. OL14 7BU; Tel. 01706 813941; Sturdy sampling nets, etc.

Geo Supplies Ltd, 16 Station Road, Chapeltown, SHEFFIELD S30 4XH; Tel. 0114 245 5746; range of geological equipment.

Hampshire Micro, 17 High Street, NAILSEA, North Somerset BS48 1AU; Tel. 01275 797750; a good range of microscopes and hand lenses. (NB change of address)

DJ & D Henshaw, 34 Rounton Road, WALTHAM ABBEY, Essex EN9 3AR; Tel. 01992 717663; Spring scissors and fine forceps, e.g. for slug dissection, small display boxes for reference collection of small marine/non-marine molluscs, etc.

Northern Biological Supplies, 3 Betts Avenue, Martlesham Heath, IPSWICH, Suffolk; Tel. 01473 623995: Glass petri dishes.

Polybags Ltd, Lyon Way, GREENFORD, Middlesex UB6 0AQ; Tel. 0181 575 8200; wide range of polythene bags, including self-sealing. A minimum order of 1,000 of any one size.

Preservation Equipment Ltd, Shelfanger, DISS, Norfolk IP22 2DG; Tel. 01379 651527; wide range of conservation, restoration and preservation materials, some of which should be of interest to conchologists.

Lydie Rigout, 1 Hillside Avenue, CANTERBURY, Kent CT2 8ET; Fax: 01227 456013; entomological equipment including pins, pin vices and tweezers.

Watkins and Doncaster, PO Box 5, CRANBROOK, Kent TN18 5EZ; Tel. 01580 753133; wide range of biological equipment including much of interest to conchologists.

Colin Gillard
I Court Farm
Hillfarrance
Taunton
Somerset TA4 1AN



Conchological Society of Great Britain and Ireland

MINUTES

1080th (Ordinary) meeting (joint meeting with the British Shell Collectors' Club) held on 13 December 1997 in the Demonstration Room of the Natural History Museum starting at 2.30 p.m.

In the chair: Mr Eversham with 33 members and friends present.

Apologies for absence: Mr & Mrs Weideli, Mrs Light, Mr Killeen, Mrs McMillan, Mr Dance, Dr Verdcourt, Mr Crowley, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Dr Chatfield, Mrs & Miss Fogan, Dr Willing, Dr Kerney, Mr Negus, Dr Colville, Dr Oliver, Mr Smith, Mr Dixon.

Minutes of the last meeting (of 11 October 1997): Read and accepted.

Matters arising: None.

Nomination and election of new members. No list was available.

Announcements and correspondence: The next indoor meeting would take place on 14 February 1998 and the speaker would be Dr Graham Oliver.

The Society display boards would be on show at the Brighton Natural History Museum from 25 January 1998.

Nominations for the post of Hon. Programme Secretary were sought.

Lecture of the day:

Speaker: Mr Kevin Brown (London)

Title of talk: *What's in a Name?*

Papers to be read: None.

Any other business: Subscriptions for both the British Shell Collectors' Club and the Conchological Society of Great Britain and Ireland could be paid during the meeting to Mr Brown and Ms Reynolds respectively.

Meeting closed at 5.30 p.m.

Chairman

Appendix: Members' exhibits

- | | |
|---------------------------|---|
| Kevin Brown | <ol style="list-style-type: none"> 1. Book: <i>Procedures in Taxonomy</i>. 2. Book: <i>International Code of Zoological Nomenclature</i>. 3. Press cuttings. 4. Various shells with interesting/unusual names. 5. <i>American Conchologists'</i> article on Ovulids. 6. 'Pallidula' article on <i>Neotrigonia</i>. |
| Fred Pinn | Watering pots. |
| Janet Sawyer | Sanibel Island and Comoros Island. |
| Dominic Rawlingson-Plant | Unusual Bonnets x 3. Shells from Seychelles including <i>Cypraea marginata</i> – normally Australian. |
| Derek Howlett | <i>Anisus vortex</i> – unusual example! |
| Rupert Honnor | Names in limpets. |
| Terry Wimbleton | J.R. Le B. Tomlin shells in the Harry Beeston Collection – 1917. |
| Ron Boyce & Rosemary Hill | Fossils from the Lower Lias at Blockley Clay Pit collected at the field meeting on 8 November 1997. |
| Rupert Honnor | Programme for 1998. |
| D.C. Long | Fossils from the field meeting to the Lower Lias at Blockley 8 November 1997. |
| Colin Gillard | Suppliers of equipment, etc. – a first attempt. |
| J.E. Reynolds | <ol style="list-style-type: none"> 1. Institutional members' publication and other correspondence including report on the sale of Sainsbury's Homebase/Marine Arts Shells, photographs of the new Tokyo Institute of Malacology shell museum and shell 'wants' list. 2. 'Snaily things' by J. Pedley for sale. 3. <i>Asperitas inquinata penidae</i> – live specimens. □ |

Corrections to list for the Cornwall marine field meeting, June 1997

Rupert Honnor

nr. Henley on Thames, Oxfordshire

A considerable number of mistakes arose in preparing the original report (published in the Newsletter in December last year) of the marine field meeting held around Looe, Cornwall in June 1997. The table below shows the corrections for the errors of identification, collation and transcription which occurred:

Original destination	Site(s)	Correction	Notes
<i>Tonicella marmorea</i>	8 (Hannafore Pt, Looe)	<i>Tonicella rubra</i>	Alive
New addition	1 (Gorran Haven)	<i>Skenea cutleriana</i>	Shell only
New addition	3 (Polkerris) 10 (Millendreath) 11 (Seaton)	<i>Onoba aculeus</i>	All alive
<i>Circulus striatus</i>	1 (Gorran Haven) 5 (Polruan, Fowey R.)	Delete	
<i>Cytharella coarctata</i>	12 (Portwrinkle)	<i>Mangelia powisiana</i>	Shell only
<i>Rissoella diaphana</i>	3 (Polkerris)	Delete	
New addition	11 (Seaton)	<i>Rissoella diaphana</i>	Alive
New addition	11 (Seaton)	<i>Rissoella opalina</i>	Alive
<i>Omalogyra atomus</i>	6 (Talland Bay) 11 (Seaton)	Delete	
<i>Pherusina gulsonae?</i>	1 (Gorran Haven) 6 (Talland Bay)	Delete	
New addition	1 (Gorran Bay)	<i>Cima minima</i>	Shell only
<i>Chrysallida indistincta</i>	6 (Talland Bay)	<i>Chrysallida obtusa</i>	Alive
New addition	1 (Gorran Haven) 8 (Hannafore Pt, Looe) 11 (Seaton)	<i>Chrysallida</i> sp.	Shell only

Original destination	Site(s)	Correction	Notes
<i>Brachystomia rissoides</i>	1 (Gorran Haven) 3 (Polkerris) 6 (Talland Bay)	Delete	
New addition	1 (Gorran Haven) 6 (Talland Bay)	<i>Brachystomia eulimoides</i>	Alive
New addition	3 (Polkerris) 8 (Hannafore Pt, Looe)	<i>Brachystomia</i> sp.	Alive at #3
New addition & changed status	8 (Hannafore Pt, Looe) 11 (Seaton)	<i>Odostomia turrita</i>	Alive at both sites
<i>Odostomia unidentata</i>	1 (Gorran Haven) 3 (Polkerris) 8 (Hannafore Pt. Looe)	Delete	
New addition	6 (Talland Bay)	<i>Odostomia</i> sp.	Alive
New addition	8 (Hannafore Pt, Looe)	<i>Turbonilla lactea</i>	Shell only
<i>Callista chione</i>	12 (Portwrinkle)		Shell only

Thanks to both the Marine Recorder, Jan Light, and Ian Killeen for help in identifying some of the smaller material, and for pointing out some of the more outrageous mistakes!

Reference

Honnor, R.C., 1997. Wet, Wet, Wet or the Cornwall marine field meeting. *The Conchologists' Newsletter* Vol. 8 (No. 143) 903-910.



Diary of Meetings

Conch. Soc. Field Meetings for 1998 are listed separately.

Saturday, 3 October, Low Dalby: Yorks. Conch. Soc. field meeting. Calcareous springs in Dalby Forest area. Meet at car park in Low Dalby, SE 856875 at 11.00. Contact: David Lindley [REDACTED]

Saturday, 10 October, London. Conch. Soc. indoor meeting. Martin Willing (West Sussex): Biodiversity Matters – What's been going on? The Natural History Museum at 14.30.

Saturday, 24 October, Leeds: Yorks. Conch. Soc. Annual Meeting and presidential address. Leeds City Museum at 13.00.

Saturday, 7 November, London. Conch. Soc. indoor meeting. Georges Dussart (Canterbury): After Boycott ... The Natural History Museum at 14.30.

Saturday, 21 November, Cardiff: Exploring Tomlin's Legacy. An introduction to the Melville-Tomlin Collection and an opportunity to examine specific groups of interest. National Museum of Wales, Cardiff. All day. Organiser: Graham Oliver [REDACTED]

Saturday, 28 November, Woking: Conch. Soc. Molluscan Workshop. Contact: Judith Nelson [REDACTED]

Saturday, 12 December, London. Conch. Soc. indoor meeting. A review of molluscan survey progress. Chaired by Ian Killeen (Felixstowe). The Natural History Museum at 14.30.

□

Field Meetings 1998

Hon. Programme Secretary:
(Position currently vacant)

Important

*Please remember to inform
the leader if you are attending
a field meeting.*

Sunday 11 October

Ashtead Common and Woods, Surrey

Leader: June Chatfield

This is an ancient pasture wood with old pollards, that has recently been acquired by the Corporation of London (who also own Burnham Beeches) and they are anxious to have species lists for all groups. There is a wardening staff. Ashtead Common is on Eocene and superficial deposits, not chalk, but the slugs should be of interest. The common can be sticky if wet – wear appropriate footwear. The common is reached on foot from the railway station – bring lunch.

Meet at: Ashtead railway station, Grid Ref. TQ/181590. It is half a mile off the A24 at Ashtead. Time of meeting is 10.30 a.m. (09.37 train from Waterloo – change at Epsom – arrives at Ashtead at 10.16 – timetable valid until 26 September, so please check out time on new timetable nearer the date).

Saturday, 17 October

North Downs – Box Hill and Colley Hill

Leader: Keith Alexander

Chalk downland molluscs: The Box Hill grasslands are being restored to a flower-rich sward under a nature conservation grazing regime. Morning visits will examine how molluscs have fared after periods of coarsening sward and scrub development. After lunch we will visit Colley Hill where the grasslands have remained in better condition over the same period. An emphasis will be to search for any remaining populations of *Helicella itala*. Bring lunch or use local pubs.

Meet at 10.30 a.m. in the National Trust car park off the lower zig-zag road leading up to the hilltop. By train: Box Hill Station at West Humble on Waterloo to Dorking line. By road: NT signed off Buford Bridge roundabout on A24 between Leatherhead and Dorking. OS Grid Ref. TQ 176519 – Landranger map 187: Dorking, Reigate & Crawley.

Other events 1998

**Saturday, 21 November: 'Exploring Tomlin's Legacy'
An Introduction to the Collections in the National Museum of
Wales, Cardiff**

Venue: National Museum of Wales, Cardiff.

There is a limit of 16 members to be included on this visit, so places will be allocated on a first come, first served basis. Please contact Alison Trew at the Department of Biodiversity and Systematic Biology, National Museum of Wales, Cathays Park, Cardiff CF1 3NP, Tel. 01222-573244 with your name, daytime telephone number and your priority area of interest. You will be contacted to confirm your place.

Saturday, 28 November: Molluscan Workshop

Venue: in the home of Judith Nelson in Woking [REDACTED] An excellent opportunity to meet and discuss those difficult specimens! ☐

Annual General Meeting March 1999

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

Rule No. 12. Candidates for nomination to the Council shall be paid-up members of the Society and shall be nominated by two members. Nominations, other than those made by the Council itself, shall be sent in writing to the Hon. Secretary at least six weeks before the AGM, and shall be accompanied by a signed declaration of the candidate's willingness to serve.

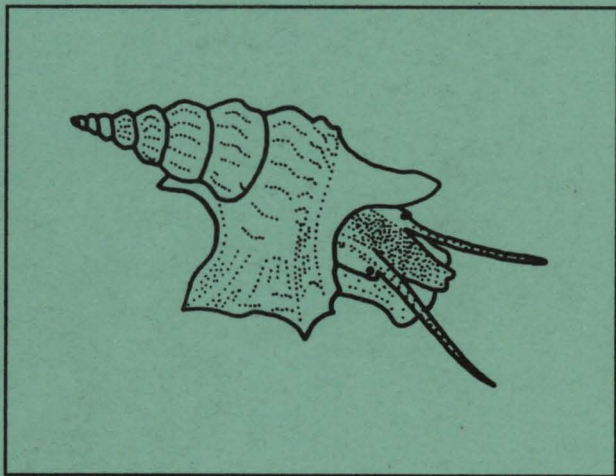
Note: Nominations must be received by the Hon. Secretary **NOT LATER THAN 31 December 1998.**

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Conchological Society of Great Britain & Ireland
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A threat to maërl beds in Cornwall

Martin Willing

, Midhurst, West Sussex

One of the rarest and richest marine habitats to be found in British coastal waters is under threat. These are the maërl beds of the Fal estuary in Cornwall. Maërl is a calcareous red marine alga ('seaweed') that grows in irregular concretions and twig-like shapes ('rhodoliths') that are pink when live and bleached white after death. The three species that are the chief maërl producers are *Phymatolithon calcareum*, *Lithothamnium corallioides* and *L. glaciale*, the former two of which are listed in the European Species Directive, Annex Vb (which deals with exploitation subject to management if necessary). The importance of the habitat was acknowledged in *The Biodiversity Challenge* (second edition), which produced an outline plan for *Maërl beds – calcareous red algae* (Wynne et al., 1995). The Government's Biodiversity Steering Group Report (Anon., 1995), includes maërl in two slightly different situations as *Maërl beds (inlets and bays)* and 2. *Maërl beds (open coast)* in the list of Key Habitats for which costed action plans will be prepared.

In suitable situations maërl beds are found from low water mark to depths of about 20m, below which lack of sufficient light prevents photosynthesis (Wells et al., 1983). The maërl beds also need a gentle water current, which may be important in keeping them free from fine sediments. The beds grow extremely slowly with growth rates of 1 mm (or less) occurring each year (Adey & McKibben, 1973). They occur very locally around the British coasts, being found chiefly on the west coast of Scotland and in western and north-eastern Ireland. At locations where the dead maërl washes up on the shore, 'coral beaches' are often said to be present.

Maërl supports a wide range of living molluscs with Wells et al. (1983), suggesting that up to 99 species have been reported from the habitat, whilst Dr Julia Nunn of Marine Biology Station, Queen's University, Belfast, in studying maërl beds at a number of locations, has recorded 123 living species (Nunn, 1993). She explains that few of these molluscs are specifically dependent on maërl, but that the habitat provides a multitude of

microhabitats and numerous molluscan (and other animal) feeding opportunities. The maërl itself can be grazed by herbivorous gastropods, whilst the hard surfaces provide attachment points for other weeds and animals. The loosely consolidated maërl 'gravel' provides a friable material ideal for burrowing bivalves such as the *Mya truncata* and *Dosina exoleta*.

St Mawes Bank is the only extensive bed of healthy live maërl in the Cornish Fal estuary and this is also the only bed of significant size in southern Britain (Wells et al., 1983). The Fal estuary and Falmouth Bay also support extensive beds of sub-fossil maërl which, although not as faunistically rich as the live beds, still support a rich community of Mollusca and other flora and fauna. Often these 'dead beds' have a scattering of living maërl rhodoliths on the surface, which need to be undisturbed if the areas are to spread (Hardiman et al., 1976).

Maërl has been dredged for seaweed fertiliser since the 18th century, but for most of that time its extraction has been on a fairly small hand dredged scale, which is not thought to have had a major impact on stocks over most of the area (S. Turk, personal communication). In 1975 the Calcified Seaweed Company has had a licence to dredge dead maërl, mostly from an area near to Mylor. A few years ago the company applied for a licence extension to suction dredge 30,000 tonnes in hitherto untouched areas of chiefly dead maërl. This, as yet undecided, proposal has caused widespread opposition on environmental grounds, with claims that the exploitation of new areas will further denude a fragile, rare and biodiversity rich marine habitat. It is significant that in a comparative preliminary MAFF trial (Anon., 1973) of maërl and sea sand on a crop of winter cauliflower, the maërl was concluded as only having value as a liming agent, a function which could just as easily be achieved at a fraction of the cost by using blown shell sand. It has also been suggested that the Calcified Seaweed Company investigate the exploitation of sustainable inshore brown seaweeds as a substitute (and possibly richer) source of algal fertiliser.

Before any extension of maërl dredging, it is vital to know if the scale of removal is sustainable and if the beds are being maintained by new maërl growth. There is great uncertainty as to the degree of damage that any extension of dredging activities would cause. It is only by monitoring the recovery of areas

abandoned after dredging and comparing these with otherwise untouched areas that the matter can be objectively assessed. Until the removal of maërl can be demonstrated to be sustainable then further dredging should be resisted. Many people that feel that the removal of even small quantities of this important habitat are unacceptable. As there are apparently several suitable equally effective soil conditioners that could substitute for maërl, the environmental risks and losses associated with its further removal would not seem to be justified.

The Conchological Society, particularly through the local interest of Stella Turk, will be keeping a close eye on this situation. Any moves to remove or damage this rare and fragile habitat, which is of such importance for marine molluscan biodiversity, is likely to be strongly resisted by the Society.

Thanks are due to Stella Turk who provided help and gave valuable comments which have been incorporated into this article.

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Field meeting in South Somerset 17 – 19 April 1998

Pryce Buckle

[REDACTED], Boxmoor, Herts. [REDACTED]

The main purpose of the weekend meeting was to survey the non-marine mollusca in connection with the Somerset mapping scheme, on sites and in tetrads for which no records were held at present. Details of species found at each location are summarised in the accompanying table, which was prepared by Colin Gillard.

Six members of the Society met at Odcombe Lodge at 10 a.m. on Friday, 17 April, and we proceeded to our first site, Lufton Hill. This was a rather dry area of grassland with some scrub and a small stream. The site yielded 26 species, all typical of this type of habitat.

The second site we visited was the River Yeo at Yeovilton, where we collected from the river and searched the banks. Many of the freshwater species were collected as dead shells, there being few live ones available. In some places the dead shells were to be found in abundance, but we were unable to account for the paucity of live material.

We next visited the River Parrett at Gawbridge where we concentrated on the freshwater molluscs. Here live material was found more frequently, and nine species were recorded, together with two terrestrial species.

Our last site for the day was at Westmoor Bridge. Here we investigated the Westport Canal and the drainage ditch which runs parallel with the canal at this point, for freshwater molluscs, and the canal towpath and banks for land species. The ditch proved to have a slightly richer molluscan fauna than the canal itself, producing 13 species compared with 10 in the canal.

The towpath proved to be extremely hazardous because dredgings from the canal had been dumped upon it, and there was no warning whatsoever. The surface had started to dry and looked relatively firm, but when Michael Weideli stepped upon it he sank almost to the top of his wellingtons, and became firmly

stuck. It was only with great effort and with assistance from Colin Gillard that Michael and his boots were finally freed. Despite the hazard, 10 species were gathered.



Michael Weideli in the mud at Westmoor Bridge.

This concluded the recording for the day and we all returned to Colin's home, where his wife Margaret had prepared an excellent meal for us. We enjoyed a convivial evening before returning to our respective lodgings for the night.

Next morning we met at Crewkerne railway station and then proceeded to Mancombe. This is a private nature reserve and a County Wildlife Site. It has an area of about 6 hectares and is situated on calcareous Yeovil Sands with unimproved grassland, broad-leaved woodland, scrub, ponds and a stream which runs through a miry area of old coppice to the north. There are also several, mostly capped, springs.

We were met by the owner, John Sims, who had graciously given permission for us to survey the molluscs on the reserve. We were supplied with maps which showed the borders of each compartment, and it was our intention to record the molluscs in each for comparison. For the sake of clarity in this report the accompanying table combines all the records for each compartment into the one column. Not surprisingly in view of the variety of habitats present, a total of 41 species were recorded.

The presence of both *Limax cinereoniger*, and *Zenobiella subrufescens* suggests that the conservation value of the site is high.

It was not until well after lunch that we moved to the next site. This was West Coker Fen, a Somerset Wildlife Trust Reserve of about 6 hectares of unimproved marshy pasture over the calcareous Yeovil Sands. Here a total 26 land species were recorded.

For the final recording session of the day, we examined a dry-stone wall at Ham Hill. The choice of site was to some extent determined by the fact that it was our intention to eat at the nearby pub, and we were waiting for the pub to open. The wall was being repaired in some places, but traditional methods were being used, as were many of the old stones, so that disturbance of the flora and fauna would be minimised. Sixteen species were found, including *Pomatias elegans* and *Helicigona lapicida*, both of which we found only at this site during the entire weekend.

We enjoyed a good meal at the pub, and after a while we returned to our lodgings, having arranged to meet next day to survey a pond and two woods in the Little Norton valley.

Until the Sunday the weather had been kind to us, but we awoke to drizzle, which gradually got worse as the day wore on. Nevertheless we started undeterred for Pit Pond. This proved to be an ornamental lake surrounded by exotic trees and shrubs. Even worse, the lake appeared to have been drained and cleaned in the recent past. The only freshwater species we could find were a few *Potamopyrgus antipodarum* and some *Gyraulus albus*. The surroundings revealed only five land species, all typical of a disturbed site.

We next moved to Pit Wood. This also proved to have been disturbed and 'tidied' and only six species were recorded here. Again, all typical of a disturbed site, including *Lehmannia valentiana* which we had already found the previous day at West Coker Fen near the entrance to the reserve.

The rain continued, but we persevered, and proceeded to what we thought would be some less disturbed woodland. This also

proved to have been disturbed, at least around the perimeter where a new fence had been erected. Only seven species were found, and once again we found only those indicating a disturbed habitat, including *Lehmannia valentiana*.

By this time we were all feeling a little despondent, but we decided to proceed to the west arm of the Sutton Bingham Reservoir. The rain gathered strength. Although we did get as far as dipping our nets in the reservoir, the weather finally got the better of us and we decided we had had enough.

Despite the final day's weather we enjoyed the weekend field trip and we thank Colin Gillard for arranging it, and both Colin and Margaret for their hospitality. Thanks are also due to John Sims for allowing us to record on his private nature reserve at Mancombe.

Key to Table

Date	Site Reference	Name of Site	Map Reference
17 April	1.	Lufton NT (County Wildlife Site)	ST510168
	2.	River Yeo, Yeovilton	ST544226
	3.	River Parrett, Gawbridge	ST441203
	4.	Westmoor Catchment, Westmoor Bridge*	ST401205
	5.	Westport Canal, Westmoor Bridge (Land)	ST401205
	6.	Westport Canal, Westmoor Bridge* the drainage ditch that ran parallel to the Westport Canal	ST401205
18 April	7.	Mancombe Reserve	ST424096
	8.	West Coker Fen (SWT Reserve)	ST505137
	9.	Ham Hill, a wall	ST479168
19 April	10.	Little Norton valley, Pit Pond	ST494157
	11.	Little Norton valley, Pit Wood	ST493157
	12.	Little Norton valley, damp woodland	ST490156
	13.	Sutton Bingham Reservoir, west arm	ST544102

Key to database listing of species recorded:

L = live, S = fresh shell

SPECIES	Ref	1	2	3	4	5	6	7	8	9	10	11	12	13
Pomatias elegans	10									L				
Carychium minimum	30	L						L	L					
Carychium tridentatum	40	L						L	L					
Succinea putris	70	L		L				L	L					
Oxyloma pfeifferi	80								L					
Cochlicopa lubrica	115	L						L	L	L	L			
Columella edentula agg.	140							L						
Columella aspera	150							L						
Vertigo pygmaea	210	L												
Lauria cylindracea	320							L	L	L				
Vallonia excentrica	360									L				
Acanthinula aculeata	370							L						
Punctum pygmaeum	410	L						L						
Discus rotundatus	430	L						L	L	L		L	L	
Arion ater agg	440										L	L	L	
Arion subfuscus	490	L				L		L	L	L		L		
Arion circumscriptus agg.	500								L					
Arion circumscriptus ss	505								L	L				
Arion silvaticus	510							L						
Arion fasciatus	520								L					
Arion distinctus	540							L			L			
Arion intermedius	560	L				L		L	L					
Vitrea pellucida	570							S	L	L				
Vitrea crystallina	615	L						L						
Aegopinella pura	640	L						L						
Aegopinella nitidula	650	L				S		L		L				
Oxychilus cellarius	670					S		L		L			L	
Oxychilus alliarius	680	L						L						
Oxychilus helveticus	690	L						L	L					
Zonitoides nitidus	710	L				L								
Boettgerilla pallens	770							L						
Limax maximus	780							L						
Limax cinereoniger	790							L						
Limax marginatus	830							L	L					
Lehmannia valentiana	835								L			L	L	
Deroceras laeve	840							L	L					
Deroceras reticulatum	860	L				L		L	L	L			L	
Deroceras caruanae	870							L	L					
Euconulus fulvus ss	885	L						L						
Clausilia bidentata	930	L						L	L	L				
Monacha cantiana	1090					L			L		L			
Ashfordia granulata	1100	L						L	L					
Zenobiella subrufescens	1110							L						
Trichia hispida	1150	L				S		L	L		L	L		
Trichia striolata	1170	L				L			L	L				

SPECIES	Ref	1	2	3	4	5	6	7	8	9	10	11	12	13
Arianta arbustorum	1200	L						L						
Helicigona lapicida	1210									L				
Cepaea nemoralis	1230	L						L	S					
Cepaea hortensis	1240	L		L				L		L				
Helix aspersa	1250	L				L		L	S	L				
Valvata cristata	2030				L									
Valvata piscinalis	2050				S		L							
Potamopyrgus antipodarum	2100	L									L		L	
Bithynia tentaculata	2120			L	L		L							
Physa fontinalis	2180			L	S		L							
Lymnaea palustris	2250				L									
Lymnaea stagnalis	2260						L							
Lymnaea peregra	2280				L		L	L						
Planorbis planorbis	2300			L										
Planorbis carinatus	2310				L									
Anisus leucostoma	2320				L			L						
Anisus vortex	2330				L		L							
Bathyomphalus contortus	2350			L	L		L							
Gyraulus albus	2380				L		L				L			
Armiger crista	2390			L										
Planorbarius corneus	2420						L							
Ancylus fluviatilis	2440			L										
Acroloxus lacustris	2460			L	L									
Unio tumidus	3030						L							
Anodonta cygnea	3040			L										
Sphaerium corneum	3070			L	L									
Pisidium milium	3170							L						
Pisidium subtruncatum	3190							L						
Totals		26	26	11	13	10	10	41	26	16	7	6	7	0



*The Newsletter Editor sends
Seasonal Greetings
and Best Wishes for the New Year
to every reader.
My special thanks go to all contributors to the
Newsletter, especially those who produced articles
at short notice.*

Shells at Hastings: The shell collections at Hastings Museum and Art Gallery, East Sussex

June E. Chatfield

[REDACTED], Alton, Hampshire [REDACTED]

Abstract: Hastings Museum has collections of British marine and non-marine shells made over a period of 45 years by P.J. Rufford, W.R. Butterfield, H.J. Sargent, A. Belt, J.R. le B. Tomlin and A.E. Craven and some display material of exotic marine shells donated by J. Morgan and ethnographical items using shells collected by Lady Brassey, the latter on display in the Durbar Hall. The British marine collection is based on the Hastings area, including Camber Sands and offshore dredging and is voucher material for the account of marine life in *The Victoria History of the County of Sussex*. There is a brief introduction to the present habitats for molluscs in the Hastings area.

Hastings Museum

Interest in learned matters led to the formation of a short-lived Hastings Literary and Scientific Institute in 1831, with a museum in George Street, Old Hastings, East Sussex. The Institute was wound up and its museum collections sold in 1855. Local interest in museums was rekindled with the formation of the Hastings and St Leonards Museum Society in 1890 set up with the intention of developing a local museum. In 1892 premises were found through Hastings Corporation for a museum in the Brassey Institute, Claremont which still houses the Hastings Public Library. This operated on a voluntary basis with virtually no funding until 1905 when it was taken over by Hastings Corporation. The first full-time paid Curator was W. Ruskin Butterfield and he was Curator at Hastings until his death some 30 years later. In 1928 the museum acquired its present building, John's Place, above the White Rock Gardens in Cambridge Road. Butterfield was succeeded in 1935 by John Manwaring Baines. The Hastings and St Leonards Museum Association continues as a Friends organisation and is represented on the Museum Committee (Hastings Museum Fact Sheet 1).

The Shell Collectors

The core of the shell collection was contributed by members of the early Museum Committee: John Morgan, Chairman of the Specimens Committee (exotic shells), Phillip James Rufford and Anthony Belt (who contributed both British marine and non-marine shells, mostly local). There were later additions to the collection by two of the early curatorial staff, W.R. Butterfield who had local fishermen collecting for him, and his Assistant, H.J. Sargent. Most of the shell collection at Hastings was assembled between the last decade of the nineteenth century and the mid-1930s, a period of about 45 years. A few British specimens were donated by the well-known private shell collector J.R. le B. Tomlin who lived at St Leonards in his later years. The last notable collection to be accessed was a small cabinet of British land and freshwater shells made by A.E. Craven who had retired to Hastings.

Brassey Collections

Another smaller component of the present collections at Hastings Museum is from the Brassey family who founded the Brassey Institute in 1878. The first Lord Brassey, Thomas Brassey (1836-1918) was a politician and Liberal MP. He and his wife Anne were great travellers and Lady Brassey made collections of shells and ethnographic objects for her private museum. This was housed in the Durbar Hall, a carved Indian palace purchased in 1886 from the Great Exhibition and erected at their London home in Park Lane. The Durbar Hall with its contents was presented to the Hastings Museum in 1919 by Lady Brassey's son, the second Earl Brassey, and was in store until its re-erection at John's Place in 1931, where it still forms a prominent part of the museum displays. The ethnographic collection from the Pacific islands incorporates some shell work. These include a necklace of cowries and shell discs from Fiji, shell pendants from the Gilbert Islands, a mother-of-pearl ladle and a Conch shell with a hole from Palau and discs of shell strung as money, further shell necklaces of cowries and moonshells and a girdle of moonshells from the Marshall Islands. Records of the travels and collections made were recorded in two books, the exhibition catalogue (Bryce-

Wright, 1883) and in Lady Brassey's book *A Voyage in the Sunbeam* (Brassey, 1890), the latter making a fascinating read. There are exhibits on the Brassey family in the Durbar Hall at Hastings Museum. With the Accession Registers at Hastings Museum is a substantial bound manuscript catalogue of the Brassey Museum which included many exotic marine shells. This was clearly the private collection of Lady Brassey, but so far this collection has not been discovered in the museum at Hastings. However, a collection of fine exotic shells and fossils was given to Bexhill Museum by Lady Brassey's daughter and these may prove to be the shells listed in the Brassey catalogue. There was a home of the Brassey family outside Bexhill inherited by Lady Brassey's daughter. The author hopes to follow up this study.



Fig. 1. Lady Brassey writing her journal on board the *Sunbeam*, from *A Voyage in the Sunbeam* by Lady Brassey, 1890.

Phillip Rufford Collection

Most of the natural history shell and marine life collections at Hastings were made by Phillip Rufford who was an active member of the Museum Specimens Committee from 1893. Manuscript notes by Mr M.V. Crane, a contemporary and Hon. Secretary of the Museum Committee, refer to Rufford's modesty. He contributed a great deal in many ways to his local museum and his collection forms the larger part of the present molluscan holdings.

Phillip James Rufford (1852-1902) was a civil engineer who retired to Hastings in 1888 due to ill-health when he was in his mid-30s. In the early years of the museum he served as the natural history authority and built up a comprehensive collection of marine and non-marine shells which he presented to the museum in 1899. The significance of this shell collection is as voucher material for the list of local marine life drawn up by Rufford and published in *The Victoria History of the County of Sussex*. He also made a special study of Wealden fossils and thus his obituary was published in the *Geological Magazine* (September 1902). Rufford's untimely death at 50 was due to suicide on the railway line near Wadhurst, which event was covered in *The Hastings and St Leonards Weekly Mail and Times* for 28 June 1902.

Although the early collections were incorporated into a general museum collection, Rufford's specimens are recognisable by his handwriting on the labels and many are in black glass-topped boxes which were much in use in collections at that time. Identity is further established in the Mollusc Record Book – a catalogue made by W.R. Butterfield with C1-97 being marine and C98-180 non-marine. Many of the latter are in wooden pill boxes with the data written in ink on the lid. Whilst few are individually localised, it is implicated that this is essentially a collection from the Hastings area and it is fairly comprehensive with most local species of mollusc represented. It also includes some egg masses and examples of left-handed whelks. The significance scientifically is as voucher material for Rufford's account of marine zoology in *The Victoria History of the County of Sussex* (pp. 71-107). As well as lists of species this includes localities and other notes and it is

apparent how much material came from trawlers working the local fishing grounds around Hastings. The fishing industry still continues in the town. The non-marine shells are described as a British collection and may not be so strictly local. Much of Rufford's collection was once on display in the museum.

The museum has a limited amount of spirit material and in a letter from Phillip Rufford to Mr Crake, dated 10 April 1902, the expense of alcohol was mentioned. This was at a time when the museum was without adequate funding and operating on an entirely voluntary basis, so financial resources acted as a limiting factor in the expansion of spirit material.

John Morgan Collection

John Morgan was another member of the early museum committee who provided the museum with its collection of tropical marine shells which were listed in the catalogue. Unfortunately these had neither date of collection nor locality but served well as display material and were used in this way until the 1950s.

Anthony Belt Collection

Anthony Belt, a scientist, naturalist and Fellow of the Linnean Society London, came to Hastings in 1899 for his health. He was the son of a mining engineer, but his father's early death precluded him from obtaining a university education. He took private pupils. Belt was a member of the Museum Committee until 1944 and he died in 1952. His main contribution was on local faunal lists and he also provided specimens for museum displays (entries in accession books). Belt was President of the South-Eastern Union of Scientific Societies and of the Hastings Natural History Society and wrote many articles for the local newspapers on natural history.

William Ruskin Butterfield (1872-1935): the first Curator

Manuscript sources in the museum provide some background on the museum's first full-time and paid Curator. Originating in Yorkshire W.R. Butterfield came to the Hastings area in 1894 as Assistant Teacher at the St Leonards Parochial Boys School. He

became the first museum Curator in 1905, Hon. Secretary of the Museum Committee in 1906-1910 and in 1909 Librarian of the Brassey Reference Library. Unlike Phillip Rufford he was not a collector but more interested in recording and studying the lives and habits of animals. Like others of his day he was a good all-round naturalist and delighted in field study. He wrote many articles for the local newspaper and for journals of natural history societies, and was a considerable and popular influence on natural history of the Hastings area in his day. Butterfield was the first Editor (in 1906) of *The Hastings and East Sussex Naturalist*, the journal of the Hastings and St Leonards Natural History Society and he contributed a number of papers, including 'The Marine Mollusca of Sussex' (Butterfield, 1910 and 1917).

Because of a speech impediment he did not lecture to large audiences, but found active involvement in communicating his interest and enthusiasm to small groups of children. The details and meticulous catalogue of the Hastings Museum shell collection is owed to W.R. Butterfield. He worked immensely hard seeing the move of the museum from the Brassey Institute to its present building in John's Place and finally the addition of the Durbar Hall and associated displays, which was his last contribution to work at Hastings. From 1930 Butterfield's health declined and, after two lengthy leaves of absence, he never regained full strength and died suddenly from a heart attack.

H.J. Sargent, Assistant Curator

H.J. Sargent was Butterfield's Assistant Curator and his name appears on labels as collector of a number of shells added to the collection. He followed Rufford's earlier lead with an interest in the local marine molluscan fauna. With no opportunity for promotion at Hastings, he left in 1920 to become Curator at Bexhill Museum, a post he held until 1983.

J.R. le B. Tomlin

J.R. le B. Tomlin had a remarkable private shell collection which was worldwide in its fame and in its scope: he was a prominent personality in the shell world of his time. Tomlin died at the age of 90 in 1954 at 23 Boscobel Road, St Leonards, Sussex, where he

lived in his later years. After graduation at Cambridge, Tomlin taught in schools in various parts of the country, but due to private means he was able to give much time to amassing a large shell collection and supporting library, both of which were given to the National Museum of Wales in Cardiff (Salisbury, 1955). Tomlin's large house is now a residential home for the elderly. Tomlin gave some specimens of non-marine molluscs (C227-C230) to the Hastings Museum. These included *Valvata macrostoma*, a rare water snail in Britain that lives in Pevensey Levels, East Sussex, a nationally important wetland habitat not far from Hastings and reached by the railway line. *V. macrostoma* is listed as Vulnerable in the *British Red Data Book* (Bratton, 1991) and details of the molluscan populations of Pevensey Levels have been published (Hingley, 1979).

A.E. Craven (1849/50-1937)

One of the last collections of molluscs to come to Hastings Museum was the small five-drawer cabinet of British non-marine shells made by A.E. Craven. He came to live at 34 Ashburnham Road, Clive Vale in Hastings in the later part of his life. In the local directories from 1916 to 1936 A.E. Craven is recorded as living at 34 Ashburnham Road and in the rate books is listed as its owner. It is a large house which was being used as a girls' school before his occupancy and as a girls' home from 1937. Although there were some Sussex-collected shells, the bulk of the material had come from the Croydon area in north-east Surrey, where presumably he had been living before. Although the shells were labelled with the locality, there was no date, but from deduction of his life history, it is presumed to be an early 20th century collection. A feature of the Craven Collection is the extreme neatness and precision of its presentation even with a sheet of card on top of each drawer to protect the glass-topped boxes from dust. He also made some very fine mounts of love darts, radulae, jaws and internal shells of slugs and clausilia of door snails, suggesting a high level of technical dexterity.

Craven had a chequered career which has been outlined in previous publications (Dance, 1986, Verdcourt, 1979, 1982, 1994 and Mienis, 1983) and he appears to have been a person of small

private means. Correspondence reveals that he had shown an interest in work at the British Museum in London (which he did not get) and later went to East Africa where he made a study of the molluscs, but returned home ill with dysentery. He then seems to have had a period of financial hardship for his name then ceased to appear in the membership lists of societies to which he had previously belonged, and in 1891 he sold his shell collection. In 1891 Craven went to work in the museum at Terverun in Belgium where he published a number of papers on East African molluscs, some of them in French. After living in Belgium for some years, according to the records at Terverun, he fell into debt and suddenly disappeared in February 1895, being next heard of in Weymouth in July that year. It has been suggested (Verdcourt, 1982) that his small private income and nominal stipend at the museum in Belgium proved inadequate to the support of wife and family and he fell into debt – hence a rapid return to England where he seems to have kept a low profile. On the evidence of the size of house which he owned, Craven's financial fortunes seem to have changed by the time he came to reside at Clive Vale in Hastings, perhaps due to inheritance.

In 1909 and 1910 his name appears in the Accession Registers of the Mollusca Section at the British Museum (Natural History) to whom he had given some non-marine shells, mostly from the Croydon area, but with some from Sussex (BM (NH) Reg. No. 1909.6.14, 1-114; 1910.4.14, 1-12). His own reference collection of British land and freshwater shells was given to the Hastings Museum in 1935, precipitated by his move to a smaller home following the death of his wife and his own failing health in old age. Two letters referring to this and the transfer of the collection to the museum are in the files at the Hastings Museum.

Marine molluscs at Hastings

An account of the marine molluscs of Sussex at the turn of the century is given in *The Victoria History of the County of Sussex* (Rufford, in Page, 1905) where 192 species were listed. Most of this is based on material collected in the late 19th century by Philip Rufford from Hastings and Camber Sands, augmented by specimens trawled by local fishermen from the Diamond Ground

offshore from Hastings. Information on molluscs from the Brighton area came from a 19th century publication entitled *The Natural History of Brighton* by Mrs Merrifield. Details of habitats, localities and abundance were given for those of which Rufford had direct knowledge, and detailed descriptions occur for opisthobranchs (bubble shells and sea slugs).

Hastings has an active fishing industry and edible whelks (*Buccinum undatum*) are still harvested for market. With so many specimens caught, some rare abnormalities have been recorded, principally sinistral or left-handed whelks and some with a keel. These are represented in the museum collection (C189-196 taken at Hastings in 1910). Also from fishermen's nets came colourful collections of the queen scallop (*Aequipecten opercularis*), a species of sandy bottom recorded by Rufford as common at Hastings. A selection from Rufford went to the museum after his death (C350-395).



Fig. 2 The working fishing boats on Old Town Beach, Hastings. Shells of offshore molluscs are brought in with the fishing nets.

In 1890 the American Slipper Limpet *Crepidula fornicata* was accidentally introduced to the Essex coast with oysters from the United States (Fretter and Graham, 1962). It has since spread along the south coast aided by a pelagic larval stage and prolific breeding. *Crepidula fornicata* is now one of the most abundant shells on the strandline of shingle beaches of the Channel and Solent coast. It is interesting that Rufford's list for Sussex, made at the turn of the century, does not include it. However, by 1910, on the evidence of specimens in the museum, it had reached Hastings:

C184 *Crepidula fornicata* on whelk shell, Hastings, 1910. Mr A.M. Violet.

C222 30 specimens of *C. fornicata*, J.H. Orton.

C224 *C. fornicata* on *Macra stultorum* at Camber Sands, H.J. Sargent (Butterfield, 1915).

Although shells of American Slipper Limpets were found alive on low shore rocks at Hastings in April 1994, they were not exceptionally abundant and the shells less frequent on the beach than at other locations in Sussex like Littlehampton. The live Hastings specimens were larger, broader and less colourful than those normally washed up on the Solent shores. Perhaps this difference in growth form reflects a less dense population and different habitat at Hastings on the small areas of rocks surrounded by sand at low shore and below.

Rufford recorded the Common Dog Whelk *Nucella lapillus* as very common at Hastings with a great variety of shell colours – white, yellow, orange or brown and this is substantiated by specimens in the museum collection. *Nucella lapillus* is still abundant at Hastings, being found on pier piles, groynes and intertidal rocks. The brightly coloured forms still persist and in addition there are ones marked by brown spiral banding recorded in April 1994. In many parts of the British Isles populations of this species have been affected by pollution from TBT (Tributyltin) used as an antifoulant on boats and the problem was particularly severe in proximity to pleasure craft marinas. The pollutant affects the reproductive biology making *Nucella lapillus* sterile, with the result of ageing populations and no young. Hastings,

however, with its vessels being a limited to working fishing boats beached at the old town, does not appear to be affected and adults and egg capsules of *Nucella lapillus* were recorded in April 1994 on both the pier piles and rocks. The Marine Conservation Society has been monitoring the change since the use of TBT has been restricted and volunteers are needed to undertake recording (Chatfield, 1993).

One of the special features of the sandy shore at Hastings is the strong population of the Banded Wedge Shell *Donax vittatus* which is the most abundant shell found on the sands at low tide. They are characteristic of surf beaches. Hastings has a range of marine habitats. The top levels consist of a steep shelving beach of flint shingle devoid of living molluscs but including empty shells of *Crepidula fornicata*, *Hinia reticulata* (Netted Dog Whelk), *Mytilus edulis* and others, the first named two being washed up from the sub-littoral and lower shore. A variety of empty shells of sandy shores is to be found on wet sand exposed at low tide and including *Macra stultorum*, *Donax vittatus*, *Ensis siliqua* and *Aequipecten opercularis*. At various levels of the shore are rocks of the Ashdown Sands which provide a rocky shore habitat supporting gastropods like *Littorina* spp., *Patella vulgata*, *Nucella lapillus* and bivalves including *Mytilus edulis* attaching by byssus threads and rock-boring bivalves like *Venerupis saxatilis* and *Pholas dactylus*. Other solid surfaces are provided by man-made objects like the pier piles and wooden groynes. *Mytilus edulis*, *Nucella lapillus* and *Littorina saxatilis* agg. are abundant on the pier. The Rough Winkles at Hastings include some that are brightly coloured, a feature noted by Dacie in 1919 but curiously this species complex is not included on Rufford's earlier list. It is now nearly a century since Rufford listed the marine molluscs of the Hastings area for *The Victoria History of the County of Sussex* and Butterfield's work (1910-1917) and therefore an appropriate time to undertake a new survey recording changes and backed by additional voucher material. Sea Area 14 of the Conchological Society's marine recording scheme stands at 211 species with 174 confirmed as live records: this is a similar total to that listed by Rufford.



Fig. 3. Breakwater providing a solid surface for rocky shore molluscs
– mussels, winkles and limpets.

Hastings, health and culture

Hastings has been a place of resort for those in retirement or attracted to the town for their health. Phillip Rufford's health broke in 1888, when he was in his late 30s, and he settled with his mother in Hastings. Here his active mind was employed in palaeontological and marine studies. Anthony Belt also came to St Leonards for his health in 1899: he took some private pupils and devoted time to the museum until 1944 and he died in 1952. William Butterfield, the first Curator, appeared to have poor health and died whilst still in post. The Museum and its Society provided a valuable cultural focus for talented residents who came to Hastings for their health and presumably were able to live without normal employment and so devote time and energy to voluntary work necessary to keep the museum functioning and progressing.

The attraction of sojourn in Hastings extended outside the natural history world to people of culture in art and literature and amassed many eminent people including Leigh Hunt, Lord Byron, John Keats, Charles and Mary Lamb, George Crabbe, Rossetti, Elizabeth Siddal, Lewis Carroll, Carlyle and George Eliot (Eagle and Carnell, 1977).

Acknowledgements

I am grateful to Mrs Victoria Williams, Curator of the Hastings Museum and Art Gallery for her assistance and for checking details of local collectors in the directories and rates books and to Mr B.K.C. Scott at the Reference Library of the Brassey Institute, Hastings for checking details of local references. Mr Ian Killeen kindly provided a copy of the master card for the sea area. This paper arose from curation of the shell collection under a grant from the Museums and Galleries Commission, administered by the Area Museums Service for South East England.

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Do we overlook *Zenobiella subrufescens*?

David Long

Leckhampton, Cheltenham

When Keith Alexander reported sweeping *Zenobiella subrufescens* off yew trees (*Taxus baccata* L) in Ban y Gor Wood nature reserve (ST 53-96-) on the Wye north of Chepstow on 12 July 1997, and David Haigh (Gloucestershire's Arachnida recorder) made the same find, on 4 yews, when he and I were also in Ban y Gor Wood on 18 June 1998, my curiosity was aroused as I would not have thought to search evergreen trees for this species. I have checked all the Gloucestershire (i.e. Watsonian vice counties 33 and 34), records I hold for living specimens of this species where details of the habitat on, or in, which it occurred have been retained.

No other records had yew as a source and until 7 October this year, when David Haigh and I were continuing our examination of the Gloucestershire Wildlife Trust's adjacent reserve at Lancaut and Ban y Gor, I had no other records of *Zenobiella* on evergreens. We drew a complete blank on Lancaut's yews on 16 June and again on 7 October, but on the latter date David swept single specimens of *Zenobiella* from three separate holly (*Ilex aquifolium*) trees there, plus one and a juvenile from madder (*Rubia peregrina*), and a juvenile on an ivy (*Hedera helix*) leaf on a beech (*Fagus sylvatica*) trunk.

For six of the seven finds on holly and yew *Zenobiella* was the only mollusc noted, the exception being one of the yews in Ban y Gor which also had two juvenile *Cepea* (probably *nemoralis*) and one *Limax marginatus*.

The Gloucester records indicate that *Zenobiella* is a climber on herbs and trees in spring, summer and, at least early, autumn (i.e. May to October). My records outside this period come from ground litter. It has occurred on a variety of green plants including bracken (*Pteridium aquilinum*), dog's mercury (*Mercurialis perennis*), bramble (*Rubus fruticosus*) and elder (*Sambucus nigra*).

There does not seem to be any relationship between underlying geology and the distribution of *Zenobiella* in Gloucestershire. It occurs in woods (or very occasionally just adjacent to them) on Silurian, Carboniferous, and Jurassic limestones, on Coal Measure sandstones, Triassic marls, and

Jurassic clays, which is not surprising when A.E. Boycott listed it as among the species that are indifferent to lime.

What are the lessons to be learnt here? First, one of the best ways to find *Zenobiella* is to use an entomologist's sweeping bag, or if you do not wish to be encumbered with one, either take an entomologist with you or encourage one (or more!) to save you any snails he finds in his bag. Second, be prepared to look for *Zenobiella* in places where you would not 'normally' expect snails.

I would not expect acting on this advice radically to extend the known range of *Zenobiella* in Britain, but it could help to reveal that it is more common than we thought. I suspect that it is in most 'ancient' woods in Gloucestershire, yet it was not verified by the Society for Gloucester East (vice county 33) until 1968, and I can only think that most early conchologists overlooked it for something else (*Trichia* or juvenile *Cepea* or *Arianta*) or did not search the right places.

Have any other readers found *Zenobiella* on yew or holly?

Acknowledgements

With many thanks to the Gloucestershire Wildlife Trust for asking me to survey the molluscs of Lancaut and Ban y Gor Nature Reserves, to Keith Alexander for drawing my attention to his find of *Zenobiella* on yew, and to David Haigh for accompanying me with such good effect on 18 June and 7 October.

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□

For Sale

Taylor, J.W. **Monograph of the Land and Freshwater Mollusca of the British Isles.**

3 volumes plus 3 parts volume 4, all published and complete, 1894-1921. Letter from author pasted into Vol. I. A good set.
£375.

Tel. John Humphreys, [REDACTED] for further details.

West Berkshire Field Meeting: 18 July 1998

Helen Weideli

██████████, Newbury, Berks. ██████████

A motorway services may seem an unlikely place to walk from, at the start of a Conchological Society field meeting, but on Saturday, 18 July 1988 members met at Chieveley Services M4/A34 junction 13 in Berkshire, their purpose being to gather records for the West Berkshire Mollusc Survey, led by Mike Weideli.

The underlying geology of the area visited is Upper Chalk, London Clay and Reading Beds of mottled clay and sand. Not surprisingly, bricks used to be made locally, and sand is currently being extracted from pits in the vicinity. All in all one would think not a very exciting place for a field meeting, but when a tetrad survey is being undertaken all localities have to be covered!

A public footpath runs from the services car park through grassy fields and woodland to Curridge village about a mile away. The group followed this path, recording as they went. Their goal was Dean's Wood, a mixed deciduous woodland in various stages of maturity, on a slight rise at a height of 130 metres a.s.l. (about 450 feet).

The ground flora included bluebell (*Hyacinthoides non-scripta*), wood anemone (*Anemone nemorosa*), and lesser celandine (*Ranunculus ficaria*). Fallen branches, rotting logs and patches of leaf-litter were abundant and the leaf canopy provided dappled shade, while the soil retained some moisture. A total of 21 species of land molluscs were found, as follows:

Carychium tridentatum, *Cochlicopa lubrica*, *Cochlicopa lubricella*, *Discus rotundatus*, *Arion ater* (agg.), *Arion subfuscus*, *Vitrea crystallina*, *Nesovitrea hammonis*, *Aegopinella nitidula*, *Oxychilus alliarius*, *Tandonia sowerbyi*, *Limax maximus*, *Limax cinereoniger*, *Limax marginatus*, *Macrogastra rolpheii*, *Clausilia bidentata*, *Trichia hispida*, *Trichia striolata*, *Cepaea nemoralis*, *Cepaea hortensis*.

The group then made their way to the leader's home in Newbury for lunch before setting off again to the afternoon site, Eddington Marsh, visited with special permission from the Trustees of the Town and Manor of Hungerford to whom we extend our grateful thanks.

This site, by contrast with the morning, was an SSSI wetland, and a traditionally managed water-meadow. The underlying geology is alluvium, and the site is crossed by the rivers Kennet and Dun as well as by drainage ditches. These provided contrasts of deep flowing water, shallow flowing water and standing water, respectively.

Scattered hawthorn bushes (*Crataegus monogyna*), and elder bushes (*Sambucus nigra*), with sycamore (*Acer pseudoplatanus*) and *Salix* spp. along the boundary were among the species present, and piles of logs provided safe havens for many invertebrates. Wildflowers included meadowsweet (*Filipendula ulmaria*), purple loosestrife (*Lythrum salicaria*), hemp agrimony (*Eupatorium cannabinum*) and fleabane (*Pulicaria dysenterica*).

The sun shone, there was a gentle cooling breeze, the sky was blue with white fluffy clouds and the site was peaceful. Participants thought it an idyllic spot and were reluctant to bring the field meeting to a close.

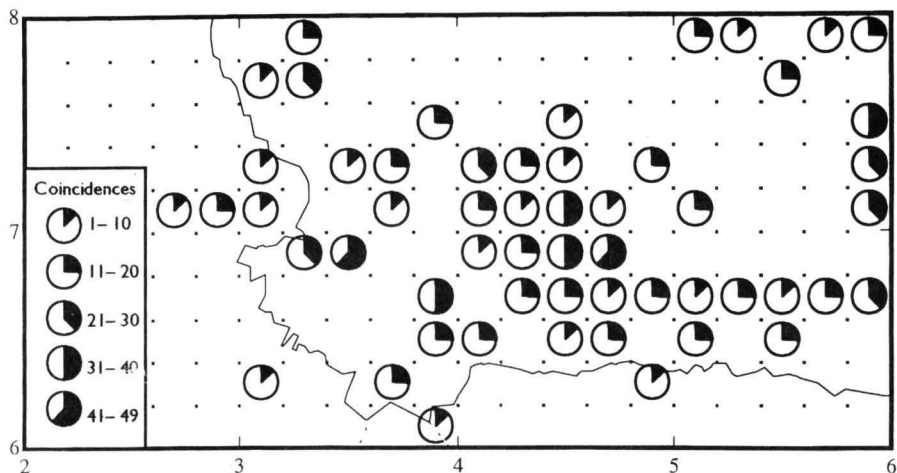
Thirty three land molluscs were recorded as follows:

Carychium minimum, *Carychium tridentatum*, *Succinea putris*, *Cochlicopa lubrica*, *Cochlicopa lubricella*, *Vertigo moulinsiana*, *Lauria cylindracea*, *Ena obscura*, *Discus rotundatus*, *Arion ater*, *Arion rufus*, *Arion subfuscus*, *Arion circumscriptus*, *Arion hortensis*, *Arion distinctus*, *Arion intermedius*, *Vitrea crystallina*, *Aegopinella nitidula*, *Oxychilus cellarius*, *Oxychilus alliarius*, *Oxychilus helveticus*, *Zonitoides nitidus*, *Deroceras laeve*, *Deroceras reticulatum*, *Euconulus fulvus*, *Euconulus alderi*, *Clausilia bidentata*, *Monacha cantiana*, *Ashfordia granulata*, *Trichia hispida*, *Trichia striolata*, *Arianta arbustorum*, *Helix aspersa*.

Thirteen freshwater species were found as follows:

Valvata piscinalis, *Potamopyrgus antipodarum*, *Bithynia tentaculata*, *Physa fontinalis*, *Physa acuta*, *Lymnaea palustris*, *Lymnaea peregra*, *Planorbis planorbis*, *Planorbis carinatus*, *Anisus vortex*, *Bathymophalus contortus*, *Ancylus fluviatilis*, *Sphaerium corneum*.

The West Berkshire Mollusc Survey was begun in 1994. Below is a map showing progress to date, but there is still a lot of ground to cover. Any members fancying a day out in rural West Berkshire are always welcome to come and help! Please contact Mike or Helen on 01635-42190 if interested.



West Berkshire Mollusc Survey, October 1998



Information required on Depressed River Mussels

We are currently undertaking a national survey of rivers to identify key populations of Depressed River Mussel *Pseudanodonta complanata*. If members have any sites which they think are worth investigating, we would be grateful for any information. Please contact:

Dr David Aldridge
Aquatic Ecology Group
Department of Zoology
University of Cambridge, Downing Street
Cambridge CB2 3EJ

Tel. (01223) 334436; e-mail: d.aldridge@zoo.cam.ac.uk

Alien landsnails on the move – the spread of the Girdled Snail *Hygromia cinctella* and the Sandhill Snail, *Theba pisana*

Martin Willing

Midhurst, West Sussex

Well, it would seem that a number of introduced land snails are on the move! The Girdled Snail *Hygromia cinctella* (Fig 1) is a native of central and southern France and the Mediterranean region generally. It has a fairly distinctive shell about 7 mm high with a breadth of about 10–12 mm and has a noticeable light coloured keel around the periphery of the whorls. It has been known in south Devon for many years living amongst stones, in nettle beds or in open vegetation on sea cliffs in the Paignton and Torquay areas. Recently it has appeared in many new areas throughout southern England. It has been recorded as far north as Worcestershire and records exist for Gloucestershire, Berkshire, Surrey and Sussex. I have been sent specimens from suburban gardens in Surbiton, South London and also found the species to be widespread in gardens and hedgerows adjacent to gardens in the Godalming area of Surrey.

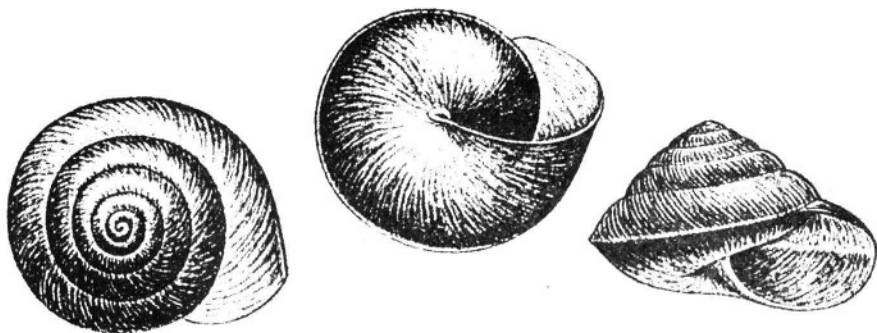


Fig. 1. *Hygromia cinctella*

H. cinctella is also expanding in Cornwall. Mr. P. Boulton of Exeter Museum discovered specimens at Polperro in 1993 whilst Sheila Harper found the species under a privet hedge in Camborne in

1994 with David Holyoak turning up the snail at Camborne in the same year. 1998 confirms the spread of the snail in west Cornwall with new finds at Perranwell and Hayle by Jacquie Davy and Hazel Meredith respectively. The most recent discovery occurred on 11 October 1998 when David and Gerry Holyoak found the species under roadside nettles and other herbaceous vegetation at Nanquidno, a location to the west of Land's End airport!

A second snail that is also expanding its range, albeit in a lesser way, is the Sandhill Snail, *Theba pisana* (Fig. 2). This is also a snail with an easily recognisable shell, which is about 15 mm high and 18 mm in breadth. The shell has a white or gingery-pinkish background coloration upon which are a series of dark, very variable, interrupted spiral bands. It has often been described as a rather beautiful shell and there are accounts of its introduction into gardens because of its attractive appearance. This is a common Mediterranean species which becomes more maritime in its distribution along the coasts of North-west Europe, reaching about as far north as the Netherlands.

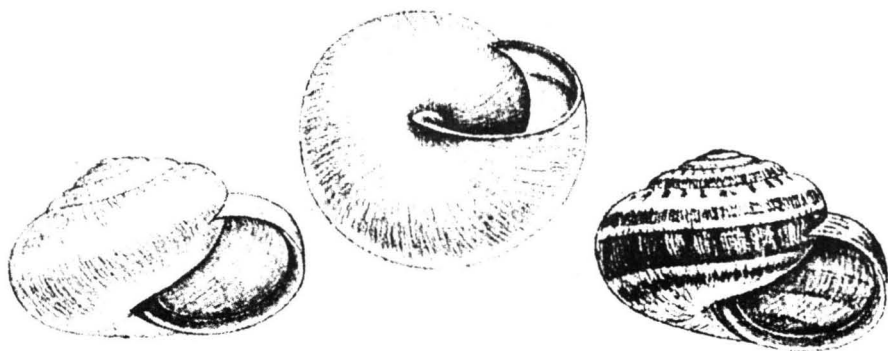


Fig. 2. *Theba pisana*

In Britain it has long been known from St Ives in Cornwall and in sand dunes near to Tenby in South Wales. Since the early 1990s *T. pisana* has been found at an increasing number of isolated localities along the north Cornish coast, where it occurs in a wide range of short to taller scrubby vegetation often in large numbers. It is often particularly noticeable due to its habit of climbing up

tall, often dead vegetation in large numbers. Here the snails may 'glue' themselves to the stems and often remain dormant for extended periods of time, particularly in dry weather. Recently it has been found near to Bude and Polzeath in East Cornwall, a new Vice-county record for the species. David and Gerry Holyoak have been active with this species as well, for as recently as the 15 October 1998 they discovered plentiful snails at Kennack sands, a south Cornish locality lying between Falmouth and the Lizard.

Stella Turk* notes that many of the new sightings are from or near to car parks and she believes that the snails may be inadvertently spread on cars or attached to holiday makers' paraphernalia.

News from Michael Kerney suggests that *T. pisana* may also be expanding its range in Ireland as he reports on two recent finds of colonies in Co. Cork from two widely separated sites (one located by Barry Colville).

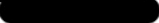
Does the spread of both of these southerly 'warmth-loving' snails provide evidence that climatic warming may be assisting the fairly sudden spread of two species that have had fairly static distributions in Britain until about eight years ago?

Figures

Fig. 1 from Kerney & Cameron, p. 181, plate 18; Fig. 2 from p. 209, plate 24.

***Footnote:** Stella Turk (who kindly provided information that has been used in this article) and Hazel Meredith are preparing a provisional annotated Atlas of the Cornish non-Marine Mollusca to be published by the Cornish Wildlife Trust. If any Conch. Soc. member has any Cornish records that may not have reached Stella, then she would be very pleased to receive them at:

Stella M. Turk,


Camborne, Cornwall 

□

Exotic snails in Liverpool Museum's Aquarium

Nora McMillan, Department of Zoology, Liverpool Museum

In 1975 Shaun Barrett brought me living snails from many of the tanks of Liverpool Museum's Aquarium. The temperate tanks held only *Potamopyrgus jenkinsi* (Smith) but the tropical tanks had a larger variety. By far the commonest species present was *Melanoides tuberculata* (Müller), but one tank produced a physid (awaiting determination), and another (also tropical) held small planorbids. Thanks to Bernard Verdcourt and David Brown, the latter were identified as *Gyraulus chinensis* (Dunker, 1848). With Dr Brown's permission I quote his interesting letter of 24 February 1997:

'The *Gyraulus* from Liverpool is quite interesting, as I think it is *G. chinensis* (Dunker, 1848), originally described from Hong Kong. This species has appeared in Europe and has been found in rice-growing areas of the Mediterranean region as well as in many aquaria and greenhouses further north. I know this from Claus Meier-Brook who has the records. There is a characteristic black pattern on the mantle roof, among the species of Europe only *G. acronicus* has a comparably strong mantle pattern, but its shell is rather different.'

Further collections, made in 1997, by Marie Tracey of the Aquarium staff, yielded the same three species.

Dennis Murphy, Head of the Aquarium, tells me that in the trade catalogues of aquarists suppliers the snails he receives are not listed. But he added, 'All sorts of things do arrive unintentionally!'

□

An Irish conchologist – Mrs Tatlow

Nora McMillan, Department of Zoology, Liverpool Museum

The name of Mrs Tatlow appears occasionally in Irish conchological literature, but nothing else seems to be known of her. An undated (but probably of the 1940s) letter from J.R. Le B. Tomlin to me gave some information of Mrs Tatlow received from R. Lloyd Praeger. The Tatlows were friends of Praeger and when he moved to Dublin to take up a post in the National Library he lodged with the Tatlows.

Here is the relevant part of Tomlin's letter:

Praeger gave me the following rather meagre facts re Mrs. Tatlow. Emily Mary Ferguson. d. of W.D. Ferguson, Registrar of the Court of Chancery of Ireland, married John Tissington Tatlow of Dublin. Died 1944.

Interested in marine conchology & collected much in Ireland but had no critical knowledge.'

Her only publications seem to have been the following:

Impressions of Achill, by Members of an Easter Party.

Marine Mollusca by Emily Tatlow and R. Lloyd Praeger. *Irish Naturalist* 7: 139-140. 1898. [a good list]

Wild-flowers in a County Dublin garden. *Irish Naturalist* 7: 120-134

Marine shells from south-west Donegal. *Irish Naturalist* 8: 235-8.

She collected for the Royal Irish Academy's Fauna and Flora Committee, and her material was checked by Chaster.

I do not know what became of her collection.



The Museum Of

The Museum Of is a new museum opening in the Bargehouse at Oxo Tower Wharf on London's South Bank. In the first of a series of temporary museums The Museum Of celebrates collectors and collecting, looking at who makes collections, what of and why. Over 40 different collectors and collections will be on display, ranging from the everyday to the bizarre. Amongst them will be the collection of snail ornaments, jewellery, etc. owned by the Society's Hon. General Secretary, Jane Reynolds.

The Museum Of Collectors runs from 13 November 1998 to 6 March 1999. Opening hours are Wednesday to Friday 1 p.m. – 7.30 p.m., Saturday and Sunday 12 noon – 7.30 p.m. Admission is free. For further details call 0171 401 2255.

The Molluscan Conservation Group of Great Britain & Ireland

Martin Willing

, Midhurst, West Sussex

The Conchological Society has had a Conservation Officer since 1984 and from that time conservation matters have been dealt with either by the Officer alone, or in conjunction with various other Officers and Society members, often in a rather *ad-hoc* manner. With conservation matters increasing and assuming a much greater significance in recent years, the Council decided that an enhanced conservation role was required by the Society. Therefore, in order to broaden its molluscan conservation remit and 'work force', in March 1998 the Conchological Society established the Molluscan Conservation Group of Great Britain & Ireland. The broad aim of this body is to: *maintain and enhance molluscan species and habitat biodiversity*. Some of the key areas that will concern the group include:

- maintaining national biodiversity (both of 'officially' scheduled species on the Biodiversity Steering Group lists and those on Red Data Lists, but also species deemed to be of local, regional or national interest)
- continuing work to maintain the Society's national terrestrial and marine mapping schemes. The recording of sites, natural features such as river corridors and tetrad regional recording (for local BAP schemes and to supply regional biological record centres) are likely to assume an even greater profile
- supporting campaigns in the defence of threatened sites of importance for Mollusca both in 'official' areas such as SSSIs, SACs and SNCIs, but also in other places judged to be of importance. The Society is keen to involve itself with other specialist groups in the development of integrated habitat interpretation and management
- involving itself in a broad range of advisory and educational activities with both governmental and non-governmental organisations.

Membership of the Conservation Committee, which will meet at least three times a year, is not fixed. It will however include, in addition to the Conservation Officer, the Marine and Non-marine recorders, the President and some other council members with current academic or professional involvements in molluscan conservation. Members may be co-opted onto the committee if their particular expertise is of value in dealing with a particular conservation issue.

Any member requiring advice or assistance with a molluscan conservation matter is invited to contact the Society's Conservation Officer. □

Slugs in the garden – can you beat this?

Helen Weideli

Newbury, Berkshire

On the night of October 1st 1998, while putting out cat food for the hedgehog in my garden, I noticed a quantity of *Arion rufus* (confirmed by dissection at slug workshops) crawling about on the lawn. It had been raining and was a mild night, so on a whim I decided to see how many I could find with the aid of a torch. Grand Total 186. They were everywhere – on the concrete path, the compost heap, the flower and vegetable gardens, the lawn, the greenhouse and even climbing up the fence!

Some were mating, curled cosily up together, some were eating various of my produce like spinach and purple sprouting broccoli, and no wonder my bedding plants were reduced to stalks! (Others were more helpfully eating weeds like clover and chickweed.) Some were tucking in to vegetable peelings and decaying plant-matter on the compost heap. Some that seemed to be just wandering when I set out on my round were drawn to the cat food like a magnet, and by the time I finished my round they were devouring it.

I decided to be 'scientific' and measure a few. Most were a staggering 135 mm long and 20 mm wide. No wonder the hedgehog will not tackle them with their tenacious slime. What a pity one cannot 'preserve' them, as in Pryce Buckle's cartoon on page 71 of *The Conchologists' Newsletter*, No. 146, September 1998!

□

Conchological Society of Great Britain and Ireland

MINUTES

**1081st (Ordinary) meeting held on 14 December 1998 in the
Demonstration Room of the Natural History Museum
starting at 2.30 p.m.**

In the chair: Mr Eversham with 32 members and friends present.

Apologies for absence: Mrs Light, Dr Willing, Mrs Platts, MrsMcMillan, Dr Verdcourt, Mr Crowley, Dr Chatfield, Mr Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Dr Colville, Mr Killeen, Mrs & Miss Fogan, Dr Kerney, Mr Woodward, Dr Preece, Mr Worth, Mr Dance, Mrs Long.

Minutes of the last meeting (of 13 December 1997): Read and accepted.

Matters arising: None.

Nomination and election of new members. No list was available.

Announcements and correspondence: The first Field Meeting of the year would take place on 18 and 19 April, Yeovil area. The leader, Mr Colin Gillard, would be pleased to give details in the tea break.

Members were reminded that the next indoor meeting would be the Annual General Meeting on 21 March.

Lecture of the day:

Speaker: Graham Oliver (National Museum of Wales)

Title of talk: *Molluscs of the Arabian Sea*

Any other business: None

Meeting closed at 4.45 p.m.

Chairman

Appendix: Members' exhibits

P.T. Wimbleton

P.T. Wimbleton *Lymnaea peregra* var. *involuta* from Lough Toberavanaha, Ireland. Collected by H.C. Huggins and featured in *British Snails* by A.E. Ellis, 1926-69.

Graham Oliver

Deep water Arabian molluscs

Rupert Honnor

Book reviewed in *Journal*.

J.E. Reynolds

1. Institutional Members' publications
2. Endangered species stamps
3. Newscutting from 1933.

- | | |
|-------------------------|---|
| C. Street | Shellsand slides. |
| Rosemary Hill/Ron Boyce | Endangered species stamps <i>Segmentina nitida</i> , interchangeable sieve set and some brochures for locations of Society field meetings (Jersey, Torbay, Durham). |
| Kevin Brown | 1. Book, <i>Seashells of Southern Arabia</i> by D. & E. Bosch
2. Book, <i>Saudi Arabian Seashells</i> by D. Sharabati
3. Book, <i>Seashells of Oman</i> , by D. & E. Bosch
4. Book, <i>Seashells of the Sultan Qaboos Nature Reserve at Qurm</i> by K. Smythe
5. Book, <i>Seashells of Eastern Arabia</i> by D. Bosch, S.P. Dance, R.G. Moolenbeek & P.G. Oliver.
6. <i>Astraea heliotropium</i> (Martyn, 1784)
7. <i>Thaia orbita</i> (Gmelin, 1791) |
| D.C. Long | Recent and fossil bivalves |
| Adrian Rundle | Some suppliers' catalogues |

□

British Wildlife* magazine and *The Conchologists' Newsletter

Many members of the Conchological Society subscribe to *British Wildlife* magazine and they will know that there is a bi-annual Wildlife Report on molluscan matters that is written by the Society's Conservation Officer. From now on, by agreement with British Wildlife, a version of the Wildlife Report will appear in the *Conchologists' Newsletter*. This will usually be modified, updated and also expanded into a series of short articles to suit the Newsletter format and readership.

Society members are reminded that they can subscribe to the independent bi-monthly *British Wildlife* at the concessionary annual rate of £17.95. If interested write to: Subscriptions Dept., British Wildlife Publishing, Lower Barn, Rooks Farm, Rotherwick, Hook, Hants. RG27 9BG.

Danger from razor shells

Injuries to bare feet of holidaymakers reached the national press (*Daily Telegraph*, 19 August 1998) in August when low tide exposed beds of razor shells. The photograph below of a notice on the sea wall at Saundersfoot in Dyfed, South Wales warning visitors of the dangers of cut feet from razor shells was taken in May 1978.

June Chatfield



Diary of Meetings

Full details of certain Field Meetings for 1999 are listed separately.

Saturday, 12 December, London. Conch. Soc. indoor meeting. A review of molluscan survey progress. Chaired by Ian Killeen (Felixstowe). The Natural History Museum at 14.30.

Saturday, 30 January, London. Conch. Soc. indoor meeting. 'Shells at Hastings, East Sussex: the collection at Hastings Museum and present day habitats', June Chatfield. The Natural History Museum at 14.30.

Saturday, 13 March, London. Conch. Soc. indoor Annual General Meeting with Presidential Address, on the subject of the behaviour of slugs, by Brian Eversham. The Natural History Museum at 14.30.

Saturday, 17 April, London. Conch. Soc. indoor meeting. Speaker to be confirmed. The Natural History Museum at 14.30.

April. Provisional: field meeting to Gloucestershire with David Long.

May. Provisional: Weekend field meeting to the Morecambe Bay area to examine molluscan species in woodlands and limestone pavement. Leader Barry Colville.

Sunday, 13 June, Winchester, Hampshire. Conch. Soc. field meeting in freshwater, wetland, and chalk downland habitats, leader June Chatfield. To record from the River Itchen, and wet meadows of the Hampshire and Isle of Wight Wildlife Trust reserve at Winnal Moors, and also from the Butterfly Conservation reserve at Magdalen Down. Meeting time and place to be advised.

July Provisional: It is hoped to hold a field meeting in the Colchester area, to examine estuarine, ditch and lagoonal molluscs.

August. Provisional: A look at Lower Tertiary fossils in Kent with Adrian Rundle.

Saturday, 18 September, London. Conch. Soc. indoor meeting. Louise Alcock (National Museums of Scotland) will give a talk about Antarctic Cephalopods. The Natural History Museum at 14.30.

Saturday, 23 October, London. Conch. Soc. indoor meeting. Speaker to be confirmed. The Natural History Museum at 14.30.

Also in **October:** Provisional field meetings to the North York Moors to look for *Vertigo geyeri* with David Lindley and the Yorkshire Conch. Soc. Also a visit to Wicken Fen in Cambridgeshire with Brian Eversham and Richard Preece.

November. The Annual Conch. Soc. Molluscan Workshop.

Saturday, 11 December, London. Conch. Soc. indoor meeting. Subject to be decided. The Natural History Museum at 14.30.

Please note: In the absence of a Hon. Programme Secretary, this programme has been co-ordinated by Helen Weideli, from suggestions supplied by Council, in order to relieve pressure on the Hon. General Secretary. Some dates are only provisional at this stage and may be subject to change as circumstances dictate. Offers from members to lead field meetings are always welcome, as are suggestions from members for speakers at indoor meetings. □

Field Meetings 1999

Hon. Programme Secretary:
(Position currently vacant)

Important

*Please remember to inform
the leader if you are attending
a field meeting.*

Saturday, 27 February Barnes, London

Leader: Jane Reynolds [REDACTED]

A preview visit to the Barn Elms Wetland Centre in Barnes, London, by special invitation of The Wildfowl and Wetlands Trust who manage the site. Due to open in the year 2000, the Centre has been under construction for the past two years on the site of old Thames Water reservoirs. A variety of freshwater habitats have been created on site, and our aim is to record the first molluscan colonisers. Bring pond-dipping gear, lunch, and binoculars for viewing the wildfowl. Meet for an 11.00 start. Please contact the leader for directions. Nearest Underground station is Hammersmith.

Saturday 20 March Windsor Forest, Berkshire

Leaders: Rosemary Hill [REDACTED] *and Ron Boyce*

This ancient Royal Forest includes many large areas of deciduous woodland with ancient pollarded trees and has a variety of damp areas and unimproved grasslands. There is a shortage of records from this area, and some sites have never been recorded for mollusca. It is hoped to obtain permission to survey some permit-only areas. It is advisable to bring a packed lunch.

Meet at: Ascot Railway Station, Grid ref. SU 922683, at 10.30 a.m., Landranger map 175.

Thursday 23 – Thursday 30 September

Isles of Scilly

Leaders: Jan Light

Celia and Tom Pain

A field meeting at this popular location will be a first for the Society. During the week we will visit a wide range of shores around the islands which fall within three DOMMIC recording units. The islands are legendary for their shelly strandlines and we hope to record the full range of species living in their respecting habitats. **IT IS IMPORTANT TO BOOK EARLY.**

Contact the Isles of Scilly Tourist Office on tel. No. 01720 422536 who will send details of travel and accommodation options. Note that it is likely that the 1998 concessionary helicopter fare available on Tuesdays and Thursdays will be available in 1999. Other options are a flight from St Just airport on Land's End where you can leave your car for the week, or the *Scillonian*, which is a flat-bottomed vessel and only recommended for good sailors! It is preferable to stay in Hugh Town on St Mary's. There are launches to transport us to the other islands (£4.50 day return). **If you hope to attend this meeting please advise of your intention as soon as possible.**

Annual General Meeting March 1999

Members are reminded that they can nominate candidates for election to the Council. **Nominations for Programme Secretary are still being sought at the time of going to press.**

Rule No. 12. Candidates for nomination to the Council shall be paid-up members of the Society and shall be nominated by two members. Nominations, other than those made by the Council itself, shall be sent in writing to the Hon. Secretary at least six weeks before the AGM, and shall be accompanied by a signed declaration of the candidate's willingness to serve.

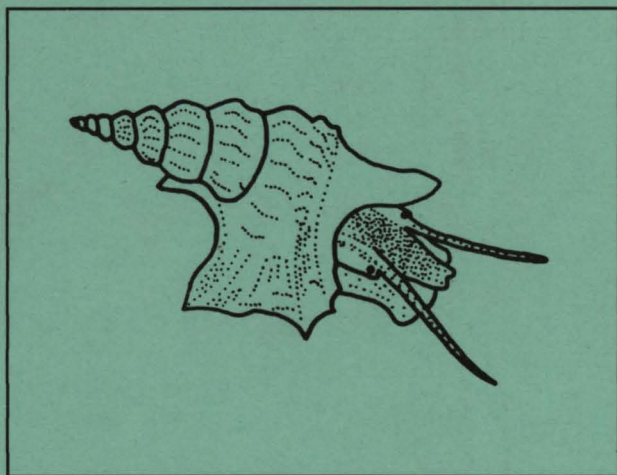
Note: Nominations must be received by the Hon. Secretary **NOT LATER THAN 31 December 1998.**

The Conchologists' Newsletter

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No. 148

March 1999



Conchological Society of Great Britain & Ireland
(Founded 1876)

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**Conchological Society field meeting on
Box Hill and Colley Hill, Surrey,
17 October 1998**

Keith Alexander
National Trust, 33 Sheep Street, Cirencester GL7 1RQ

The objective of this meeting was to visit two different chalk grassland slopes on the south-facing scarp of the North Downs, to compare and contrast the snail fauna in relation to sward structure, situation and site management history, and to consider a local proposal for re-establishing *Helicella itala* on Box Hill.

Eight members attended and 33 terrestrial mollusc species were located on the open downs, plus a further 15 species from woodlands close by. We started off with a demonstration by the writer of the Sabre Blower/Vac device – a two-stroke motor with attachments designed to either blow or suck fallen leaves in gardens, and available from large garden centres or hardware superstores. With a net introduced into the suction tube – and securely fastened around the mouth – the grassland turf can be sucked to extract loose material, including molluscs. The net can then be tipped out into a tray and the catch examined. It is a very easy way of finding species such as *Pupilla muscorum* in short tight swards where it is difficult to get one's fingers into the vegetation.

The meeting point was in the lower zigzag of the road from Mickleham up to the summit of Box Hill (SU176520). The aspect is south-westerly and the slope open to the west. The grasslands on Box Hill have had a recent history of coarsening and scrub encroachment but the National Trust has restored grazing in order to return them to a short flower-rich turf – flocks of sheep are periodically paddocked onto the grasslands using electrified flexi-netting. The first slope visited appears to have suffered least from coarsening and is moderately herb-rich and has a fairly open structure; sheep had only just been taken off the day before the visit. The section immediately above had not been grazed recently and was dominated by *Brachypodium pinnatum*, although with

herb-rich areas also present. Patches of scrub and scrub-woodland are present in both areas.

Colley Hill (SU242522) is a much steeper slope and south-facing. The sward is maintained only by rabbits but is very short and herb-dominated, with terracettes and other open patches. Scrub is thinly and locally scattered.

The mollusc fauna of the two sites was found to be virtually identical – see Table 1. The main difference is that Colley Hill has locally frequent *Helicella itala*, in contrast to the zigzag area of Box Hill which has no recent history of this species – the most recent report of a live *H. itala* anywhere on Box Hill appears to have been in 1960 when it was reported 'below Salomon's memorial'. So, if the only significant difference is the presence or absence of one species, does this suggest that *H. itala* has been lost from Box Hill due to the lack of grazing in the recent past? And, if so, is it therefore sensible to try and rectify this recent loss now that grazing has returned to the Hill? If *H. itala* is becoming increasingly scarce in the north Downs and elsewhere due to habitat loss and degradation (which it is!), would it not be sensible to establish new populations on sites currently lacking the species but where the management can be targeted at favouring them? These are the sorts of questions being asked by the local management team. They would like to celebrate the restoration of the Box Hill grasslands by re-establishing a colony of the lost snail.

By visiting both sites on the same day the Conchological Society party were able to consider these questions from direct knowledge of the two sites. It was felt that the two slopes are still very different in structure despite the similarity in the fauna; the local microclimate was also thought to be very different. No old shells have been reported from this particular area of Box Hill and none were found during this visit. This does raise the question of whether the species has ever been present in this precise spot. Perhaps the local micro-climate is unsuitable – the Box Hill zigzag area had a moister 'feel' to it than Colley Hill, which is more sun-baked, although local weather records would be needed to test the validity of this impression. At the end of the day, opinions tended

towards the conclusion that an introduction of *H. itala* to these particular slopes of Box Hill was not advisable.

The introduction proposal, including the opinions developed during this field meeting, will be further discussed within the National Trust before any decisions are made. It may be that *H. itala* does occur on sites more similar to the Box Hill zigzag elsewhere on the downs, for instance, which would then suggest that the species is less strict in its requirements.

In addition to the downland recording, Ian Killeen provided a list from the woodland higher up one of the combes on Box Hill (SU177516) while the rest of us were at lunch, and the party spent a short time at the end of the afternoon in Margery Wood (SU245525), on the clay-with-flints capping behind Colley Hill.

Many thanks to Michael Kerney for details of Box Hill records for *Helicella itala*.

Table 1. Mollusca recorded in Box Hill and Colley Hill areas, Surrey, 17 October 1998.

Species	Location			
	Chalk grassland		Woodland	
	Box Hill	Colley Hill	Box Hill	Margery Wood
<i>Pomatias elegans</i>	1	1	1	-
<i>Carychium tridentatum</i>	-	-	1	-
<i>Cochlicopa lubrica</i>	-	1	1	-
<i>Cochlicopa lubricella</i>	1	s	-	-
<i>Columella edentula</i> seg.	-	-	1	-
<i>Columella aspera</i>	-	-	-	1
<i>Vertigo pygmaea</i>	1	1	-	-
<i>Pupilla muscorum</i>	1	1	-	-
<i>Lauria cylindracea</i>	-	-	1	-
<i>Vallonia costata</i>	1	1	1	-
<i>Vallonia excentrica</i>	s	s	-	-
<i>Acanthinula aculeata</i>	1	-	1	-
<i>Ena obscura</i>	1	1	1	-
<i>Punctum pygmaeum</i>	1	-	-	-
<i>Discus rotundatus</i>	s	s	1	1

Continued ...

Species	Location			
	Chalk		Woodland	
	Box Hill	Colley Hill	Box Hill	Margery Wood
<i>Arion ater</i>	-	-	'rufus'	-
<i>Arion flagellus</i>	-	-	1	1
<i>Arion subfuscus</i>	-	-	1	1
<i>Arion circumscriptus</i> seg.	-	-	1	-
<i>Arion distinctus</i>	1	1	1	-
<i>Arion intermedius</i>	-	-	1	-
<i>Vitrina pellucida</i>	1	s	1	-
<i>Vitrea crystallina</i> seg.	s	-	-	-
<i>Vitrea contracta</i>	-	s	1	-
<i>Aegopinella pura</i>	-	-	1	1
<i>Aegopinella nitidula</i>	1	-	1	-
<i>Oxychilus cellarius</i>	-	-	1	-
<i>Oxychilus alliarius</i>	-	s	-	1
<i>Oxychilus helveticus</i>	-	-	1	-
<i>Milax sowerbyi</i>	-	1	-	-
<i>Tandonia budapestensis</i>	-	-	1	-
<i>Limax maximus</i>	-	-	1	1
<i>Limax marginatus</i>	1	1	1	1
<i>Deroceras reticulatum</i>	1	1	1	-
<i>Euconulus fulvus</i> seg.	-	-	-	1
<i>Ceciliodes acicula</i>	s	1	-	-
<i>Cochlodina laminata</i>	1	1	1	-
<i>Clausilia bidentata</i>	1	1	1	-
<i>Candidula intersecta</i>	1	1	-	-
<i>Cernuella virgata</i>	s	s	-	-
<i>Helicella itala</i>	-	1	-	-
<i>Monacha cantiana</i>	1	1	-	-
<i>Trichia striolata</i>	s	-	1	-
<i>Trichia hispida</i>	s	s	1	-
<i>Cepaea nemoralis</i>	s	1	-	-
<i>Cepaea hortensis</i>	1	-	1	1
<i>Helix aspersa</i>	1	1	1	-
<i>Helix pomatia</i>	1	1	1	-

1 = live, s = shell

□

A blister pearl in *Acavus superbus* from Sri Lanka

Henk K. Mienis

National Mollusc Collection, Berman Building,
Department of Evolution, Systematics and Ecology,
Hebrew University, 91904 Jerusalem, Israel

During a revision of samples belonging to the genus *Acavus* Montfort, 1810, tropical land snails endemic to Sri Lanka, I came across a specimen of *Acavus superbus* (Pfeiffer, 1850) forma *grevillei* (Pfeiffer, 1856) with a small blister pearl on its palatal lip. The pearl formation is situated on the upper part of the lip at about one third from the suture. It is slightly lighter in colour than the dark brown lip. The cause of the pearl formation could not be detected.

The specimen once formed part of the Hartley collection and it had been collected near Kahawalta, Sabaragamuwe, Sri Lanka. At the moment it is part of the Arthur Blok collection present in the National Mollusc Collection of the Hebrew University of Jerusalem (HUJ 6860).

This case may be added to the growing list of records dealing with pearl formation in land snails, an event once considered to be extremely rare. The following records are now known of pearl formation in land snails:

Family	Species	Reference
Acavidae	<i>Acavus superbus</i> (Pfeiffer, 1850)	Mienis, this paper
Bradybaenidae	<i>Calocochlia latitans</i> (Broderip, 1841)	Hemmen, 1997
	<i>Canistrum ovoideum</i> (Bruguire, 1789)	Bachmeyer & Uetz, 1975
Hygromiidae	<i>Helicella itala</i> (Linnaeus, 1758)	van Dalsum, 1984
Helicidae	<i>Arianta arbustorum</i> (Linnaeus, 1758)	Sattmann, et al., 1991
	<i>Levantina spiriplana caesareana</i> (Mousson, 1854)	Mienis, 1987 & 1990

Family	Species	Reference
Helicidae (Continued)	<i>Levantina spiriplana</i> <i>lithophaga</i> (Conrad, 1852)	Mienis, in press
	<i>Cepaea nemoralis</i> (Linnaeus, 1758)	van Heurn, 1948
	<i>Helix pomatia</i> , Linnaeus, 1758	Piersanti, 1933

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Erratum

The Minutes of the 1081st (Ordinary) meeting as published in Vol. 9, Part 1, No. 147 on pages 115-116 should have read 'on 14 February 1998', not 'on 14 December 1998'. The Editor apologises for this error.

Not Too Wet

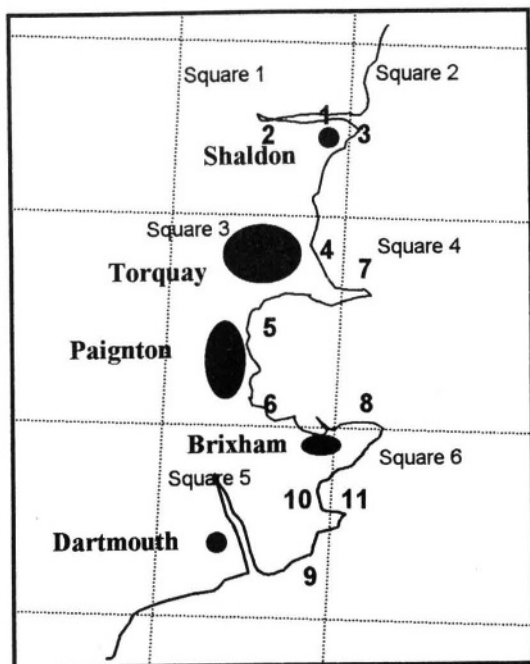
Report on the Marine Field Meeting to the Torquay area of Devon, June 1998

Rupert Honnor

nr. Henley-on-Thames, Oxfordshire

The marine field meeting to the Torquay area of Devon, for the purposes of carrying out recording for the DOMMIC mapping scheme, was actually blessed with moderately good weather, after a rather inauspicious start...

My lasting memory of the field meeting will be of the 'team' attempting to shelter from the bucketing rain under the eaves of the beach cafe, having 'done' Broadsands beach. It was pretty tough trying to collate a list of species seen, under the dripping eaves!! The following day at St Mary's Bay was more clement (only showers), and the final day was actually starting to look quite nice by the time we finished (and so it should for mid-June)! The following map locates the 'squares' and sites relative to the main geographic features:



In total, 6 DOMMIC 'squares' (6 minutes of longitude and latitude) were surveyed over a long (and very busy) weekend. In total 111 species were recorded (91 alive). It can be seen from the map above, that there was only limited access available in some of the 'squares', and this was compounded by the steep headland cliffs which are a feature of the area.

The following table shows the DOMMIC 'squares' and identifies the sites visited, and provides a key to the map and the list of species at the end.

Square 1	Lat. 50°30'N – 50°36'N Long. 3°30'W – 3°36'W
Site 1	The Salty, Shaldon (R. Teign), Devon (14/06/98)
Site 2	Coome Cellars, R. Teign (S. bank), Devon (14/06/98)
Square 2	Lat. 50°30'N – 50°36'N Long. 3°24' W – 3°30'W
Site 3	Ness Beach, Shaldon (R. Teign), Devon (14/06/98)
Square 3	Lat. 50°24'N – 50°30'N Long. 3°30' W – 3°36'W
Site 4	Oddicombe Beach, Devon (28/05/98)
Site 5	Paignton Sands, Devon (27/05/98)
Site 6	Broadsands Bay, Devon (12/06/98)
Square 4	Lat. 50°24' N – 50°30' N Long. 3°24' W – 3°30' W
Site 7	Hopes Nose, Torquay, Devon (14/06/98)
Site 8	Shoalstone Point, Brixham, Devon (14/06/98)
Square 5	Lat. 50°18' N – 50°24' N Long. 3°30' W – 3°36'W
Site 9	Pudcombe Cove (Coleton Fishacre), Devon (11/06/98)
Site 10	St. Mary's Bay, Brixham, Devon (inner portion) (13/06/98)
Square 6	Lat. 50°18' N – 50°24' N Long. 3°24' W – 3°30' W
Site 11	St. Mary's Bay, Brixham, Devon (outer portion; a.k.a. Sharkham Point) (13/06/98)

The collated list of species follows at the end. Where records exist for more than a single site per 'square', a 'square' summary column is also added (Site = '*'). Refer to the table above for the key to sites and 'squares'. In the table 'L' refers to live collected material, and 'S' to dead material.

Finally, my thanks to the following participants and recorders: Ian Killeen, Jan Light, Rosemary Hill, Ron Boyce, Judith Nelson, Rosalind Hunt, Colin Gillard, Michael and Helen Weideli, Celia and Tom Pain, and Deb and Nick Dixon. Especial thanks go to Jan Light and Ian Killeen for checking both material and lists.

Square	1	1	1	2	3	3	3	3	4	4	4	5	5	5	6
Site	1	2	*	3	4	5	6	*	7	8	*	9	10	*	11
Species															
Lepidochitona cinerea					L		L	L		L	L		L	L	L
Acanthochitona crinitus					L		L	L	L	L	L		L	L	L
Diodora graeca							L	L							
Tectura virginea										L	L		L	L	L
Patella depressa							L	L	L	L	L		L	L	L
Patella ulyssiponensis							L	L	L	L	L	L	L	L	L
Patella vulgata					L	L	L	L	L	L	L	L	L	L	L
Helcion pellucidum							L	L		L	L		L	L	L
Monodonta lineata							L	L	L	L	L	L	L	L	L
Gibbula cineraria	S		S			S	L	L		L	L	L	L	L	L
Gibbula umbilicalis	S		S	S		S	L	L	L	L	L		L	L	L
Gibbula magus						S		S							
Calliostoma zizyphinum						S	L	L		L	L		L	L	
Skenea nitens										S	S				
Tricolia pullus							L	L		L	L		L	L	L
Bittium reticulatum							L	L							S
Turritella communis	S		S	S		S		S							
Lacuna pallidula							L	L		L	L		L	L	L
Lacuna parva							L	L		L	L				L

Square	1	1	1	2	3	3	3	3	4	4	4	5	5	5	6
Site	1	2	*	3	4	5	6	*	7	8	*	9	10	*	11
Species															
Lacuna vincta							L	L					L	L	L
Littorina compressa								S							
Littorina littorea		L	L		L	L	L	L	L	L	L	L	L	L	L
Littorina fabalis						L	L	L		L	L		L	L	L
Littorina obtusata		L	L				L	L		L	L		L	L	L
Littorina saxatilis	S	L	L		L		L	L	L	L	L	L	L	L	L
Melarhaphe neritoides							L	L	L	L	L		L	L	L
Skeneopsis planorbis						L		L							
Eatonina fulgida							L	L		L	L		L	L	L
Rissoa interrupta							L	L	L	L	L		L	L	L
Rissoa parva						L	L	L		L	L		L	L	L
Cingula trifasciata							L	L	L	L	L		L	L	L
Manzonina crassa							L	L							
Onoba aculeus							L	L	L	L	L				S
Onoba semicostata							L	L		L	L		L	L	L
Alvania semistriata							L	L		L	L		L	L	L
Pusillina inconspicua							L	L		L	L				
Caecum glabrum							L	L		L	L		L	L	L

Square	1	1	1	2	3	3	3	3	4	4	4	5	5	5	6
Site	1	2	*	3	4	5	6	*	7	8	*	9	10	*	11
Species															
<i>Crepidula fornicata</i>	S		S	S			L	L		L	L				
<i>Trivia monacha</i>	S		S				L	L		L	L		L	L	L
<i>Polinices catenus</i>						S		S							
<i>Cerithiopsis tubercularis</i>							L	L		L	L				L
<i>Ocenebra erinacea</i>							L	L		L	L		L	L	L
<i>Nucella lapillus</i>	S		S		L		L	L	L	L	L	L	L	L	L
<i>Buccinum undatum</i>	S		S	S		S		S							
<i>Hinia reticulata</i>	S		S	S		S	L	L		L	L				
<i>Hinia incrassata</i>							L	L		L	L		L	L	L
<i>Mangelia coarctata</i>							L	L		L	L				
<i>Rissoella diaphana</i>										L	L				L
<i>Omalogyra atomus</i>										L	L				
<i>Ammonicerina rota</i>							L	L		L	L		L	L	L
<i>Odostomia plicata</i>							L	L	L	L	L		L	L	L
<i>Odostomia turrita</i>							L	L		L	L		L	L	L
<i>Odostomia unidentata</i>										L	L				
<i>Brachystomia eulimoides</i>										L	L				L
<i>Brachystomia rissoides</i>										L	L		L	L	

Square	1	1	1	2	3	3	3	3	4	4	4	5	5	5	6
Site	1	2	*	3	4	5	6	*	7	8	*	9	10	*	11
Species															
Partulida spiralis							L	L							
Ondina warreni							L	L							
Turbonilla lactea															S
Philine aperta						S		S							
Philine punctata							L	L		L	L				
Retusa truncatula							L	L		L	L				
Limapontia senestra										L	L				
Aplysia punctata							L	L							
Berthella plumula							L	L							
Goniodoris castanea										L	L				
Goniodoris nodosa							L	L							
Polycera quadrilineata								L					L	L	L
Limacia clavigera										L	L				
Archidoris pseudoargus							L	L							
Jorunna tormentosa							L	L		L	L				
Flabellina pedata							L	L							
Leucophytia bidentata		L	L						L		L		L	L	
Ovatella myosotis		L	L				L	L	L		L		L	L	

Square	1	1	1	2	3	3	3	3	4	4	4	5	5	5	6
Site	1	2	*	3	4	5	6	*	7	8	*	9	10	*	11
Species															
Otina ovata							L	L					L	L	L
Paludinella littorina									S		S		L	L	
Mytilus edulis	L	L	L	S	L	L	L	L	L	L	L	L	L	L	L
Modiolus sp.															S
Modiolarca tumida							L	L		L	L		L	L	L
Ostrea edulis	S		S	S			L	L							
Chlamys distorta							L	L							
Chlamys varia	S		S												
Pecten maximus				S		S		S		L	L				
Anomia ephippium				S		L	S	S							
Heteranomia squamula							L	L	L	L	L		L	L	L
Kellia suborbicularis							L	L							
Lasaea adansonii							L	L	L	L	L		L	L	L
Mysella bidentata							L	L		L	L		L	L	L
Epilepton clarkei							L	L		L	L				
Acanthocardia echinata							S	S							
Acanthocardia tuberculata						S		S							
Cerastoderma edule	S	L	L			S	S	S							

Square	1	1	1	2	3	3	3	3	4	4	4	5	5	5	6
Site	1	2	*	3	4	5	6	*	7	8	*	9	10	*	11
Species															
<i>Mactra stultorum</i>						S		S							
<i>Spisula solida</i>	S		S	S											
<i>Spisula subtruncata</i>				S		S	L	L							
<i>Lutraria lutraria</i>						S		S							
<i>Ensis ensis</i>						L		L							
<i>Ensis siliqua</i>				S		S	S	S							
<i>Angulus tenuis</i>						L	L	L							
<i>Donax vittatus</i>	S		S					S							
<i>Abra alba</i>							L	L		L	L				
<i>Scrobicularia plana</i>		L	L												
<i>Chamelea gallina</i>	S		S	S		L	L	L							
<i>Tapes decussatus</i>							S	S							
<i>Venerupis senegalensis</i>	S		S			S	L	L	L	L	L		L	L	L
<i>Turtonia minuta</i>							L	L		L	L				L
<i>Mysia undata</i>						S		S							
<i>Sphenia binghami</i>							L	L		L	L		L	L	L
<i>Corbula gibba</i>							L	L							
<i>Hiatella arctica</i>							L	L		L	L		L	L	
<i>Thracia distorta</i>							L	L		L	L				
<i>Sepia officinalis</i>				S									S	S	

IMPORTANT NOTICE

Due to unexpected illness of the Hon. Treasurer, the Society urgently needs a volunteer to be **Acting Treasurer** for the year 1999-2000.

Would anyone who is interested please contact Mr Weideli, who can provide a job description, or the Hon. General Secretary for further details.

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Patella depressa in the Isles of Scilly

Stella Turk

Camborne

Dennis Seaward

Chetnole, Sherborne

In our recent paper (Turk & Seaward, 1997), we discussed the status of *Patella depressa* which the many observers, including ourselves, had failed to find on the Isles of Scilly over the years. Crisp and Southward (1958) believed that its 'complete absence' could be due to the fact that it probably had a short breeding season and may have never been able to reach the islands. More recently Smith & Gault (1983) did not record this species although the writers had been concentrating on molluscs.

However, just after our paper was published, Dr Hugh Jones wrote that he had recorded and photographed specimens from Toll's Island, St Mary's (SV9311), whilst this year (1998) Dr Richard Warwick and Dr Tegwyn Harris found 'plenty of specimens' on White Island (SV9217).

Whether *P. depressa* is a new coloniser we will never know, but certainly it must be commoner now than formerly to have been overlooked by so many recorders familiar with the three species of *Patella*.

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□

Collectors in East Africa

No. 28: C. Alluaud (1861-1949)

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Charles Alluaud was one of the last gentlemen-naturalist collectors who was not constrained by having to earn a living and could go where he chose. He collected many groups and the results were written up by many of the best workers of his day. He was a good ambassador for France during his travels; a man of artistic tastes but equally a naturalist very interested in biogeography.

He was born in Limoges on 4 May 1861. His great-grandfather, Fr. I. Alluaud, was director of the Manufacture Royale de Porcelaine de Limoges as far back as 1793 and one of the first private factories in the city was founded in 1816 by Charles' grandfather, François Alluaud, who was also a learned mineralogist. The factory passed to his son Amédée, Charles' father. The family is still honoured for its connection with the porcelain industry, there being a Salle Alluaud in the 'Musée de la Porcelaine' at Limoges. Charles started his schooling in Limoges and it was the time he spent in the grounds of his parents' property, Chateau de Ribagnac, which started his passion for entomology. He had a brother Eugène five years older and a younger sister Camille. The famous painter Camille Corot (1795-1875), that great master of landscape art, was a friend of the family and had a strong influence on the children; Charles had a love of painting all his life and Eugène later became a talented painter.

At 15 Charles was sent to the Collège de la Rue des Postes in Paris, but with his independent character he responded badly to the attempts of the Fathers to discipline him and after several outspoken tirades against authority he was sent back. His parents wanted him to study law but natural history was much more to his taste and fate now took a part with the early death of his father. His considerable inheritance enabled him to be quite independent and follow pursuits which interested him. When he

was 20 he married a childhood friend Jeanne Guillemot and soon had a son Jean; they lived in the Avenue Foucaud near the Jardin D'Orsay in Limoges.

Apart from a trip to the Canary Islands in 1883 his travels began in 1886 with an official mission for the Paris Museum (although presumably financed by himself) to Assinie, now Assini, in the Ivory Coast [5°07'N, 3°17'W] near the coast on the western border of Ghana. *Gulella adami* van Bruggen is based on a specimen collected there by Alluaud on 26 February 1887 (van Bruggen, 1994). He spent seven months in the Canary Islands with his wife and son in 1889-1890 after which he visited the Seychelles in 1892. On his return from Diego Suarez (in Madagascar) in 1893 the family moved to Paris and rented an apartment in Boulevard Saint-Michel. Another premature death intervened. As a result of a frightful accident, their son Jean, now aged 14, killed himself accidentally while playing with a revolver. This sad wasteful loss naturally overshadowed the rest of their lives and from this time on his wife accompanied him on his more lengthy trips and became a valued collaborator in his work.

They visited the Mascarenes (1897), Tunisia and Tripolitania (1898-1899), S. Madagascar (1900-1901) (Dorr, 1997 reports that his first visit to Madagascar was impeded by Anglo-French diplomatic tension and his second was aborted when he contracted malaria) and Kilimanjaro and Victoria Nyanza (1903-4). When they arrived in Mombasa for this trip the British authorities put a saloon-car at their disposal on the Uganda railway which made it possible to be shunted on to a siding at all the stations up to the terminus at Port Florence [= Kisumu] on the lake. The railway was only totally completed in 1903 (although the first locomotive ran into Kisumu on 20 December 1901) thus far and did not reach Kampala until 1931. On their return from the lake they left at Voi and went via Taveta to Kilimanjaro – Jeannel (1952) mentions they transversed 'Pori de Serengeti' (Serengeti bushland) but the Serengeti is some 300 km west and possibly the term was less restricted then. The Sudan and Egypt were visited in 1905-1906. In Cairo Alluaud was given

permission by the Cairo Museum to make an examination of the mummy of a high priest of Ammon in the XXI Dynasty (around 1000 BC). Various dermestid and clerid beetles discovered in mummies had been described as extinct species but Alluaud (1908) showed that in reality they were no more than the common cosmopolitan *Necrobia rufipes* (Degeer) and *Dermestes frischii* (Kugelann) which swarmed in the corpses around Cairo. They made further trips to East Africa in 1908-1909 and 1911-1912, visiting the high mountains Kilimanjaro and Ruwenzori, and to Morocco in 1919-1924.

After their son's death they had left the apartment in 'Boul Mich' and moved to rue du Dragon not far away near St Germain-des-Près which remained their home when not travelling until Jeanne died in 1928. Despite the despair over their son's death various friendships made much of their life happy. They often visited Charles' brother and his painter friends. His sister Mme Philipps, the widow of an English officer killed during the Somali Campaign, often joined them. She had two sons both of whom became high ranking officers, one in the army and the other in the navy. Now a widower, Charles started to build in 1929 on land at Crozant (46°24'N, 1°37'E) in the Department of Creuse which he had acquired during the lifetime of his wife and moved into his new house in 1930. At first he was quite happy working, forming a collection of insects from Creuse which he left to the Museum in Guèret the capital of the Department. He also published his own journal *Afra* [*Afra. Cahiers d'Entomologie. Paris 1930-1936*]. He made a journey to the Ivory Coast in 1930-1931, to Rif Espagnol in 1932 and to Tunisia in 1935-1936; his final one was to Madeira in 1938. The solitude of the Crozant countryside had begun to depress him long before, and in any case the Second World War was fatal to people of independent means and at last money became a difficulty. He had to sell his property and the money he obtained was soon spent. He lost his sister, then his brother, and survived until 12 December 1949 when he died aged 88 after a short illness during which he was looked after by his niece Mme Clifford.

He became a member of the Société Entomologique de France

in 1885 and was president in 1899 and 1914, secretary in 1902-1903; in 1923 he was made an honorary member. He was also a member of the Société Zoologique de France and became president in 1909 and honorary president in 1926. He became a correspondent of the Muséum National d'Histoire Naturelle in Paris in 1922 and an associate in 1936 and obtained the Croix d'Officier de la Légion d'Honneur in 1935. The greatest honour of all was to have two of the most interesting plant genera of the extraordinary Madagascan family Didiereaceae named after him, *Alluaudia* (Drake) Drake and *Alluaudiopsis* Humbert & Choux. Doubtless numerous insects are also named after him.

Alluaud wrote 165 mostly short papers which are listed by Jeannel (1952); he wrote elegantly and concisely. A man about town with a perfect education, he was a curious mixture of artist and naturalist, a lover of order, a good draughtsman and photographer; he bound his own books.

Dautzenberg (1908) wrote up the molluscs from Charles' first East African expedition in a paper illustrated by two hand-coloured plates by G. Reignier but by this time Charles was again in East Africa.

I found in the Dautzenberg archives kept in the Royal Belgian Institute of Natural Sciences in Brussels a box labelled 'Autographes'. This contained notes on some of his correspondents but also preserved in the box is a letter from Alluaud to Dautzenberg from Entebbe in Uganda dated 16 December 1908 [a Wednesday]. This is I think worth publishing as a whole (translated fairly freely).

Dear Sir,

On debarking here three days ago I found a second copy of your work on my shells. I have been touched by all the precautions you have taken to ensure I should receive a reprint so interesting to me. I have received both copies (from Nairobi I acknowledged receipt of the first). Again thank you.

This morning I had at my disposition a powerful steam-launch. I profited from this by dredging in front of Entebbe at 8 to 10 m depth – unfortunately engine trouble lost me about

two hours and I was invited to lunch at his Excellency the Governor General of Uganda!

I have therefore not done anything of much importance. I discovered from the bottom of my dredge that the fauna hardly differs from that of Kavirondo Bay. I saw again with pleasure *Unio alluaudi*, some valves of *Pseudocorbicula alluaudi*, *Melania tuberculata* etc and a gasteropod which I do not recall having encountered in the east (but my memory is very vague concerning those species not figured in your work) [the word gasteropod is marked with an asterisk leading to a drawing and a description stating species with projecting sharp ribs a little larger than the preceding of which I have only found one dead shell – the drawing shows a form of *Bellamya trochlearis* and a second drawing marked *Espèce abondante*, obviously 'the preceding' in the phrase above, which probably depicts *Bellamya jucunda*].

The small steamer unfortunately departs tomorrow. I will try to complete my researches on my return from Ruwenzori (I leave next Monday for about three months).

It is probable that a small Government steamer will be put at my disposal on lake Albert-Nyanza which I propose to visit when I have finished my researches on the Ruwenzori Massif.

Sleeping sickness and the rigorous measures taken by the Government on the banks of the great lakes has temporarily suppressed the departures of the big native boats which will hinder my researches considerably. Be that as it may I much hope to bring back interesting material thanks to the precious help of the English authorities. Madame Alluaud and I are in perfect health despite a terrible month of November passed to the north of [Mt] Kenia, on foot with continual rain lost in the fog. I had to give up the ascent of Kenia to my great regret.

Please remember me kindly to Madame Dautzenberg and all of yours and accept all best sentiments, from your devoted colleague.

Charles Alluaud

List of molluscs described from material collected by Charles Alluaud in Kenya and Tanzania

All the Alluaud and some of Daubenberg's types are in the Laboratoire de Malacologie, Muséum National d'Histoire Naturelle, Paris; other Daubenberg material is at Brussels.

Achatina kilimae Dautzenberg, 1908. Tanzania, Kilimanjaro, cultivated zone, 1400 m., *Alluaud* (syntypes); Kilimanjaro, Kibosho, 1500 m., *Daubenberg* (syntypes). *Achatina* (*Lissachatina*) *zanzibarica kilimae* Dautzenberg.

Buliminus (*Conulinus*) *nakuroensis* Dautzenberg, 1908. Kenya, Nakuro (= Nakuru) (holotype). *Edouardia nakuroensis* (Dautzenberg).

Ennea landianiensis Dautzenberg, 1908. Kenya, Landiani (= Londiani) (holotype). *Gulella* (*Plicigulella*) *landianiensis* (Dautzenberg).

Ennea sambourouensis Dautzenberg, 1908. Kenya, Sambourou (= Samburu) (holotype). *Gulella* (*Plicigulella*) *vicina sambourouensis* (Dautzenberg).

Melania tuberculata var. *victoriae* Dautzenberg, 1908. Kenya, Lake Victoria, Kavirondo Bay (syntypes). *Melanoides tuberculata* (Müll.) [Pilsbry & Bequaert, 1927, renamed this *Melanoides tuberculata* var. *dautzenbergi* since there is an earlier *Melania victoriae* Dohrn 1865 from the Victoria Falls which is also a *Melanoides*; there seems no reason to recognise the variety in any case.]

Physa alluaudi Dautzenberg, 1908. Kenya, Nairobi R. (syntypes). *Bulinus tropicus* (Krauss) [sometimes recognised as a subspecies of *tropicus*.]

Planorbis nairobiensis Dautzenberg, 1908. Kenya, Nairobi, (holotype), *Biomphalaria pfeifferi* (Krauss) [some half a dozen subspecies were formally recognised including one based on this but there is no justification for this.]

Pseudocorbicula alluaudi Dautzenberg, 1908. Kenya, Lake Victoria, Kavirondo Bay (syntypes). *Sphaerium* (*Pseudocorbicula*) *nyanzae alluaudi* (Dautzenberg) [following Mandahl-Barth.]

Succinea alluaudi Dautzenberg, 1908. Kenya, Nairobi (syntypes). '*Succinea*' *alluaudi* Dautzenberg [generic position not yet known.]

Unio (*Parreyssia*) *alluaudi* Dautzenberg, 1908. Kenya, Lake Victoria, Kavirondo Bay (syntypes). *Caelatura alluaudi* (Dautzenberg).

Vitrina lobeliaecola Dautzenberg, 1908. Tanzania, Kilimanjaro, 3200 m. (syntypes). *Vitrina lobeliaecola* Dautzenberg (position awaits a revision) [despite Kilimanjaro not being marked on the itinerary given by Dautzenberg on page 2 of his paper it is clear he visited the mountain.]

Some of the material on which Dautzenberg's paper was based was collected by the Rev. Père Daubenberger and it is convenient to mention him here. He was a missionary at the Catholic Mission at Kibosho on Kilimanjaro, an offshoot I think of the main Mission in Tanga. There are records of later exchanges of shells for photographic material in 1908 and 1909 and a note in the Dautzenberg archives of '12 dz plaques pour diapositifs 45 x 107 and 6 dz plaques pour négatifs 13 x 12' packed in zinc [over forty years later I was still using glass plates sent out by Ilford in metal tins soldered around the lids.]

One species was based entirely on Daubenberger material:

Mabilliella daubenbergeri Dautzenberg, 1908. Tanzania, Kilimanjaro, Kibosho, cultivated zone, 1500 m. *Daubenberger* (type material). *Conulinus daubenbergeri* (Dautzenberg).

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Song Thrush predation on marine gastropods

Alastair Pout

Heslington Road, York

Shell fragments belonging to 4 gastropod species were collected from an 'anvil' used by a Song Thrush *Turdus philomelos* on a rocky shore in south Harris during April 1997. Of 275 shells recovered, 244 were of the Edible Periwinkle *Littorina littorea*, 28 of the Flat Periwinkle *Littorina obtusata*, 2 of the Dog Whelk *Nucella lapillus* and there was a single *Littorina saxatilis*. Observations of a Song Thrush breaking shells and examination of the discarded shell fragments revealed that the gastropods were held in the beak with the spire pointing to the left and struck usually 3 to 4 times. The effect of this is either to break a hole in the side of the shell or to break the shell in half. Previous records suggested that such predation is largely associated with harsh weather conditions (Feare, C.J., 1966. *British Birds* 60: 412-414). However, the quantities of shells to be found around anvils, and the regularity with which Song Thrushes were seen to behave in this way, suggests that this may not be the case in south Harris.

Maximum height was measured for the predated shells of 85 *L. littorea* and 11 *L. obtusata* that were either holed or could be pieced together from broken fragments. These were compared with the maximum shell height of 92 *L. littorea* and 40 *L. obtusata* collected from the same shore at low tide (Fig. 1).

Selection of gastropods by Song Thrushes was both species and size specific. *L. obtusata* was the most numerous gastropod on the shore and *N. lapillus* was particularly conspicuous, being found on exposed rocks, yet many more *L. littorea* were taken than either of these species. The size of *L. littorea* taken in Harris corresponded to the size range of *L. littorea* in Wales that represent the adult cohort, those over approximately 4 years of age. (Williams, E.E., 1964. The growth and distribution of *Littorina littorea* (L.) on a rocky shore in Wales. *Journal of Animal*

Ecology 33: 413-432). Selection of *L. obtusata* is also directed at the larger individuals in the population. Size preferences by Song Thrush presumably reflect a trade-off between the amount of effort required to break the shell and the size of the gastropod obtained. Why *Nucella lapillus* are not eaten in greater numbers is not known.

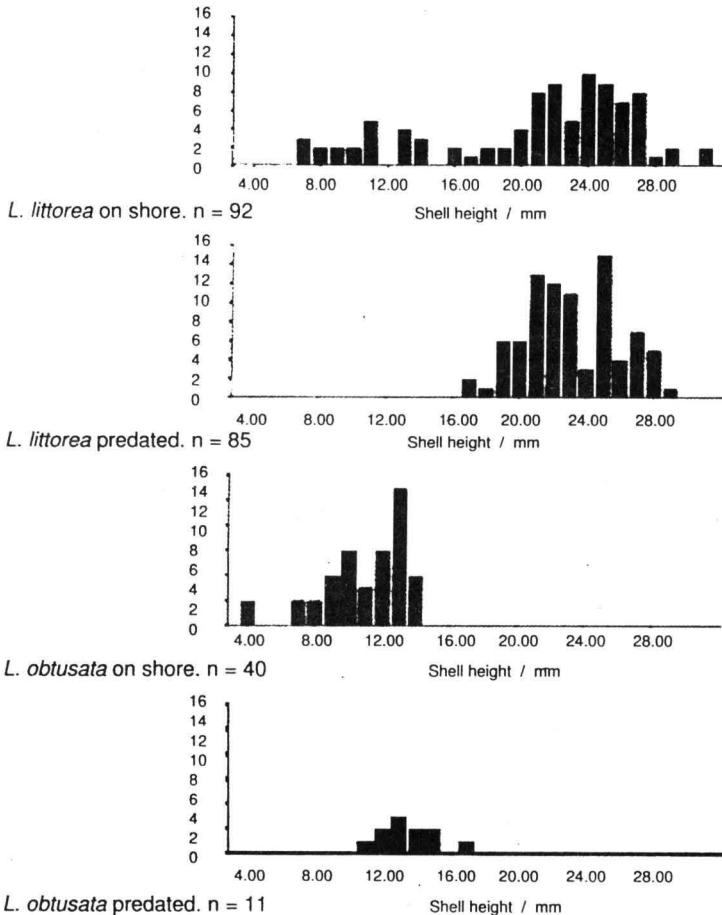


Figure 1. The shell heights of periwinkles *Littorina littorea* and *Littorina obtusata* found around the 'anvil' of Song Thrush and available on the shore.

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Field meeting to Ashtead Common, Surrey: October 1998

June E. Chatfield

[REDACTED], Alton, Hampshire [REDACTED]

A field meeting was held at Ashtead Common, Surrey (51/17-59-) on 11 October 1998 which was attended by seven members and one of the Reserve staff. After a long history under the Lord of the Manor, Ashtead Common and woods was held for a few years by the Mole Valley local authority, before being taken on by the Corporation of London in 1992. The Corporation manages a number of public open spaces in the vicinity of London. Since 1992 considerable progress has been made at Ashtead – a management plan has been published, a volunteer group set up to take part in practical conservation work, base-line data collected and provision of a new office and small meeting room (for the use of groups studying the reserve) at the edge of the common. The Corporation is keen to have species lists for as many groups as possible and were very helpful in assisting with this meeting.*

Ashtead Common is just south of the Greater London area in north-east Surrey and situated on a fairly elevated site at 58 meters on London Clay of the Thames Valley Tertiary rocks which gives a mildly acid soil around pH 6.5, rising to pH 6.7 along the Rye Brook. Although some attempt was made to plough a small section of the common in World War II, this was of short duration and most of the common has remained an acid oak woodland. In the past Ashtead Common was a traditional pasture woodland with pollarded oaks, of which about 1,000 still remain. The grass below was grazed by domestic animals put out to common. As in other similar sites, pollarding ceased about a century ago, and grazing about 50 years ago. Designated as an SSSI for the pollard ancient woodland and associated insect life, Ashtead Common is now also recognised as a National Nature Reserve. Copies of the management plan and various attractive visitor leaflets are available from the Reserve office.

Collecting Sites

The field meeting was held on a pleasant sunny autumn day, but with the ground wet from overnight rain. Time only permitted a circuit of the western end of the common across Wood Field to New Pond and back by a parallel way-marked ride to the bridge over the Rye Brook adjacent to the houses east of Ashted railway station. Habitats studied were:

1. Roadside bank oppose the Reserve office.
2. Wood Field – grass maintained by mowing.
3. The Rye Brook – a small stream flowing along the southern part of the common. It was narrow, but with some deep pools – as one member discovered! – and with a bottom material including small stones, silt and a little *Potamogeton* pondweed. Two parts of the Rye Brook and banks were investigated (a) the west end and (b) by brick bridge on the main path at the east end of Wood Field.
4. Scrub secondary wood and grassland, with some rushes.
5. Ancient woodland with oak pollards. There was dead wood and leaf litter.
6. New Pond – a recently dug pond on the clay of the north-west corner. The above numbers identify the habitats in the table of results.

Molluscs

Around 40 species of land and freshwater snails, slugs and pea-shells were found, with the possibility of additions following the sorting of leaf litter and sifting of stream silt taken by various members of the group. The results are shown in Table 1 which gives separate listing for the habitats. Nearly all records were based on live records, marked A, compared with + for shells only. This is a typical list to be expected for woodland and grassland on mildly acid and non-calcareous London Clay, together with species expected from small streams. *Lymnaea peregra* and *Physa*. sp. are likely to have been distributed by birds visiting both the stream and New Pond. Lack of lime here has restricted the occurrence of some species of snails found in woodland on the North Downs not far away at Leatherhead and Dorking. At Ashted the more lime-

Table 1. Molluscs at Ashtead Common, Surrey, October 1998

Species	Habitats at Ashtead Common						
	(see text for numbers)						
<i>Freshwater Molluscs</i>	1	2	3a	3b	4	5	6
<i>Potamopyrgus antipodarum</i> (= <i>P. jenkinsi</i>)			A	A			
<i>Physa</i> sp.			A	A			A
<i>Lymnaea truncatula</i>				+			
<i>L. peregra</i>			A				A
<i>Ancylus fluviatilis</i>			A				
<i>Pisidium</i> sp.			A				
<i>Terrestrial Molluscs</i>							
<i>Carychium tridentatum</i>				A	A		
<i>Succinea putris</i>			+				
<i>Oxyoma pfeifferi</i>				A			
<i>Cochlicopa lubrica</i>	A			A	A		
<i>Vertigo pygmaea</i>					A		
<i>Ena obscura</i>				A			
<i>Discus rotundatus</i>			A	A	A	A	A
<i>Arion ater</i> agg.		A		A		A	
<i>A. subfuscus</i>					A		
<i>A. circumscriptus</i> s.s.	A	A					
<i>A. silvaticus</i>		A					
<i>A. hortensis</i>					A		
<i>A. intermedius</i>		A				A	
<i>Vitrina pellucida</i>	A				A		
<i>Vitrea crystallina</i>			+				
<i>Nesovitrea hammonis</i>						A	A
<i>Aegopinella nitidula</i>	A		+				
<i>Oxychilus draparnaudi</i>				A			
<i>O. cellarius</i>					A		
<i>O. alliarius</i>		A			A	A	A
<i>Milax sowerbyi</i>				A			
<i>M. budapestensis</i>				A			
<i>Limax maximus</i>					A	A	
<i>L. marginatus</i>					A		
<i>Deroceras laeve</i>				A			A
<i>D. reticulatum</i>	A	A	A				
<i>D. caruanae</i>			A				
<i>Euconulus fulvus</i> s.s.						A	
<i>Clausilia bidentata</i>					A		
<i>Monacha cantiana</i>	A			A			
<i>Trichia striolata</i>			A	A			
<i>T. hispida</i>	A				A		
<i>Cepaea hortensis</i>	A (Juv)			A			
<i>Helix aspersa</i>	+		+	A			

A = live record; + = shell only.

demanding species were at the roadside, the brick bridge or along the line of the Rye Brook. Here species associated with human habitation included the slugs *Milax sowerbyi* and *M. budapestensis* and snail species *Ena obscura*, *Oxychilus draparnaudi*, *Monacha cantiana*, *Trichia striolata*, *Cepaea hortensis* and *Helix aspersa*. No ancient woodland species of slugs (viz. *Limax cinereoniger* or *L. tenellus*) were found and they should be searched for on future occasions. Curiously several members of the group noted that numbers of both species and individuals were lower in the ancient pollard wood compared with the secondary woodland on the west of the common. London Clay is not a particularly favoured soil for molluscs as apart from its low calcium content, it can bake hard and dry in summer offering little shelter at ground level.

Further survey work could usefully complete the eastern part of the reserve, the other pond and extend into the adjacent Epsom Common which has further pond habitats. A 64-page booklet published by the Epsom Common Society (Gough 1993) details the history of Epsom Common (including the original site of the mineral wells making Epsom a spa town) and an introduction to the natural history, but not including molluscs. It is on sale in libraries in Epsom and Ewell. It is also interesting to compare the mollusc list for Ashtead Common with that for Nonsuch Park in Ewell, Surrey (Chatfield 1994). Nonsuch Park has 27 terrestrial species of molluscs in common with Ashtead. Part of Nonsuch is also London Clay but includes Reading Beds, Thanet Sands and some Chalk, but it has a different history as farmland and lacks the streams, marshy places and ancient woodlands found at Ashtead.

References

- Chatfield, J.E.**, 1994. Nonsuch Park and adjacent open spaces in Ewell, Surrey – some data on the flora and fauna. *The London Naturalist* **73**: 77-142.
- Gough, H.** (Ed.), 1993. *Epsom Common*. The Epsom Common Association.

*Contact address for the Reserve: Ashtead Common, PO Box 49, Ashtead, Surrey KT21 1YG.

□

A second case of blister pearls in *Glycymeris insubricus* (Brocchi, 1814)

Henk K. Mienis

*National Mollusc Collection, Berman Building,
Department of Evolution, Systematics and Ecology,
Hebrew University, 91904 Jerusalem, Israel*

Sometime ago I was able to report on the presence of blister pearls in a valve of *Glycymeris insubricus* (Brocchi, 1814) found during an archaeological survey of North Sinai, Egypt, between the years 1972-1981 (Mienis, 1995). It constituted the first reported case of pearl formation in this common Mediterranean species, which is better known by its junior synonym *Glycymeris violascens* (Lamarck, 1819).

A study of the molluscs recovered during the excavation of the remains of a Byzantine church at Karkur, between Beer Sheva and Lahav, Negev, Israel, carried out by Dr Pau Figueras, revealed a second valve of *Glycymeris insubricus* showing blister pearls. This valve was found at locus 2031. It has a width of 37.9 mm and a height of 38.7 mm. It has a man-made hole in its umbo and served most probably as a shell-pendant (Mienis, in press).

The interior of the valve shows under the hinge a low but perfectly round blister pearl with a diameter of 3.8 mm. Due to the hidden position of this pearl formation it was impossible to measure its height. Somewhat below the centre of the shell another smaller blister pearl is situated with a diameter of 2.3 mm. The cause of the formation of these blister pearls could not be detected. This valve forms now part of the General Mollusc Collection of the Hebrew of Jerusalem (HUJ 40626).

It is interesting to note that the two known cases of pearl formation in *Glycymeris insubricus* were both discovered in archaeological material.

I would like to thank Dr Pau Figueras, Division of Archaeology, Ben Gurion University of the Negev, Beer Sheva, for allowing me to study the archaeological material.

References

- Mienis, H.K.**, 1995. Blisterpearls in *Glycymeris insubricus* (Brocchi, 1814) (Mollusca, Bivalvia, Glycymerididae). *Levantina*, **82**: 4.
Mienis, H.K., in press. Aquatic molluscs from the excavation of a Byzantine church at Kurkar. □

Field Studies Council Courses

Helen Weideli

Newbury, Berkshire

Members may be interested to know that the Field Studies Council (Registered Charity No: 313364) exists with the aim of providing **'Environmental Understanding for All'**. In 1999 it has over 600 Special Interest Courses on offer at 12 Centres in England and Wales, plus some 40 Study Tours overseas. Some of the broad categories covered which may be of particular interest to CSGBI Members include: General Natural History, Ecology and Conservation, Environment Training, Geology and Diving.

Several courses relate to Molluscan studies, such as **Land and Freshwater Molluscs** and **Surveying Invertebrates in Woodland, Grassland and Heathland** at Flatford Mill in Suffolk, with CSGBI Member Paul Lee. **Exploring the Seashore**, and **Diving the Skomer Marine Reserve and Pembrokeshire Islands**, are on offer at Dale Fort on the Pembrokeshire Coast. **Freshwater Invertebrates and Pollution Monitoring**, and **Ecological Survey Techniques**, are courses available at Epping Forest. **World of the Microscope** at Juniper Hall, in Surrey could also interest some of our Members. Dr June Chatfield is leading **Natural History in the Somerset Hills**, which is bound to feature some Molluscs! This is based at Nettlecombe Court on Exmoor, as is **Exploring the Sea Shore: Marine Ecology and Identification**. On offer at Preston Montford in Shropshire is a course on **Rivers and River Corridor Surveys**, and at the same venue, Alan Morton is leading a course on **Biological Mapping with DMap**. **Coastal Zone Planning and Policy** and **Integrated Local Coastal Management** courses are available at Slapton Ley in Devon.

These are just a few of the excellent courses available from this well-established provider. Brochures detailing **Courses 99** and **FSC Overseas Experiences 1999** are obtainable from: FSC Head Office Preston Montford, Montford Bridge, Shrewsbury, Shropshire SY4 1HW. □

Conchological Society of Great Britain and Ireland

MINUTES

1082nd (Annual General) meeting held on 21 March 1998 in the Demonstration Room of the Natural History Museum starting at 2.30 p.m.

Announcements of deaths: The deaths of Miss J.M. Blyther, SRN, SCM, member since 1963, and Dr D.A.A. Whiteley, Ph.D., member since 1989, were announced.

In the chair: Mr Eversham with 39 members present.

Apologies for absence: Mrs Weideli, Mrs McMillan, Dr Verdcourt, Mr & Mrs Pain, Mr Crowley, Dr Chatfield, Mr & Mrs Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Mr Woodward, Mrs Platts, Mr Rawlingson-Plant and Ms Chesney.

Appointment of Scrutineers: Mr Long & Mr Tracey were appointed.

Minutes of the last Annual General Meeting (of 15 March 1997): Read and accepted.

Matters arising: None.

Nomination and election of new members: 2 Ordinary, 3 Family, 1 Student and 1 Overseas Institutional members were nominated and elected.

Ordinary:

- Mr B. Gillibrand
[redacted], Newcastle, Staffordshire [redacted]
- Rear-Admiral H.G.H. Tracey
[redacted] Bath [redacted]

Family:

- Mr P.A. and Mrs H.I. Johnson
[redacted], Auchterarder, Perthshire, Scotland
- Miss S.R. Kent
[redacted], Oldham, Greater Manchester

Student:

- Miss T. Hooper
[redacted] Gt Dunmow, Essex [redacted]

Institute (overseas)

- Santa Barbara Museum of Natural History
2559 Puesta Del Sol Road, Santa Barbara, California 93105, USA.

Discussion and vote on the proposed change to the Society Rules:

The proposed change to Rule 9 was circulated to members along with the agenda for the AGM. The proposed change is as follows with the changes in bold:

'9. Second sentence ... The Presidency shall be tenable for not more than **three** years in succession and the President is expected to deliver at least one address.'

Mr Eversham asked for Dr Preece to explain the reason for the proposed change to Rule 9. There were no speakers against the proposed change. The meeting voted in favour of the change to Rule 9 by 37 votes, with one against the motion and two abstentions.

Additionally a second change to the rules was proposed at the meeting. The Hon. General Secretary, Ms Reynolds, explained that the proposed change to Rule 18 was to bring the Society's Rules in line with the Charity Commission rules. She clarified that no change in the way the Society presented its accounts would occur, and that these changes represented a more correct form of terminology. There was some discussion as to the exact wording of the rule change, and the proposed change was agreed as follows with the changes in bold:

'18. The accounts, before being presented, shall be **examined** by **one examiner** usually appointed at the previous Annual General Meeting.'

There were no speakers against the proposed change. The meeting voted in favour of the change to Rule 18, with no votes against the motion.

Report of the Council by the Hon. General Secretary: Read and accepted.

Report of the Hon. Membership Secretary/Treasurer: Read and accepted.

Report of the Hon. Non-marine Recorder: Read and accepted.

Report of the Hon. Marine Recorder: Read and accepted.

Report of the Hon. Programme Secretary: Read and accepted.

Report of the Hon. Conservation Officer: Read and accepted.

Announcements and Correspondence:

Mr Eversham announced that Miss Stella Davies had been awarded Honorary Membership of the Society to commemorate her 50th anniversary as a member and in recognition of her work in conchology, particularly with the genus *Arion*.

The next indoor meeting would be on 2 May, when the speaker would be Dr Adrian Rundle on the subject of Lower Tertiary Molluscs. The next field meeting would be 17, 18 and 19 April, Yeovil area, leader Colin Gillard, followed by 23-24 May, Durham area, leader Rosemary Hill.

The Society's Display Boards were still on show at Brighton Natural History Museum.

Presidential Address:

Mr B.C. Eversham, 'Biogeography and local conservation'.

Election of Examiner: Mr N. Light was elected.

Results of the postal ballot: The following were elected:

Officers:

President	Mr B.C. Eversham
Hon. General Secretary	Ms J.E. Reynolds
Hon. Treasurer	Ms A. Trew
Hon. Membership Secretary	Mr M.D. Weideli
Hon. Editor (<i>Journal</i>)	Dr P.G. Oliver
Hon. Newsletter Editor	Miss R.E. Hill
Hon. Marine Recorder	Mrs J.M. Light
Hon. Non-Marine Recorder	Dr M.P. Kerney
Hon. Conservation Officer	Dr M.J. Willing

Ordinary Council members (to serve a 3-year term):

Mr K. Brown, Mr C. Gillard, Dr A.J. Rundle

Any other business: None.

Meeting closed at 5.38 p.m.

Chairman.

Appendix: Members' exhibits

Colin Gillard	1. Somerset field trip, April. 2. 'Suppliers of Equipment' list — version 3.
Adrian Rundle	British species of the genus <i>Pisidium</i> .
E.O. Bishop	1. Land snails from Thailand 2. Postcard reproductions of 'Endangered Species' stamps.
P.T. Wimbleton	1. Borneo cave snails of the genus <i>Opisthostoma</i> . 2. A new site in Sussex for <i>Cerastoderma glaucum</i> (Poirlet 1789).

- | | |
|-------------------|--|
| Kevin Brown | <i>Neritodryas dubia</i> (Gmelin 1791) + specimens of <i>Neritodryas</i> and <i>Neritina</i> for comparison. |
| P. Dansey | <i>Ensis americanus</i> – identification and distribution. |
| M.J. Willing | Two publications:
1. 'Recording Wiltshire's Biodiversity' re. <i>Helicella itala</i> survey on Salisbury Plain.
2. RSPB, <i>Sustainable development – the importance of biodiversity</i> . |
| D.C. Long | 1. Book – <i>Mollusca, the Southern Synthesis</i> .
2. <i>Scalariform Candidula intersecta</i> . |
| J.E. Reynolds | 1. Photos of snail clock and snail mirror.
2. Press cuttings
3. <i>Asperitas inquinata penidae</i> (homes needed). |
| Dr J.E. Chatfield | Mystery object – suggestions please! |

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**1083rd (Ordinary) meeting held on 2 May 1998 in the
Demonstration Room of the Natural History Museum
starting at 2.30 p.m.**

In the chair: Mr Eversham with 24 members and friends present.

Apologies for absence: Dr Willing, Dr Aldridge, Mrs McMillan, Dr Verdcourt, Mr Crowley, Mr Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Mrs & Miss Fogan, Ms Trew, Dr Preece, Mr Wimbleton, Mrs Platts, Mr Boyce, Dr Kerney, Mr & Mrs Buckle.

Minutes of the last meeting (of 14th February 1998): Read and accepted.

Matters arising: None.

Nomination and election of new members: No list was available.

Announcements and Correspondence: Dr Chatfield gave details of the Cone Workshop which was to take place on Sunday 17 May.

Lecture of the day:

Speaker:	Adrian Rundle
Title of talk:	Lower Tertiary Molluscs – A Diverse Assemblage

Any other business: Miss Sawyer said that she had noticed shell items for sale in Marks & Spencer's shops, similar to those produced by Sainsbury's Homebase/Marine Arts Shells. The Hon. General Secretary said that she had received information from other members regarding similar products, and that the relevant information would be passed on to the Society's conservation committee to look into.

Meeting closed at 4.45 p.m.

Chairman.

Appendix: Members' exhibits

- | | |
|---------------|---|
| Jane Reynolds | 1. Institutional Members' publications |
| | 2. Book – <i>Slug & Snail Pests in Agriculture</i> . |
| T. Pain | <i>Cullullaea labiata</i> (Lightfoot, 1786) |
| Adrian Rundle | 1. Lower Tertiary molluscs (to illustrate talk) |
| | 2. Slide of British Vertiginidae. |
| Kevin Brown | 1. Book – Marsh & Rippingale, <i>Cone Shells of the World</i> |
| | 2. Book – Walls, <i>Cone Shells: A Synopsis of the Living Conidae</i> |
| | 3. Book – Rockel, Korn & Kohn, <i>Manual of Living Conidae</i> |
| | 4. Specimens of <i>Conus</i> for comparison |
| | 5. Press cuttings. |
| P. Dansey | British Columbia razor shells. |
| Rosemary Hill | Durham Field Meeting. |
| D.C. Long | Tertiary fossils (Oligocene-Pliocene-Australian). |



Diary of Meetings

This is a listing of **all** meetings in date order.

Acting Programme Secretary:

Helen Weideli, [REDACTED], Newbury, Berkshire [REDACTED]

IMPORTANT: Please remember to inform the leader if you are attending a field meeting.

Key to meetings:

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

NHM – Saturday, 13 March at 14.30: Conch. Soc. Annual General Meeting. Presidential Address: Brian Eversham, 'Aspects of the Behaviour and Ecology of British Land Slugs.'

YCS – Saturday 13 March: Indoor meeting, at [REDACTED], Leeds, at 1.00 p.m.

FIELD – Saturday, 20 March: Windsor Forest, Berkshire.

Leaders: Rosemary Hill [REDACTED] and Ron Boyce.

This ancient Royal Forest includes many large areas of deciduous woodland with ancient pollarded trees and has a variety of damp areas and unimproved grasslands. There is a shortage of records from this area, and some sites have never been recorded for mollusca. It is hoped to obtain permission to survey some permit-only areas. It is advisable to bring a packed lunch.

Meet at: Ascot Railway Station, Grid ref. SU 922683, at 10.30 a.m., Landranger map 175.

YCS – Saturday 10 April: Hesse Quarry Park. Humber Bank. Meet at Humber Bridge Viewing Point, Grid ref/ TA 025253, at 11.00 a.m.

WKSHP – Wednesday 14 April: Haslemere Museum, Surrey. Easter Holidays 'Seashells' Event tutored by June Chatfield. Two sessions will be held, with children in mind: morning 10.30 – 12.30, and afternoon 1.30 – 3.30. A small charge will be made. For enquiries/bookings, please telephone the Museum (01428 642112).

NHM – Saturday, 17 April at 14.30: Talk entitled 'Mollusc Conservation in the National Trust following the November 1996 Cardiff Conference.' Speaker: Keith Alexander, Leader of the National Trust Biological Survey Team.

FIELD – Saturday, 24 April: Wye Valley Woods, Gloucestershire.

Leader: David Long [REDACTED]

Slade Bottom, to be visited by kind permission of Forest Enterprise, is mixed woodland with a tufa depositing stream; it is the only site known west of the Severn for *Ena montana*. Bigsweir Wood SSSI, to be visited by kind permission of the Woodland Trust and the owners of the Florence Country Hotel, is a wood on the side of the Wye Gorge with an unrecorded mollusc fauna.

Because of limited parking the plan is to meet at 11.00 a.m. in Forestry Commission Woodland at Bearse Common, Grid ref. SO 571059 and then walk down to Slade Bottom and by footpath to Bigsweir Wood and back, a round trip of about 4 miles.

To find the meeting place, turn west, off the B4228, along a paved track with a bungalow on its south side at SO 572057 about 1 mile north of St Briavels and 1 mile south of Trow Green. Follow the track until the paths diverge about 100 yards into the wood.

There are two ways to get to the B4228: first, get onto the M48 off Junction 21 of the M4; then take the A48 towards Gloucester out of Chepstow and go left (at ST 545947) onto the B4228, signed to Coleford, at the Tutshill end of Chepstow. Second, if coming from Gloucester on the A48, go into the centre of Lydney, turn right (opposite Wydean Motors) on to Bream Road, the B4231; follow the B4231 past Bream to Trow Green and turn left at the T-junction with the B4228.

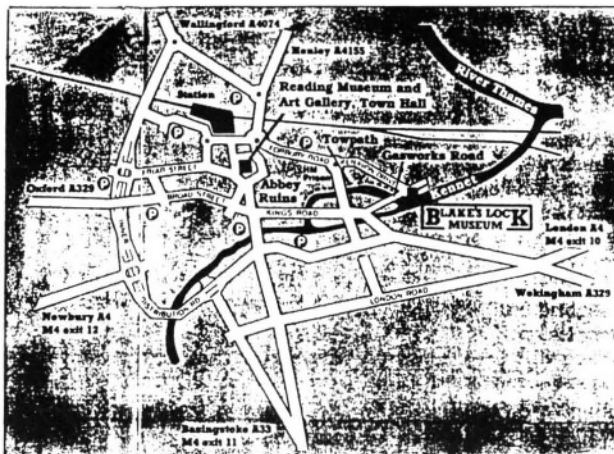
Bring a packed lunch and afternoon snack, and strong footwear.

If considering an overnight stop or short break, the Royal Forest of Dean Accommodation and Short Breaks Guide is available, free, from the Tourist Information Centre, High Street, Coleford, Glos. GL16 8HG – tel. 01594-812388, fax 01594-812330.

WKSHP – Sunday 9 May: Blakes Lock Museum, Reading, Berkshire. Tutor: June Chatfield [REDACTED]; subject: 'Volutes & Olives'; Time: 14.00 – 17.00.

This workshop provides an opportunity to see a wide range of species of Volutes and Olives, and to receive help with naming of material. Bring identification books as available and hand lenses and any specimens you would like to compare against the museum collection.

Blakes Lock Museum, Gasworks Road, is within walking distance of Reading Railway Station. Access by foot and car is along Kenavon Drive, leading off the Forbury Road roundabout. Footpath along the R. Kennet from the back of Forbury Gardens and Abbey Ruins. (See map below.) Car parking in museum – private car park – ask at reception on arrival.



FIELD – Saturday 15 May: Cuckmere Valley, East Sussex.

Leader: Dr Ed. Bishop [REDACTED]

This meeting is to investigate if *Monacha cartusiana* still inhabits the site and also to look at chalk grasslands on this attractive National Trust property. Meet at Lewes railway station at 10.30 (subject to train times not yet available) or later on road to site at the NT car park on the Alfriston Road at Grid ref. TQ 509011.

**FIELD – Weekend Friday 21 – Sunday 23 May:
North Lancashire and South Cumbria**

Leader: Barry Colville [REDACTED]

[REDACTED], Ambleside, Cumbria [REDACTED]

This long weekend offers a wonderful opportunity for those of us living in the South to see some unfamiliar Northern mollusc species such as: *Vertigo alpestris*, *V. pusilla*, *Leiostryla anglica*, *Clausilia dubia* and others. These will be found by examining a variety of terrestrial habitats in this rich limestone area, including some remaining unspoilt Limestone Pavement. (The destruction of areas of Limestone Pavement to provide ornamental rockery stones has been a subject of great concern to conservationists in recent years).

A three-day programme will be offered from Friday morning to Sunday afternoon. Members are welcome to attend all or part of this meeting, but should contact the Leader for full details. A fast rail service operates from London to nearby Oxenholme (on the main Carlisle line). Tourist Information Centres at Town Hall, Highgate, Kendal LA9 4DL (01539 725758) and Grange-Over-Sands, at Victoria Hall, Main Street, Grange-Over-Sands LA11 6PT (015395 34026) can help with a wide range of services including accommodation listings and bookings, maps, local information, etc.

YCS – Saturday 12 June: Sherburn ponds, Sherburn. Meet at lay-by by church, Grid ref. SE486333 at 11.00 a.m.

FIELD – Sunday, 13 June: Winchester, Hampshire.

Leader June Chatfield [REDACTED]

Freshwater, wetland, and chalk downland habitats. To record from the River Itchen, and wet meadows of the Hampshire and Isle of Wight Wildlife Trust reserve at Winnal Moors, and also from the Butterfly Conservation reserve at Magdalen Down. Meet at Winchester Railway Station, Grid ref. SU477299 at 10.30 a.m. (subject to train times not yet available). Bring wellies and lunch.

FIELD – Saturday 3 July: Market Weston Fen, Suffolk.

Leaders: Roy Baker [REDACTED] and Ian Killeen [REDACTED]

This meeting is in response to the Biodiversity Steering Group's request for help to try to re-discover a possible population of *Vertigo angustior* at the site. Meet at Diss Railway Station, Grid Ref. TM 128797 at 10.30 a.m. (subject to train times not yet available). Bring lunch and wellies.

YCS – Saturday 4 September: Washburn valley to look for *Limax* sp. Meet at car park opposite Leathley church, grid ref. SE 233447 at 11.00 a.m.

YCS – Weekend, Saturday 2 October – Sunday 3 October. North Yorkshire Moors area. Details from Mr D. Lindley [REDACTED]

YCS – Saturday 23 October: AGM and Presidential Address. 1.00 p.m., Pool-in-Wharfedale village hall.

Other meetings are planned, as per the Programme Card. Extra details on these will appear in the forthcoming Newsletters.

Urgent note regarding Isles of Scilly meeting:

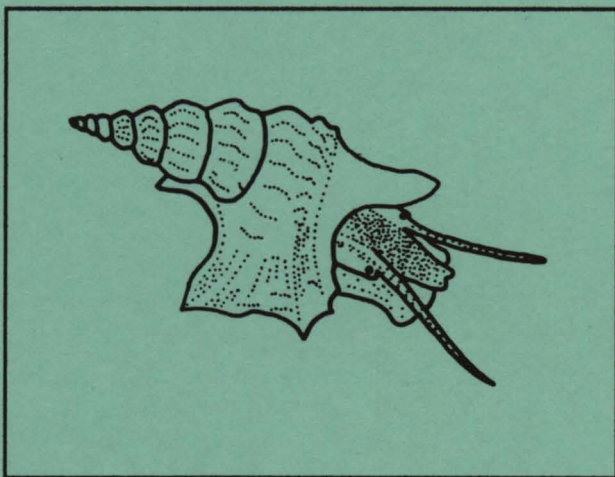
Thursday 23 – Thursday 30 September 1999. See details on page 120 of Newsletter No. 147, December 1998. Any members still hoping to attend this meeting are urged to contact the Isles of Scilly Tourist Office (01720 422536) IMMEDIATELY for any possible remaining accommodation and travel options. When these have been confirmed, please inform the Leaders, Jan Light [REDACTED] or Celia and Tom Pain [REDACTED] of the intention to attend.

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Nerites in Peninsular Malaysia

Malcolm Symonds

Ashtead, Surrey

A family holiday in Malaysia in May 1998 provided a few opportunities to investigate the mollusca of the region, including the *Neritidae* in which I am particularly interested. Our first destination was Pulau Tioman, an island about 40 km off the east coast of Peninsular Malaysia. Before catching the boat from Mersing I had a chance to examine some rocks just offshore which were exposed at low tide. These were home to numerous *Nerita chamaeleon* Linne 1758 in a wide variety of colours and patterns and, at the base of the rocks, I also found two *Nerita reticulata* Karsten 1789 (Syn. *Nerita signata* Macleay in Lamarck 1822).

On Tioman, we stayed at Salang, a small resort on the west coast at the northern end of the island. The foreshore, mainly stones and coral rubble, was surprisingly poor for molluscs despite the presence of a healthy reef just beyond the low water mark. Only *Nerita undata* Linne 1758, *Monodonta labio* (Linne 1758) and *Planaxis sulcatus* (Born 1778) were reasonably common. The *Nerita undata* population included a striking form with black spiral ridges which, at first sight, looked more like *Nerita articulata* Gould 1847. (This resembles the form described by Recluz as *Nerita savieana* Recluz in Reeve 1855)

An isolated patch of granite rocks at about mid shore supported a number of *Nerita albicilla* Linne 1758. I also found a few examples of *Nerita polita* Linne 1758 and, on a rock on the upper shore at the north end of the bay, a single specimen of *Nerita plicata* Linne 1758. A freshwater seepage high on the beach created a microhabitat where a small colony was established of what I believe to be *Clithon faba* (Sowerby 1836) (Syn. *Clithon sowerbyana* (Recluz 1842). These were of small size, up to 12 mm, with an unusually high spire for this species.

Monkey Bay, an isolated cove a few miles to the south of Salang, had a similar fauna with the addition of fairly common *Polinices tumidus* (Swainson 1840) and a distinctive *Nerita* which

I eventually identified as a form of *Nerita chamaeleon*. All the specimens had a cream shell with a few pale grey markings and a yellow aperture and septum. The spire was depressed and the teeth smaller than usual. At first I thought it was a separate species but when I examined the collection at the Natural History Museum I found various examples of *Nerita chamaeleon* with similar or intermediate features.

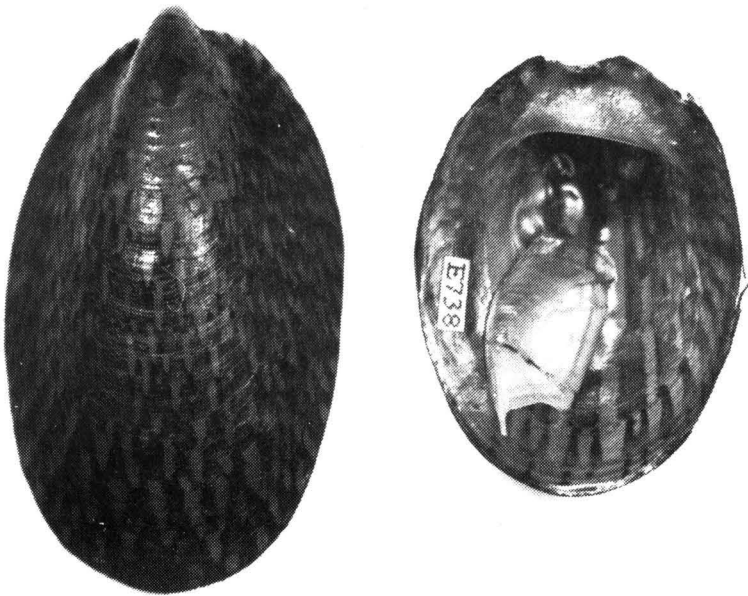


Fig. 1. *Septaria lineata*

On our second day at Tioman we took a boat to Tekek with a view to walking across the island to Juara. A tidal creek just behind the beach at Tekek contained a variety of *nerites* and *Faunus ater* (Linne 1758). *Clithon* (*Pictoneritina*) *oualaniensis* (Lesson 1831) was abundant on gravel about mid shore. With them and also slightly lower on the shore were frequent *Clithon faba*, this time the more typical form with the usual depressed spire, and readily distinguishable from the *Pictoneritina* by their larger size and, when dry, by their mat surface. The largest specimens had had their spires completely eroded. *Neritina*

coromandeliana Sowerby 1832 was common just below the high tide mark and a number of *Septaria lineata* (Lamarck 1816) were attached to pontoons below water. With their limpet-like shells and internal opercula they seemed more like *Patellidae* than *Neritidae*. It is, perhaps, not surprising that the type species of the genus, *Septaria borbonica* (Bory de St Vincent 1803), was originally placed in the genus *Patella*.

Further upstream the crystal clear water was completely devoid of molluscan life, perhaps due to acidity. There were however some conspicuous snails, *Cyclophorus* sp., on the path through the rain forest. Crossing over to the east side of the island we came to a stream running through coconut plantations which was crowded with *Neritina pulligera* (Linne 1767), conspicuous by their black shells (due in part to mineral deposits) which contrasted with their orange apertures.

A visit to Pulau Tulai, a small island north east of Salang gave us an opportunity to see some spectacular coral and fish but few molluscs apart from frequent *Tridacna gigas* (Linne 1758). Nevertheless I did find a few *Nerita georgina* Recluz 1841 in gaps between granite boulders close to the high tide mark.

Returning to the mainland, we drove north towards Kuantan. In the estuary of the River Pahang, near Pekan, *Neritina* (*Neripteron*) *auriculata* Lamarck 1826 was present on the mud and *Septaria lineata* on rocks below water. Travelling inland we spent a few days at Taman Negara, a national park in the heart of the rain forest. The many rivers and streams were mainly devoid of molluscs but I noticed numerous snails, *Thiara* sp., in a muddy stream below a small limestone outcrop.

Crossing to the west coast, we stayed at Kuala Selangor on the edge of a mangrove swamp bordering the mouth of the Selangor River. *Nerita articulata* Gould 1847 (Syn. *Nerita lineata* Gmelin 1791, *Nerita balteata* Reeve 1855) was abundant throughout the swamp on the trunks of mangroves, usually at the base but also at various heights up to high water mark; never on the mud. Other common mangrove species present included *Cassidula aurisfelis* (Bruguiere 1789), *Ellobium aurisjudae* (Linne 1758) and *Cerithidea obtusa* (Lamarck 1822). This last was

collected in enormous numbers and sold in local food markets. *Neritodryas cornea* (Linne 1758) and *Neritodryas dubia* (Gmelin 1791), which I had hoped to find there, were conspicuously absent. A mixed mangrove and nipa palm swamp at Sungei Buloh, about 10 km to the south, provided a similar range of species with the addition of *Telescopium telescopium* (Linne 1758). Despite an intensive search I was still unable to find any *Neritodryas* but at least that will be something to look for on my next visit to Malaysia.

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***Limax tenellus*: is this slug exclusively a rustler of *Russula*?**

Jan Light

1. Codelding, Surrey

Until the autumn of 1998, I had never seen *Limax tenellus* living in the wild despite having searched at the 'right' time of year and in the 'right' habitat: the species is most frequently found in the autumn and is described as very local, living in old woodland, both deciduous and coniferous (Kerney & Cameron, 1979). In October I joined my sister on a Fungus course organised by the Field Studies Council at the Preston Montford Centre near Shrewsbury. (Lizzie and I share a tendency for the enthusiastic pursuit of learning in our middle age and have earned ourselves the nickname 'The Swot Sisters' by a fellow conchologist!) During the week we collected each day from a variety of sites and returned to the Centre in the afternoon, to work through identification of our numerous species, often very late into the evening. On the second day, a specimen of *L. tenellus* turned up on a *Russula ochroleuca* toadstool. I had been told to look out for this slug on *Russula* fungi, also known as Brittle Caps. Having also been told that the slug's yellow colouration was 'unmistakable', 'vivid', 'garish' by various people, I was rather surprised at the muted colour of the body but the dark purplish tentacles were very distinct. Once tuned in to looking out for slugs, all participants' eyes were focused. Many juvenile *Arion* spp. were hopefully presented for inspection but later in the week a second specimen turned up, associated with *Russula mairei* – a Brittle Cap associated with beech. Michael Kerney subsequently advised me that both specimens represent new 10 km square records.

A couple of weeks after returning home I received a phone call from the course tutor, Derek Reid, with the news that he had found a yellow slug in Sussex associated with *Russula cyanoxantha* ('The Charcoal Burner') in coniferous woodland between Duncton and Graffham Commons. This I confirmed, and

a week later a second specimen turned up at another site, Houghton Forest, this time on a mossy stump supporting a group of *Hypholoma marginatum* (a congener of the common Sulphur Tuft fungus), although one rather decayed *Russula* toadstool was nearby. Questions ensued which sent me to the literature. Using the *Conchologists' Newsletter* index I found several field meeting reports with references to the species – nearly all referred to October and November sightings with one on December 4th. Adrian Norris supplied information on the species' reproductive cycle including the observation that, unlike the longer-lived *Limax* spp., *L. tenellus* appears to be an annual. More questions followed – why do there appear to be few sightings earlier in the year? Admittedly the juveniles might be harder to find but one might nevertheless expect some records.

Writing on the first occurrence of *L. tenellus* in Britain, Oldham (1928) alluded to the animal's 'mycophagous and subterranean habits' without giving any further information. What are these habits? There does not appear to be much published on the subject, but Barry Colville tells me he has most often found the species associated with *Russula* and that the slugs eat the fungus in a characteristic manner, grazing the edge of the cap to create a frilly edged toadstool. Although usually found in the autumn, he did find two animals under decaying logs in August, and speculates that juveniles feed on the subterranean mycelia of the fungus, surfacing when the fungus matures and the toadstools emerge. Ian Killeen has found *L. tenellus* in June in litter under pollarded beech at Felbrigg Great Wood in Norfolk.

So how close is the association between *L. tenellus* and *Russula* spp? One way to find out would be to look for fungal spores in the gut, or, since fungal spores are often thick-walled and likely to pass through the gut relatively undamaged, the faeces. (Based on my experience of resident specimens and lacking the ability to 'rustle up a *Russula*', the slugs are evidently able to subsist on supermarket mushrooms if pushed!)

In order to gather more distributional information for this species it is probably worth alerting our mycologist friends to the ecology of *L. tenellus* in the hope of obtaining more sightings. In

the meantime, I would like to thank Barry Colville, Ian Killeen, Adrian Norris and especially Derek Reid for providing me with material for this article.

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Alien snails in inner Liverpool

Nora McMillan

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A good deal of attention has been paid to the colonisation of urban sites by flowering plants and sometimes other plants and animals (see Gilbert, *The Ecology of Urban Habitats*, 1989) but seldom molluscs. Freshwater habitats are not common in inner Liverpool: the occurrence of two freshwater snails living in a spring outflow in St James' Cemetery is notable.

The tiny 'chalybeate' spring in St James' Cemetery beside the Anglican Cathedral has been known since 1793 and Whittingham-Egan (in *Liverpool Soundings*, 1969, p. 24) gives an account of the spring and the medical virtues of its water.

A Liverpool Museum colleague, Mr Chris Felton, on 6 October 1998 visited the spring and in the small basin below its outflow found two species of snail. One was that intrepid colonist *Potamopyrgus antipodarum* (Gray), the other an alien *Physa* sp. (not yet det.).

As to source and mode of introduction one can only invoke that useful standby – carried by birds!

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Field Meeting to Jersey, 6 – 11 September 1998

Ian Killeen

Felix

In 1998, the annual week-long marine field meeting focused on providing data for the DOMMIC project took place on the Channel Island of Jersey. Although a field meeting held jointly with Porcupine took place in 1994 to Guernsey and Herm, this was the first occasion that the Conchological Society has visited Jersey. Compared with Guernsey and the much-visited Herm, Jersey appears to have received relatively little attention from malacologists or shell collectors. The majority of records that do exist are from the rich complex of reefs and rocks off the south-east coast. This meeting provided an opportunity for obtaining up-to-date live records from a geographical spread of sites, in addition to filling a gap in the DOMMIC recording area. The best equinoctial autumn tides were selected for the trip. However, during our time there, Jersey received the tail end of a hurricane, which led to some members having an unpleasant sea crossing and others falling foul of cancelled ferries. Although the weather was generally kind to us at the time of low water, the tides never reached their full potential as a result of the anticyclone.

Jersey is covered by six DOMMIC (6' x 6') 'squares'. Nine sites were recorded:

Site	Location	Latitude	Longitude
1	Flicquet Bay	49°13.5'N	02°01.1'W
2	Plémont Bay	49°15.5'N	02°13.8'W
3	Plémont Point	49°15.6'N	02°13.3'W
4	St Ouen's bay (north end)	49°14.5'N	02°15.2'W
5	Le Hocq Point, St Clement's Bay	49°09.1'N	02°02.5'W
6	St Aubin's Bay (western end)	49°11.0'N	02°09.4'W
7	Ouaisne, St Brelade's bay	49°10.8'N	02°11.1'W
8	Bonne Nuit Bay	49°15.0'N	02°06.9'W
9	La Pulente, south end of St Ouen's Bay	49°11.4'N	02°14.2'W

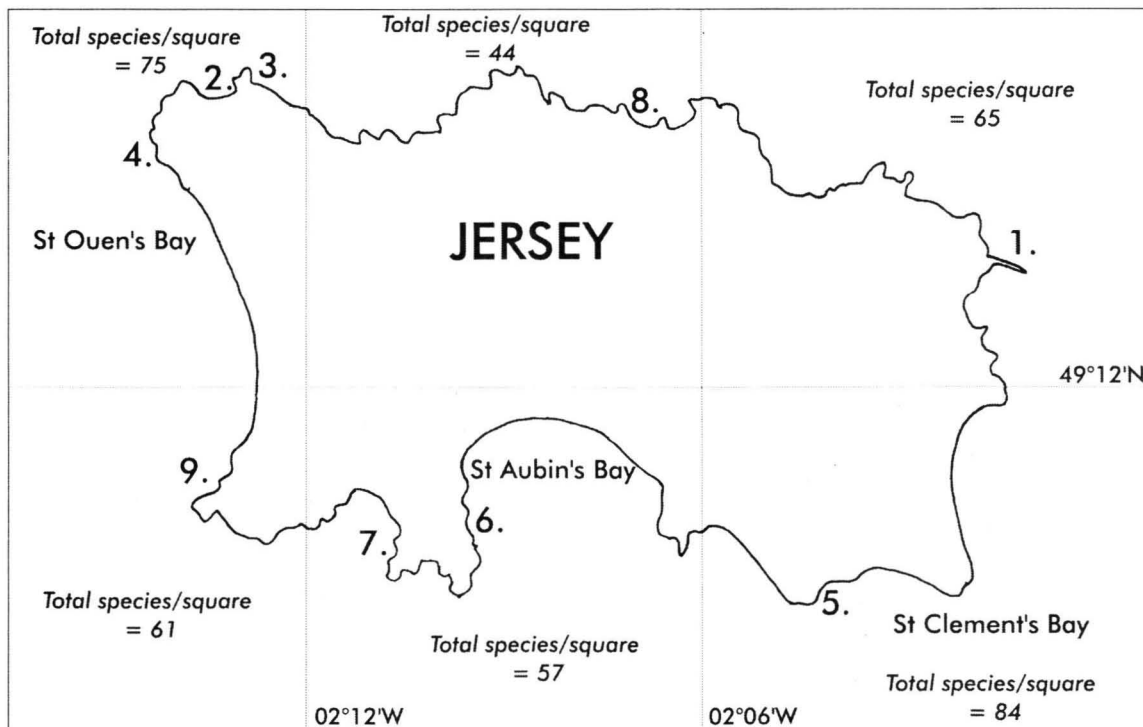


Figure 1: Map of Jersey with field locations and numbers of species recorded.

These locations and the total number of species recorded **living** in each square are shown on the map (Figure 1). Full species lists are not included in this report but summaries and notes on some of the more interesting species and assemblages are given below.

With the exception of the north-central square (with 44 species), the other squares are relatively rich and broadly similar in the number of species found (57 – 84). Much of the north coast of Jersey is exposed and has steeply sloping shores which do not support the extensive reefs with rich algal communities which are found elsewhere on the island. These reef habitats occur along most of the western and south-eastern coasts and occasionally elsewhere (e.g. Site 1, Flicquet Bay). The molluscan fauna of the rocks and weeds at these sites was very similar and particularly rich in rissoids. This included the suite of species (*Leptochiton scabridus*, *Alvania lactea*, *A. carinata* and *Tornus subcarinatus*) which lives under large embedded rocks (see Killeen & Light 1996). Curiously, *Setia pulcherrima* which is considered a Channel Island (and Brittany) speciality was found only at site 3 (Plémont Point).

Another species which is rarely recorded on the English mainland is *Bittium simplex*. This was common at sites 3, 4 and 9, all on the west coast but was not found elsewhere. We have also found this species to be locally abundant on the north Brittany coast of France where it sometimes co-exists with *B. reticulatum*. A closer examination of *Bittium* specimens from southern Cornwall may reveal it to be more common there. With practice, live collected material can easily be separated on the basis of shell morphology and colour (*B. simplex* has no varices and is usually pink rather than brown).

We were pleased to find living ormers, *Haliotis tuberculata* at several sites. Although occurring only at ELWST, adult and juveniles were found under rocks at sites 3, 5 and 9. Perhaps human predation on this species is less intense than on Guernsey or Brittany?

The reef system in St Clement's Bay (site 5) yielded the greatest number of species living (84). In addition to the typical

gastropod assemblage recorded at other sites, 24 species of bivalve were recorded. The site comprises an extensive complex of reefs, gulleys, lagoons and gravel beds which at low water are exposed over an area of several square kilometres. To reach low water on a spring tide means walking for at least 1.5 km offshore and then making sure the tide doesn't cut you off. However, digging amongst the shell gravels yielded many living bivalves particularly *Ensis siliqua* and *Venus verrucosa*, but also less frequently encountered species such as *Laevicardium crassum*, *Gari depressa* and *Striarca lactea*. On the upper shore rocks at Le Hocq Point specimens of the pulmonate *Onchidella celtica* were found by Rupert Honnor: a feat for which he later received the 'find of the week' prize (a hideous shell ornament), hopefully to be re-awarded on Scilly later this year!

Finally, I should mention that we found another two sites for *Paludinella littorina*! One in a cave habitat (site 2) and the other under large upper shore slabs in Flicquet Bay (site 1).

This was an enjoyable and successful trip which has provided several hundred new records for the DOMMIC project. Thanks are due to all who participated.

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Shell names and shell games in Orkney, and Robert Rendall

Alan Skene

Stromness, Orkney

Shell names in Orkney

The Orkney folk have a fair number of traditional names for the molluscs they find on the shore. Commonly used are 'grottie buckie' for a cowrie (*Trivia*), and coo-shell (cow-shell) for *Arctica islandica*. Why 'grottie buckie' – or sometimes 'groatie buckie'? The popular reason for the name is a connection with John o' Groats, which is not far away. However, it may more likely be from a groat, meaning a grain of barley, from its shape.

Other names would be known by older generations. *Pecten maximum* was called 'harpo': this big shell was used as a meal scoop in a girnal. It was excellent for scraping out the meal, which had been packed in hard to keep out mites. 'Hussif' or 'husho' was *Mya arenaria*; 'kraeno' was *Mytilus edulis*; 'smerslin' was *Mya truncata*; 'rookler, rooko' was *Patella aspera*; 'krubbick' was a small pick hammer for striking limpets off the rock.

A name I like, although it is not a mollusc, is 'klankertony' – jellyfish; but it also means a scone with rhubarb jam!

All these names derive from Old Norse and are a testimony to folk memory, but we have other names that are modern, such as: 'silver willie' – grey top-shell, *Gibbula cineraria*; and 'cattie buckie' – a dog whelk (strange!) *Nucella lapillus*; and 'scaadman's heid' (scalded man's head) – sea-urchin (for which the old Orkney word was 'uivigar').

There were a few shell names with ecclesiastical association: Lady-shell, or Lady-limpet, likewise called Mary-shell, a widely diffused name for *Patina pellucida* – over its apex are drawn two wonderfully clear blue lines that give peculiar grace and beauty to this small mollusc. The Lady shell appears to be a name only, so far as one finds it was not used in any folk custom.

Shell games in Orkney

In Birsay, not so very long ago, the 'small longneb' (*Nassarius incrassatus*) was commonly pierced and strung as a necklace.

Children once played on the beach or on the grass banks above at making farms, the buildings represented by squares of beach stones, with shells representing the different animals. Their imagination readily conjured up an affinity between the shell and the creature it was supposed to represent. So they had cows (*Cyprina islandica*), horses (sholt – *Gibbula magus*), dogs (langneb – *Colus gracilis*), sheep (gimmers – *Chlamys*), pigs (grice – *Mya truncata*), cats (*Nucella lapillus*), and crows (kraa – *Mytilis edulis* which is black and wing-shaped).

The finely corrugated ribs of a cockle became a sheep's fleece in Norway; in Orkney it was replaced by the ribs on a scallop. The cat's face could be seen in the obtuse dog whelk, and that of a dog in the nose of a spired shell. The outline of a gaper shell looks like the snout of a pig.

Children's games: in the simplest form a farm steading was formed of beach stones on the shore or taken onto the grass bank above it. It was then furnished with farm stock, consisting of shells as above. As a game it had the same attraction as a Noah's ark. (The Norsemen from which this derived depended on a farming economy. This sort of children's farm game with shells is referred to in the Icelandic sagas).

Robert Rendall's mother recalled a farm-game in which chuckie-stones (or bob-stones) served as a sort of dice in moves described as 'putting the coos in the stall' and 'putting the pigs in the sty'. There was a whole series of such operations, regulated by the play of the chuckie stones. For stalls of byre and stable, the fingers of the left hand were spread apart, and held point downwards, tips on the ground. Likewise, when the four fingers of the left hand were held together and, with the thumb extended apart from them to form a cave, placed on the ground, there at once you had an excellent pig sty; and we may be sure that the grice were tumbled in without undue ceremony.

It is interesting to read in an article in the Norwegian

magazine *Hjemmet* (31.12.1925) about similar games in North Norway, where dead shells are brought up on the grass bank to collect a good farm-stock. Some shells are the same, but they used *Cardium edule* = sheep, and *C. echinatum* = 'Spanish ram'. *Mytilus edulis* = goat (not kraa); *Chlamys opercularis* = cock; there are also 'bear shell', 'elk', and 'reindeer'. Bivalves have two shells – the right shell is HE and the left is SHE, and as most farm stock is 'shes' it was necessary to slaughter most of the oxen, rams and billy-goats. This was performed by crushing the shells with a hammer or stone.

The dogs were differentiated as farm-dogs, shepherd-dogs, hunting-dogs. Dog fights, among the dogs themselves and with wild animals, called for the separation of the combatants – so here was another lively feature of the imagination of youth.

Robert Rendall

1998 is an appropriate year to write about these shell names. It is the 100th anniversary of the birth of Robert Rendall, 1898-1967. He was a remarkable character, and it was our friendship with him that inspired me and our family to collect and to study shells.

Robert Rendall lived all his life, apart from a few childhood years, in Kirkwall. He left school unwillingly at 13 and worked in a family draper's shop; a crofter for some years; a devout Christian, teacher and writer. He was also a poet with a love of the countryside:

On this great beach a wild
Atlantic storm
Sculptures in stone its huge
and wavelike form.

He wrote many fine poems in Orkney dialect. He is remembered for the breadth and range of his interests, and for his love of these islands.

He was an amateur naturalist, but trained in scientific method. He had a lifelong interest in nature. As a boy in summer he and his brother went off after school to a beach, and were met by his mother with a picnic. They kept their specimens in

cardboard boxes with glass lids, begged from Kirkwall shopkeepers. He spent holidays with an aunt at Birsay in the north-west of the Orkney Mainland (as the main Orkney island is called. The rest of Britain is *not* 'the Mainland', it is simply South'). Birsay was his favourite collecting ground for shells, which he housed in stout wooden whisky cases. Fry's chocolate boxes, then also made of wood, served as cabinet drawers.

In the annual Kirkwall Flower and Industrial Show there was a section for children in which money prizes were offered for handwriting, pencil drawing, design drawing and painting, the amounts being 1/-, 9d and 6d for first, second and third. The young Robert made certain and submitted entries in all sections. The result was gratifying beyond his wildest hopes, and Robert swept the board. He could now buy a coveted copy of *The Orkney Book*, with an excellent introduction to nature study.

Later in life in the 1960s Robert donated a small prize every year for a display of shells. My son, aged 10, won it and came to Robert's notice, who encouraged him. This elderly man, by now unwell and in the Old Folks' Home just behind our house, and very deaf, used to 'escape' and come down to our house in his slippers to see my son. His excitement when examining a new find, such as a small wendeltrap (*Epitonium clathratulum*) from his own beloved Birsay, was great to behold.

But Robert Rendall was not simply an amateur naturalist. He studied scientific method seriously. The young man spent a day with Magnus Spence, the botanist, travelling to Deerness at six in the morning with the post gig. And later in 1929 he became a member of the Conchological Society. He also took any opportunity to visit museums and marine laboratories.

Even during the war in 1916 he tells how as an officers' steward on a depot ship in Scapa Flow, he was able to walk the beaches and study, albeit surreptitiously. He found a 6-inch sea urchin, took it aboard, and hid it in a convenient hole in one of the lower flats of the ship, and forgot it. A few days later naval discipline took action: decks were scrubbed with caustic soda, a thorough, vigilant search led by the Commander tracked the smell to an area near the storeroom, where they pounced upon a smelly

sack of cabbage ... Late in the afternoon, when the lower deck was quiet, Robert extracted the remains, gingerly carried it up through devious alleyways and put it overboard.

Robert's excellent collection of Orkney shells is in the Stromness Museum, and his scientific was published as *Mollusca Orcadensia*, in the Proceedings of the Royal Society of Edinburgh 1955. He was also the author of four books of poetry and some religious books and travel books. He contributed several articles to the *Journal of Conchology* between 1931 and 1964, and also wrote articles on antiquities in Orkney.

Except for some biographical details, practically all the information in this article is to be found in Robert Rendall's *Orkney Shore*.

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Collectors in East Africa

No. 29: Ludwig Kohl-Larsen (1884-1969)

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Ludwig Kohl was born at Landau in the Pfalz (Palatinate) a region to the west of the Rhine just above the tributary Lauter, the wine area known as the Südliche Weinstrasse. Already when a student of medicine he was drawn to travel, a desire for which was to be abundantly fulfilled. He became a good skier and climber and developed interests in various branches of natural history. These interests led him to enter the Colonial Service and participate in expeditions devoted to scientific discovery. His first was as a doctor on a ship sailing to the South Atlantic, part of Wilhelm Filchner's great Antarctic expedition. Unfortunately Ludwig was struck with an acute illness and had an operation on board ship (possibly appendicitis). He was deeply disappointed to give up the expedition and stayed on South Georgia where one month later he met the woman who was to become his wife and companion for life – Margit Larsen. She was the daughter of a Norwegian captain. The following year Ludwig and his bride – they had now adopted the double name Kohl-Larsen – went to Lappland where he practised as a doctor and later to Mesopotamia as a doctor and archaeologist. Margit became a constant collaborator in his travels and work. He was a member of the Tell-Halaf Expedition under the leadership of Max Freiherr von Oppenheim and during this year-long undertaking already showed his capability of getting on well with his colleagues, an essential in any expedition (but unhappily so often by no means a noticeable trait in members of expeditions). It was particularly useful when dealing with the often difficult Bedouin. Ludwig obtained a post on the island of Yapp in the South Seas as Government Doctor but his future plans were wrecked by the First World War but after his return he visited Japan and America. The next five years were spent in Finmarken (the extreme upper part of Norway at about 70°N 25°E) doing medical and

ethnological research. He and his wife made another expedition to the Antarctic in 1928-1929 and he was the first person to reach the centre of South Georgia. In 1931 he joined the great Zeppelin journey over the Eurasian Arctic zone. Hanjürgen Müller-Beck's obituary states that the high point of his field work was, however, his two trips to East Africa in 1934-1936 and 1937-1939, but there must have been a third since all the molluscs he collected in Tanzania were collected in late 1932 and 1933. Perhaps he was in Africa between 1932 and 1936.

The Leakey family has so dominated the study of prehistoric man in East Africa that others in the field are scarcely known to non-specialists. Ludwig became well known in this field when in 1935 he discovered fragments of a highly specialised Upper Pleistocene human skull near the shores of Lake Eyasi. Four years later he discovered fragments which were described as *Meganthropus africanus* Weinert and very many other fossil animals in the Laetoli beds, an area the study of which was to be written up in the magnificent work edited by Mary Leakey and J.M. Harris (1987). He was interested in the arid areas with seasonal rivers and investigated all aspects collecting ethnological, palaeontological, geological and climatological data and that relating to prehistoric man. He made the first contact with the hunter-gathering tribe the Tindiga (Hadza) and related groups living near them and also a complete recording of all the cave paintings he could find in the area. He made stratigraphical investigations carefully recording animal and subhuman fossils from each layer. This very varied work was recognised by the University of Freiburg who made him an Honorary Professor in 1939 and finally he was called to Tübingen two years later. However, here renewed army service interrupted the writing up of all his results and the consequences of the war prevented his return to Tübingen. Later he was sacked from his job in 1949 (possibly for right wing views?) but this was mitigated in 1953 when he was given Professor Emeritus status.

In spite of all the difficulties in the post-war years he and his wife published their results almost completely with the help of the Deutschen Forschungsgemeinschaft and many private supporters;

this included works on the East African rock paintings and a monograph on the Tindiga people. Of great importance was the recording of the myths, legends and fairy tales of these fast disappearing people which, but for him and his wife, would have disappeared without trace. This work was finished by Mrs Larsen after the death of her husband and published by the Institute of Prehistory of the University of Tübingen. Their work provides a basis for much future field work and they will be remembered for their work not only in Tübingen but in centres of African prehistory everywhere.

We are only concerned with collections of molluscs made around Ngorongoro. As in so many cases I do not think Kohl-Larsen was particularly interested in molluscs himself but clearly someone had encouraged him, possibly Fritz Haas himself who had been in Africa the previous year.

I am grateful to my colleague Monica Shaffer-Fehre for translating Müller-Beck's obituary for me.

List of molluscs described from material collected by Ludwig Kohl-Larsen in East Africa

- Bocageia (Liobocageia) elata* Haas (1936). Tanzania, S. slope of Ngorongoro, 1700 m., Kohl-Larsen (holotype, SMF 8751). Same.
- Cerastus lymnaeiformis* Haas (1936). Tanzania, S. side of Ngorongoro, 1800 m., Kohl-Larsen, (holotype, SMF 8809). Same.
- Diaphora (Huttonella) kohl-larseni* Haas (1936). Tanzania, S. side of Ngorongoro, 1800 m., Kohl-Larsen (holotype, SMF 8673). *Gulella kohl-larseni* (Haas).
- Gonaxis (Gonaxis) ordinarius obliquior* Haas (1936). Tanzania, W. Usambaras, Bumbuli, Kohl-Larsen (holotype, SMF 8675 & paratype, SMF 8676). *Gonaxis denticulatus* (Dohrn).
- Gulella (Primigulella) satura* Haas (1936). Tanzania, W. Usambaras, W. of Bumbuli, 1400 m., Kohl-Larsen (holotype, SMF 8669 & paratype, SMF 8670). *Gulella (Primigulella) usagrica satura* (Haas).
- Gulella (Gulella) subsellae* Haas (1936). Tanzania, S. side of Ngorongoro, Oldeani, Kohl-Larsen (holotype, SMF 8671). Same.
- Halolimnohelix late-aperta* Haas (1936). Tanzania, S. slope of Ngorongoro, 1800 m., Kohl-Larsen (holotype, SMF 8175). Probably a *Haplohelix*.
- Sitala concavispira* Haas (1936). Tanzania, S. side of Ngorongoro, 1800 m., Kohl-Larsen (holotype, SMF 8757), *Afroconulus concavispira* (Haas) but probably the same as *A. iredalei* (Preston).

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- Kohl-Larsen, L. & M.** 1938. *Felsmalereien in Inner-Afrika*. Stuttgart.
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□

Addendum to Collectors in East Africa No. 25

In my account of A.B. Percival I mentioned I did not know how he contacted Preston, but it is distinctly possible he did know of him and his interest in shells. Percival certainly knew Berrow Manor near Burnham on Sea in Somerset and his father Percy died near Berrow.

Whilst I was working at the Institut Royal des Sciences Naturelles de Belgique in Brussels I discovered a letter from Preston to Dautzenberg (in French; both Preston's mother and wife were French) with the address given as 'The Manor House, Berrow near Burnham' dated 23 March 1899. By that time Percival had been in Africa some three years. Preston was a planter in Ceylon for several years and returned to England in the 1890's. Winckworth in his obituary of Preston (*Proc. Malac. Soc.* **27**: 4-5 (1946)) states 'after two attacks of fever he had to return to England in 1897'. At that time Percival was in South Africa but I have no idea if he returned home before or after going on the expedition to Arabia and subsequently taking up work in East Africa. If so he could easily have met Preston in 1899. Preston started his shell business in the Fulham Road about January 1900.

It is of course also possible that Percival's father met Preston, spoke of his son in Africa and discovered Preston was prepared to pay for shells. It seems too much of a coincidence that both should have been at Berrow. □

'Tekhelet' = sky-blue

Fred Pinn

[redacted], London [redacted]

Dor, also Dora, was a Canaanite port town south of Haifa, Israel and close to the Herodian harbour of Caesarea. It was developed by the Egyptians in the 15th and 14th centuries BC as an important maritime centre. During the 12th century BC the town was conquered by the Philistines. In the Persian period Dor became a Sidonian colony and it is to this time of the 5th–4th centuries BC that a well-developed local purple dye industry can be dated. Recent excavations have revealed extensive dyeing installations such as vats filled with crushed Murex shells and plastered channels leading to the vats showing the purple stain of the dye.

It was at the small but fascinating Dor Museum, which holds the many and beautifully displayed finds of the excavations, that I came across a little pamphlet entitled *Tekhelet*, meaning 'sky-blue, also called 'biblical blue'. Page one explains the content:

'The story of the rediscovery of the source for the dye tekhelet – sky-blue – is one of intrigue, deception, deduction and luck. It weaves together clues from archaeology, chemistry and biblical scholarship, a great Chasidic Rebbe, and the former Chief Rabbi of Israel.'

The authors are Baruch and Judy Sherman whose text has been adapted for conchological readers.

'In ancient times the purple and blue dyes were so rare and sought after that they were literally worth their weight in gold. These precious dyes coloured the robes of the kings and princes of Media, Babylon, Egypt and Greece. To wear them was to be identified with royalty. Twice daily we read (during prayers): "The Lord spoke to Moses and said: 'Speak to the sons of Israel and tell them to put tassels (Tsitsit) on the hems of their garments and to put a sky-blue cord on this tassel at the hem. You must have a tassel, then, and the sight of it will remind you of all the commands of the Lord. You are to put them into practice then and no longer follow the desires of your heart.' (Numbers, 15, 37-39)'"

The Mediterranean coast was the centre of the dyeing industry in the ancient world. 'Tyrian Purple' came from the port city of Tyre in Phoenicia (now south Lebanon). The Phoenicians (the etymology of their name comes from the word purple) obtained their great wealth trading in the precious dyestuff, and dye houses were ubiquitous in the region.

Because of its lucrative nature, purple and blue dyeing eventually came under imperial control. The Romans issued edicts that only royalty could wear garments coloured with these dyes, and only imperial dye houses were permitted to manufacture the material. This oppression apparently drove the Jewish tekhelet-making industry underground. Later, with the Arab conquest of Palestine (639 AD) the secret of tekhelet was essentially lost, the dyeing process obscured.

The biblical commandment to wear tassels on the corner of one's garment is still widely observed today, but the prominent blue thread has all but been forgotten. What has remained are the various, sometimes esoteric passages in the Talmud describing the source of the blue dye – a snail known as the Hilazon. This marine creature's most notable features were that it had a shell, that it could be found along the northern coast of Israel, and that its body was 'similar to the sea'. The main characteristics of the dye were that its colour was similar to the sky and sea, it was steadfast, extracted from its source while still alive, and it was indistinguishable from the counterfeit dye of vegetable origin, *kala ilan* (indigo).

In 1858, the French zoologist Henry de Lacaze-Duthier found that three molluscs in the Mediterranean sea produced purple-blue dyes. One, *Murex trunculus*, was determined by him (and other scientists, archaeologists and historians) to be the source of the ancient biblical blue.

In the same century, unaware of Lacaze-Duthier's findings, Rabbi Gershon Hanokh Leiner – the Radzyner Rebbe – set out on an expedition to search for the lost Hilazon (snail), in a grand effort to restore tekhelet to the Jewish people. He was convinced that a certain type of squid fitted all the descriptions of the coveted Hilazon. Unable to produce a blue dye from the black ink

released by this squid, he turned to an Italian chemist, who provided him with a method. Within two years, ten thousand of the Rebbe's followers were wearing blue threads on their tassels as their ancestors had done. The Rebbe published two books to counter the strong opposition from other scholars who did not agree with his conclusions.

A letter from the Radzyner Dye Master to Rabbi Herzog revealed the secret formula: 'The squid blood ... is mixed with iron filings and a snow white chemical called Potasz. After keeping it on a large powerful fire for some four or five hours, until the flames burn outside and inside as the fires of Hell, the mixture fuses ...'

In 1913 the Chief Rabbi of Ireland, Rabbi Isaac Herzog (later Chief Rabbi of Israel), wrote a doctoral dissertation on the subject of Hebrew Porphyrology (the study of purple – a word he coined). When he sent samples of the Radzyn tekhelet to chemists and dye experts for analysis, the results were unanimous: the dye was inorganic – a synthetically manufactured colour known as Prussian Blue. Refusing to believe that Rav Gershon Hanokh had purposely misled his constituents, Rav Herzog studied the Radzyner dyeing process. Immediately the truth was revealed. The process called for subjecting the squid ink to intense heat and then adding colourless iron filings to the mixture. This produced the blue colour which indeed appeared to come from the squid ink. In fact, under these conditions, virtually all organic substances would yield the same blue dye – the squid was not an essential component. The Rebbe had apparently been misled by an unscrupulous chemist.

Rav Herzog knew of the work done by Lacaze-Duthier and others, and realised that all the evidence pointed to *Murex trunculus* as the most likely candidate for the tekhelet source. Two problems, however, prevented him from positively identifying that snail with the Hilazon. Firstly, the dye obtained from *Murex trunculus* was purplish-blue, not pure blue as tradition maintained. Furthermore, this snail has an off-white shell with stripes of brown, hardly fitting the Talmudic description of the Hilazon as appearing similar to the sea.

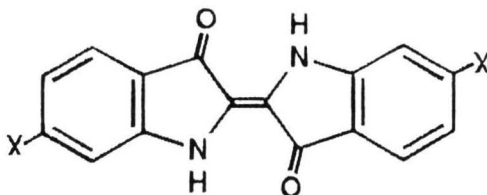
Modern research has supplied the solutions to these

objections. The shell appears off-white when it is out of the water, cleaned and polished. In its natural element *Murex trunculus* is covered with a coat of sea-fouling the colour of the ocean. Everything in its vicinity is covered with the same fouling, making it almost impossible to distinguish the snail from the sea bed in which it is found. The Talmud's description is of the Hilazon in its natural habitat!

The riddle of producing a pure blue colour from the snail was solved serendipitously. While researching the methods used by the ancient dyers, Professor Otto Elsner of the Shenkar College of Fibres, noticed that on cloudy days *Murex trunculus* dye tended towards purple, but on sunny days it was a brilliant blue! To the dye masters of old working in the bright Mediterranean sunlight, this was certainly no secret.

The chemistry of tekhelet

Inside the hypobranchial gland of the snail, only the precursors to the dye exist as a clear liquid. When the precursors are exposed to air and sunlight in the presence of the enzyme purpurase which also exists within the gland, they turn into the dye material. Purpurase quickly decomposes, so in order for this reaction to take place, the gland must be crushed soon after being taken from the live snail, in accordance with the Talmudic passage that the tekhelet is taken from the Hilazon while still alive. In the *Murex trunculus* extract the reaction results in a mixture of dibromoindigo (purple) and indigo. These molecules must be put into solution in order for them to bind tightly to wool. In this state, if dibromoindigo is exposed to ultraviolet light it will transform to indigo, turning *Murex trunculus* mixture from purplish-blue to pure blue.



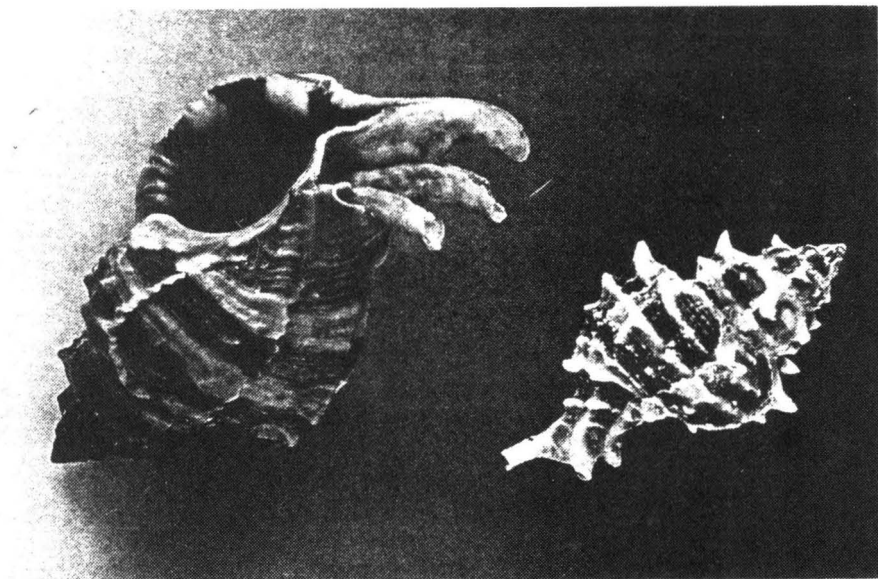
X = Br. Dibromoindigo

X = H. indigo

There are some strange societies and charities in the world to which has been added the society for the promotion of the use of the blue cord called 'Amurat P'til Tekhelet', which means, 'Non-profit-making Society of the Blue Cord'. It was formed 'in an effort to provide Tekhelet to the general public. Today, after more than 1300 years tassels are again being tied with the elusive thread of Tekhelet.' One of the ancient Jewish sages said: 'Whoever observes the command of tassels – it is considered as if he greeted the Divine Presence, for tekhelet resembles the sea, and the sea resembles the sky, and the sky resembles God's holy throne.'



This illustration shows the hem of a prayer shawl with white tassels and the sky-blue cord at the corner of the hem.



Murex trunculus

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Sterman, B. & S., *Tekhelet*.
Stern, Ephraim, Dor, Ruler of the Seas.

□

An Indo-Pacific cowry *Cypraea arabica arabica* (L.) on a Chios shore, eastern Mediterranean

Nora McMillan

Dept. of Zoology, Liverpool Museum, Liverpool
M.J. Taylor, [REDACTED], Stockport, Cheshire

In December 1994 Dr H.K. Mienis published a note in the *Conchologists' Newsletter* No. 131 (pp. 401-405) on the finding of tropical marine molluscs in the eastern Mediterranean.

Another species must now be added; the cowry *Cypraea arabica arabica* (L.). A single shell, fresh but empty, was picked up by Mr Taylor who has a holiday house on the island of Chios. The location was the shallow sheltered bay of Salagonas in the remote south-west of Chios in April 1998.

As to the source of the shell, Chios is not a touristy holiday island. There is International Mooring at Chios (the town) but very little traffic there. Small local ferries run regularly to Cesme on the Turkish coast.

The shell has been deposited in the collection of Liverpool Museum. This note was written at the suggestion of Dr Mienis and we thank him for his interest in the record.

□

American Museum of Natural History

Rosemary Dansey

[REDACTED], Eaton, Norwich [REDACTED]

For those of you who do not believe ordinary people win prizes, we can tell you otherwise. My husband Paul won a three-night break in New York and we chose to go in December to experience the Christmas atmosphere. Of course the city was ideal for shopping and sightseeing, but we did spare a morning to go to the Natural History Museum, half-heartedly thinking that it would be far inferior to the museums in Washington. However, according to our Dorling Kindersley Guide book it is the largest natural history museum in the world, covering three city blocks. The setting is superb because the museum lies alongside Central Park which incidentally looked beautiful with the winter sunlight filtering through the trees. It is away from the bustle of a big city but easily accessible by bus or subway from the centre. The museum staff are helpful and the printed guide is clear on layout so we easily identified the molluscan section, but free guided tours are also available.

The Mollusks and Our World display is on the ground floor, adjacent to the entrance on 77th Street. In a comparatively small space the subject was covered in depth to appeal to the specialist, Paul, and me, the layperson. We both agreed that this display alone was well worth a visit and if time had allowed there were four floors of other exhibits to explore, the most popular being the dinosaurs and gems, alongside special promotions, such as the Rainforest. School parties visiting were well organised and unobtrusive. Their verdicts on the molluscan display were 'neat', 'awesome' and the slugs 'agh'. It was worth noting that amenities for the disabled are excellent (for example, wheelchairs were available, plus there were Braille signs and hearing aids for theatre shows).

Mollusks and Our World

The exhibition begins with the biology of shells and how they grow, their life cycle and anatomy. Living Molluscs are classified

and a chart shows their distribution around the world. There is a body plan of an ancestral mollusc and an underwater picture of ancient shell life. More novel were poetry extracts and to give just a sample:

She sells sea shells on the seashore.

*Mary, Mary quite contrary, How does your garden grow,
With silver bells and cockle shells*

*The lark's on the wing, the snail's on the thorn,
God's in his heaven, All's right with the world.*

Browning, 1812-1889

Colourful stamps featuring shells formed an eye catching display. A large mural of the Shell House, Goodwood, Chichester, was a prominent feature, exhibiting the use of shells in architecture. It was built in the 1740s from a shipload of shells presented to the Duchess of Richmond in 1737. I naively thought Aristotle was one of the earliest shell specialists, but I learnt the history of shell collecting went back at least 25,000 years with the earliest known collections being traced to the Egyptian tombs. There was also a reminder of the role of shells in archaeology to date changes in the environment. I felt children would be fascinated by the exhibition on the spiritual power given to shells and how they were used either as currency or in decoration by tribal people to show status. Finally it was shown how shells feature in daily life, as food, utensils or medicine. It was a fairly small exhibition when you consider the size of the museum but we felt it demonstrated vividly how important shells have been, a microcosm of the conchology world. Maybe this display will inspire future generations of collectors and if you are in New York it is well worth a detour. A visit can be combined with a walk across Central Park to reach Fifth Avenue, where the garish jewellery on display in Tiffany's made me realise there is more beauty in the natural world.

Opening hours:

Sunday – Thursday: 10.00 a.m. – 5.45 p.m.

Friday and Saturday: 10.00 a.m. – 8.45 p.m.

Closed Thanksgiving and Christmas days.

There are also museum shops and cafes (Ocean Life, Diner Saurus and Whale's Lair – food and drink served under a 94-foot Blue Whale).

□

A note on the possible dispersion of small freshwater bivalves by aquatic insects

Ron Carr

██████████, Maidstone, Kent, ██████████

Whilst collecting aquatic bugs at a pond on Great Bookham Common, Surrey (map reference TQ 1256), I was surprised to find a specimen of *Pisidium nitidum* clamped to the mid tarsal claw of a female corixid bug *Sigara falleni*.

S. falleni is only 7–8 mm in length therefore the possibility of flight by the insect with its attached passenger is debatable, though limited transportation to different areas of the pond was presumably readily available.

In his book *The Dispersal of Shells* (1893, London: Kegan Paul, Trench Trübner & Co. Ltd), H.W. Kew cites a number of instances where freshwater bivalves have been found attached to the legs of aquatic beetles and bugs, including three observations of *Sphaerium* species clamped to the legs of the Great Diving Beetle *Dytiscus marginalis*.

My grateful thanks are conveyed to Michael Kerney for drawing my attention to Kew's work, and for the identification of the *Pisidium*.

□

The Explosive Shell

Theba pisana is a xerophile
(it likes it dry)
Theba pisana is a calcophile
(it likes it 'sweet')
Theba pisana is a thermophile
(it likes it hot)
Theba pisana is a snail
With a very long trail.
For when it's got all it could need
Plus plenty of plants on which to feed
Its populations starts to explode
In many far-flung parts of the globe.
First in North Africa, later Australia
And for good measure California.
In Ireland, Wales and Cornwall – all Celtic lands –
It lives on the warm, dry, limeful shell sands.
If it's too hot it aestivates
(summer sleeps)
If too cold it hibernates
(winter sleeps)
And in this dozy manner
It has spread from St Ives to Bude Bay
Watch out Devon – it's coming your way!

This attractive-looking snail is known for its ability to emigrate by water and land (probably in cargoes and in cars) and to reproduce in prodigious numbers in the right conditions. Colonies were known in Wales, Ireland and Cornwall (The Island, St Ives) at the end of the 18th century, remaining small and stable for a couple of centuries. Two decades ago, they started to appear in a series of 'explosions' at various points along the north coast of Cornwall, the focal points usually being car parks. Here they can occur in millions on the maritime vegetation.

SMT 30 Nov.1998
Stella Maris Turk

Additional publications by G. Mandahl-Barth on Mollusca

Henk K. Mienis

*National Mollusc Collection, Berman Building,
Dept. Evolution, Systematics & Ecology
Hebrew University, 91904 Jerusalem, Israel*

Recently Brown (1995) published a bibliography of the malacological papers written by Georg Mandahl-Barth (1910-1994), well known for his tremendous work in the field of medical malacology. Unfortunately several obscure titles were omitted from the list of his malacological publications. They are mentioned here in chronological order.

- 1951 *Vallonia pulchella* en *Vallonia excentrica*.
Correspondentieblad van de Nederlandse
Malacologische Vereniging, **41**: 355-356.
- 1965 A possible biological method of controlling
Bilharzia snails. Lecture, Ain Sham's University
Cairo, 23.XI.65. 9 p. (a mimeographed, widely
distributed hand-out).
- 1973 Record of publications on African non-marine
mollusca by G. Mandahl-Barth. *Achatina*, **4**:
81-82.
- 1988 The shell-bearing land-snails of Malta (a
comprehensive field guide). *Maltese Fauna* **1**:
1-61, index, map. Mdina, Malta.

According to Giusti et al., 1995, a second edition of Mandahl-Barth's study of the land-snails of Malta has been published which contains some corrections of obvious mistakes.

It is still noteworthy that some of his most important papers, originally published in English by the World Health Organisation, have been translated also into French and Spanish and were published one or two years later. Since I have no access to these translations in Israel, I do not know whether we are dealing here

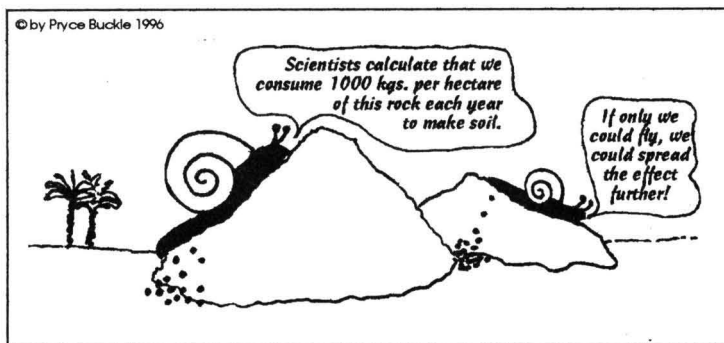
with exact, verbal translations or works with slightly different contents. In each case it would be worthwhile to draw up a list of those translations.

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- Brown, D.S.**, 1995. Georg Mandahl-Barth (1910-1994): his life, publications and described taxa. *J. Conch.*, Lond., **35** (4): 303-312.
- Giusti, F., Manganelli, G. & Schembri, P.J.**, 1995. *The non-marine molluscs of the Maltese Islands*. Museo Regionale di Scienze Naturali – Torino, Monografie, 15: 607 p.



THE ADVENTURES OF EUCHONDRUS. **"Meanwhile, in the Negev Desert....."**



Molluscs from a water reservoir at Horvat Burgin, Israel

Henk K. Mienis

National Mollusc Collection, Berman Building,
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Hebrew University, 91904 Jerusalem, Israel

A Byzantine water reservoir at Horvat Burgin, north of Bet Guvrin, Israel, was excavated by Bo'az Zissu (licence no. 2553/96) in October 1996. An earth sample from the bottom of the reservoir (locus 1153) was preserved for archaeomalacological examination. The molluscs found in that sample are enumerated in Table 1.

Table 1: Molluscs found in a Byzantine water reservoir excavated at Horvat Burgin, Israel

Species	Specimens and fragments	minimum number of specimens
<i>Euchondrus chondriiformis</i> (Mousson, 1861)	3	2
<i>Calaxis hierosolymarum</i> (Roth 1855)	1	1
<i>Cecilioides acicula</i> (Müller 1774)	6	6
<i>Eopolita protensa jebusitica</i> (Roth, 1855)	16	14
<i>Xeropicta vestalis joppensis</i> (Schmidt, 1855)	24	17
<i>Monacha haifaensis</i> (Pallary, 1939)	80	53
<i>Metafruticicola fourousi</i> (Bourguignat 1863)	1	1
<i>Levantina spiriplana hierosolyma</i> (Mousson, 1854)	11	5
<i>Helix engaddensis</i> Bourguignat, 1852	2	1
Total	144	100

The rather fragmented material belonged to nine species of landsnails, which are still living today in the neighbourhood of Bet Guvrin. Both *Euchondrus chondriformis* and *Metafruticicola fourousi* occur here at the southern border of their range of distribution in Israel.

Only twelve complete shells were encountered: *Calaxis hierosolymarum* – 1 *Cecilioides acicula* – 6 and *Eopolita protensa jobusitica* – 5. All other shells were severely damaged or consisted of fragments only. Most of the damaged specimens show traces of predation by small mammals. As a matter of fact the material contained also some tiny bones of small rodents or insectivores. The fact that *Cecilioides* and *Calaxis* were found in the form of complete shells only, is probably due to their way of life: both are tiny, subterranean species. *Eopolita* is less attractive to small mammals most probably because of a bad taste.

The mollusc material encountered in the earth sample from the water reservoir at Horvat Burgin seems to be more of zoologic than of archaeological importance. Also part of it may be of much more recent origin, in spite of the fact that the earth sample originated from the bottom of the reservoir.

I would like to thank Dr Bo'az Zissu (Israel Antiquities Authority, Jerusalem) for allowing me to study this material.

□

Further details of *Philine angulata*

Christine Street

Barkingside, Ilford, Essex

In 1997 we spent our holiday in Fetlar, Shetland where I found many interesting shells, mainly juveniles. Among them was a small shell that was unlike anything I had yet seen. It was a *Philine* sp. and the only shell I could liken it to was the shape shown in rather undetailed diagrams as *Philine angulata*. This needed confirmation.

Unfortunately there is not much material available and at the Conchological Society meeting I was advised to send it to Ted Phorson who has specimens which were confirmed by the late T.E. Thompson, the writer of the main Opisthobranch reference book. He was not confident about it, as it was not exactly like his and kindly sent me his slide so that I could compare (Fig. 1). In fact my shell (Fig. 2) had very characteristic grooving around the spire which his did not have to the same extent and which is not mentioned in descriptions. This might suggest that it was a more mature specimen showing the feature beyond the growth stage of Ted Phorson's examples.

Recently I saw Dr Shelagh Smith and discovered that she had material to check it and was very pleased that she could confirm it to be *Philine angulata*. Queries are associated with the *Philine angulata/denticulata* species separation and I thought it might be valuable to show, by drawings, the detail which does not seem to appear in books and which seems to set this species apart. I did make some quick sketches of Ted Phorson's younger specimens, which I hope show how much more complicated the ridges and grooves become with greater maturity.

Would any member be able to show similar detail of *Philine denticulata*?

Thank you to Dr S. Smith and Ted Phorson and all those who have helped me. It shows the value of belonging to the Conchological Society and to be able to have these consultations with people that live so far away.

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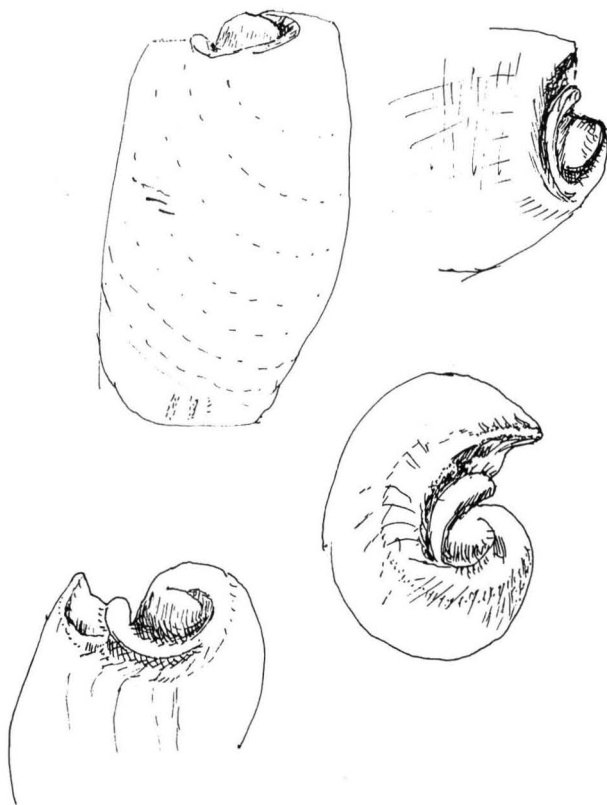


Fig. 1. Ted Thorson's *Philine angulata* viewed at x 40. A.S. just over 1 mm.

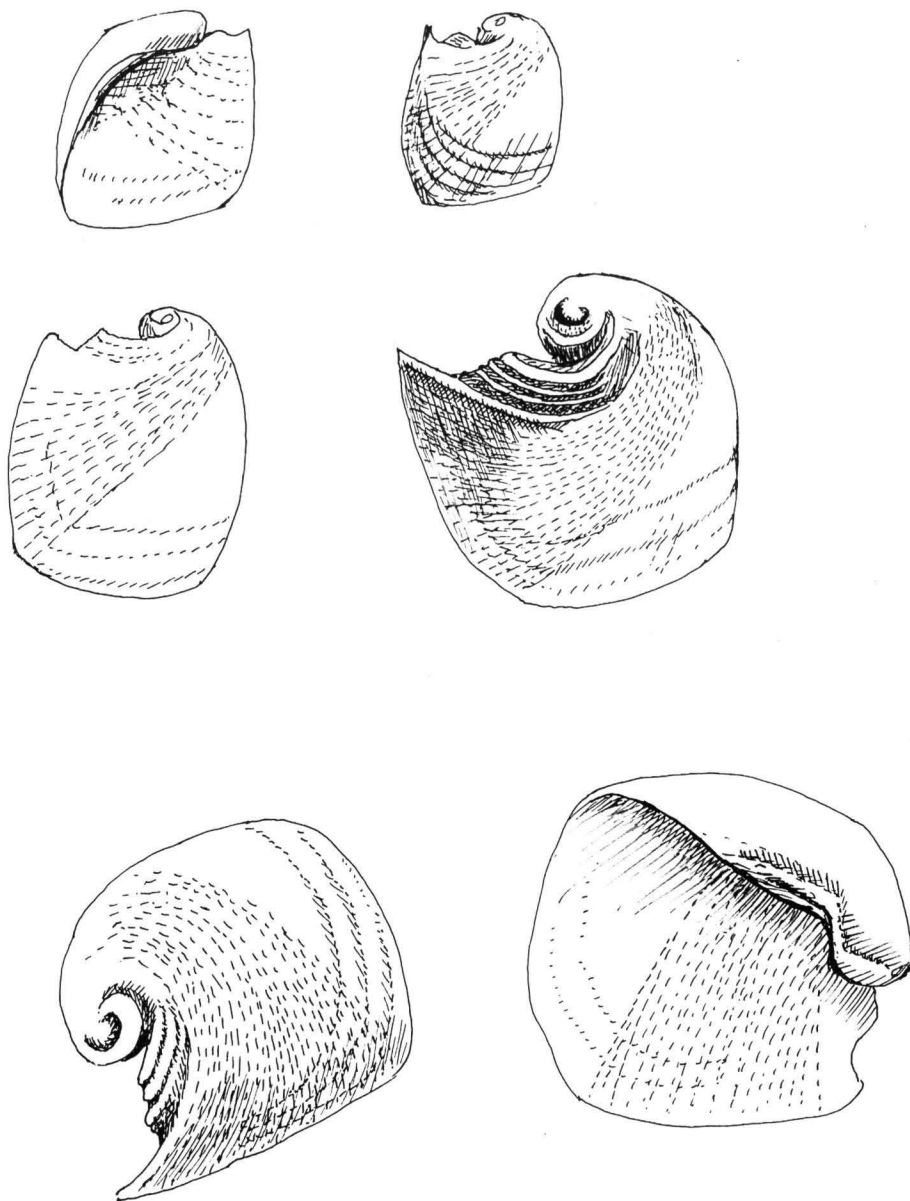


Fig. 2. *Philine angulata*. Fetlar, Shetland. A.S. H.2 mm W.. 1.5 mm

Diary of Meetings

This is a listing of all **June–September** meetings in date order.

Hon. Programme Secretary:

Helen Weideli, [REDACTED], Newbury, Berkshire [REDACTED]

IMPORTANT: Field meetings are planned months in advance, so it is recommended that Members contact the Leader, before the day, to express their interest in attending, and to check that there have been no alterations due to unforeseen circumstances.

Key to meetings:

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

SPECIAL NOTE: *CSGBl Members are cordially invited to attend the Yorkshire Conchological Society's meetings included in this listing. Please contact David Lindley [REDACTED] for further information on these.*

YCS – Saturday 12 June: Sherburn ponds, Sherburn. Meet at lay-by by church, Grid. ref. SE 486333 at 11.00 a.m.

FIELD – Sunday 13 June: Winchester, Hampshire

Leader: June Chatfield [REDACTED]

Freshwater, wetland, and chalk downland habitats. To record from the River Itchen, and wet meadows of the Hampshire and Isle of Wight Wildlife Trust reserve at Winnal Moors, and also from the Butterfly Conservation reserve at Magdalen Down. Meet at Winchester Railway Station, Grid. ref. SU 477299 at 10.30 a.m. (subject to train times not yet available). Bring wellies and lunch.

FIELD – Saturday 3 July: Market Weston Fen, Suffolk

Leaders: Roy Baker [REDACTED] and Ian Killeen [REDACTED]

A rare opportunity to visit the **ONLY** surviving wet fen area in Suffolk, and examine its associated mollusc fauna. This meeting is in response to the Biodiversity Steering Group's request for help to try to re-discover a possible population of *Vertigo angustior* at the site. Meet at Diss Railway Station, Grid ref. TM 128797 at 10.30 a.m. (subject to train times not yet available). Bring wellies and lunch.

FIELD – Saturday 24 July: Colne Point, Essex Wildlife Trust Reserve

Leaders: Neil Harvey (Reserve Warden)

and Pam and Peter Wilson

This extensive Reserve has a variety of habitats including estuarine shingly mudflats, saltmarsh and stabilised sand/shingle banks behind the shore. Meet at 10.30 a.m. at the car park in front of St Osyth Priory, Grid ref. TM 122156, where there are public toilets. We will then proceed to the small car park at the reserve, Grid ref. TM 107124. St Osyth is about 10 miles south-east of Colchester on the B1027. Bring wellies and lunch.

FIELD – Saturday 21 August: Herne Bay, North Kent

Leader: Dr Adrian Rundle

Lower Tertiary Fossils and Modern Foreshore

This dual-purpose meeting will examine the fossiliferous Lower Tertiary deposits exposed on the foreshore and in the cliffs; and investigate the recent marine molluscs.

The Tertiary deposits comprise a good sequence from the Thanet Sands to the London Clay. Special emphasis will be given to the molluscs of the Thanet Sands, which are mostly VERY delicate, and require special care to collect, as well as to develop and preserve later at home. A small kitchen knife to cut these molluscs out of the silt and a plastic tray to carry them, as well as the usual assortment of boxes and tubes, are recommended.

The recent marine mollusc fauna of the North Kent coastline is rather limited, but of special interest are the various boring bivalves and their associated commensals.

Meet at Herne Bay Railway Station, Grid ref. TR 171673 at 10.30 a.m. (train probably departs from London Victoria at 09.05 a.m., arrives Herne Bay at 10.28 a.m.). We will then proceed to the car park, Grid ref. TR (61)205686 adjacent to the study area. Bring lunch.

YCS – Saturday 4 September: Washburn Valley to look for *Limax* spp. Meet at car park opposite Leathley church, grid ref. SE 233447 at 11.00 a.m.

NHM – Saturday 18 September: 1430 hrs. for the first indoor meeting of the season we welcome as our Guest Speaker Louise Alcock from the National Museums of Scotland, Edinburgh. The subject of her talk is Antarctic Cephalopods.

ISLES OF SCILLY FIELD MEETING: 23-30 September 1999

Leaders: Tom and Celia Pain and Jan Light

This field meeting is already well subscribed and we look forward to an enjoyable and fruitful expedition. If you have not already done so, please remember to advise the meeting leaders of your intention in coming.

The object of the meeting is to visit a wide range of shores to obtain full coverage for the DOMMIC project. Although the details of the programme are not yet resolved, it is our intention to work three shores around Hugh Town on the first recording day, 24 September. Meet at the public conveniences on the green at the eastern end of the Town Beach, Hugh Town, Grid. ref. SV 90451065) at 10.00 a.m. If for some reason you fail to make contact on the first working day, messages can be left for Tom and Celia Pain who are staying at the Star Castle Hotel, Hugh Town. For additional information at a later stage, or a map showing the meeting place, please send s.a.e. to Celia Pain or Jan Light. (See Membership List January 1999 for addresses.)

**ADVANCE NOTICE FOR MEMBERS' MEETING,
11 DECEMBER 1999**

By the time Members receive this June Newsletter, half of the 1999 year will have passed, so it is perhaps appropriate to look ahead to the remaining half! Members are therefore reminded that the theme for the December meeting is: **My favourite mollusc OR mollusc book**, so that they may start planning! Members are invited to bring along a few slides (maximum 10) or a short presentation or exhibit to entertain us on this theme. (If you are unable to attend the meeting perhaps you could send a contribution to the *Conchologists' Newsletter* on this theme!)

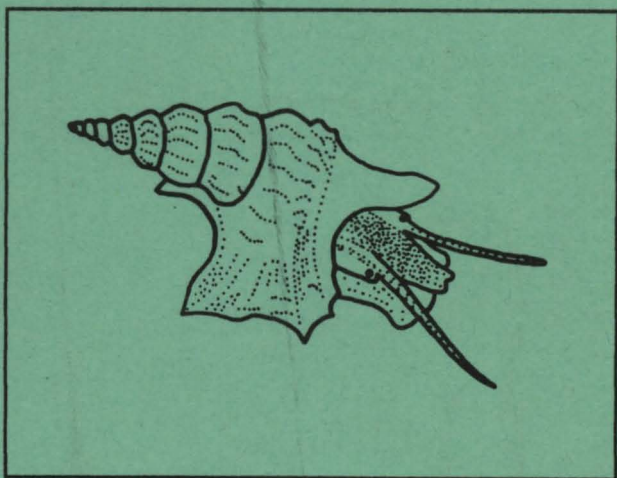
Perhaps it is the mollusc's shell sculpture, coloration/pattern or graceful movements that you admire? Maybe you are fascinated by its habits or lifestyle? Perhaps it is an endangered species? Is your favourite mollusc edible – do you have a recipe that you could share with us? Perhaps you have an applied conchology collection that you could show us, e.g. postage stamps or postcards with shells on? Perhaps you could recite your favourite mollusc poem, or read us some mollusc prose; bring along your favourite mollusc book; show some photos or slides ... (This is by no means intended as a full list, but just a few ideas that come to mind.) Please start thinking around the subject now so that we can have a full agenda.

The Conchologists' Newsletter

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***Spondylus*: more precious than gold**

Janet Ridout Sharpe

Wallingford, Oxon

The great balsa raft crunched onto the beach and came to a halt. Slowly the God-King rose from his seat and surveyed his new land. Resplendent in a great semicircular headdress gleaming with finely-worked gold, inset with huge turquoises and decorated with the brilliant feathers of forest birds from the other side of the mountains, he stepped ashore, accompanied by his wife and his chosen retinue of 40 companions. But not before one of them, Fonga Sigde, Strewer of the Shell Dust, had opened his casket and scattered pink dust wherever his Lord was to tread. So we are told in the legend of Naymlap (Markham 1910), who arrived with a fleet of balsa rafts on the north coast of Peru, probably around AD 700, to found the ruling dynasty at Sicán.

The pink dust was made from the ground shells of *Spondylus princeps*, which was extremely highly prized in ancient Peru. In 1991, the rare discovery of an undisturbed high-status Sicán burial (Shimada & Merkel 1993), dated to between AD 900–1100, yielded the body of a middle-aged man, seated cross-legged but upside-down in a burial chamber at the base of a 10 m deep shaft, accompanied by, among other things, nearly 500 cast bronze implements, 600 kg of gold-copper alloy, over 80 gold ornaments including earspools, headdresses and rattles – and a pile of 179 pristine *Spondylus princeps*. The body had originally been wrapped in a textile covered with nearly 2000 appliquéd gold, copper alloy and silver squares, and the chest and shoulders were covered by at least four layers of beads. The beads were made of various precious and semiprecious stones, including turquoise, amethyst, rock crystal, emerald, sodalite or lapis lazuli – and *Spondylus* shell.

The high status of *Spondylus princeps*, which is attested by both ethnohistorical and archaeological evidence, was probably linked in part to its rarity value. It does not normally occur off the Peruvian coast, which is washed by the cold waters of the

Humboldt Current, but is found further north in the warmer water of the Gulf of Guayaquil in Ecuador and up as far as the Gulf of California. It occasionally occurs further south during E1 Niño events, and it has been suggested that *Spondylus* could be washed up on the beach as a result of such events. But this would hardly account for the vast number of shells found in excellent condition with many of the valves still articulated, and these were probably imported from the north. It may one day be possible to provenance *Spondylus* from the minerals present in the shell and this could tell us whether the Peruvian shells all came from the same source in Ecuador or from further afield. As the Sicán tomb and other excavations have shown us, the ancient Peruvians participated in long-distance trade networks: the emerald beads came from the Colombia–Ecuador border and the lapis lazuli may have come from as far south as central Chile.

Spondylus princeps is a large, heavy, thorny oyster (Lamprell 1986) with an average diameter of about 100 mm, judging from illustrations of archaeological specimens. The spines are variable in length but tend to be fairly short, and the shell closely resembles *Spondylus crassisquamatus* with which it has sometimes been synonymised (Fig. 1).

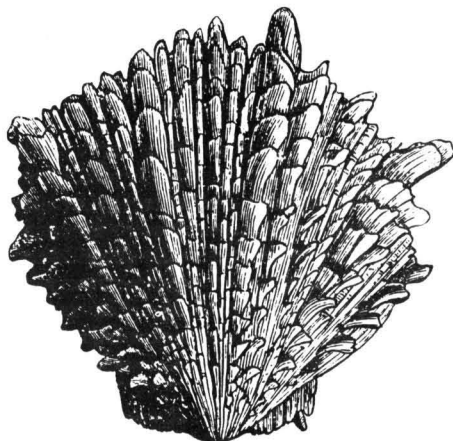


Fig. 1: An old engraving of *Spondylus crassisquama* [sic] from Figuiet's *The ocean world* (n.d. but c.1880).

An outstanding feature of *Spondylus princeps*, and the feature which probably made it so valuable to the ancient Peruvians, is its overall coral-red colour – red being the colour of blood and fertility – which extends inside the shell as a conspicuous marginal band.

The shells are found at depths of 20–60 m and their undamaged condition suggests that they were collected by divers. There is archaeological evidence for this (Stone-Miller 1995): a silver earspool from Sicán carries a repoussé scene of a canopied reed boat upon which two people are seated and hold the ends of ropes tied round the waists of divers clutching stylised *Spondylus* shells (Fig. 2). A similar scene was recently discovered on a clay bas-relief at Chan Chan, near Trujillo. Dated to c. AD 1220, this relief shows two figures on a raft above two horizontal figures with two wavy vertical lines (ropes) associated with spiky objects (*Spondylus*).



Fig. 2: Middle Sicán (AD 900–1100) silver earspool showing *Spondylus* divers; 63.5 mm diameter.

The mud-brick city of Chan Chan, capital of the Chimú who conquered Sicán around AD 1400, was dominated by the ten great palace compounds of successive God-Kings. The rule of 'split inheritance' ensured that when each king died he was buried in his palace together with his wealth – including hundreds of *Spondylus* shells – whereas the new king had to amass his own wealth and build his palace from scratch. All the tombs were looted long ago for their gold but the *Spondylus* shells, now considered worthless, remain scattered on the ground. This intensive collection of shells may have served to increase their rarity value by depleting natural populations.

Spondylus has a long history in ancient Peru. The earliest shells were found at the Preceramic pyramid complex at Aspero on the central coast, which is dated between 3000 and 2500 BC, and they first appeared in the central highlands at the ceremonial site of La Galgada before 2000 BC. The shells were being worked at this early date too: a 2-month-old baby buried as a dedicatory offering at the summit of one of the Aspero pyramids was wearing a cap made of shell beads.

The first representations of *Spondylus* shells in Peruvian art are found at Chavín de Huantar in the central highlands (Burger 1995). Chavín was the centre of the first great unifying culture of Peru, otherwise known as the Early Horizon, whose forest-animal based art style dominated part of the highlands and most of the coast between 1000 and 200 BC. *Spondylus* shells are restricted to the temple at Chavín, suggesting that their acquisition was a prerogative of the priesthood and that these shells were not owned by the common people. The Tello Obelisk, a major artwork associated with the Old Temple period (c. 1000–500 BC), is a 2.52 m long by 0.32 m wide slab which is covered on all sides with an elaborate bas-relief of two monstrous caymans. These animals, perhaps representing dual aspects of the same deity, are covered with small figures including carvings of food plants. Root crop and seed crop plants are depicted on different caymans and, based on the well-known dualism of Native American religions, it has been suggested that the former represents the Cayman of the Underworld and the latter the Cayman of the Sky. There is a

representation of a *Spondylus* shell (Fig. 3) associated with the Cayman of the Underworld, which may refer to its collection from deep water. This shell is depicted as a fanged head with snakes issuing from its mouth, an allusion to its supernatural qualities.

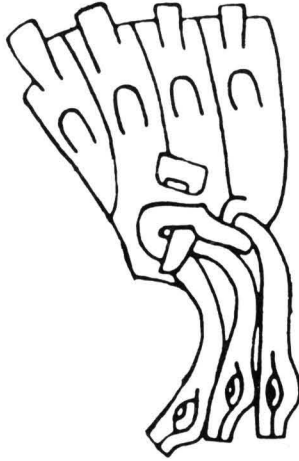


Fig. 3: Chavín (1000–500 BC) carving of *Spondylus* shell associated with the Cayman of the Underworld, Tello Obelisk.

A later sculpture, from the New Temple period (c. 500–200 BC), shows the principal Chavín deity with his feline attributes (a fanged and upturned snarling mouth) and serpent hair, holding a *Spondylus* shell in his left hand and a *Strombus galeatus* (shown as a fanged mouth) in his right (Fig. 4). In ancient Andean ritual, these two shells are believed to have formed a symbolic duality with *Strombus* associated with male forces and the reddish *Spondylus* representing female forces. This symbolism is maintained by the Kogi priests of Colombia today and *Spondylus* is still used in fertility rituals in the Peruvian highlands. The *Strombus* is also native to Ecuador and the depiction of both shells on this bas-relief probably alludes to the ability of the temple to acquire exotic material to feed the gods and maintain fertility.

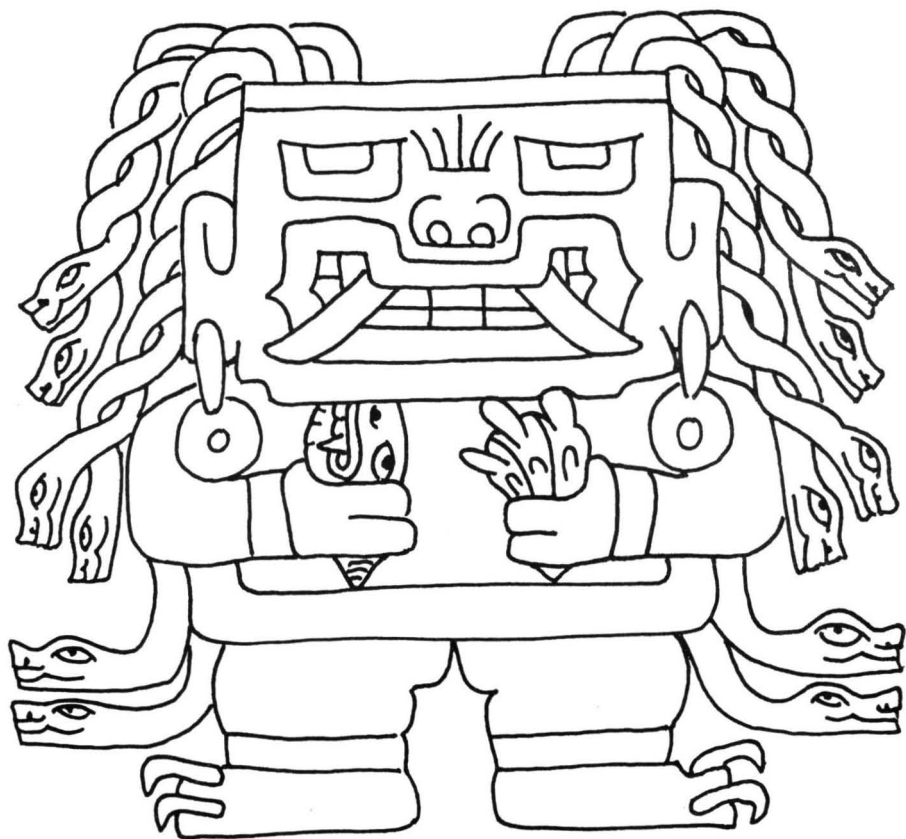


Fig. 4: Chavín (500–200 BC) deity holding *Strombus* and *Spondylus* shells; 53 cm high.

Like *Spondylus*, but to a lesser extent, *Strombus galeatus* was used for offerings to the gods in ancient Peru. Numerous fragments were found during the excavation of the Old Temple at Chavín, where several bas-reliefs show figures blowing *Strombus* shell trumpets. The *Strombus* trumpet orpututu is a traditional Andean instrument which is still played in Cuzco and other parts of the southern highlands at the beginning and end of public

ceremonies. An exceptionally large example (235 mm long), dating to the Chavín period, was excavated on the north coast in the 1930s. The apex had been cut off and the shell was perforated for suspension just above the siphonal canal. The surface had been smoothed and polished and engraved with a Chavín-style figure blowing such a trumpet; the profusion of snakes and fanged heads shown emanating from the trumpet express its powers of communication with the supernatural. A fanged-mouthed *Strombus* shell is associated with the Cayman of the Sky on the Tello Obelisk.

In addition to offerings of complete shells, which were considered to be the food of the gods, and their use for bead making, *Spondylus* shells were also carved into pendants and figurines and used for inlay work. For example, the Preceramic site of La Galgada (before 2000 BC) has yielded a *Spondylus* pendant in the form of a viscacha with inlaid turquoise eyes. A Chimú period (AD 1000–1476) bowl inlaid with *Spondylus* shell shows the same diving scene as the Chan Chan relief, but radiating out from this central motif are representations of crop plants emphasising the association of *Spondylus* with fertility. Finally, an Inca period offering pit in the floor of a temple on the north coast contained two female figurines (64 and 54 mm high) carved from red *Spondylus* shell and elaborately dressed in fine textiles.

A Chimú (c. AD 1430) shell bead workshop was recently excavated at Túcume on the north coast (Heyerdahl *et al* 1995) and revealed all the stages of bead production from whole *Spondylus* shells to cut shells to perforated angular discs to tiny ground circular beads. This process was extremely wasteful of shell material and, like the shell dust scattered by Fonga Sigde, represents conspicuous consumption which was probably a royal prerogative. This may be compared with the potlatch ceremonies of North America where precious objects were publicly destroyed or given away to emphasise the wealth and power of the ruling class.

However, the significance of *Spondylus* in ancient Peru was not simply a matter of supply and demand. The shell was closely associated with offerings to the gods and with ensuring the

fertility of man, animals and plants. So next time you dust that shell on the mantelpiece – just think, once it was worth more than its weight in gold and it was sent to accompany God-Kings in paradise.

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□

Lymnaeidae in the British Isles: Is it time to stop the 'lumping'?

Ian J. Killeen

[REDACTED], Felixstowe, Suffolk [REDACTED]
[REDACTED]

The last year has seen the publication of new major works which include the distributions of the freshwater mollusc faunas of four European countries:

Gittenberger E. & Janssen A. (eds) 1998. *De Nederlandse Zoetwatermollusken*.

Glöer P. & Meier-Brook C. 1998. *Susswassermollusken* (12th Edition).

Kerney M.P. 1999. *Atlas of the land and freshwater molluscs of Britain and Ireland*.

Turner H. et al 1998. *Atlas der mollusken der Schweiz und Liechtensteins*.

On the basis of the data presented in the new edition of the UK atlas (Kerney 1999), there are significantly fewer species of Lymnaeidae in the UK than in other European countries. Kerney acknowledges the taxonomic difficulties of the family, especially with *Lymnaea 'peregra'* and *L. 'palustris'*. Given the number of species which reach the western European coast, it seems likely that some of them occur in the UK, but are currently unrecognised. If the UK does have these European species, then we must view the current distribution maps as species aggregates, in the way that, for example, *Euconulus fulvus* and *Columella edentula* were portrayed in the first edition of the 10 km Atlas (Kerney 1976).

If we take the nomenclature presented in Glöer & Meier-Brook (1998), then the following species of the Lymnaeidae occur in western and Central Europe:

Lymnaea stagnalis (L. 1758)

Stagnicola palustris (Müller, 1774) Syn. *Lymnaea palustris*

Stagnicola turricula (Held, 1836)

Stagnicola occultus (Jackiewicz, 1959)

Stagnicola fuscus (C. Pfeiffer, 1821)

Stagnicola corvus (Gmelin, 1791)

Omphiscola glabra (Müller, 1774) Syn *Lymnaea glabra*

Galba truncatula (Müller, 1774) Syn. *Lymnaea truncatula*

Radix auricularia (L. 1758) Syn. *Lymnaea auricularia*

Radix ampla (Hartmann 1821) Syn. *Lymnaea auricularia*
var. *ampla*

Radix peregra (Müller, 1774) Syn. *Lymnaea peregra*

Radix ovata (Draparnaud, 1805)

Myxas glutinosa (Müller, 1774)

All of the species of *Stagnicola* are difficult to separate using conchological characters as there appears to be interspecific overlap. There are, however, differences in anatomical characters, especially the penis, and these allow the separation of the different species (see figures in Glöer & Meier-Brook 1998, p. 52).

Within the '*Lymnaea peregra*' group, *Radix peregra* and *R. ovata*, conchological similarities also exist, with interspecific overlap. The key characters for separation of these two species are the degree of black pigmentation on the mantle (see figures in Glöer & Meier-Brook 1998, p. 55). Differences in geographical distributions of the *peregra/ovata* group are seen in Germany where *Radix peregra* is more local, with fewer records in the north. However, in Switzerland *R. peregra* is the more widespread species. In Holland both are recognised, but with only a limited number of segregate records; the distribution map shows an aggregate. The status of *Radix ampla* is unclear, some authors regarding it as a separate species and others as merely a form of *Radix auricularia*.

The distribution maps given for Germany show that *Stagnicola palustris* is usually found in the north, whereas *Stagnicola corvus* is usually found in the south. *S. fuscus* is more local and occurs in the southern part of Germany, whereas *S. turricula* and *S. occultus* appear to be rare with small, localised distributions. In Switzerland, *S. corvus* appears to be the main recognised species. The only species currently recognised in Holland are *S. palustris* and *S. corvus*, although the data for their distributions are limited. Consequently most of the records are mapped as '*Stagnicola palustris* complex'.

Whatever ones views are on lumping or splitting, the fact that most of the European malacological community agrees that there are more species in the family Lymnaeidae than has previously been acknowledged suggests that it is timely to review the records for the family in the UK, identifying which species are present and any differences in their habitats and distributions.

I call upon members of the Society to participate in this process by collecting and submitting material for examination. I would like to receive specimens of '*L. palustris*' and '*L. peregra*' from a range of habitats and geographical locations, particularly from northern and western regions and not just lowland south-east England.

In order to get the best material for dissection, send in adult material (preferably at least 10 specimens), preserved in 70–80% alcohol (Industrial Methylated Spirit). To get the best results material should be narcotised, then gradually fixed through addition of increasing strengths of alcohol. Detailed locality, habitat and date information should accompany each sample.

Please contact me (Tel. 01394 274618) prior to submitting material or for further information on preservation, or for suggestions as to collection sites. Selected material will be sent to a continental expert for verification of identity. A preliminary summary of the results will be published in the Newsletter.

□

Vertigo at low altitude: Morecambe Bay Pavements field meeting, 21-23 May 1999

Ron Boyce

[REDACTED], Earley, Reading [REDACTED]

It was with some trepidation that I drove over the Pennines from Durham in the direction of Kendal. My eventual destination was the important area of limestone pavement on the Lancashire/Cumbria border near Silverdale which has been proposed by English Nature as a candidate Special Area of conservation. Some parts of the area are insufficiently recorded, and the purpose of the meeting I was heading for was to search for molluscs at selected sites and provide additional data for use in conservation and management programmes. I had a tent with me in the boot of the car, but the weather forecast for the week-end was severe gales, heavy rain and the possibility of snow. In a fit of discretion I booked into a B&B in a pretty stone-walled village a few miles from the study area. Not a mollusc to be seen.

The following morning the place was *alive* with *Helix aspersa*. I drove over to the meeting point at Challan Hall, where nine of us assembled. Conditions were not promising; there was a leaden overcast sky and it was spitting on to rain. What a relief to find, eventually, that this was the worst weather we ever had during the meeting.

Our first study site on the Friday was within walking distance of the assembly point, and for the sake of ambiguity it was called Hawes Water. Not to be confused with the Lake District water body of that name, it is quite small, and to make matters worse there is another lake called Little Hawes Water not far away. However, small is beautiful in this case, and our searches for molluscs were given added pleasure by the wide range of flowering plants around the lake, including a large stand of birdseye primrose *Primula farinosa* in full bloom.

The emergent vegetation at the edge of the lake, all of ten metres above sea level, had large populations of *Vertigo*

antivertigo, and other wetland loving molluscs to be found here were *Succinea putris*, *Oxyloma pfeifferi* and *Deroceras laeve*. A search of the woodland and fen in the vicinity yielded a total of 38 species for the site, including live *Pomatias elegans* which is usually not nearly as easy to find as its empty shells are. It is nearing the northern edge of its range here. Some of us had a quick look at Gait Barrows NNR where we were shown how and where to find *Vertigo angustior*. The site has of course been studied extensively already, so no serious recording was done here.

In the afternoon we visited Eaves Wood, a National Trust property about one mile west of the lake consisting of deciduous woodland on top of limestone pavement. This again yielded *Pomatias elegans* alive and also had some interesting species (*Pyramidula rupestris*, *Columella aspera*, *Leiostyla anglica*) that had not turned up in the morning. By the end of the afternoon we were having some sunshine which it seemed a pity to waste, so four of us had a further look round Gait Barrows to appreciate the flora and see what sort of damaging effects the removal of weathered limestone from paved areas to sell as rockery stone can have. Apparently the plant cover does not restore itself within realistic time scales, and potentially suitable sites for *V. angustior* had disappeared where the limestone had (historically, not recently) been removed.

On Saturday morning we met in Beetham village, where we were joined by two additional members, and visited the nearby Underlaid Wood which is about two miles north of Hawes Water. The habitat here was mixed woodland with calcareous springs having a wide range of light intensities from very deep gloomy shade to well illuminated patches. It was here that we achieved the longest species list (48) of which the more interesting ones were *Acicula fusca*, *Vertigo pusilla*, *V. antivertigo*, *V. pygmaea*, *Abida secale* and *Spermodea lamellata*. One odd observation about *Abida secale* was that it was present on overhanging limestone pavement vegetation on one side of the Fairy Steps but not on the other side, which suggests that this species may be sensitive to aspect.

We ate our sandwiches in one of the open areas of the wood where the limestone pavement made excellent picnic benches. There was bright sunshine and the proceedings were enlivened by close encounters with a Dingy Skipper, a Rose Chafer and several Pearlbordered Fritillaries. In the afternoon we visited Deep Dale at Yealand Conyers about three miles south of Beetham. This is a former limestone quarry and is now tall deciduous woodland on a precipitous slope with a pond at the bottom. We found 45 species, many of which had turned up in the morning, but interesting additions were *Azeca goodalli* and *Vertigo substriata*. The weather was rather windy and not very warm, but there was no sign of any snow yet!

On the Sunday we again met in Beetham village and proceeded to Yealand Hall Allotment at Yealand Storrs, an area of limestone grassland and scrub with some pavement areas about a mile north of Deep Dale. *Pomatias elegans* turned up once again, as did *Vertigo pusilla* and *V. pygmaea*. Interesting new finds at this site were *Balea perversa* and *Helicella itala*.

After this there was a general dispersal. Several members decided to risk their lives wading into Windermere in search of pea mussels, while the more cautious among us accepted Barry Colville's invitation to be shown a roadside verge at Meathop from which *Succinea oblonga* is known. There is a substantial rock face next to the road and it is presumably the runoff from this that sustains the damp but not flooded conditions under which this snail thrives. There was some doubt as to whether the animal was still present, since there had been a recent pollution incident at the site, but it was still found, and in some numbers. The following morning the heavens opened, and all the *Helix aspersa* in the village fled for their lives while it continued to deluge for several hours. The trip to the north had only just succeeded in missing the rain, just as had the Durham meeting last year.

Many thanks to Barry Colville for arranging and leading a very successful and enjoyable meeting; to Ian Killeen for additional advice and encouragement; and to English Nature, the National Trust and various other landowners for permission to work their properties.

Table 1. Mollusca recorded in the Morecambe Bay Pavements area, May 1999

Species	Location				
	Hawes Water	Eaves Wood	Under-laid Wood	Deep Dale	Yealand Hall
<i>Pomatias elegans</i>	L	L			L
<i>Acicula fusca</i>		L	L (2)	L	
<i>Carychium minimum</i>	L		L	L	
<i>Carychium tridentatum</i>	L	L	L	L	L
<i>Succinea putris</i>	L				
<i>Oxyloma pfeifferi</i>	L			L	
<i>Azeca goodalli</i>	L	L	L	L	L
<i>Cochlicopa lubrica</i>	L	L	L	L	L
<i>Cochlicopa lubricella</i>		L	L	L	
<i>Pyramidula rupestris</i>		L	L	L	L
<i>Columella edentula</i>	L		L	L	L
<i>Columella aspera</i>		L	L	L	
<i>Vertigo pusilla</i>			L	L	L
<i>Vertigo antivertigo</i>	L		L		
<i>Vertigo substriata</i>				L	
<i>Vertigo pygmaea</i>			L		L
<i>Abida secale</i>			L		
<i>Leiostyla anglica</i>		L	L	L	
<i>Lauria cylindracea</i>		L	L	L	L
<i>Vallonia costata</i>			L		L
<i>Vallonia excentrica</i>					L
<i>Acanthinula aculeata</i>		L	L	L	L
<i>Spermodea lamellata</i>			L	L	
<i>Ena obscura</i>	L		L		L
<i>Punctum pygmaeum</i>		L	L	L	L
<i>Discus rotundatus</i>	L	L	L	L	L
<i>Arion ater</i> <i>agg.</i>	L	L	L	L	L
<i>Arion subfuscus</i>	L		L	L	L
<i>Arion circumscriptus</i>			L	L	
<i>Arion silvaticus</i>			L	L	
<i>Arion fasciatus</i>				L	
<i>Arion distinctus</i>		L	L	L	
<i>Arion intermedius</i>	L		L	L	
<i>Vitrina pellucida</i>		(shell)	(shell)	(shell)	(shell)
<i>Vitrea crystallina</i>	L	L	L	L	L
<i>Vitrea contracta</i>		L	L	L	L

Species	Location				
	Hawes Water	Eaves Wood	Under- laid Wood	Deep Dale	Yealand Hall
Nesovitrea hammonis	L	L	L	L	L
Oxychilus cellarius		L	L	L	
Oxychilus alliarius		L	L	L	L
Oxychilus helveticus		L	L	L	
Zonitoides nitidus	L				
Milax budapestensis		L		L	
Limax maximus		L		L	
Limax marginatus		L			
Deroceras laeve	L				
Deroceras reticulatum	L	L	L	L	L
Euconulus fulvus		L	L	L	
Euconulus alderi	L		L		
Ceciloides acicula			L		
Cochlodina laminata	L	L	L	L	L
Clausilia bidentata	L	L	L	L	L
Balea perversa					L
Candidula intersecta			L		L
Helicella itala					L
Ashfordia granulata	(shell)		(shell)		
Zenobiella subrufescens		L		L	
Trichia striolata	L	L	L	L	L
Trichia hispida	L	L	L	L	L
Arianta arbustorum			L	L	
Cepaea nemoralis	L	L	L	L	L
Cepaea hortensis	L		L	L	L
Helix aspersa			L		
Valvata cristata	L				
Bithynia tentaculata	L				
Physa fontinalis	L				
Lymnaea truncatula	L				
Lymnaea palustris	L				
Lymnaea peregra	L				
Bathyomphalus contortus	L				
Pisidium milium	L				
Pisidium hibernicum	L				
Pisidium nitidum	L				

□

Sea (Shell) Fever **(with apologies to John Masfield)**

Jennifer H. Creech,

Hartford, Northwich, Ches

I must go down to the beach again,
to the lovely beach, bye and bye,
And all I ask is a shelly drift
and some seaweed left to dry,
And the seashells picked
and the sea's pong
and the fine sands caking,
And a seamist rising up the seawalls,
yet a great day's waking.

I must go down to the beach again,
for the call of the beachcomber's tide
Is a wild call and has a thrall
that may not be denied;
And all I'd like is a sunny day
with the white clouds flying,
And lots of time
with miles of beach,
and the sea-gulls crying.

I must go down to the beach again,
to the beachcombers easy life,
To the cockles' way and the whelks' bay
where shelly remains are rife;
And all I ask is a long low tide
with lots of beach uncovered;
And plenty of bags
full of shells in their prime
when the beach trip's over.

Field Meeting in the Wye Valley: Saturday 24 April

David Long

Leckhampton, Cheltenham

Eleven of us met on a fortunately bright and warm day following heavy rain. The first venue was Slade Bottom (SO 5605), by kind permission of Forest Enterprise.

Slade Bottom is a 'hidden' valley carrying the Slade Brook which runs into the Wye. Most of the valley was mixed deciduous woodland until about 1960 when the Forestry Commission planted much of it with conifers, in some cases as interplanting; these are gradually being taken out. The valley is cut through the lower part of the Carboniferous Limestone series and passes into Devonian sandstones at about the 400 ft contour. Because of its passage through the limestone the water issuing at the top of the sandstones is highly calcareous and has given rise to active deposition of tufa along at least 600 m of the Slade Brook. This is certainly the largest area of actively depositing tufa in Gloucestershire. The nationally rare (Red Data Book 3) *Ena montana* was found on Ash trees in the valley bottom on 20 September 1987, and has been recorded there twice since, the latest pre-1999 record being for July 1998. It is the only site known west of the Severn in Gloucestershire.

The aim of our meeting was to establish what other molluscs are present, both in the limestone upper part of the valley, and by the stream, especially where *Chrysosplenium oppositifolium* grows.

Forty-one species of land mollusc were recorded on 24 April. This is a rich fauna but not exceptionally so in comparison with other ancient woods on limestone in the Forest of Dean and Cotswolds. In addition one small species, *Vertigo pygmaea*, was found in the moss of a ride at SO 563056 during the 1987 visit. Most of the recording on 24 April was along the Slade Brook and up nearby slopes between about SO 569052 and 563055, but some attention was also given to an Ash-dominated area (with some evidence of cleared conifers) on the limestone at SO 568055.

The most important outcome was to confirm that *Ena montana* was present in numbers among ground vegetation and on Ash trunks along the bottom of the Slade Brook valley between SO 569052 and SO 563055. Two other species were recorded which are indicative of old woodland in Gloucestershire and elsewhere:

Phenacolimax major is known from one other Gloucestershire site west of the Severn – Highbury Wood National Nature Reserve – so finding it, as had been hoped, was welcome. At Slade Bottom three of us found at least five living specimens (two mating on the underside of a Hartstongue Fern) and a dead shell were found both on the limestone at SO 568055 and nearer the Slade Brook at SO 567053 and 567054.

Zenobiella subrufescens of which live juveniles were noted in at least two sites along the tributary valley of the Slade Brook at SO 567055 and SO 568055.

Single bleached dead shells noted at SO 568055 on 10 March and 24 April 1999 indicate that *Pomatias elegans* was present, at least at one time, on the limestone part of the wood. It may still be there (so long as acidification from conifers did not eliminate it), but dead shells of this species are very durable.

Damp valley bottoms in old woods, especially where there is Golden Saxifrage (*Chrysosplenium* spp) often have a diverse fauna of small land molluscs of conservation interest, such as *Acicula fusca*, *Leiostyla anglica*, and *Vertigo substriata*. This did not turn out to be the case at Slade Bottom where the small mollusc fauna was dominated by the widespread *Carychium tridentatum*. Ian Killeen found one specimen of *Columella edentula* under a Hogweed leaf.

Our second venue, to which we walked via a field containing an apparently tame bull, was Bigsweir Wood SSSI, in this case by kind permission of the Woodland Trust, English Nature, and the Florence Hotel. The site is mainly a Woodland Trust property on the side of the Wye Gorge; a small part of the wood is owned by the Florence Hotel. It is basically an Oak wood on Devonian sandstones and conglomerates. Virtually nothing was known of the molluscs present.

Search was concentrated in the oak woodland with patches of Woodrush (*Luzula sylvatica*) in the vicinity of the southern exit of the Offa's Dyke Path from the reserve, around SO 543056. This contained a low number, fairly low diversity mollusc fauna which is typical of acid woods of this type. Two ancient woodland indicator species were found:

Limax cinereoniger, which occurs in small numbers in ancient woods in Gloucestershire on both sides of the Severn, was found by Michael Weideli under a log.

A juvenile of *Zenobiella subrufescens* was found by Rosemary Hill in the litter layer. Like *Limax cinereoniger* this is also found in small numbers in many ancient woodland sites in Gloucestershire.

In addition *Columella aspera* occurred in the litter layer, being especially associated with the basal part of *Luzula sylvatica* clumps. In Gloucestershire virtually all records are from old woods.

Barry Colville and Pryce Buckle went down the footpath towards the Florence Hotel and found a slightly more damp and possibly more base-rich area around SO 543058 which had the larger helioid species (*Arianta arbustorum*, *Cepaea nemoralis* and *C. hortensis*), both the clausiliids (*Cochlodina laminata* and *Clausilia bidentata*) recorded from the wood and a relatively varied small mollusc fauna.

Two introduced slug species were noted; *Deroceras caruanae* was seen on my route-finding visit on 10 March, and *Arion flagellus* was seen on both 10 March and 24 April. In all 31 species were recorded on these two dates.

With many thanks to all those who attended, to Paula Keen, Charlotte Pagendam and Henry Coles for giving permissions for their respective organisations, and to Pat for providing the super supper.

□

More on *Zenobiella subrufescens*

Robert Cameron

[REDACTED], Sheffield [REDACTED]

As a belated response to David Long's article (*Conchologists' Newsletter*, 147, pp 103-4), I have not found *Z. subrufescens* on evergreens but, like most people, I suspect, I have not looked very hard. I can confirm, though, that the species commonly climbs trees and rests on the undersides of leaves.

Many years ago, a class on woodland ecology I was leading visited Earl's Hill nature reserve in Shropshire. One of the exercises was to beat the foliage of several species of tree over trays to find out what was in them. Much to my surprise, quite a few *Z. subrufescens* fell out. I no longer have the details, but the snail showed a marked preference for Wych Elm (*Ulmus glabra*) compared with the other trees sampled: Ash (*Fraxinus excelsior*), Oaks (*Quercus* spp.) and Birches (*Betula* spp.).

Looking through woodland records made over many years, I find that where I have found *Z. subrufescens* on the ground or in bags of litter, it is always in small numbers and nearly always as fresh empty shells. I have just finished sieving several bags of litter from Anston Stones Wood, S. Yorkshire (SK 53-83-), which have yielded over 1,600 shells. Only two of them are *Z. subrufescens*, both fresh dead juveniles. Had I taken less litter, or searched the ground and tree-trunks only, I would have missed the species altogether.

In the high evergreen Laurel forests of northern Madeira, there is only one common Helicoid, *Leptaxis membranacea*. As its name suggests, it resembles *Z. subrufescens* in having a very thin shell. It also has a minute umbilicus, and generally looks very similar. From my records, it was found in ones and twos (and usually empty) in ground searches and litter samples, but in larger numbers and alive where foliage was accessible.

□

Blister pearls in *Anomia ephippium*

Henk K. Mienis

National Mollusc Collection, Dept. Evolution, Systematics &
Ecology, Hebrew University, IL-91904 Jerusalem, Israel
E-mail: mienis@hotmail.com or mienis@netzer.org.il

The Saddle oyster *Anomia ephippium* Linnaeus, 1758 is a common species along the Atlantic coasts of Western Europe and in the Mediterranean Sea. Along the coast of Israel it has been found alive in the intertidal and infralittoral zones up to a depth of 68 m (Barash & Danin, 1992). Usually it was found attached to stones, rocks or other large shells. However, empty shells have also been dredged from a depth of 135 m.

A check of all the samples of *Anomia ephippium* present in the National Mollusc Collections of the Hebrew University of Jerusalem (HUJ) and the Tel Aviv University (TAU) revealed the presence of two specimens with blister pearl formations in the TAU-collection.

A specimen collected by means of a bottom trawl from a depth of 16 fathoms between Yavneh and Tel Aviv on 22 June 1965, shows a large blister pearl in the upper valve. The pearl has a size of 15 x 8 mm and is filled with sand and silt.

Another valve dredged from a depth of 22 fathoms between Atlit and Tantura on 1 March 1962 shows a similar blister pearl measuring 17 x 8 mm. Also in this case it is possible to see through the shell that the pearl formation is filled with sand and silt.

In both cases the blister pearl formation is of the same colour as the inside of the shell.

I am not aware that pearl formation has been recorded before in *Anomia ephippium*.

Reference

- Barash, A. & Danin, Z., 1992. Annotated list of Mediterranean molluscs of Israel and Sinai. *Fauna Palaestina – Mollusca I*: 405 pp., 372 figs. The Israel Academy of Sciences and Humanities, Jerusalem. □

Proximal and distal

David Long

[REDACTED], Leckhampton, Gloucestershire [REDACTED]

As I am Chairman of the Society's Publications Committee, I was recently passed copies of correspondence between an author of a paper published in the *Journal of Conchology* and one of the paper's referees, both malacologists with a large amount of published work. They discussed in particular the use of the terms 'proximal' and 'distal' in relation to pulmonate genital anatomy. One of the authors had always taken the view that 'proximal' was towards the genital opening and 'distal' was away from it, but the referee had the opposite concept – that proximal is towards the point of origin of the flow of genital products. Here are extracts from the exchange, slightly modified in line with Society policy that the identity of referees is confidential:

From the referee:

'The most diffuse praxis wants the gonad to be the starting point and the genital atrium the end of the genitalia. Accordingly all what is "more internal" is usually called as "proximal", while all that is closest to the genital atrium "distal."

From the author:

'I absolutely disagree with the proposed reversal of the meaning of terms "proximal" and "distal." The terms are purely formal and arbitrary, used univocally in over a hundred papers by Forcart, [myself] and other "[workers]" in one direction: by [the referee] and his school – in the opposite direction. ... I am even able to agree with the "logical" correctness of the direction adopted by [the referee]: from the hermaphroditic gland to the outlet of the reproductive ducts. But should this be imposed on other malacologists as the only correct terminology?

'As regards figures: pulmonate genitalia are usually figured with the gonopore at the bottom. In case of slugs, since Simroth it has been adopted to figure them with the gonopore at the top. Does it prevent their correct interpretation and comparisons? At worst the paper can be turned upside down, so why argue?

The published paper followed the author's usage and can readily be understood by reference to the figures, but it is easy to see that confusion can arise if publications on mollusc anatomy use an adjective in two diametrically opposed senses. Is it possible or, more to the point sensible, to standardise? And if so, how should the terminology apply?

Perhaps a dictionary would help. *The Oxford English Dictionary* 2nd Edition 1989, the OED, gives the anatomical sense of 'proximal' as '*situated towards the centre of the body, or the point of origin or attachment of a limb, bone or other structure: opp. to distal.*' 'Distal' is defined in the same work as '*situated away from the centre of the body, or from the point of origin (said of the extremity or distant part of a limb or organ); terminal. Opp. to proximal.*'

This seems to be fine for mammals but how does it work for a snail? One can see that the referee was right if the point of origin of a genital organ (an 'other structure') is the opposite end to the genital opening, even though, for example, the ovotestis occupies the tip of the shell's spire. In this case the proximal point is that farthest from the centre of the body. So surely the genital opening is nearer the centre of the body of a snail? In which case the author is right, but – er – what is the centre of a snail, or for that matter a slug? The heart? The junction of the head-foot and the visceral and reproductive mass? Or?

Because the OED definition can encompass both usages, it might be easier to use such terms as 'posterior/anterior' or 'adapical/abapical' where appropriate. However, the referee does not think that these fit well ...

... 'as a valid alternative to "proximal/distal." They imply subjects with two faces or vertices, one of which can be clearly defined as anterior or apical (the head in a bilateral animal; the front cover with title of a book). Both don't imply a "starting point."

What do readers think? Can they suggest alternative terminology?

With many thanks to the authors and the referee for allowing me to make use of this exchange and for commenting on this note in draft. □

George Crawford Hyndman (1796-1867) and his papers

Nora McMillan

Department of Zoology, Liverpool Museum, Liverpool

A long time ago (*J. Conch.* **29**: 164, 1931) I wrote a note on some letters, etc. of George Crawford Hyndman (1796-1867), Belfast solicitor and marine biologist. He was a leading participant in the series of marine dredging expeditions sponsored by the British Association for the Advancement of Science in the nineteenth century. His fine shell collection went to the Belfast Museum (now the Ulster Museum).

Now, many years later, I find I have a letter (dated 1922) from my old friend the late Robert Welch (1859-1936), part of which letter I present here because it throws some light upon the rest of Hyndman's papers. Most, of course, went to the Ulster Museum but what became of the material given to R. Lloyd Praeger is unclear; it was not in the National Library of Ireland when I made enquiries there in 1968. Here are the relevant parts of Welch's letter to Stelfox:

'I have had a good sort of all the Hyndman papers Berry gave me 8 or 10 years ago and have sent R.Ll .P[raeger] a lot more or less useful for a life of G.C.H. including some of his grandfather's (R.P.) letters to H. and some other well known conchologists of the fifties & sixties such as Barlee, Waller etc. and some of the big lot of dredging logs, lists and reports.

I enclose some of the stuff which may be useful i.e. the bivalve hinge drawings'. (Letter dated 8.6 (?1922).)

Stelfox gave me the bivalve drawings referred to in Welch's letter.

All the Hyndman information will be deposited in the Archives of the Natural History Museum.

□

Dispersal of freshwater bivalves

Patrick J. Wisniewski

The Wildfowl and Wetlands Trust

Martin Mere, Burscough, Ormskirk, Lancashire L40 0TA

Ron Carr's observation of *Pisidium nitidum* attached to a corixid bug (*Conchologists Newsletter* Vol 9, Part 2, No. 149) reminded me of something I observed some thirty years ago. Whilst sampling an isolated farm pond near Nuneaton, Warwickshire I captured two male Smooth Newts *Triturus vulgaris* both with a *Pisidium* so attached to their flanks. The two newts were in full breeding condition so unlikely to leave the pool immediately but it is easy to envisage a situation where migrating newts and other amphibia act as agents of dispersal for small freshwater bivalves.

□

Important Notice

Due to the unexpected resignation of the Hon. Programme Secretary, the Society urgently needs a volunteer to be Acting Programme Secretary to co-ordinate the year 2000 Programme.

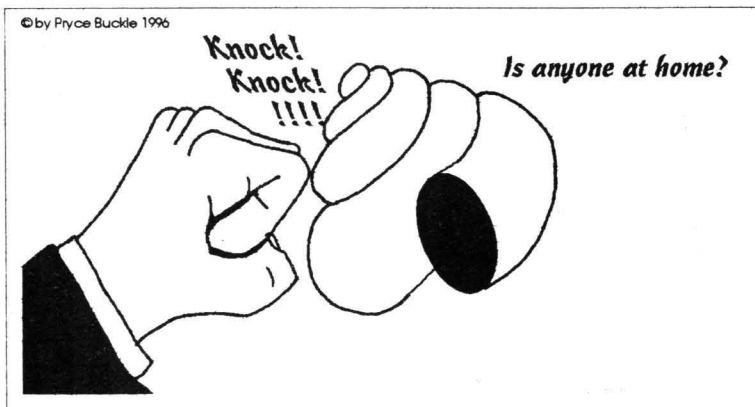
Please would anyone who is interested contact the Hon. General Secretary, Ms Jane Reynolds, at [REDACTED], London [REDACTED] or telephone [REDACTED] for further details.

Annual General Meeting March 2000

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

Rule No. 12. Candidates for nomination to the Council shall be paid-up members of the Society and shall be nominated by two members. Nominations, other than those made by the Council itself, shall be sent in writing to the Hon. Secretary at least six weeks before the AGM, and shall be accompanied by a signed declaration of the candidate's willingness to serve.

Note: Nominations must be received by the Hon. Secretary NOT LATER THAN **31 December 1999**.



COLLECT ONLY DEAD SHELLS

Conchological Society of Great Britain and Ireland

MINUTES

1084th (Ordinary) meeting held on the 10th October 1998 in the Demonstration Room of the Natural History Museum starting at 2.30p.m.

Announcements of deaths: The death of Capt. W E Owen, Master Mariner, Life member since 1973, was announced.

In the chair: Mr Eversham with 27 members and friends present.

Apologies for absence: Mrs Light, Dr Willing, Mrs McMillan, Mr Crowley, Mr Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Mrs & Miss Fogan, Mr Killeen, Mr Dance, Mrs Platts, Dr Preece, Miss Sawyer, Mrs Long.

Minutes of the last meeting (of 2nd May 1998): Read and accepted.

Matters arising: None

Nomination and election of new members: 7 full and 4 student members were nominated and elected.

Ordinary:

Mr A R Filmer

██████████, Faversham, Kent, ██████████

Dr J Wise

Dept. of Malacology, Houston Museum of National Science,
1 Herman Circle Drive, Houston, TX 77030, USA

Mr J Arnott

██████████, Farnborough, Hants, ██████████

Dr G M Somerville

School of Biology, University of Sussex, Falmer, Brighton, Sussex

Mr R Templeton

██████████, Rutherglen, Glasgow, ██████████

Mr J Liquorice

██████████, Loughborough, Leics., ██████████

Mr S R Youell

██████████, Lowestoft, Suffolk, ██████████ ██████████

Student:

Mr S J Muller

Fitzwilliam College, Cambridge, CB3 0DG

Miss C C E Perkins

██████████, Cardiff, ██████████

Miss A McIvor

[REDACTED] Bournemouth, Dorset, [REDACTED]

Miss E J Main

[REDACTED], Englefield Green, Surrey, [REDACTED]

Announcements and Correspondence: Details of forthcoming meetings and events were given. Dr Chatfield gave details of the field meeting to Ashted Common, which was to take place on Sunday 11th October. There would be a meeting on Saturday 17th October to Box Hill and Colley Hill, led by Keith Alexander. On Saturday 21st November there is a one-day event at the National Museums & Galleries of Wales, organised by Dr Graham Oliver, to examine the Melville-Tomlin Collection. Miss Nelson said that there were still a few places available at the Molluscan Workshop to be held at her home on Saturday 28th November. The topics covered would be *Vertigo* species and fossils from the Blockley Quarry field meeting.

It was explained that as Dr Willing had been unable to attend today's meeting, the sequence of lectures for October and November had been changed. Therefore the next indoor meeting on 7th November would include Dr Willing's talk 'Biodiversity Matters – What's Been Going On'.

Lecture of the day:

Speaker: Georges Dussart (Canterbury)

Title of talk: *After Boycott....*

Papers to be read: None

Any other business: None

Meeting closed at 5.00 p.m.

Chairman

Appendix: Members' exhibits:

- | | |
|---------------|---|
| P T Wimbleton | 1. <i>Theba pisana</i> (Müller 1774). Holywell, Cornwall, August 1998. Is this a new English location? |
| | 2. <i>Helicodonta obvoluta</i> (Müller 1774). A review of locations at its western range on the Hants/Sussex border. 1997 & 1998. |
| | 3. Two additions to the Marine Census List for Hannaford Beach, Looe, Cornwall August 1998. <i>Leucophytia bidentata</i> (Montagu 1808) <i>Lamellaria perspicua</i> (L. 1758) |
| Adrian Rundle | Open University Microscope (now available by post cheap (!)), Argos lamp & slide of small land snails. |

- | | |
|------------------|---|
| J Chatfield | Note on proposed razor shell fishery in The Wash from <i>Natural World</i> , Autumn 1998. |
| E O Bishop | Some non-marine shells from the Kuala Lumpur Region, West Malaysia. |
| Helen Weideli | 'Paua Prince of Molluscs' Article from <i>New Zealand Geographic Magazine</i> |
| Kevin Brown | 1. Book: R F Zeigler & H C Porreca, <i>Olive Shells of the World</i>
2. Book: E J Petuch & D M Sargent, <i>Atlas of the Living Olive Shells of the World</i> .
3. Specimens of <i>Oliva</i>
4. Press cuttings
5. Book: N Tebble, <i>British Bivalve Seashells</i> |
| Dr G B J Dussart | Publications relating to snails in their environment. |

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**1085th (Ordinary) meeting held on the 7 November 1998
in the Demonstration Room of the Natural History Museum
starting at 2.30p.m.**

In the chair: Mr Eversham with 32 members and friends present.

Apologies for absence: Miss Hill, Mr Boyce, Mr Gillard, Dr Rundle, Mrs McMillan, Mr Crowley, Mr Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Mr Woodward, Dr Colville, Mrs & Miss Fogan, Miss Trew, Dr Oliver, Ms Chesney, Mrs Platts, Mr Dance, Dr Preece, Mrs Long, Mr Tracey.

Minutes of the last meeting (of 10th October 1998): Read and accepted.

Matters arising: None.

Nomination and election of new members: One ordinary member nominated and elected:

Dr M J Simms

Dept of Geology, Ulster Museum, Botanic Gardens, Belfast BT9 SAB.

Announcements and Correspondence: Ms Reynolds had received a letter from Mr John R Wrightson of Malaga, Spain. Mr Wrightson had donated his shell collection to the Society 10 years ago when he emigrated, and was now hoping to purchase replacements (or even the original shells) in order that he might form a collection for his nine year old son. Any members able to help should contact the Hon. General Secretary.

Details of forthcoming meetings and events were given. Dr Mary Seddon of the National Museums & Galleries of Wales spoke about the open day entitled 'Exploring Tomlin's Legacy' to be held on Saturday 21 November. This would be followed on 28 November by the Molluscan Workshop at the home of Miss Judith Nelson. The next indoor meeting would be on Saturday 12 December, when the topic would be 'Review of Molluscan Survey Progress', chaired by Mr Ian Killeen. The first indoor meeting of 1999 would be on Saturday 30 January, when the speaker would be Dr June Chatfield.

Lecture of the day:

Speaker: Dr Martin Willing

Title of talk: *Biodiversity Matters – What's Been Going On?*

Any other business: Members were reminded that nominations for Council members should reach the Hon. General Secretary no later than 31 December 1998.

Meeting closed at 5.45 p.m.

Chairman.

Appendix: Members' exhibits:

M J Willing	Various Biodiversity documents
D C Long	A few snails from SW France
M P Kerney	<i>Corbicula fluminea</i> new to the British Isles
P Dansey	<i>Ensis minor</i> and <i>Ensis siliqua</i>
Kevin Brown	Pieter Friedrich Röding and the <i>Museum Boltenianum</i> – published in 1798 – 200th anniversary
J Reynolds	1. Museum Of leaflets 2. Press cuttings 3. Institutional Members' publications
Helen Weideli	Applied conchology
P T Wimbleton	<i>Corbicula fluminalis</i> (Müller 1774). Sub fossils from Pleistocene Deposits Lohnstein, River Rhein, Southern Germany, May 1998.

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**1086th (Ordinary) meeting held on the 12 December 1998
in the Demonstration Room of the Natural History Museum
starting at 2.30p.m.**

In the chair: Mr Eversham with 38 members and friends present.

Apologies for absence: Mrs McMillan, Mr Crowley, Mr Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Miss Holt, Dr Willing, Dr Chatfield, Mrs Buckle, Mr Philp, Dr Honnor, Dr Preece, Mrs Long.

Minutes of the last meeting (of 7th November 1998): Read and accepted.

Matters arising: None.

Nomination and election of new members: No list was available.

Announcements and Correspondence: The next indoor meeting will take place on Saturday 30 January. The speaker will be Dr June Chatfield on 'Shells at Hastings, East Sussex: the collections at Hastings Museum and present day habitats'.

There will be a meeting of the Malacological Society on recording on February 27 & 28 in Cardiff. CSGBI members are invited; a flier would be circulated with the January mail out. Ms Reynolds gave details of the first field meeting of 1999 to Barn Elms Wetland Centre, London, on the same weekend (Sat. 27 February).

Lecture of the day:

Chairman: Ian Killeen

Title of talk: Review of Molluscan Survey Progress

Speakers: Mrs Light, Mr Gillard, Ms Reynolds, Mr Weideli, Mr Killeen, Dr Aldridge and undergraduates and postgraduates from University of Cambridge Zoology Department.

Papers to be read: None.

Any other business: None.

Meeting closed at 5.45 p.m.

Chairman.

Appendix: Members' exhibits:

Tony Smith	<i>Valvata macrostoma</i> in West Sedgemoor
J Reynolds	1. Institutional members' publications
	2. Press cuttings re. Museum Of
	3. Exchange offer
	4. Xmas card from Terry Crowley

- | | |
|---------------|---|
| | 5. <i>Asperitas inquinata</i> – please take |
| | 6. LNHS area map |
| M P Kerney | Maps for the new Non-marine <i>Atlas</i> |
| Mike Weideli | West Berkshire Mollusc Survey |
| E Fogan | Conch shell fitted with mouthpiece |
| David Long | Early Eocene marine molluscs from Gan, Pyrénées Atlantique, France |
| Adrian Rundle | <i>Testacella maugei</i> found live on Portland, Dorset in December! |
| Jan Light | 1. Surrey Wildlife Trust Atlases |
| | 2. Marine Mollusca of the Isles of Scilly Turk & Seaward 1997 |
| | 3. Isles of Scilly tourist information |
| E O Bishop | Where not to find snails in Corsica |
| J Sawyer | <i>Tapes pullastra</i> , <i>T. decussata</i> and <i>T. ?</i> from Green Island Beach, Jersey, September 1998. |
| Liz Platts | <i>Cepaea nemoralis</i> – stone boss |
| Kevin Brown | 1. <i>Turbinella angulata</i> (Lightfoot 1786) |
| | 2. Hawaiian endemics |
| | 3. Press cuttings |
| | 4. Specimens for identification |

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**1087th (Ordinary) meeting held on the 30 January 1999
in the Demonstration Room of the Natural History Museum
starting at 2.30 p.m.**

In the chair: Mr Eversham with 32 members and friends present.

Apologies for absence: Mrs McMillan, Mr Crowley, Mr Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Miss Nelson, Mr & Mrs Buckle, Dr Aldridge, Dr Bishop, Dr Willing, Mr Dance and Mrs Long.

Minutes of the last meeting (of 12th December 1998): The speakers of the day included Dr Aldridge, undergraduates and postgraduates from the University of Cambridge Zoology Department, not just undergraduates as recorded. The minutes were then accepted.

Matters arising: None

Nomination and election of new members: 3 Ordinary and Family members were nominated and elected.

Ordinary:

Dr M | Simms

Department of Geology, Ulster Museum, Botanic Gardens, Belfast, BT9
SAB

Mr S R Prowse

██████████, Bournemouth, Dorset, ██████████

Mr K W K Palmer

██████████, Sheringham, Norfolk, ██████████

Family:

Dr D T & Mrs G A Holyoak

8 Edward Street, Tuckingmill, Camborne, Cornwall, TR14 8PA

Announcements and Correspondence: There would be a field meeting to Barn Elms on Saturday 27 February led by Jane Reynolds.

The next indoor meeting would be the AGM on Saturday 13 March. Members are reminded to send their voting papers to the Scrutineers c/o the Hon. General Secretary in a signed and sealed envelope by 12 March.

There would be a meeting of the Malacological Society on the subject of Biogeography and Distribution of European Land and Freshwater Molluscs to be held at Cardiff on 27 & 28 February.

Miss Hill and Mr Boyce would be leading a field meeting to Windsor Forest Park on Saturday 20 March.

Lecture of the day:

Speaker: Dr June Chatfield

Title of talk: Shells at Hastings, East Sussex: the collections at Hastings Museum and present day habitats.

Papers to be read: None.

Any other business: None.

Meeting closed at 5.00 p.m.

Chairman

Appendix: Members' exhibits:

| Chatfield

Pamphlets, map, books and habitat photographs to illustrate the talk Shells in the collection of the Hastings Museum and marine shells in Hastings today.

Helen Weideli

Soft toy molluscs

Christine Street

Shellsand from Jersey (so far!)

M D Weideli

Recorder 2000

- | | |
|----------------|---|
| P Dansey | Fossil <i>Ensis</i> from Pliocene Red Crag |
| J E Reynolds | 1. Institutional members' publications |
| | 2. Barn Elms Wetland Centre Info. |
| | 3. Recent Press Items |
| | 4. Museum Of Collectors photos |
| Barry Colville | <i>Fauna Helvetica</i> : Mollusca Atlas |
| E Platts | Natural history prints and <i>Cepaea</i> on <i>Acanthus</i> leaf |
| D C Long | Data on two Wye Valley woods and information on the 24 April Field Meeting |
| P T Wimbleton | Marine Mollusca from Hastings |
| Kevin Brown | 1. Victorian History of the County of Sussex extract on 'Marine Zoology' |
| | 2. A W B Powell, <i>Indo-Pacific Mollusca</i> Vol. 1 No. 5 <i>The Family Turridae in the Indo-Pacific</i> |
| | 3. Specimens of <i>Turris</i> (s.s.) |
| | 4. Press cuttings |

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**1088th (Annual General) meeting held on the 15 March 1999
in the Demonstration Room of the Natural History Museum
starting at 2.30 p.m.**

In the chair: Mr Eversham with 32 members and friends present.

Apologies for absence: Mrs McMillan, Mr Crowley, Mr & Mrs Negus, Mr de Bartolomé, Mrs Turk, Mr & Mrs Rands, Miss Hill, Mr Boyce, Mr Rawlingson-Plant, Mr & Mrs Buckle, Dr Chatfield, Ms Chesney, Dr Oliver, Mr Woodward, Mr Hill, Mr Brown, Mr Philp, Mrs Cooper, Mrs Long, Mr Dance, Mr Llewellyn-Jones.

Appointment of Scrutineers: Mrs Platts and Mrs Pain were elected.

Minutes of the last Annual General Meeting (of 21st March 1998): Read and accepted

Matters arising: None.

Nomination and election of new members: No list was available.

Report of the Council by the Hon. General Secretary: Read and accepted.

Report of the Trustees: Read and accepted.

Report of the Hon. Treasurer: This report was prepared by Mr Weideli due

to the illness of the Hon. Treasurer and was still subject to audit. Read and accepted subject to the auditors recommendations.

Report of the Hon. Membership Secretary: Read and accepted.

Report of the Hon. Non-marine Recorder: Read and accepted.

Report of the Hon. Marine Recorder: Read and accepted.

Report of the Hon. Programme Secretary: This report was prepared by Mrs Weideli as Acting Programme Secretary. Read and accepted.

Report of the Hon. Conservation Officer: Read and accepted.

Announcements and Correspondence: Forthcoming meetings and workshops are as follows: 20 March, Windsor Forest Field Meeting, leaders Rosemary Hill and Ron Boyce; 14 April, Seashells Workshop, Haslemere Museum, organised by June Chatfield; 17 April, Indoor Meeting, speaker Keith Alexander of the National Trust; 24 April, Non-marine Field Meeting, Gloucs., leader David Long.

Presidential Address:

Speaker:

Mr Brian Eversham Title of talk:

'Aspects of the Behaviour and Ecology of British Land Slugs'

Election of Examiner of the Accounts: Mr N Light was nominated and elected.

Results of the Postal Ballot:

Officers:

President	Mr B C Eversham
Hon. General Secretary	Ms J E Reynolds
Hon. Treasurer	Ms A Trew
Hon. Membership Secretary	Mr M D Weideli
Hon. Editor (<i>Journal</i>)	Dr P G Oliver
Hon. Newsletter Editor	Miss R E Hill
Hon. Marine Recorder	Mrs J M Light
Hon. Non-Marine Recorder	Dr M P Kerney
Hon. Conservation Officer	Dr M J Willing
Hon. Programme Secretary	Mrs H M Weideli

Ordinary Council members (to serve a 3 year term):

Mr Buckle, Mr Palmer and Dr Honnor were elected. As news of Ms Trew's illness had not been received until after the ballot paper had been prepared, Mr Buckle had offered to be Acting Treasurer for the

forthcoming year. Mr Eversham explained that as Mr Buckle was one of the three ordinary Council members elected, the fourth candidate would be co-opted to Council if it was the wish of the meeting. Mr Eversham then proposed that Mr Wimbleton be co-opted to Council for the forthcoming year. This was agreed.

Any other business: None.

Meeting closed at 5.15 p.m.

Chairman.

Appendix: Members' exhibits:

P T Wimbleton	Non-marine mollusca from beech wood leaf litter on the Hants/Sussex border
Stella Davies	Juvenile slugs: from a single batch of eggs
P Dansey	Norfolk razor shells and piddocks newscuttings
D C Long	Small fossils from Gan including the bivalve ascoglossan <i>Gougerotia c+ orthodonta</i>
B Colville	Some snails from La Gomera, Canary Islands
M J Willing	Species awareness leaflets ('River mussels' and 'snails') from the Environment Agency
Adrian Rundle	A very special rabbit burrow: Middle Eocene fossils from a classic French locality
J E Reynolds	1. Institutional members' publications 2. Museum Of Collectors photos 3. Garden Open Day leaflets.

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Diary of Meetings

This is a listing of all September – December meetings in date order.

Hon. Programme Secretary:

Vacant

IMPORTANT. Field meetings are planned months in advance, so it is recommended that Members contact the Leader, before the day, to express their interest in attending, and to check that there have been no alterations due to unforeseen circumstances.

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.

YCS – Saturday 4 September: Washburn Valley to look for *Limax* sp. Meet at car park opposite Leathley church, Grid ref. SE233447 at 11.00 a.m.

NHM – Saturday 18 September: 14.30 hrs. For our first indoor meeting of the new season we welcome as Guest Speaker Louise Alcock from the National Museums of Scotland, Edinburgh. The subject of her talk is Antarctic Cephalopods.

FIELD: Thursday 23 – Thursday 30 September

Isles of Scilly

Leaders: Tom and Celia Pain [REDACTED] and Jan Light [REDACTED]

This field meeting is well subscribed and we look forward to an enjoyable and fruitful expedition. If you have not already done so, please remember to advise the meeting leaders of your intention in coming.

The object of the meeting is to visit a wide range of shores to obtain full coverage for the DOMMIC project. Although the details of the programme are not yet resolved, it is our intention to work three shores around Hugh Town on the first recording day, 24 September. Meet at the public conveniences on the green at the eastern end of the Town Beach, Hugh Town, Grid ref. SV 90451065 at 10.00 a.m. If for some reason you fail to make contact on the first working day, messages can be left for Tom and Celia Pain who are staying at the Star Castle Hotel, Hugh Town. For additional information or a map showing the meeting place please send s.a.e. to Celia Pain or Jan Light. (See Membership List, January 1999 for addresses).

YCS – Weekend, Saturday 2 October – Sunday 3 October. North Yorkshire Moors area. Details from David Lindley [REDACTED]

**FIELD: Saturday 9 October,
Wicken Fen, Cambridgeshire**

Leaders: Richard Preece [redacted], Brian Eversham [redacted] and
Adrian Colston, Reserve Manager [redacted]

Members are invited to Wicken Fen, the oldest nature reserve in Britain, in celebration of its centenary this year as a National Trust Property. It also has National Nature Reserve status, and is a rich site for a wide range of species: plants, mammals, birds and invertebrates. Among the latter, 72 species of molluscs have been recorded here, including *Valvata macrostoma*, *Pisidium pseudosphaerium* and *Vertigo moulinsiana* which have been found alive in the Fen. In this year of the National Trust's 'Focus on Wildlife', there will be an opportunity to compare the faunas of sites within the fen which have been subjected to different management regimes over the years. Meet at 11.00 hrs in the National Trust car park, Grid ref. TL 565705. Bring lunch and wellies.

NHM – Saturday 23 October, 14.30 hrs. We welcome as Guest Speaker Guido T. Poppe from Belgium. In order to acquire knowledge on the origins, taxonomy and nomenclature of marine and land shells, Guido and his friends have spent more than 20 years travelling the world to find the most interesting and beautiful specimens. The title of the talk is not yet confirmed.

YCS – Saturday 23 October: AGM and Presidential Address. 1.00 p.m., Pool-in-Wharfedale village hall.

NHM – Saturday 20 November, 14.30 hrs. We welcome as Guest Speaker Dr. Michael Barker, Principal Lecturer from the Department of Geology at Portsmouth University, and Membership Treasurer of the Palaeontological Association. His subject is 'Colour Preservation in Fossil Shells.'

WKSHP – Saturday 27 November, 10.00 – 17.00 hrs.

The **Annual Woking Workshop** kindly hosted for us by Judith Nelson [redacted]. Topics to be covered are: 'The identification of small British land snails' with Adrian Rundle and 'The identification of small British marine bivalves' with Ian Killeen. Early booking is advised, as numbers will be restricted to 12.

Participants should bring a packed lunch and all the equipment they require for sorting shells (dishes, paintbrush/forceps, containers, plastic bags, labels etc.) plus their own microscope and lamp if possible. There will be a small charge.

NHM – Saturday 11 December, 14.30 hrs. Members' Meeting with the theme of 'My favourite mollusc' OR 'My favourite mollusc book.' An opportunity for Members to bring along a few slides (10 maximum) or a short presentation or exhibit to entertain us on this theme. (See page 200 of June Newsletter No. 149 for details.) Please inform the Hon. GENERAL Secretary by December 1st if you intend to bring along an item of entertainment, so that a schedule for the afternoon can be arranged.

