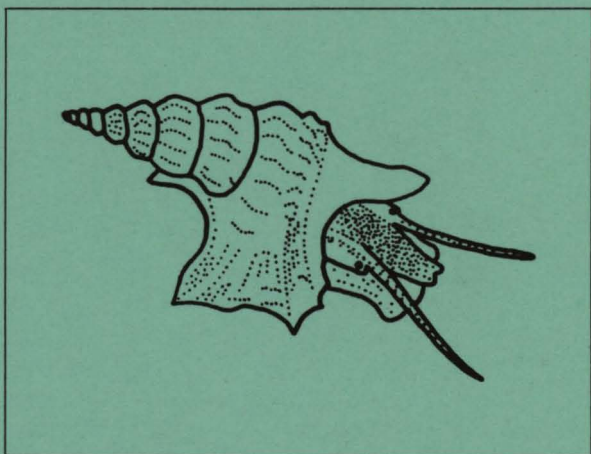


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Studies in Mollusca

**Joint meeting with the Malacological Society
of London, held in the Linnean Society,
Burlington House, Piccadilly, London
on Saturday 15 May 1993**

The Conchological Society hosted a very successful meeting with the Malacological Society as part of the celebrations for the Malacological Society's Centenary. Forty-five members of the two Societies met for an all-day meeting on the subject of 'Studies in Mollusca'. Nine speakers from the UK and Ireland gave excellent talks on a wide range of topics, summaries of which are given below.

Elizabeth Platts

* * *

Distributional discontinuities of the bivalve fauna of the Indian Ocean

P. Graham Oliver (Department of Zoology, National Museum of Wales, Cardiff)

The malacofauna of the tropical Indian Ocean is traditionally viewed as a single biogeographic unit and moreover an extension of the Indo-West Pacific province. Many species are consequently expected to have ranges from East Africa to the islands of the western Pacific.

From recent and ongoing studies of the bivalve fauna of the Arabian Sea, Red Sea and Arabian Gulf indications are that there is greater than expected endemism in the northern Indian Ocean. Distribution patterns recognised were: 1) restricted to the Red Sea; 2) restricted to the Arabian Gulf; 3) restricted to the cold water upwelling region of Oman; 4) restricted to the cold water upwelling regions of Oman and to the tropical convergence zone of southern Africa; 5) restricted to the Arabian Sea; 6) restricted to the Red Sea and Gulf of Arabia; 7) pan tropical.

It was proposed that current systems and climatic changes

through the Pleistocene were sufficient to create environmental regimes different enough from the stable tropical environment to stimulate speciation and effect isolation. Today this isolation is maintained by the cold upwelling currents off Somalia and Yemen/Oman. These currents also restrict access of the pan-tropical fauna to the Red Sea.

Due to the restricted access to the Red Sea and its own peculiar climate speciation in the Red Sea took place during the late Tertiary. Parts of this fauna are believed to have survived the hypersaline extinction in the Pleistocene in a refuge in the Gulf of Aden. This may explain the modern occurrences of Red Sea species in the Gulf but not elsewhere.

Endemism in the Gulf is viewed as peculiar as the Gulf was dry 18,000 years BP. The Gulf fauna must be derived from that of the Gulf of Oman and 'endemic species' must have survived in this area during the Pleistocene. Endemism here may be associated with the large input of freshwater which during the Pleistocene would have consisted of a combined Tigris, Euphrates and Indus load.

The bimodal southern Africa/Arabian Upwelling distribution could be maintained today by the influx of larvae via the deep upwelling currents. It may however be a relict of the Pleistocene when it is believed that the general temperature of the Indian Ocean was lowered enough to allow the warm temperate southern faunas to spread northward. On the return of truly tropical conditions in the central Indian Ocean the temperate elements were restricted to the Arabian upwelling.

In general, it was proposed that the Arabian Sea could be considered a subprovince of the Indian Ocean. □

The distribution of Unionacean mussels in southern Irish rivers and streams

John Lucey (Environmental Research Unit, Dublin)

Six species of the larger freshwater bivalves of the superfamily Unionacea are recorded from Britain but only half of that number

are known from Ireland. In surveys carried out between 1987 and 1990 a total of 1812 sites on 398 rivers and streams were searched for shells in the course of surveys carried out to monitor biological water quality. The three Irish species were recorded with the following frequency:

- *Margaritifera margaritifera* (L.) shells were found at 8.1% of sites and 14.6% of the rivers and streams.
- *Anodonta anatina* (L.) was found at 0.7% of sites and 1.8% of the rivers and streams.
- *Anodonta cygnea* (L.) was found at 0.4% of sites and 0.8% of the rivers and streams.

All three species were found associated one with another in at least one site *viz.* *M. margaritifera* and *A. anatina* at a site in one river; *M. margaritifera* and *A. cygnea* at a site in one river; *A. anatina* and *A. cygnea* at two sites in one river.

Although *M. margaritifera* is widespread in the region with 48 new ten-kilometre square recordings from the surveys, a decline in some of its former sites is nonetheless apparent. *A. anatina* and *A. cygnea* are by contrast sparsely represented and hitherto were regarded as absent from the south yet the surveys did yield eight and five new ten-kilometre square records respectively. It is concluded that prior to this study the Unionacea were poorly recorded in southern Irish rivers and streams. In an effort to determine aspects of their habitat preferences the occurrences of *Margaritifera* and *Anodonta* are tested against various site characteristics. □

Biogeography of wetland mollusc faunas in western Ireland

Peter Tattersfield (Chapel-en-le-Frith, Stockport)

Variation in the molluscan faunas of wetlands on the three Aran Islands (Inishmore, Inishmaan and Inisheer) in Galway Bay and from the Burren region in north Clare was studied. The project also sought to confirm the status of the rare succineid *Catinella arenaria* on the Arans.

The Burren and Arans have a distinctive glacio-karst landscape and are dominated by extensive areas of Carboniferous limestone pavement. There are few permanent waterbodies and surface water is scarce except in times of wet weather. Twelve sites were studied on the Arans and five in the Burren. By using ordination analysis and comparing the results with physical and botanical site characteristics it was found that the mollusc faunas of the Arans could be divided tentatively into three assemblages, the 'Turlough', 'Swamp' and 'Aran Seepage' groups. It was suggested that the variation could be related to the depth and stability of the water regimes.

The Turlough assemblage occurs in sites which are relatively dry for most of the year but which are subject to occasional and often large-scale fluctuations in water level. This faunal group is species-poor (mean number of species per site = 3.7, SE = 0.9) and is characterised by the presence of *Anisus leucostoma* and *Lymnaea peregra*. It is associated with the species-poor plant community. The Swamp assemblage is found in areas which appear to have a relatively stable but high water level. Reeds, bulrush or reedmace are typically locally dominant in the flora. Its fauna is moderately rich (mean = 7.0, SE 1.7) and appears to be weakly characterised by *Oxyloma pfeifferi*.

The third and most strongly defined group is associated with seepages and springs which have a regular water regime. 'Aran Seepages' are often very small in extent and characteristically support sedge-rich and botanically diverse plant communities, usually containing black bog rush, bog pimpernel and devil's bit scabious. The mollusc fauna is also rich (mean = 11.4, SE = 1.4) and is characterised by *Catinella arenaria*, *Leiostyla anglica*, *Vertigo pygmaea*, *Vertigo antivertigo*, *Punctum pygmaeum* and *Carychium minimum*. *Catinella arenaria* was found in all the Aran Seepage sites (five sites on Inishmore and one on Inishmaan) and appears to be common in such habitats on these two islands.

Four of the Burren sites were clearly very similar to the Aran Seepage sites using botanical and non-molluscan criteria. However, striking differences were noted in the mollusc faunas. In particular, *Catinella arenaria* was found in only one of the

Burren sites. This species is evidently uncommon in the Burren, there being only two known sites (cf. five on the Arans located during one short survey). Three hypotheses, each of which requires further investigation, are suggested to partly account for this apparent disparity.

Firstly, agricultural intensification is very much more apparent in the Burren and may have led to the loss of suitable wetlands. Secondly, there may be significant but unknown climatic or other environmental differences. The third hypothesis relates to glacial/post-glacial history. *Catinella* was a relatively widespread and common species in the British Isles in the late glacial but, being a shade-intolerant species, declined as forest cover increased in the early post-glacial. The glacial history of *Catinella* is not known from the west of Ireland but there is evidence that forest also dominated in the Burren after the last glaciation. Since the extreme exposure of the Arans would have greatly hindered tree growth, it is possible that *Catinella* maintained relict populations on these islands throughout this period to the present. □

The origins of the land-snails of Morocco: some preliminary observations

M.B. Seddon (Department of Zoology, National Museum of Wales, Cardiff)

The land-mollusc fauna of north-west Africa shows a similar composition to that of Europe. This provides a contrast to parts of the flora and fauna of the region, especially in the south on the northern margins of the Sahara. For example, the vertebrate fauna has a high proportion of Saharan/Middle East or Sub-Saharan African species. The distribution of different groups of land-snails was examined in a further attempt to understand the origins of land-snails in north-west Africa, especially Morocco.

There are various different types of distribution pattern which can be identified and examples of these were given. Some widespread Palaearctic species reach their southern limits in north-west Africa (e.g. *Vertigo antivertigo*, *Vertigo pygmaea*,

Lauria cylindracea, *Acanthinula aculeata*, *Zonitoides nitidus*, Seddon and Holyoak, 1993). These species tend to be found in the richest, moistest sites which, in some cases, are in rather different micro-habitats to those of northern Europe. Other Palaearctic species are montane species which are very locally distributed through Europe and have only been recently recognised in north-west Africa (*Catinella arenaria*, *Pupilla triplicata*, Seddon and Holyoak, 1993). Species which have widespread circum-Mediterranean distributions are common in north-west Africa (e.g. *Rumina decollata*). Some of these Mediterranean species have more disjunct distribution patterns. Giusti and Manganella (1984) attributed such disjunct patterns to faunal displacement due to geological activity during the Tertiary where microplates were detached from the Balkan regions and reattached to the African side of the Mediterranean. Further examples of disjunct patterns were examined and an alternative hypothesis for some of these disjunct patterns was presented. It was suggested that wide disjunction of the two centres of diversity in the genus *Leiostyla* may have resulted from climatic change during the Pleistocene. The wetter phases of the Pleistocene may have allowed expansion of the faunas, with subsequent drier phases isolating species in suitable refuges. A similar explanation was proposed for the north-west African species of *Oestophora* and Chondrinidae.

There are very few land-snails with Afro-tropical affinities. One of these, *Pupoides coenopictus*, reached the northern Sahara during the late Quaternary. The present distribution of *Pupoides coenopictus* is most extensive in Asia and tropical Africa (south of the Sahara). The range expansion of this species is again believed to be the result of climatic change during the Pleistocene period.

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- Seddon, M.B. and Holyoak, D.T., 1993. Land Gastropoda of NW Africa: New distributional data and nomenclature. *J. Conch., Lond.*, 34. □

Snails and parasites: population, biology and disease transmission

David Rollinson (The Natural History Museum, London)

Snail-borne diseases continue to be an important obstacle in the way of development programmes in many parts of the world. The diseases that snails transmit cause vast amounts of general ill health in man and animals. Trematode parasites of medical importance can be associated with the intestine, liver, lungs and blood. Schistosomiasis, caused by blood flukes, is the most important and widespread parasitic disease transmitted by snails with estimates of over 200 million people infected in 74 countries of the tropical world. Snails form an obligatory part of trematode life-cycles and hence, for schistosomes and the many other parasites of medical and veterinary importance, it is essential to be able to identify the snails responsible for transmission of the disease. The snail parasite relationship is often very specific, with the parasite only being able to complete development in certain snails. Many studies have attempted to examine the interactions between schistosomes and their intermediate snail hosts. In this paper examples were given concerning the importance of characterisation studies in projects concerning schistosomiasis in two different parts of the world. The first example involved the identification of *Bulinus* species responsible for the transmission of both human and animal schistosomiasis in West Africa and the other concerned the population biology of *Bulinus cernicus*, the intermediate snail host of *Schistosoma haematobium* in Mauritius.

The ways in which schistosomes and snails can be isolated from endemic areas and studied in the laboratory was illustrated by work on *S. curassoni*, *S. haematobium* and *S. bovis* from Senegal and Mali. Attention was drawn to the importance of *Bulinus umbilicatus* as a host for *S. curassoni*. Preliminary observations in Senegal, coupled with laboratory investigations, have shown that *S. curassoni* is primarily a parasite of sheep and cattle and that it is unlikely to be associated with human infection. The need to adopt a multidisciplinary approach, including morphology, host-specificity, enzyme and DNA

studies, for the characterisation of the snail and parasite populations was emphasised.

Schistosomiasis appears to be in decline on the island of Mauritius due to chemotherapy and improved living conditions. Interestingly there has also been a marked decrease in the number of viable *B. cernicus* populations. Research interest has centred on the biology and genetic variability of *B. cernicus*, initially to determine whether there was more than one species of snail responsible for transmission of schistosomiasis on the island. The conclusion from earlier work was that it was best to consider *B. cernicus* as one variable species. Indeed, *B. cernicus* shows much greater enzyme heterogeneity than closely related forms on mainland Africa. Comparisons have been made between snails collected in 1980, 1986 and 1992. Examination of data sets for three polymorphic enzyme loci (glucose phosphate isomerase, acid phosphatase and 3-hydroxybutyrate dehydrogenase) revealed the allelic frequencies to be consistent over time. Experiments, using enzymes as markers, have been conducted to determine the breeding biology of these hermaphrodite snails. The snails will self-fertilize but preferentially cross-fertilize; they have the ability to store donated sperm for up to 70 days and multiple insemination is possible. Such mechanisms may help to conserve the gene pool of the species. □

Drag coefficients of freshwater snails

N. Norman, G.B.J. Dussart and K. Carlton (Christ Church College, Canterbury)

The relationship between the size of an object and the parameters of water flow over that object can be described by the dimensionless unit called the Reynolds Number which separates turbulent from laminar flow. Shells of freshwater snails appear to function at the threshold between these two flow regimes and the aim of the experiment was to see whether the empty shells of different aquatic snail species produced measurably different drag coefficients by use of an apparatus incorporating two mutually repelling magnets.

Shell apertures were masked with a thin film of glue. The apparatus gave highly reproducible results (coefficient of variation of 1.85%). A hydrodynamic shape factor 'a' was calculated for each shell and is given by the exponent of the relationship between $\ln(\text{force/area})$ and $\ln(\text{shell length})$. A covariance analysis suggested that there was significant variation in 'a' between differently shaped shells ($F_{7,62} = 8.36$ $P < 0.001$). Plots of drag coefficient against Reynolds Number for each species showed smoothly varying lines for some species (*Lymnaea peregra*, *Bulinus tropicus* and *Biomphalaria glabrata*), suggesting complicated hydrodynamic interactions between water flow and shell shape; other species (*Stagnicola elodes*, *Bulinus jousseaumei*, *Bulinus truncatus* and *Helisoma duryi*) had more 'kinked' lines, reminiscent of the characteristic performance of simple physical objects.

The results may be relevant to the design of irrigation channels where schistosomiasis is a consideration, or power station cooling intakes. However, the work needs to be extended beyond the realm of empty shells. □

The life of a living fossil: aspects of the physiology and behaviour of *Nautilus*

Martin Wells (Department of Zoology, Cambridge)

Nautilus is the only survivor from the enormous range of shelled Cephalopods that have existed in the past. While it is dangerous to extrapolate from what is known of the physiology and behaviour of a living and possibly rather specialised animal to the lives of extinct forms, there are some capabilities, related to the possession of a shell, that were very probably typical of many of the shelled forms in the past. Telemetry, signalling the movements and the jet/ventilation pressures of individuals in the laboratory and in the sea, reveals that *Nautilus* can move vertically as economically as horizontally. This is something that fish, with their compressible swim bladders, cannot do; it means that *Nautilus*, working vertically to sample currents moving along the faces of the barrier reefs off which it lives, can

seek its food very economically – all the evidence is that a crop-full could last it for several weeks.

A second feature, which *Nautilus* may have shared with its extinct relatives, is the capacity to survive hypoxic conditions. An animal whose only defence is to retire into a shell must be able to endure periodic hypoxia anyway, but *Nautilus* seems to have exploited this in a manner that would allow it to crop food from hypoxic habitats where aerobic predatory fish cannot remain active. Under hypoxic conditions *Nautilus* becomes intermittently active, periods of jet propulsion alternating with longer periods, during which its very high affinity blood pigment allows it to build up oxygen reserves in its very large blood volume. During the Palaeozoic and much of the Mesozoic the oceans were by modern standards grossly hypoxic. A *Nautilus*-like physiology would have allowed shelled forms to move vertically to exploit foods sources and stay out of reach of fish, which soon became faster and more manoeverable than the shelled cephalopods. These advantages largely disappeared with the progressive oxygenation of the seas, so that shelled forms were trapped between their depth limits and the downward penetration of predatory fish and eventually became extinct. *Nautilus* alone survives because it is uniquely adapted to a low-energy lifestyle in a habitat where the advantage of economical vertical migration persists where there are likely to be hypoxic pockets for a scavenger to exploit. □

Sex and the single slug

Les Noble (Genetics Department, University of Oxford)

The evolution of sex and the study of life history strategies are central themes in evolutionary biology, and as such have received more theoretical attention than practical research. However, both areas address different aspects of the same problem: how does an organism's environment determine its reproductive strategy?

The hermaphroditic large arionid slugs offer an unparalleled opportunity to investigate the ecology and evolution of sex in a

higher animal. They exhibit a range of breeding systems from facultative selfing to obligate outcrossing, and inhabit a variety of habits throughout north-western Europe. However, the lack of a good taxonomic character, the multitudinous colour varieties and a plethora of varietal names has retarded research. A number of discrete groups emerged from an analysis of the morphometry of the distal genitalia, each corresponding to variation in a single anatomical feature, the ligula. A similar quantitative analysis of colour suggested many varieties were common to a number of taxa, and so of limited taxonomic value.

Anatomical, genetic and geographic evidence suggest that self-fertilisation is a derived condition in these taxa, probably associated with events during the Pleistocene glaciation (~10,000 years BP). Facultatively selfing taxa appear to have arisen abruptly and recently from closely-related geographically-adjacent outcrossing species, which view is supported by the restriction of selfers to higher altitudes and latitudes in habitats recently free of ice or tundra.

Arion ater ater is a self-fertile, genetically depauperate derivative of *A. ater rufus* which, like *A. lusitanicus*, can occasionally self-fertilise, whereas the genetically variable *A. flagellus* is an apparently obligate outcrosser. On the Continent *A. lusitanicus* is found in drier areas but is replaced by *A. a. rufus* in the cooler, wetter Swiss Alps and the west Pyrenees – in both taxa self-compatibility increases with altitude. *A. a. ater* has the most restricted distribution; relic populations survive in undisturbed habitats in north and west Britain and Norway. *A. flagellus* is known with certainty from only Britain and north-west Spain, where it is widespread and synanthropic, inhabiting biotically complex environments. It is also the only large *Arion* known to carry parasites of veterinary importance. The distributions of these taxa are as predicted by evolutionary models of sex – selfers replace outcrossers in the biotically less complex habitats of higher altitudes and latitudes.

Life history studies suggest outcrossers mature early and have short, highly productive lives, producing many small, genetically variable progeny, whereas the invariant selfers'

offspring are fewer, larger and less variable. Such fundamental differences in life history strategy and reproductive biology between closely related taxa may reflect adaptations to the complexity of their biotic environment.

Although an ideal group with which to address questions on the evolution and ecology of sex and the genetic consequences of alternative reproductive strategies, repeated bottlenecks, prolonged self-fertilisation and close inbreeding have robbed most facultative selfers of genetic variation detectable by traditional methods. Consequently, selfing taxa form a series of monomorphic lines that are anatomically and genetically similar to their outcrossing progenitors. However, our recent discovery of genetic markers using the Random Amplified Polymorphic DNA (RAPD) assay in this taxon, and the use of non-destructive sampling techniques, has allowed us to identify several reliable and robust polymorphisms. We are currently using RAPDs to shorten and simplify further breeding experiments, and to investigate the population structure and geographic variation of *ater* and many other hitherto genetically depauperate pulmonate taxa. □

*Seasonal Greetings and Best Wishes for
the New Year to every reader from
the Newsletter Editor.*

*Thank you for your support over the last year
and please continue to send in your
contributions.*

Recording Mollusca in Ireland: Mulroy Bay, Co. Donegal

Julia Nunn

Marine Biology Station, Queen's University Belfast

Mulroy Bay is a shallow sea lough on the north coast of Ireland (see Figure 1), about nine miles long (north to south) and a maximum of 1½ miles wide (Broadwater). It is connected to the open sea by a nine-mile channel which narrows at three places to around 100 yards wide. The current in this channel can be very strong, probably exceeding five knots. By contrast, there is no current in the main lough, except in the channel linking North Water and Broadwater. Mulroy Bay is extremely sheltered from wind, and consequently rarely experiences significant wave action. The habitats for mollusca around the lough reflect this diversity of current strengths, varying from soft mud at the heads of North Water and Broadwater; silt-covered bedrock, cliffs and boulders in the main lough; coarse sand/gravel/maerl in the channel to clean, fine sandy beaches and exposed bedrock at the entrance to the lough.

I have been visiting Mulroy Bay regularly for the past six years, recording marine mollusca from the shores in May 1986, June 1989, March/April 1991, March/July–August 1992, and by diving from 1988 to date. In June 1989, the Conchological Society also visited Donegal, including this lough. The trip was reported in Nunn, 1990. Few other workers have studied the mollusca of Mulroy Bay, although there have been regular visits from the late 1970s to date by Dr Dan Minchin from the Department of the Marine in Dublin, and Bernard Picton from the Ulster Museum in Belfast. Both have kindly agreed to let me include their records here.

Mulroy Bay has one considerable practical advantage over many other areas when it comes to recording. The tidal difference between sites at the Bar and in North Water/Broadwater is three hours, with intermediate time differences down the long channel. This means that it is possible

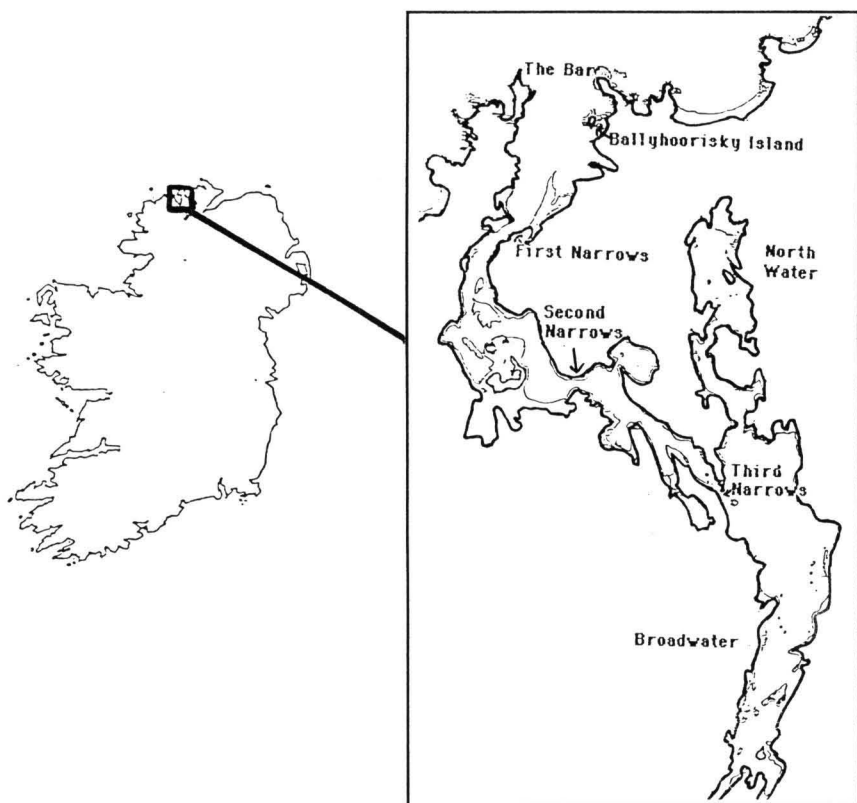


Figure 1: the location of Mulroy Bay, Co. Donegal

to record mollusca from at least three sites on the same spring tide – depending on your energy! As a result, for example, in March 1992 I was able to visit 26 shore sites in the area over a five-day period of good spring tides. A total of 57 littoral sites have been surveyed and dives made at a further 12 sites. Material brought up by divers from an additional five sites has also been identified. Details of the exact sites can be obtained from me upon request. This information, together with data from records supplied by Minchin and Picton, means that mollusca have been recorded from 81 distinct sites in the area. One hundred and seventy nine living and 24 'shells only' species of mollusca have been recorded from Mulroy Bay (see list below). Under the new scheme initiated by the Marine Recorder Jan Light, 150 of these are post-1990 records for Sea Area 33. This article is a preliminary report, as I hope in the future to publish a paper comprising an annotated checklist and atlas of distribution for Mulroy Bay.

Species found in Mulroy Bay

*post-1990 records for Sea Area 33

Live species: •*Leptochiton asellus*; **Leptochiton cancellatus*; *Leptochiton scabridus*; **Lepidochitona cinereus*; **Tonicella rubra*; **Callochiton septemvalvis*; **Acanthochitona crinitus*; *Emarginula fissura*; **Diodora graeca*; **Tectura virginea*; **T. testudinalis*; **Patella ulyssiponensis*; **P. vulgata*; **Helcion pellucidum*; *Monodonta lineata*; **Gibbula cineraria*; **G. magus*; **G. umbilicalis*; **G. tumida*; **Calliostoma zizyphinum*; *Dikoleps nitens*; *Skenea serpuloides*; **Tricolia pullus*; *Turritella communis*; **Bitium reticulatum*; **Lacuna pallidula*; **L. parva*; **L. vineta*; **Littorina littorea*; **L. mariae*; **L. obtusata*; **L. neglecta*; **L. saxatilis*; **Melaraphe neritoides*; **Skeneopsis planorbis*; **Eatonina fulgida*; *Barleeia unifasciata*; **Rissoa interrupta*; **Rissoa lilacina* (and *var. *rufilabrum*); **Rissoa membranacea*; **Rissoa parva*; **Alvania punctura*; **A. semistriata*; **Cingula trifasciata*; **Onoba aculeus*; **O. semicostata*; *Pusillina inconspicua*; **Pusillina sarsi*; **Hydrobia ulvae*; **Caecum glabrum*; **Simnia patula*; **Trivia arctica*; **T. monacha*; **Lamellaria latens*; **L. perspicua*; **Polinices polianus*; **Cerithiopsis tubercularis*; **Marshallora adversa*; **Epitonium clathratulum*; **Vitreolina philippi*;

**Ocenebra erinacea*; **Nucella lapillus*; **Buccinum undatum*; **Hinia incrassata*; **H. reticulata*; **Raphitoma linearis*; **R. purpurea*; **Rissoella diaphana*; *R. globularis*; **R. opalina*; **Omalogyra atomus*; **Ammonicerina rota*; *Odostomia plicata*; **O. turrita*; **Brachystomia scalaris*; **Chrysallida indistincta*; *C. obtusa*; **C. suturalis*; **Partulida spiralis*; **Turbonilla rufescens*; *Philine aperta*; *P. pruinosa*; **Diaphana minuta*; **Haminoea navicula*; **Retusa obtusa*; **R. truncatula*; **Runcina coronata*; **Elysia viridis*; *Placida dentritica*; **Hermaea bifida*; *Limapontia capitata*; **L. senestra*; *Akera bullata*; **Aplysia punctata*; *Pleurobranchus membranaceus*; **Berthella plumula*; *Lomanotus genei*; *Doto coronata*; **D. koenneckeri*; **Goniodoris nodosa*; **Onchidoris bilamellata*; *Diaphorodoris luteocincta*; **Acanthodoris pilosa*; **Aegires punctilucens*; *Polycera faeroensis*; **P. quadrilineata*; *Limacia clavigera*; *Palio nothus*; **Cadlina laevis*; **Rostanga rubra*; **Architoris psuedoargus*; **Discordoris planata*; **Jorunna tomentosa*; *Janolus cristatus*; **Coryphella browni*; *C. gracilis*; **C. lineata*; *Flabellina pedata*; *Tergipes tergipes*; **Catriona gymnota*; *Cuthona nana*; *Eubbranchus cingulatus*; *E. doriae*; **E. exiguus*; *E. farrani*; *E. tricolor*; *Favorinus brianus*; **Aeolidia papillosa*; **Aeolidiella alderi*; **A. glauca*; **Leucophytia bidentata*; **Arca tetragona*; **Mytilus edulis*; *Modiolus modiolus*; **Modiolula phaseolina*; **Musculus discors*; **Modiolarca tumida*; **Limaria hians*; **Limaria loscombi*; **Ostrea edulis*; **Chlamys distorta*; **Chlamys varia*; **Pecten maximus*; **Palliolium striatum*; **Anomia ephippium*; **Heteranomia squamula*; **Pododesmus patelliformis*; **Lucinoma borealis*; **Kellia suborbiculis*; **Lasaea adansonii*; **Mysella bidentata*; *Epilepton clarkiae*; **Parvicardium exiguum*; **P. ovale*; **Cerastoderma edule*; **C. glaucum*; *Spisula subtruncata*; **Ensis arcuatus*; *Ensis ensis*; **Angulus tenuis*; *Moerella donacina*; **Macoma balthica*; *Gari depressa*; **Venus verrucosa*; **Chamelea gallina*; **Timoclea ovata*; **Tapes decussatus*; *Tapes rhomboides*; **Venerupis senegalensis*; **Dosinia exoleta*; *D. lupinus*; **Turonia minuta*; *Mysia undata*; **Mya truncata*; *M. arenaria*; **Corbula gibba*; **Hiatella arctica*; *Thracia phaseolina*; **Sepiola atlantica*. (179)

Dead species: *Puncturella noachina*; *Margarites helycinus*; **Alvania beanii*; **Manzonina crassa*; **Epitonium turtonis*; *Brachystomia eulimoides*; **Turbonilla lactea*; **Eulimella*

laevis; *Otina ovata*; *Antalis entalis*; **Crassostrea gigas*; **Palliolium tigrinum*; **Loripes lucinalis*; **Thyasira flexuosa*; **Goodallia triangularis*; **Plagiocardium papillosum*; *Lutraria angustior*; *Lutraria lutraria*; **Ensis siliqua*; *Gastrana fragilis*; *Gari tellinella*; **Scrobicularia plana*; *Thracia convexa*; **Thracia villosiuscula*. (24)

Please note correction to previously published record (Nunn and Smith, 1987) of *Onoba proxima* from this area. This was a misidentification for *Onoba aculeus*.

Notes on selected species

■ *Leptochiton scabridus/cancellatus*

Mulroy Bay is rich in chitons, although the northern species *Tonicella marmorea* is apparently absent. Both the above species are found close to fast currents. Third Narrows is the only site in Ireland for *Leptochiton scabridus*, where it is common (Smith, 1989; Light and Baxter, 1990; Nunn, 1990). It has not been found at any other site in Mulroy Bay despite an intensive search by the author.

■ *Acanthochitona crinitus*

Several unusual red-backed specimens of this chiton were found in sample of maerl from a sublittoral site close to the First Narrows. Other red-backed specimens have been found in Strangford Lough and off Horn Head, Co. Donegal.

■ *Calliostoma zizyphinum*

This species is confined to areas of strong current (the Narrows, and the Channel between Broadwater and North Water). No white specimens (var. *lyonsii*, commonly found in Strangford Lough) were seen. However, the specimens were very pale.

■ *Rissoa membranacea*

Abundant where found, on blades of *Zostera marina*. The distribution of this species reflected the distribution of the eel-grass in the Bay, generally in the sheltered areas of Broadwater and the southern end of the main channel.

■ *Caecum glabrum*

Only present in Moross Channel (between North Water and Broadwater). No dead shells were found anywhere else in the lough.

■ *Simnia patula*

Found on its food *Alcyonium digitatum* on sublittoral bedrock close to First Narrows. This species has not been recorded this far west on the northern coast before, although common further down on the west coast. Sporadic records on the north coast, e.g. Rathlin Island.

■ *Epitonium clathratulum*

A single live specimen in a sample of maerl in the channel between First and Second Narrows. Generally present on south-west and west coasts of British Isles. This is a new record for Sea Area 33.

■ *Raphitoma purpurea*

A single living specimen of this rare species was found under a boulder on a spit between Second and Third Narrows. The only other sites in Donegal where this species has been found recently are Murles Point, Donegal Bay and Lamb's Head Bay, Lough Swilly (Nunn and Smith, 1987).

■ *Turbonilla rufescens*

This is the first recent (post-1950) living record of this species from Ireland. Single specimens were found on the shore between Second and Third Narrows, and in six metres in the north of Broadwater. Recently live elsewhere in the British Isles only on the west coast of Scotland (Seaward, 1991), e.g. Iolla Bheag, at the mouth of Loch Broom (Nunn, 1990).

■ *Rissoella globularis*

A single specimen of this tiny rare mollusc found amongst algal material by Shelagh Smith from a site at the Third Narrows (Nunn and McGrath, 1989).

■ *Hermaea bifida*

Several large transparent specimens found on *Zostera marina* in North Water and Broadwater.

■ *Doto koenckeri*

Three specimens on their food the hydroid *Aglaepenia plumula*, close to First Narrows. This is a new record for Sea Area 33 for this unusual species.

■ *Aeolidiella alderi*

Three specimens found at two sites between Second and Third Narrows. They were of an unusual colour variety, not seen since they were found by Lemche at Mweenish, Co. Galway, and figured in Just and Edmunds (1985). This is a new record for Sea Area 33, and the most northerly record for this species in the British Isles (Nunn, in press).

■ *Arca tetragona*

Single specimens found on the shore and at 14 metres in the channel between First and Second Narrows. This species is relatively rare, but locally common, e.g. numerous specimens can be found bored into rock under overhangs at Murles Point in Donegal Bay.

Acknowledgements

My grateful thanks go to the following: Graham Day, Dolphins Sub-Aqua Club, for diving support; Shelagh Smith and John Baxter for identification of the more difficult molluscan species; Dan Minchin and Bernard Picton and the members of the Conchological Society trip in June 1989 for the use of their records.

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Cowrie Money of Thailand

Fred Pinn

London

The Thai originally had their kingdom in central and southern China. It was called Nanchao with its capital at Talifu. They are thought to have already gradually moved into northern Siam and settled there since about the 8th century AD. But this slow penetration was accelerated into a flood of immigration by their defeat by the Moguls under Kublai Khan in the middle of the 13th century. By the end of that century the Thai had become the rulers of the whole of Siam. Knowledge of the early history of Siam is very vague, but one thing seems certain, namely that, together with other customs, the Thai brought with them the system of currency to which they had been used in their Chinese homeland: silver and cowries.

The earliest mention of cowrie money in southern China comes from Marco Polo who in 1272 paid a visit to this part of Kublai Khan's empire. He wrote: 'For money they use white cowries, i.e. the sea-shells that we used to make necklaces for dogs.' He also provides an idea of the value of the shells: '80 cowries are equivalent to one saggio of silver which is worth two Venetian groats, and eight saggi of fine silver may be taken to equal one saggio of fine gold', and that means that 640 cowries were worth one saggio of fine gold. This figure is of some interest as it will turn up again later in the Thai scale of valuation.

The next and probably oldest local record of currency is found in a stone inscription of King Ram K'amheng of Sukotai dated 1282 in which he decrees that 'whoever wants to sell elephants and horses may sell them; whoever wants to deal in silver and gold may do so' – a kind of free market economy. This goes to show that some kind of metal currency was already customary though it is not known what it looked like.

About 80 years later – c.AD 1361 – another stone inscription from Sukotai in two scripts (Khmer and Siamese) provides the first epigraphic evidence of the use of cowrie money; it states that

King Sachanalai-Sukotai distributed royal gifts to the extent of '10 jyang of gold, 10 jyang of silver and ten million cowries' according to the Khmer text, and '10,000 of gold, 10,000 of silver and ten million cowries' in the Siamese wording. Again there is no indication of what shape gold and silver were distributed. It is assumed, however, that following the Chinese custom the Thai carried out their business transactions by means of lumps of silver which could be cut to the required weight, in which case '10,000 of gold' and 10,000 of silver' would mean 10,000 pieces of gold and silver clipped to the weight prescribed by the King's generosity.

There is an interesting reference to Thailand in Ma Huan's *The Overall Survey of the Ocean's Shores* of AD 1433. This intrepid Chinese traveller had been as far as southern India and the Maldiv Islands from where cowries, according to Ma Huan, were exported to Thailand. 'In trading', he writes of the Thai, 'they employ cowries as money for current use; optionally, gold, silver and copper coins may all be used.'

As we know that Thailand had no metal coins, this description probably meant that foreign traders could bring their own currency as they did, for instance, in India, where any good coinage was acceptable at a more or less fixed rate of exchange.

It is certain that many forms of 'money' were already in circulation in those very early days and lasted into the 18th century. Among all those shapes ('flower' money, 'leaf' money, 'pig-mouth' money, 'bar' money, etc., etc.) one was outstanding and most universal throughout Thailand (= Siam): 'Bullet' money. A 'bullet' coin was a piece of silver bar bent until both ends met which gave it the appearance of a bullet. One suggestion for an explanation of the peculiar shape of the 'coin' is that it was meant to represent a cowrie – an interesting speculation but not really acceptable as the Siamese name for the 'bullet' is P'ot Duang, meaning 'twisted or curled worm'. Perhaps it should be mentioned here that these 'bullets' were minted right up to 1860, the year of the introduction of modern 'flat' coinage produced by a machine brought from the UK and set up in 1859.



Fig. 1: Typical 'Bullet' money

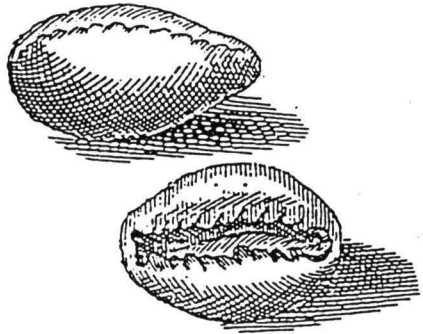
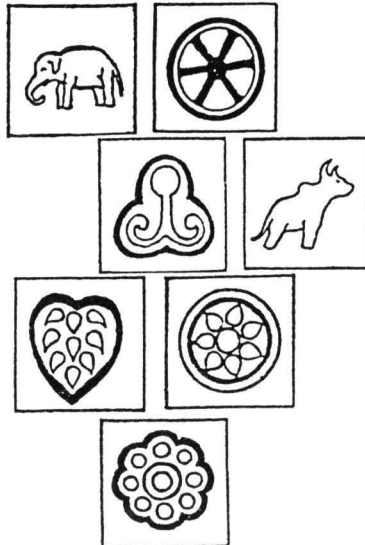


Fig. 2: The cowrie shell –
displaced in Thailand by tin and
copper coins in 1862.

These lumps of silver were made in several weights and duly marked with two stamps, probably indicating the king on whose orders they were minted and the mint itself, but no generally accepted conclusion as to the significance of the stamps has been arrived at. Figure 3 below shows just a few examples of the many different mint stamps:



The invention of the bullet-shaped coin has been attributed to King K'un Ram K'amheng, son of the founder of the Sawank'alok Kingdom (approximately AD 1275–1315). The unit weight was one Baat of silver with an exchange value of 6,400 cowries. Bullets of fractions of a baat were also minted.

One of the earliest illustrations – perhaps the first – of bullet and cowrie money, together with a description of both, can be seen in the account of the French ambassador to the Court of Siam in 1687–88. Monsieur de la Loubere as 'Envoy Extraordinary From The French King To The King of Siam' spent almost two years in the country and little escaped his curiosity. The result was a fat tome full of detailed information accompanied by his own drawings. This is what he found out about Siamese currency:

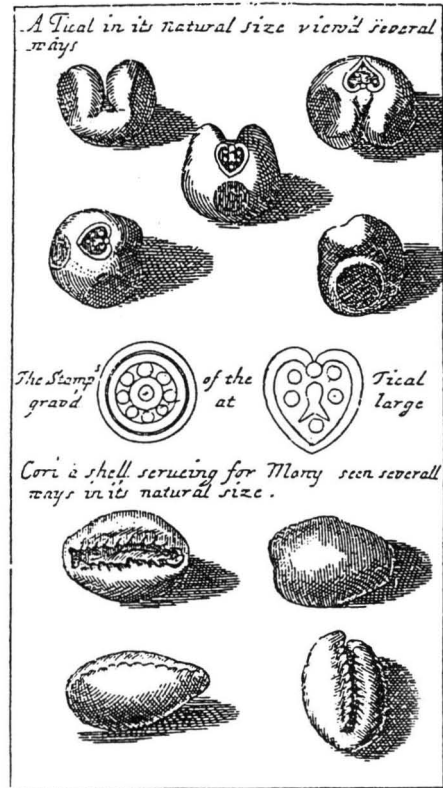
'They have no gold nor copper money; gold is a merchandise among them and is twelve times the value of silver...

...Money serves them for weights....The same names do therefore signify the weights and money both.... Their silver coins are all of the same figure and struck with the same stamps, only some are smaller than others. They are of the figure of a little cylinder or roll, very short and bowed quite at the middle so that both ends of the cylinder touched one another. Their stamps (for they have two on each piece struck one at the side of the other in the middle of the cylinder and not at the ends) do represent nothing that we knew, and they have not explained them to me ... I give the figure and size thereof.'

Then he comes to the cowries:

'The base coin at Siam is no other than those little shells I have already mentioned and of which I have likewise given the size and figure. The Europeans which are at Siam do call them Coris, and the Siamese Bia. They fish them up abundantly at the Maldives Islands, and sometimes at the Philippine Isles, but in very little quantity, as some have informed me. Nevertheless, Navarette in his discourse on China p.62 speaks thus concerning the Coris, which he calls Sequejes. Tis imported, says he, from the Coast of India and Manille; they are innumerable at the isle of Luban, which is one of the Philippines and a little after he subjoines, the Sequejes are brought from the isles of Baldivia, which are the Maldiviae.'

Fig. 4: A page from the journal of Monsieur de la Loubere, 1687–88



Most instructive is also de la Loubere's description of the shopping procedure in the bazaar:

'The coco serves as a measure for grain and liquors in this manner: as all the cocos are naturally unequal, they measure the capacity thereof by those little shells called Coris which serve for small money at Siam, and which are not sensibly greater one than the other. There is therefore such a coco which contains a thousand Coris, as some have informed me, such as one which contains five hundred and such another more or less ... But for want of policy and a standard according to which the measures should be legally be regulated, the buyer accepts them only after having measured them with his coco, the capacity of which he knows by the Coris.'

We are even given the rate of exchange in 1688, for de la Loubere tells us that 'a Fouan, or the eighth part of a Tical (Baat) is worth 800 Coris, or that 700 or 800 Coris are hardly worth a penny; the lowness of money being a certain sign of a good market, or rather of the cheapness of commodities.'

It is a common-sense assumption that all the silver money was used for larger business transactions whereas the day-to-day shopping in the bazaar and the payment of daily wages were done in cowries. Particularly low-paid labourers earning approximately 520 cowries a day would want their pay given in cowries, of which a large part would be needed for immediate purchases in the bazaar of daily provisions for themselves and their families. Silver pieces would have been a great nuisance since they would have to be exchanged at a loss (as happened in India). It stands to reason that a shopkeeper resented selling 10 cowries worth and having to give 190 cowries in change.

In most countries using cowrie money only two species were acceptable: the money cowrie (*Cypraea moneta*) and the ring cowrie (*Cypraea annulus*). In China all species were for a short period legal tender, but they were divided into five classes according to size, and each class had a fixed exchange rate for copper coins. In Thailand only eight species were used as currency and, strange to say, all eight irrespective of size were of equal value. The Siamese for 'cowrie' is 'BIA' and each species has its own name:

1. Bia plog (*Cypraea mauritiana*) (?)
2. Bia Kaa (*Cypraea caput-serpentis*)
3. Bia chan (*Cypraea moneta*)
4. Bia nang (*Cypraea annulus*)
5. Bia moo (*Cypraea poraria*)
6. Bia pong lom (*Cypraea nucleus*) (?)
7. Bia bua
8. Bia tum

During what is called 'the Ayudhya period' from 1350 to 1767 the Baat of silver was the standard unit and its rate of exchange was more or less fixed at 6,400 cowries as correctly recorded by de la Loubere in 1688. His figure of 7-800 per Fouang varied only

occasionally depending on demand and supply. For instance, during the troubles of the change-over from the Ayudhya Dynasty to the 'Bangkok Dynasty' in 1767 the value of cowries rose but was soon enough stabilised again at the old rate of 6,400 to the Baat. This scale was still valid in 1822 when John Crawford visited Siam, but by 1832 an American ambassador found that '1,050 cowries make one Fuang' instead of 800 cowries and the Baat now goes for 8,400 instead of 6,400 cowries. And in 1839 Howard Malcom in his *Travels in South-Eastern Asia* discovered that all values had been doubled since 1822 and the Baat now stood at exactly twice its value, namely 12,800 cowries. This would indicate a serious depreciation of the cowrie within seven years.

All this information from the different sources enables us to make a table of 'coins' (weights) and their equivalents in cowries:

1688			1839
1 P'hai	= 20 cowries	—	400 cowries
1 Songp'hai	= 400 cowries	—	800 cowries
1 Fuang	= 800 cowries	—	1,600 cowries
1 Saloong	= 1,600 cowries	—	3,200 cowries
1 Baat (Tical)	= 6,400 cowries	—	12,800 cowries
1 Tamloong	= 25,600 cowries		
1 Chang	= 512,000 cowries		

But the Tamloong and the Chang were practically never used and the Baat was really the highest denomination with its equivalent of 6,400 cowries (12,800 in 1839).

Looking at the above figures, anyone familiar with Indian currency is likely to reflect on some peculiar similarity:

1 rupee	=	16 annas
16 annas	=	64 paisa (p'hai?)
1 baat	=	16 songp'hai
16 songp'hai	=	6,400 cowries

It should be most interesting to trace the connection between the two systems.

Edmund Robert, the American envoy, reckoned the baat at 2s 6d sterling ('I have given it the same value as the European traders') in 1832, and Howard Malcom quoted 12,800 per baat in 1839. With these two figures at our disposal, and allowing the higher rate of exchange, it is possible to work out in cowries the latter's price list given in shillings and pence to show that 'living is not dear'. At 426 cowries per penny, his budget makes interesting reading:

Servants' wages per month 12s = 61,344 cowries

Fuel 4s = 20,448 cowries

Fowls each 3d-6d = 1,278-3,408 cowries

Ducks each 5d-8d = 2,130-3,408 cowries

Pork per pound 4d = 1,704 cowries

Oil for lamps and cooking per gallon

15d-20d = 6,390-8,520 cowries

Rice per pound $\frac{1}{2}$ d = 213 cowries

Sugar per pound $2\frac{1}{2}$ d = 1,065 cowries

Milk per quart 4d-5d = 1,704-2,130 cowries

Tea per pound 15d-20d = 6,390-8,520 cowries

Pineapples per 100 3s 2d-4s = 16,188-20,448 cowries

Oranges per 100 1s-2s 6d = 6,390-12,780 cowries

Coconuts for curry per 100 9d-15d = 3,834-6,390 cowries

Common labourer per month 6s = 30,672 cowries

No doubt, this list is very incomplete for there must have been many smaller items like vegetables and other food stuffs which would have cost considerably less than 1 p'hai (200-400 cowries), not to mention the odd cups of tea at tea stalls and small meals at eating houses, but a quick calculation does show that a labourer could not afford many pounds of pork in the month nor buy many gallons of oil for cooking and lighting; he also was not likely to drink a pound of tea at an average of 7,455 cowries or about 25 per cent of his total monthly income. He would buy one coconut for 38 cowries rather than 100 for 6,300 cowries. One only has to go to a modern oriental bazaar to see how people shop in small quantities, partly because things don't keep long, but chiefly because buyers simply do not have the money that would allow them to purchase wholesale by the hundred or hundredweight. Unfortunately, shopping has always been such a commonplace

affair that nobody seems to have bothered to leave behind a record of how people carried the cowries around or how big a shopkeeper's cowrie box had to be to hold a day's takings – all aspects of the cowrie currency which still deserve investigation.

In 1862 King Mongkut introduced tin and copper coins and cowries were no longer legal tender.

As in other countries which abolished their cowrie currency, in Thailand too the shells continued to be used as small change in out-of-the-way rural areas. They were reckoned by the peasants at a rather fluctuating rate of 600–1,200 to the baat. In commercial centres like Bangkok, however, cowries were only seen in gambling houses where they were served as counters. Quiggin in his *Survey of Primitive Money* makes an interesting comment:

“The border line between gambling counters and money is not easy to define, and it is safe to say that cowries are still used for gambling all over the world. For small stakes they are obviously superior to coins, as they are so much easier for the winner to scoop up. When copper atts, the value of a cowrie, or 1/64 of a tical (baat) were used for gambling in Siam, they were bent up at the edge to avoid fumbling. □

Corrections

■ Dr G. Legg of the Booth Museum, Brighton has kindly pointed out that the Loder Valley Reserve (see *Newsletter* No. 126, p. 210) is in fact in West Sussex and not Surrey.

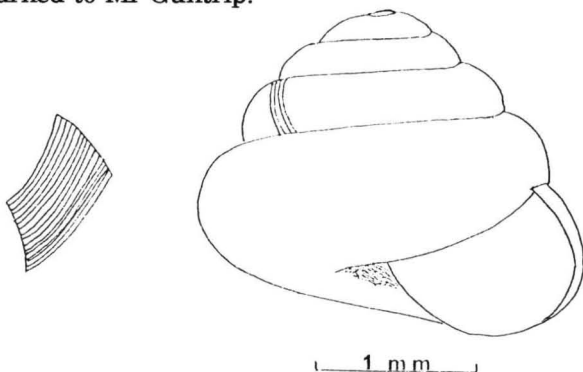
■ In ‘The Molluscan Fauna Associated with Maerl’, *Newsletter* No. 125. The latitude/longitude for Port an Eorna (page 165) should be 57° 50'N 05° 80'W.

***Afropunctum seminium* (Morelet) Euconulidae in Britain**

B. Verdcourt

Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

I mentioned (*Conchologists' Newsletter* **100**: 437 (1987)) that the tropical African snail *Afropunctum seminium* (Morelet) found in a tropical greenhouse in Wageningen was likely to turn up in Britain and such has now proved to be the case. D. Guntrip found a single empty but recent shell of this species during the Conchological Society's field meeting to the Royal Botanic Gardens, Kew, led by Jane Reynolds. It was discovered in the Princess of Wales Greenhouse Wet Tropics Zone on a path close to the wall near D 16 (exit door from the Tropics visual presentation). De Winter and van Bruggen have finally proved the species belongs to the Euconulidae in an exhaustive paper (*Proc. Kon. Ned. Akad. Wetensch.* **95**: 515–533 (1992)). I and others had variously placed it in Euconulidae or Endodontidae and finally decided on the latter. Further material is needed to confirm that it is actually established at Kew. The specimen has been returned to Mr Guntrip.



The figure is taken from a scanning electron micrograph by J.H.W. Kromm (Natural History Museum, Leiden) of a specimen from a greenhouse at Wageningen Agricultural University. Inset shows part of upper sculpture of last whorl. □

JNCC Non-Native Marine Species Project

This year the Marine Conservation Branch of JNCC are carrying out a review of all non-native marine macro-species found in British waters. We are hoping to gain a better understanding of the processes involved and problems arising from introductions to provide the basis for making more informed policy decisions. We aim to gather key information on species and would welcome your contributions both on the list of introduced species below and on any others of which you might be aware.

Introduced mollusca

Mesogastropoda: *Crepidula fornicata* (Slipper limpet), *Cymatium argus*;

Neogastropoda; *Urosalpinx cinerea* (Oyster drill or American tingle)

Myoidia: *Mya arenaria* (Soft-shelled clam)

Ostreoida: *Crassostrea gigas* (Pacific oyster), *Crassostrea angulata* (Portuguese oyster), *Crassostrea virginica* (American oyster); *Agropecten irradians* (American bay scallop), *Patinopecten yessoensis* (Japanese scallop), *Ostrea lutraria* (New Zealand oyster);

Veneroida: *Ensis americanus*, *Tapes philippinarum* (Manila clam), *Mercenaria mercenaria* (American hard-shelled clam); *Petricola pholadiformis* (American piddock).

Recording forms can be obtained from:

Dr N. Clare Eno
Marine Conservation Branch
JNCC
Monkstone House, City Road
Peterborough PE1 1JY

Conchological Society of Great Britain and Ireland

Minutes

**1041st (Ordinary) meeting held on 11 April 1992 in the
Demonstration Room of the Natural History Museum at 2.30 pm**

Announcements of deaths: The death was announced of Mr H.J. Garrett, member since 1983.

In the Chair: Mr F.R. Woodward with 22 members present.

Apologies for absence: Mrs S. Davies, Mr A.D. Secombe, Mrs J.M. Light, Dr M.J. Willing, Mr M.F. Symonds, Dr. E.E. Sándor, Miss J.T. Sawyer, Mrs N.F. McMillan, Mr S.P. Dance, Mr T.E. Crowley, Dr J.E. Chatfield, Mr P. Negus, Mr J.F.M. de Bartolomé, Mrs E.B. Rands, Dr B. Colville.

Minutes of the last meeting (of 21 March 1992): Read and accepted.

Matters arising: A letter has been received from Mr Negus thanking the Society members for the gift and signed card in recognition of his long service as Newsletter Editor.

Nomination and election of new members:

Mr P. Chapman, [REDACTED] Mapperley, Nottingham [REDACTED]

Lecture of the day: The invited speaker was unable to attend. Instead some members brought in larger exhibits than usual and spoke at greater length about them.

Meeting closed at 5.33 pm.

Appendix: Members' exhibits:

- | | |
|--------------------|---|
| • Phil' Palmer | Ammonites as living molluscs. |
| • Mr T. Pain | The genus <i>Chicomurex</i> Arakawa, 1964 (Muricidae). |
| • Dr B. Coles | Landshells of Porto Santo (Madeira) |
| • Mr F.R. Woodward | <i>Anodonta woodiana</i> (Lea) from cooling tank at power station 30 kilometres from Moscow, Russia. |
| • Mr P. Lee | Some shells from Corfu and Lesvos and papers used in their identification. |
| • Mr B. Craig | Freshwater bivalves of North and South America. |
| • Mr D.C. Long | Catalogue of non-marine mollusca of Australia (and associated papers and photos). |
| • Mr I.J. Killeen | Marine mollusca from the S.W. English Channel. |
| • Mr D.W. Guntrip | - How to use a microscope for drawing shells.
- Fossil shells of <i>Margaritifera auricularia</i> from the Thames. |
| • Mr F.R. Woodward | - Russian pearl from ammonite.
- Shells of <i>Margaritifera</i> spp.
- Craftwork brought back from March 1992 visit to Russia: designs printed on woven material. |

**1042nd (Ordinary) meeting held on 16 and 17 May 1992 in the
Argyll Room of the Argyll Hotel in Dunoon, Scotland at 9.37 am**

In the chair: Mr F.R. Woodward with 20 members and friends present.

Apologies for absence: Mrs E.B. Rands, Mrs N.F. McMillan, Miss J.T. Sawyer, Mr S.P. Dance, Mr T. Pain, Mrs C. Pain, Dr R. Preece, Dr B. Coles.

Minutes of the last meeting (of 11 April 1992): Read and accepted.

Matters arising: Mr I.J. Killeen exhibited some colour plates from his atlas of Suffolk non-marine molluscs which was due to be published in 10 days time.

Lecture of the day: The guest lecture for this weekend meeting was by Professor John Davenport, Director of the University (of Glasgow) Marine Biological Station, Millport and was entitled 'The biology of the Antarctic protobranch bivalve *Yoldia eightsii*'.

The full agenda for this weekend meeting was as follows:

Recording Marine Mollusca – The Way Forward

Saturday

- Welcome by Fred Woodward.
- The existing recording scheme by Jan Light.
- Nomenclature by Shelagh Smith and David Heppell.
- The way forward, regional surveys, the new recording card, use of computerised databases by Jan Light and Ian Killeen.
- Buffet lunch
- Society business and announcements.
- Guest lecture by Professor Davenport.
- The BRISC Chiton survey by Fred Woodward.
- Liaison with other organisations:
 - UMBS Millport by John Davenport
 - Department of Agriculture and Fisheries, Scotland by David McKay.
- Optional visit to a local shore.
- Evening dinner at the Argyll Hotel.

Sunday

- 6.00 am. Low-tide marine surveying at sites south of Dunoon.
- MNCR/JNCC (Marine Nature Conservation Review of Joint Nature Conservation Committee) by Roger Covey.
- Marine Conservation Society and dog whelk survey by Cait Loretto.
- Specialist mollusc groups:
 - Cephalopods by Cynthia Yau of Aberdeen
 - Chitons, Solenogastres and Caudofoveata by Alan Jones of Dundee.
 - Nudibranchs by Julia Nunn of Belfast.
 - Pteropods by David McKay of Aberdeen.
- Getting difficult material identified.
- Workshop summary and open discussion.

- Afternoon field meetings:
 - Private garden to the north of Dunoon.
 - Marine surveying at Otter Ferry.



**1043rd (Ordinary) meeting held on 17 October 1992 in the
Demonstration Room of the Natural History Museum at 2.30 pm.**

Announcements of deaths The death was announced of Miss V. Fretter, member since 1976.

In the chair: Mr T. Pain and Mr F.R. Woodward, with 31 members present.

Apologies for absence: Dr M.P. Kerney, Mrs J.M. Light, Dr M.J. Willing, Mr D.R. Seaward, Mrs N.F. McMillan, Mr S.P. Dance, Mr P. Negus, Mrs E.B. Rands, Mr D.C. Long, Mr D. Rands, Mrs E. Platts, Mr E. Philp, Mr R. Scase, Mr B. Craig.

Minutes of the last meeting (of 16 to 17 May 1992): Read and accepted.

Nomination and election of new members:

Ordinary membership: Mr David Rix, [REDACTED] Whitstable, Kent.

Family membership: Mr P. and Mrs R. Dansey, [REDACTED] Kings Lynn,
Norfolk [REDACTED]

Lecture of the day: Dr Robert Cameron (University of Birmingham): 'Snail diversity and conservation, some world-wide comparisons'.

Announcements and Correspondence:

1. Ms J. Reynolds announced the donation of £75 to the CSGBI. Ms Reynolds won this award, to be donated to the charity of her choice, from the Rotary Club of Kew Gardens in recognition of her exceptional charity fund-raising work. Mr Woodward thanked Ms Reynolds for this donation from the chair.
2. Dr Martin Bell, our speaker for November, is unable to speak on that day. It has been arranged that Dr Preece will speak in his place and Dr Bell will now give his talk in January.

Meeting closed at 5.18 pm.

Appendix: Members' exhibits:

- Dr R.A.D. Cameron Carnaenind land snails and others from the Napier and Oscar ranges, W. Australia.
- Dr B. Coles A small selection of forest snails from southeast USA.
- Dr J. Chatfield Recently published books:
 - *The management and welfare of invertebrates in captivity*, National Federation of Zoological Gardens.
 - *John Lightfoot: His work and travels* by Jean K. Dowden, Royal Botanic Gardens, Kew.
 - Also scarf with snail motif.
- Mr K. Hill Snails from Palm House of Kew Gardens? (Identified as *Subulina striatella*).

- Ms J. Reynolds Rotary Club Award.
Shells of Cameroon land snails.
- Mr T. Pain Rare tropical land shells from Peru and Madagascar.
- Miss J.T. Sawyer
 - Fossil Nautiloid from North Bay, Scarborough (CSGBI field trip).
 - *Helix leucorum* (?) found in apple orchard in vineyard near Arezzo, Tuscany, Italy.
 - *Rapana venosa* (Valeniennes 1946). Normally from Japan and China. It has been introduced into the Black Sea. These came from Istanbul spice market.
- Anon *World shells of rarity and beauty*. Published by National Science Museum, Tokyo 1991.
- Mrs C. Street Shells from Colosay, Hebrides.
- Mr F.R. Woodward *Pleurotamaria westralis*, *P. teremchii*, *Pleurotamaria* sp nov.
- Mr K. Brown
 - 'Last stand for Society snails', *New Scientist* cutting.
 - 'Musseling in' and 'Exotic spp. in ship's ballast', *Scientific American* cuttings.
 - Indonesian mollusc books.
 - Three lucky finds: *Conus milneedwardsi*, *C. excelsus*, *C. gloriamaris*.
- Mr D. Guntrip
 - Tufa land snails of CSGBI Peterborough field trip (5000 years old).
 - *Ario owenii* and *Limax maculatus*? CSGBI Dunoon meeting.



**1044th (Ordinary) meeting held on 21 November 1992 in the
Demonstration Room of the Natural History Museum at 2.30 pm**

In the chair: Mr F.R. Woodward with 29 members present.

Apologies for absence: Mrs S. Davies, Mr P. Lee, Dr M.P. Kerney, Mr M.F. Symonds, Mrs E. Platts, Mrs N.F. McMillan, Mr S.P. Dance, Mr P. Negus, Mr D.C. Long, Mrs M. Fogan, Miss J. Nelson, Mrs J. Sawyer.

Minutes of the last meeting (of 17 October 1992): Read and accepted.

Lecture of the day: Dr R.C. Preece, 'The Natural History of the Pitcairn Islands'.

Any other business: A set of seashell prints was donated by Mr L. Blaker to be auctioned in aid of Society funds. This sale was delayed until the AGM in order that a better idea could be gained about their value.

Meeting closed at 5.10 pm.

Appendix: Members' exhibits:

- Dr B. Colville
 - Mapping the land and freshwater mollusca of Cumbria,
 - *Ceriuella virgata* shell colour variability.
- Mr T. Pain Size variation in *Buccinum undatum* L.
- Mr D.W. Guntrip Snail diagrams intended for forthcoming UK mollusc atlas.

- Mr F.R. Woodward 'Pearls' including 18th century *Cristaria plicata* with Chinese cultured pearls.
- Mr L. Blaker - Two French-published books on land-snails, 'L'escargots' and 'Guide complet de l'elevage des escargots'.
- Leaflet from Decorabilia of Suffolk.
- Ms J. Reynolds Various press items:
 - A blue *Pugilina*
 - Snail chocolates – label and photo
 - Photographs of snails in Sweden.
- Dr B. Verdcourt Two shells once considered great rarities: *Thateria mirabilis* (north-west Taiwan) and *Wentletrap* (unlocalised).
- Dr M.J. Willing Terrestrial sieve.
- Mr K. Brown - Cones described by Hwass in Bruguiere 1792 – a 200th anniversary exhibition.
- Three books on West African marine molluscs, with shells for comparison.
- Dr B. Coles Some land molluscs from Tuscany (Chianti)
- Mr I.J. Killeen Society publications, merchandise, etc.
- Dr R.C. Preece Pitcairn artefacts.
- Mr S. Tracey Mollusc books: 'Forbes & Hanley' and 'MacFarland'.



**1045th (Ordinary) meeting held on 12 December 1992 in the
Demonstration Room of the Natural History Museum at 2.30 pm.**

In the chair: Mr F.R. Woodward with 24 members present.

Apologies for absence: Mr T. Pain, Mrs N.F. McMillan, Mrs S. Davies, Dr M.J. Willing, Dr R.C. Preece, Mr S.P. Dance, Mr J.F. Fogan, Mrs M. Fogan.

Minutes of the last meeting (of 21 November 1992): Read and accepted.

Lecture of the day:

Dr Endre Sándor, 'Frilly and fragile – the family *Coralliophilidae*'

Meeting closed at 5.12 pm.

Appendix: Members' exhibits:

- Mr D.C. Long *Sphaeriidae* and other molluscs, including *Menetus dilatatus*, from the Gloucester-Sharpness canal.
- Dr E.E. Sándor The family *Coralliophilidae* *Chenu*, 1859.
- Mr D.W. Guntrip Longevity of hothouse snails in captivity.
- Dr B.F. Coles Miscellany:
 - *Latiaxis nakamigawai* io Kilburn 1974.
 - Book, *Seashells of Southern Africa*, R. Kilburn and Rippey.
 - Book, *Greenpeace book of coral reefs*, S. Wells and N. Hanna. □
- Mr K. Brown

Applications published in the *Bulletin of Zoological Nomenclature*

The following Applications were published on 30 September 1993 in Vol. 50, Part 3 of the *Bulletin of Zoological Nomenclature*. Comment or advice on these Applications is invited for publication in the *Bulletin* and should be sent to the Executive Secretary, ICZN, c/o The Natural History Museum, Cromwell Road, London SW7 5BD.

- Case 2871** *Helix nitidula* Draparnaud, 1805 and *H. nitens* Michaud, 1831 (currently *Aegopinella nitidula* and *A. nitens*; Mollusca, Gastropoda); proposed conservation of the specific names and designation of a neotype for *H. nitidula*.

Edmund Gittenberger

Nationaal Natuurhistorisch Museum, PO Box 9517,
NL 2300 RA, Leiden, The Netherlands.

Abstract. The purpose of this application is to conserve the specific names of *Aegopinella nitidula* (Draparnaud, 1805) and *A. nitens* (Michaud, 1831) which are in universal use for common terrestrial pulmonate species (family ZONITIDAE) from western Europe. It has long been recognised that the existing syntype of *A. nitidula* is a specimen of *A. nitens* and it is therefore proposed that a neotype be designated for the former species in accordance with current usage, so conserving also the usage of *A. nitens*. The suppression is proposed of *Helix nitens* Gmelin, [1791], a little-used senior primary homonym of *H. nitens* Michaud, 1831 but a junior objective synonym of *H. nitida* Müller, 1774. The name *H. nitidula* Draparnaud was placed on the Official List in Opinion 336 (March 1955).

- Case 2860** *Pleurotoma meneghinii* Mayer, 1868 (currently *Asthenotoma meneghinii*; Mollusca, Gastropoda): proposed replacement of neotype by rediscovered lectotype

Roberto Gatto

*Dipartimento di Geologia, Paleontologia e Geofisica
dell'Università, Via Giotto 1, I-35137 Padova, Italy.*

Abstract. The purpose of this application is to replace the neotype of the Upper Miocene species *Pleurotoma meneghinii* Mayer, 1868, designated in 1990, by a lectotype selected from the type series of the taxon which has been rediscovered recently in the Mayer-Eymar collection in the Naturhistorisches Museum, Basel. The neotype and proposed lectotype are conspecific. *P. meneghinii* is the type species of *Asthenotoma* Harris & Burrows, 1891, a gastropod genus (family TURRIDAE) which includes mainly species from the European Tertiary. □

Marine Nature Conservation Review Reports

Since it was established by the Nature Conservancy Council in 1987, the Marine Nature Conservation Review has produced over 100 field survey or occasional reports. These formerly appeared in the NCC's *CSD Report* series, and since 1991, as JNCC Reports. Although most have had a limited circulation, these reports have been a considerable success, and are widely used within the county conservation agencies and outside. Loan copies of these reports (which borrowers may photocopy) are available within the UK by inter-library loan from the English Nature Library, or may be purchased on microfiche. A full list of MNCR reports is available from:

Colin McLeod
Publications Manager
Marine Conservation Branch
Joint Nature Conservation Committee
Monkstone House, City Road
Peterborough, PE1 1JY, UK

Memoirs of Gordon Osborn

In the last few years of his life Gordon Osborn, who was a regular attender at Conchological Society meetings in the 1960s and 1970s, was prevented by ill health from coming to London meetings. However his interest and involvement in natural history and other projects continued. Encouraged by his wife Patricia he started to write his memoirs and at the time of his death draft manuscripts were left of three books. Patricia Osborn has edited and published (1993) the memoirs under the title *Lines in Pleasant Places: Memoirs of Gordon Osborn FLS, Master Butcher in the town of Olney* (ISBN 0 9505530 5 0).

The 22 chapters cover in readable form Gordon's life in Olney, Bucks, his schooling, work in his father's butchery business and later as an examiner in the meat trade, committee work with societies, museums and colleges, work with the local fire brigade, interests in natural history and the balance of events in the last years of his life – losses and gains – but ending on a positive note. Credit is due to Patricia Osborn for her careful editing. The book is very well produced, attractively laid out in a good print and illustrated with photographs. A line drawing motif of *Ena obscura* has been used decoratively at the beginning of the chapters and this was taken from the design Gordon had painted on the doors of the bright red Renault car, making it a distinctive vehicle in Olney.

Copies of this book are obtainable from Mrs Patricia Osborn, [REDACTED] Olney Bucks [REDACTED] at £8.95 plus £1.00 p&p.

1994 Subscriptions

Important notice: *Please note changes in rates and in address for subscriptions.*

■ Ordinary Members	£23.00
■ Family Members	£25.00
■ Institutional Members	£35.00
■ Student Members (remains unchanged)	£10.00

The special concession of £1.00 to Full and Family Members remains unchanged for those paying before March 31st (i.e. Full Members £22.00, Family Members £24.00).

Subscriptions are due on 1st January 1994. Please *pay promptly* and do not cause the Society to waste limited funds (your money) on expensive postage, etc., in sending out reminders, which should not be necessary! If you pay by standing order, do please ensure that your bank has the correct amount. We do ask for your co-operation over the payment of subscriptions.

All subscriptions to be paid in Sterling or equivalent to include costs of conversion charges. Cheques to be made payable to the Conchological Society of Great Britain and Ireland and not to individuals.

All subscriptions should be sent to *The Acting Membership Secretary, Mike Weideli*, [REDACTED] *Newbury, Berks.*
[REDACTED] and not to the Treasurer.

Display Boards

The set of display boards recently bought by the Society are currently being assembled. They have been bought to advertise our work and to promote an interest in molluscs. They are visually attractive and feature information and photographs of molluscs, field meetings, biographical projects and so on.

We are seeking suitable venues around the country to display these boards: conferences, museums, university departments, libraries, etc. If Members know of events or venues where these publicity boards could be displayed, will they please contact Jane Reynolds, [REDACTED] Holloway, London [REDACTED]

Diary of Meetings

Saturday 11 December, London: Conch. Soc. indoor meeting: *Snails: a horticultural nightmare?* by Miss Jane Reynolds. The Natural History Museum at 14.30.

Please note that the indoor meeting scheduled for Saturday 15 January 1994 has been cancelled.

Saturday 19 February, London: Speaker to be announced. The Natural History Museum at 14.30.

Saturday 19 March, London: AGM and Presidential Address. The Natural History Museum at 14.30.

Friday 8 to Sunday 10 April: Mollusc course at Flatford Mill Field Centre, Suffolk. Tutor: Ian Killeen. *An introduction to molluscan identification and ecology with a particular focus on freshwater species*. Full details from the Director: Edward Jackson, Field Studies Council, Flatford Mill Field Centre, East Bergholt, Colchester, Essex CO7 6UL. Tel. (0206) 298283.

Saturday 16 April, London: Speaker to be announced. The Natural History Museum at 14.30.

Saturday 23 April, Blockley, Gloucs: Conch. Soc. field meeting to study land snails and Jurassic fossils.

Saturday 21 May, London: Speaker to be announced. The Natural History Museum at 14.30.

Saturday 22 October, London: *Malacological Pioneers*. Full-day meeting held jointly with the Malacological Society and the Bibliographical Society at the Linnean Society Rooms, Burlington House, Piccadilly.

Saturday 29 October, Newbury, Berks: Conch. Soc. field meeting.

Saturday 19 November, London: Regional marine and non-marine mapping projects – various speakers. The Natural History Museum at 14.30.

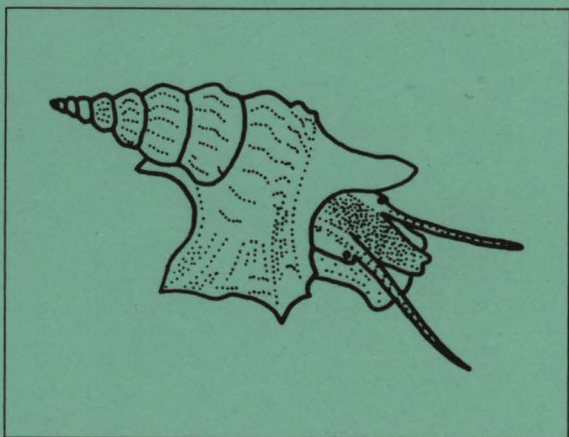
Saturday 10 December, London: Members' slides, exhibits and a quiz. The Natural History Museum at 14.30. □

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The Marine Mollusca of Dingle Peninsula, Co. Kerry, and the Neighbouring Coastline

Julia D. Nunn

*Marine Biology Station, Queen's University Belfast,
Portaferry, Co. Down*

During 1992, a long-term project to produce a checklist and atlas of distribution for the mollusca of Ireland (with co-authors Dr Shelagh Smith (Carlisle) and Dr Dave McGrath (University College, Galway)) was begun. The last published checklist was by Nichols (1900), and it is anticipated that the new atlas and checklist will be published in the year 2000, to celebrate the centenary of Nichols' work. Fieldwork for the atlas will mainly consist of expeditions to under-recorded areas of Ireland over the next 6–7 years. Although there has been considerable offshore work in the Dingle area, with many interesting specimens lodged in the collections of the National Museum of Ireland (e.g. Michael Long Collection), very little recent systematic work has been carried out in the littoral zone. It was therefore decided that the first planned survey for the atlas should be carried out in the Dingle Peninsula area.

The fieldwork was intended to be the recording of mollusca principally on shores, to cover the grid system of the proposed Atlas. The squares of the grid are 12' x 6'. The expedition was centrally based at a large four-bedroom cottage with wonderful panoramic views of Inch Strand on the south-eastern side of the Dingle Peninsula. The survey took place over a period of eight days (14 – 21 April 1992) during the good Easter spring tides. Five (lucky?) people took part in the survey: Julia Nunn (JDN), Graham Day (GVD), Shelagh Smith (SMS), Jan Light (JML) and Ian Killeen (IJK).

For this survey, sites were selected, if possible, on the following basis to include:

1. a full range of habitats present in the area
2. representative sites with habitats which occur extensively
3. sites with restricted or unusual features
4. even geographic coverage

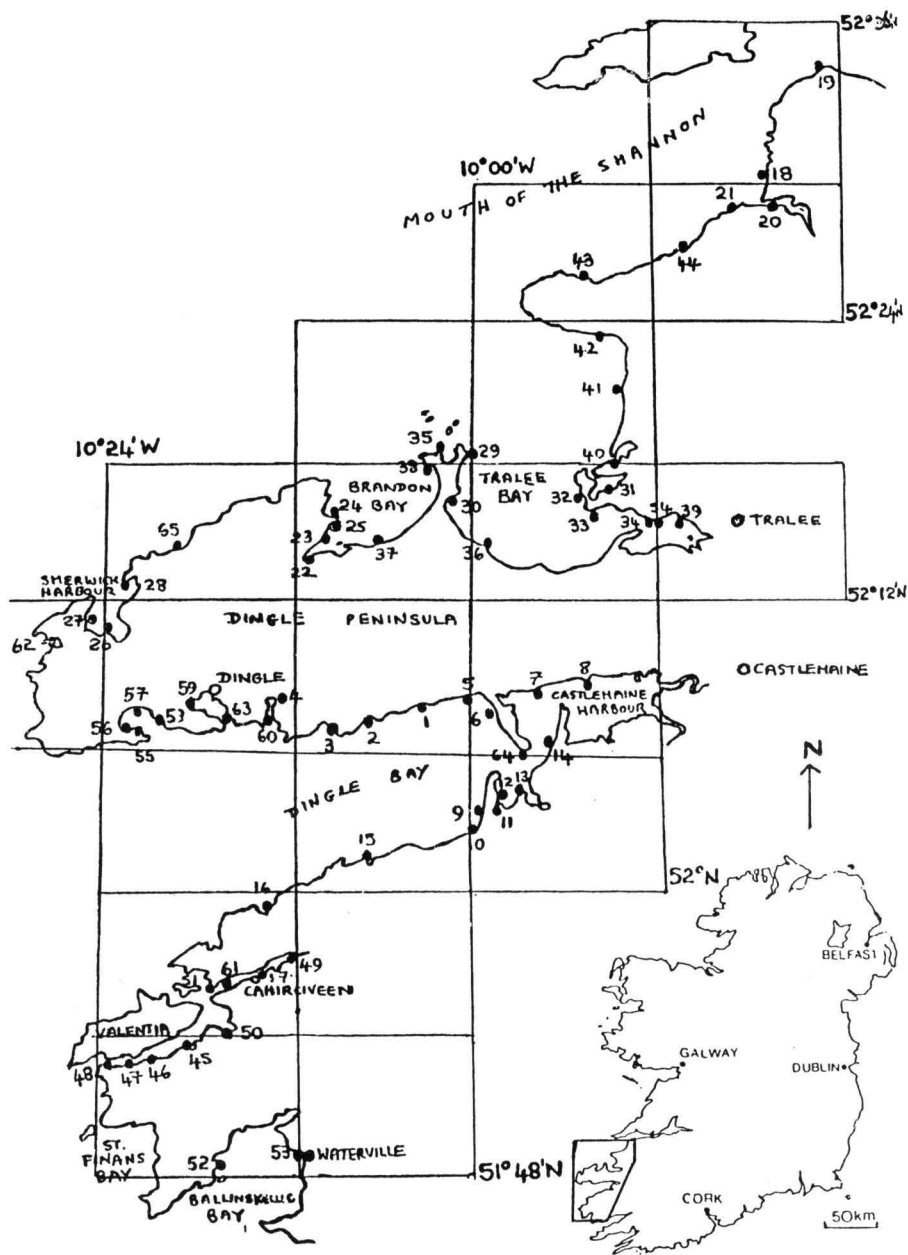


Fig. 1. The Dingle Peninsula and surrounding area

5. areas under-recorded by previous workers
6. all atlas squares in immediate area sampled.

Sites were at first selected from detailed charts of the area. If access seemed to be easy from road maps, these sites were investigated where possible in advance of the date chosen for sampling. However, because of time limitations, this was not always possible, and the sampling therefore relied on good interpretation of features shown on the charts of the area. In almost every case, the charts proved to be accurate and useful, and a satisfactory range of habitats were studied.

All the sites were visited on reasonable or good spring tides (low tide being predicted to be not more than 0.8 metres above Chart Datum). Low tide was very conveniently timed to occur between 9 am and 2.30 pm while we were there. The five recorders were divided into three teams of two, two and one persons to cover as wide an area as possible.

Each site was searched for species of mollusca over a period of about 10 minutes to 90 minutes (depending on the assessed richness of the site). One or two buckets full of algal samples (mainly red algae, *Cladophora* spp. and *Fucus serratus*) were removed for further examination, together with any shell sand. Descriptive notes were made of the area searched.

The samples of algae were taken back to our cottage, and soaked for a minimum of three hours (usually overnight) in fresh water. The algae were shaken and removed from the water. Detached mollusca were collected and preserved in 70% alcohol. The species were identified, and a list prepared. Additional larger molluscan species observed on the shore were identified and added to the list.

Unfortunately, the rough and windy weather encountered during this survey did not permit more than one dive to take place, at Brandon Creek (site 65).

Sixty-four shore sites and one dive site were sampled during this survey (a complete list of details of each site is available from the author). Nineteen squares for the Atlas of Ireland were sampled and completed (see Map 1). It was not possible to extend the fieldwork to diving or shore work on and around the Blaskets

due to the weather and time limitations.

A total of 191 species of mollusc were recorded (138 living).

List of species of mollusca found in area

*post-1900 records (see Area Atlas: Conchological Society of Great Britain and Ireland)

Live species: *Leptochiton asellus*; *Callochiton septemvalvis*; *Lepidochitona cinereus*; **Tonicella rubra*; *Acanthochitona crinitus*; *Emarginula fissura*; *Diodora graeca*; *Tectura virginea*; *Patella ulyssiponensis*; *P. vulgata*, *Helcion pellucidum*, **Monodonta lineata*; *Gibbula magus*, *G. cineraria*; *G. tumida*; *G. umbilicalis*; *Calliostoma zizyphinum*; *Tricolia pullus*; *Bittium reticulatum*, *Lacuna pallidula*; *L. parva*; *L. vincta*; *Littorina littorea*; *L. mariae*; *L. neglecta*; *L. obtusata*; **L. nigrolineata*; *L. saxatilis*; *Melarhaphe neritoides*; *Skeneopsis planorbis*; *Eatonina fulgida*; *Barleeia unifasciata*; *Rissoa interrupta*; **Rissoa lilacina*; *Rissoa parva*; *Alvania punctura*; *Alvania semistriata*; *Cingula trifasciata*; *Onoba semicostata*; *Pusillina inconspicua*; *P. sarsi*; *Hydrobia ulvae*; *Potamopyrgus antipodarum*; *Trivia arctica*; *T. monacha*; **Lamellaria latens*; *L. perspicua*; *Cerithiopsis tubercularis*; *Marshallora adversa*; **Graphis albida*; *Ocenebra erinacea*; *Nucella lapillus*; **Buccinum undatum*; *Hinia incrassata*; *H. reticulata*; **Mangelia brachystoma*; **M. nebula*; *M. coarctata*; *Rissoella diaphana*; *R. opalina*; *Omalogyra atomus*; *Odostomia plicata*; *O. turrita*; *O. unidentata*; *Brachystomia scalaris*; **Chrysallida indistincta*, **Noemiamea dolioliformis*; **Ondina warreni*; **Retusa obtusa*; *R. truncatula*; **Runcina coronata*; *Eltysia viridis*; *Limapontia capitata*; **L. depressa*; *L. senestra*; *Aplysia punctata*; *Berthella plumula*; *Doto coronata*; **Onchidoris depressa*; **Acanthodoris pilosa*; *Polycera quadrilineata*; *Limacia clavigera*; *Palio nothus*; *Archidoris pseudoargus*; **Discodoris planata*; *Jorunna tomentosa*; **Facelina bostoniensis*; *Facelina coronata*; *Aeolidia papillosa*; *Leucophytia bidentata*; **Antalis vulgaris*; **Nucula nitidosa*; *Mytilus edulis*; **Modiolus barbatus*; *Modiolus modiolus*; *Modiolula phaseolina*; *Modiolarca tumida*; *Musculus discors*; **Ostrea edulis*; *Chlamys distora*; *Chlamys varia*; *Pecten maximus*; *Anomia ehippium*;

Heteranomia squamula; *Pododesmus patelliformis*; **Loripes lucinalis*; **Lucinoma borealis*; *Kellia suborbicularis*; *Lasaea adansonii*; *Mysella bidentata*; **Epilepton clarkiae*; *Parviacardium exiguum*; **P. scabrum*; *Cerastoderma edule*; **Spisula solida*; **S. subtruncata*; **Solen marginatus*; **Ensis arcuatus*; **Ensis siliqua*; **Angulus tenuis*; **Fabulina fabula*; **Macoma balthica*; **Donax vittatus*; *Abra alba*; *Venus verrucosa*; **Chamelea gallina*; **Clausinella fasciata*; *Tapes aurea*; *T. decussatus*; *Venerupis senegalensis*; **Dosinia exoleta*; **D. lupinus*; **Turtonia minuta*; *Mya truncata*; *Hiatella arctica*; **Pholas dactylus*; **Barnea candida*; *Thracia phaseolina*. (138)

Dead species: *Turritella communis*; **Lacuna crassior*; **Rissoa membranacea*; **Alvania carinata*; *Manzonina crassa*; *Caecum glabrum*; **C. imperforatum*; *Polinices polianus*; **Epitonium turtonis*; *E. clathratulum*; *Vitreolina philippi*; **Haedropleura septangularis*; **Raphitoma boothii*; *R. linearis*; *Brachystomia eulimoides*; **Chrysallida obtusa*; **C. suturalis*; *Partulida spiralis*; **Turbonilla lactea*; **Cylichna cylindracea*; *Philine aperta*; *Diaphana minuta*; *Antalis entalis*; *Nucula nucleus*; **N. sulcata*; **Modiolus adriaticus*; **Palliolum tigerinum*; *Thyasira flexuosa*; **Montacuta substriata*; **Tellimya ferruginosa*; **Acanthocardia echinata*; *Parviacardium ovale*; **Mactra stultorum*; **Spisula elliptica*; **Lutraria angustior*; **Lutraria lutraria*; *Angulus squalidus*; **Gastrana fragilis*; *Gari depressa*; **G. fervensis*; **Pharus legumen*; **Abra prismatica*; **Scrobilcularia plana*; **Arctica islandica*; *Tapes rhomboides*; **Irus irus*; **Mya arenaria*; **Zirfaea crispata*; **Psiloteredo megotara*; **Teredora malleolus*; **Thracia distorta*; **Thracia villosiuscula*; **Cochlodesma praetenuae*. (54)

One species was new, living in Ireland: *Noemiamea dolioliformis* (Killeen (1992)). A second species was a post-1951 live record for Ireland: *Ondina warreni*. There were 16 new records for Sea Area 37 and four post-1951 new live records for the Sea Area Atlas of the Conchological Society of Great Britain and Ireland (Seaward, 1982 and 1990). These are given below:

New records Sea Area 37: *Lacuna crassior* (dead); *Rissoa lilacina*; *Pusillina inconspicua*; *Graphis albida*; *Mangelia brachystoma*; *Raphitoma boothii* (dead); *Chrysallida indistincta*;

C. suturalis (dead); *Ondina warreni*; *Noemiamea dolioliformis*; *Brachystomia scalaris*; *Turbonilla lactea* (dead); *Retusa obtusa*; *Limapontia depressa*; *Antalis vulgaris*; *Barnea candida*; *Teredora malleolus* (dead); *Thracia phaseolina*.

Post-1951 records Sea Area 37: *Tonicella rubra*, *Buccinum undatum*, *Macoma balthica*, *Turtonia minuta*.

Several sites in this area were very rich in live species of mollusca: Station 32 (57), Station 55 (55), Station 29 (54), Station 30 (54) and Station 52 (52), with a further six stations recorded with 40+ species. Four of these stations were in Tralee Bay, two in Brandon Bay, one at the entrance to Ventry Bay, three near Valentia Island and one in Ballinskellig Bay. Two further sites (Stations 19 and 60) had a large number of dead species (shells) recorded from shell sand. Apart from two sites (55,51) the molluscan fauna in Dingle Bay itself, and on the exposed west-facing shores of the peninsula, was relatively poor (less than 30 live species at a site). The richest sites were either partly sheltered from the prevailing south-westerly winds (e.g. Valentia channel, Ballinskellig Bay), and/or had a different geology (limestone, e.g. Maharees Peninsula, Tralee Bay) which was supportive of a more diverse flora and fauna.

Acknowledgements

My grateful thanks go to the following: Graham Day for diving support; Shelagh Smith and John Baxter for identification of the more difficult molluscan species; Jan Light, Ian Killeen, Shelagh Smith and Graham Day, for their assistance with the fieldwork, without whose help this study could not have been carried out; the Praeger Committee, Royal Irish Academy, Dublin for their financial support of this expedition.

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Biographical Notes

2. Mrs Susanna Corrie of Woodville near Birmingham

Fred R. Woodward

Art Gallery and Museum, Kelvingrove, Glasgow G3 8AG

During the last two hundred years conchologists have tended to immortalize their colleagues and friends by naming new species in their honour. Thus Isaac Lea states, in 1833, under his description of *Unio corrianus*:

I am indebted to an amiable and intelligent friend, Mrs Corrie of Birmingham, England, for this new species, which comes from Calcutta; and to her I dedicate it, as a mark of sincere friendship.

But who was this Mrs Corrie and what was her association with Isaac Lea and Unionids? Enquiries at the Local Studies Department, Birmingham Central Libraries resulted in a letter from the Librarian, Miss Dorothy McCulla, dated 16 June 1978, which states:

With reference to your letter of 26 April, I regret that it has not been possible to trace a great deal of information concerning Mrs Corrie. Her obituary in *Aris's Birmingham Gazette* of 28 April reads as follows: 'On Monday last, in her 78th year, Susanna, widow of John Corrie, Esq., of Woodville near this town.'

The Local Studies Department has the Annual Reports of the Philosophical Institution from 1832/3 and some early transactions in *The Analyst*, Vol. 3-6, 1836-7. The Annual Reports indicate that her husband, the Rev. John Corrie, was President 1832/3, a position he held until his death in 1839. In fact there is an obituary of him in the report for that year. According to *Aris's Birmingham Gazette*, he died on 16 August 1839 aged 69. None of this material refers to Mrs. Corrie and there is no description of the Institution's collections, although passing references to it are made. The local newspapers may well refer to Isaac Lea's visit in 1838. A search could be made if you knew which part of the year the visit was made.

Mrs Corrie was evidently active in Natural History circles in

Birmingham in the 1830s since her name appears under the list of Patronesses, Patrons, and Subscribers to the Birmingham Museum of Natural History in the pamphlet 'A systematic Catalogue of British Birds; intended as a guide to the ornithological department of the Birmingham Museum of Natural History published in 1832, [Woodward 1993], where her entry reads: 'Corrie, Mrs., Woodville.

Scudder [1885: xiii-xiv], in his Biographical sketch of Isaac Lea, writes:

During his stay in London Mr. Lea had the pleasure of dining at a friend's with the Rev. Sydney Smith, Miss Aiken, and a few other notables. He was also present, by special invitation, at the meeting of twenty-five Lords who met to discuss the subject of the Charter of the Birmingham and London Railroad, where he heard the celebrated barrister, Mr. Follet, plead for the charter of the railroad, which was refused as a result of their report.

[The expense for this application to Parliament was £60,000. The following year they obtained the charter.]

Further, Scudder [1885:xx], referring to Isaac Lea's 1836 publication of his Synopsis of the Family Naiades states:

And Mrs. Corrie,* the wife of the president of the Philosophical Society of Birmingham, in one of her numerous letters, said:

'I hope the high reputation which these contributions have established, will stimulate you to further researches. You possess advantages unrivaled by those of any other naturalist in your own hemisphere or ours. I trust, my dear sir, that you will have health and time to exercise them fully for the universal benefit of science.'

*She had one of the best collections of the Unionidae in Europe, and no one was better acquainted with this branch of conchology.

As a result of this statement further investigation shows that Mrs Corrie advertised for shells of freshwater mussels in 1829 in volume 1 of the *Magazine of Natural History*. Thus on page 93 there is the following:

Mya batava – Are any of your readers possessed of British specimens of the true *Mya batava* of Maton and Turton, (the *Unio batava* of

Lamarck) and can they point out its locality? I have never seen native examples of this shell, which is common in France and other parts of the Continent. I purchased a specimen from Mrs. Mawe, which she told me came from Gibraltar. – S.C.

The supposition that S.C. stands for Susanna Corrie is confirmed by a further entry on page 96 which reads:

Exchange of shells. Sir, I take the first advantage of your well projected Magazine of Natural History, to propose an exchange with some of your conchological readers. My cabinet is deficient in the following species of *Anodon*, for which I shall be happy to give, in exchange, the duplicates of some very fine *Uniones*, I have just received from America.

Anodon rugosus, Swainson's Zoological Illustrations, vol. II, pl 96

Anodon purpurascens, Ibid. vol III pl 160

Anodon crassus, Ibid. vol III pl 167

Anodon elongatus, Ibid. vol III pl 176

Anodonta exotica, Lamarck's Anim. vol VI p.87

Anodonta patagonica, Ibid. p.88

Birmingham, April.

S.C.

Mrs Corrie's reference to duplicate Unionids from America indicates that by 1829 she may already have been in contact with Isaac Lea (1792–1886), Thomas Say (1787–1834) or Timothy Conrad (1803–1877).

The British conchologist, William Swainson (1789–1855) knew Mrs Corrie and refers to her in his 1840 *Treatise* on page 260 thus:

The Unionidae almost always have their bosses more or less rubbed and injured, occasioned by the friction of stones and other substances carried onwards by the stream. Although generally of an olive brown colour, occasionally varied with obscure rays on their outer surface, the interior of these shells is always perlaceous. Hence they are now manufactured in America into pearl buttons and other ornaments. Real pearls, also, are occasionally found in some of the species. We once took from a small specimen of *U. circulus*, a beautiful little pearl, half the size of a small pea, which is now in the possession of our friend Mrs Corrie of Birmingham.

The reference to the pearl button manufacturing is interesting since Birmingham became the British centre for this enterprise and tradition has it that the city Museum and Town Hall are built on top of shell refuse resultant from Unionids imported from America to provide blanks for pearl button reproduction. Swainson [1840: 289] again refers to Mrs Corrie in a footnote to his *Uniopsis radiata* thus:

I suppose, from the name, that this is the *Margaritana radiata* of Lea's Synopsis, but, as no reference is made to where the shell is described, or any information beyond its being 'non-symphynote and smooth'. I affix this name at a venture, merely for my present purpose; the real name, if described, can always be made out from the figure here given. Since writing the above, my kind friend Mrs Corrie (who has a noble series of Unionidae in her fine collection) has sent me a specimen of this type under the name of *Alasmodon inflata*; the teeth are not so oblique as in that here figured.

These glowing references to Mrs Corrie's Unionid collections indicate that it must have been of considerable significance at that time and it is possible that some or all of it may have passed into the Philosophical Institution's possession before or following her death. If this was so it would have been inherited by the Birmingham Natural History and Philosophical Society. It appears that the major portion of the Birmingham Philosophical Institution's collections were sold in 1852 as shown in the following extract from *The Athenaeum* for 1852:

Birmingham Philosophical Institution.

F. Hornblower has received instructions from the Committee to SELL by AUCTION, about the middle of DECEMBER NEXT, on the Premises of the Institution, in CANNON STREET, BIRMINGHAM – the very VALUABLE GEOLOGICAL AND MINERALOGICAL MUSEUM, WITH THE Glazed Mahogany and Painted Cases containing the same – also, the Pneumatic, Electrical, Chemical, and other Apparatus belonging to the Institution – including a Splendid Chronometer Clock, by Dent – Barometers by Newman and others – Osler's Anemometer – Transit Instrument, by Troughton and Simms – Sidereal and other Clocks &c. – Mahogany and other Bookcases,

Shelving, Furniture, Books, Coins, and Miscellaneous effects – particulars of which will appear in Descriptive Catalogues shortly before the Sale. N.B. – Donors to the Institution who may desire to reclaim their Donations, may do so, provided they shall, before the second day of December, send to the Steward a notice containing a description of the Articles claimed.

Significantly no mention is made to the zoological or botanical collections which were presumably retained by the Society. In addition to her personal collections Mrs Corrie presented material to the British Museum as can be seen in the following entries of the published 1851 British Museum Catalogue, *A list of British Animals*:

On page 17 under *Sphaerium rivicole*:

a-k – Wednesbury, Warwickshire. Presented by Mrs Corrie

Page 73 under *Thracia convexa*:

e. Lyme Regis. Presented by Mrs Corrie

page 105 under *Anodonta cygnea*

g (?). Warwickshire. Presented by Mrs Corrie

page 108 under *Unio pictorum*:

m-t. Wednesbury, Warwickshire. Presented by Mrs Corrie

page 109 under *Unio tumidus*:

w (jun), Warwickshire. Presented by Mrs Corrie [page 110]. gg-ii (light salmon-coloured inside), Wednesbury, Warwickshire. Presented by Mrs Corrie.

and finally on page 123 under *Dreissena polymorpha*:

g-n. Warwickshire. Presented by Mrs Corrie.

It would appear that she also presented material to the Ulster Museum since Helena Ross, *pers. comm.* dated 15 January 1980, writes:

We have about 12 lots of material in our land and freshwater collection, from the Thompson and Hyndman collections which is labelled Mrs. Corrie – some of it with English provenances or simply 'English' written on the label.

I had originally assumed that this name was a misspelling of 'Mrs Corry' who was the wife of a Mr. T. Corry a member of Belfast Naturalists Field Club. However it now appears that it is more likely to be the Mrs. Corrie whom you mention.

Sadly the remnants of Mrs Corrie's personal collection in Birmingham have not been found, including her examples of *Unio corrianus* Lea, but some material is probably included in the 'Archer' collection in the Natural History Department, Birmingham Museum and Art Gallery at Birmingham. The 'Archer' collection was formerly in the possession of Birmingham Natural History and Philosophical Society but had been amalgamated with the Society collections in the early 1900s during the period of the Midland Malacological Society. I curated the 'Archer' collection in the mid-1950s and was given some duplicate Unionids for my services including some examples inscribed in the characteristic blue hand of T. Conrad. These may also have included Corrie material and are now in the possession of Tyne and Wear Museums Service at Sunderland Museum. The combined Archer/Society collection was transferred to Birmingham Museum circa 1963 [see Woodward 1963 and 1989].

References

- Lea, I., 1833. Observations on the Naiades; and Descriptions of New Species of that and other families. Supplement. *Trans Amer. Philos. Soc.* N. S. 5 65, Pl. ix fig. 25.
- Scudder, N.P., 1885. The published writings of Isaac Lea, LL.D., *Bull. U.S. nation. Mus.*, Washington, No. 23: pp. i–lix, 1–278.
- Swainson, W., 1840. *A Treatise on Malacology; or the natural classification of shells and shell-fish*. Illust. London.
- Woodward, F.R., 1963. The Archer Family, *Proc. Bgham. nat. Hist. phil. Soc.* 20 (2): 3–14.
- Woodward, F.R., 1989. Samuel Archer and *Entemnotrochus adansoniana* (formerly *Pleurotomaria adansoniana*). *Proc. Bgham. nat. Hist. Soc.* 26 (1): 25–28.
- Woodward, F.R., 1993. An anonymous Catalogue of British Birds dated 1832. *Journal of Biological Curation* 1 (3/4): 45–51. □

Newsletter Editor – Change of Address

Please direct all correspondence to Paul Lee at:

Lowestoft, Suffolk

**Revd H.E.J. Biggs (1895–1973):
an update of his malacological publications, with a
list of the taxa introduced by him in the mollusca**

Henk K. Mienis

*National Mollusc Collection, Dept of Evolution, Systematics &
Ecology, Hebrew University of Jerusalem, 91904 Jerusalem, Israel*

It is already twenty years since the Revd H.E.J. Biggs passed away. Yet from time to time our thoughts go back to him, especially when confronted with one of his numerous papers dealing with the malacofauna of the Near and Middle East.

Crowley (1973) published a short obituary of this eminent scholar, while Smythe (1974) compiled a list of his publications. Unfortunately she missed quite a number of his short notes. All except one appeared in the Society's own publications: either the *Conchologists' Newsletter* or the *Papers for Students*.

One title was missed by Kathleen Smythe because the Revd Biggs did not see a printed copy of it. In 1965 he finished a short manuscript concerning the non-marine molluscs recovered during the excavation of a Ghassulian shrine (4th millenium BCE) at En Gedi, Israel. It was sent immediately to the archaeologists carrying out the excavation. However, it was published only in 1980 as an appendix to the final excavation report (Ussishkin, 1980), i.e. seven years after its author had passed away!

In this note we list the papers which were omitted by or not known to Smythe (1974). We take the opportunity to provide also a list of the new taxa introduced by Biggs in the phylum Mollusca. Noteworthy is the fact that he was also the author of several new taxa in the Insecta.

**Additional malacological publications of the
Revd H.E.J. Biggs**

First European Malacological Congress London, 17–22 September 1962.

Conchologists' Newsletter No.2: 6–7, June 1961.

A little more biography. *Conchologists' Newsletter* No. 6:27, October 1962.

Papers for students. *Conchologists' Newsletter* No.10: 55, September 1964.

- Introducing Junior Membership. *Papers for Students* 1: 1–3, 1964.
Mytilus edulis L. living on edible crab (*Cancer pagurus* L.). *Conchologists' Newsletter* No. 14: 91, September 1965.
Venus (Mercenaria) mercenaria L. at Butley Creek, Suffolk. *Conchologists' Newsletter* No. 19: 131, December 1966.
The Glanford Shell Museum – Norfolk. *Conchologists' Newsletter* No. 21: 3, June 1967.
Papers for Students No. 7, 'Literature on British Molluscs'. *Conchologists' Newsletter* No. 30: 116, September 1969.
L.W. Stratton 1900–1971. *Conchologists' Newsletter* No. 37: 212–213, June 1971.
Stratton Memorial Fund. *Conchologists' Newsletter* No. 40: 250. March 1972.
Notes on non-marine mollusca from the altar in the sanctuary. *Tel Aviv*, 7: 42, 1980.

List of malacological taxa introduced by the Revd H.E.J. Biggs

- arabica* Biggs, 1972. *Phenacolepas*. *J. Conch.*, *Lond.*, **27**: 498, pl. 18, figs. 1–4.
asghar Biggs, 1958. *Siphonaria*. *J. Conch.*, *Lond.*, **24**: 249.
carinata Biggs, 1937. *Melanopsis doriae* var. *J. Conch.*, *Lond.*, **20**: 348.
castaneoradiata Biggs, 1937. *Helicella millepunctata* var. *J. Conch.*, *Lond.*, **20**: 344.
dahlakensis Biggs, 1965. *Cerithidea*. *J. Conch.*, *Lond.*, **25**: 338, fig. 1.
Dahlakia Biggs, 1971. *J. Conch.*, *Lond.*, **27**: 221.
dancei Biggs, 1959. *Eremina desertorum* var. *J. Conch.*, *Lond.*, **24**: 332.
depressa Biggs, 1937. *Helicella millepunctata* var. *J. Conch.*, *Lond.*, **20**: 344.
euprepes Biggs, 1936. *Armenica (Creniclavus)*. *J. Conch.*, *Lond.*, **20**: 253, text fig.
evansi Biggs, 1973. *Phenacolepas*. *Bull. B.M.(N.H.)*, *Zool.*, **24**: 354, pl. 2, figs. 3–4.
farsiana Biggs, 1973. *Timoclea*. *Bull. B.M. (N.H.)*, *Zool.*, **24**: 398, text figs. 9a–c, pl. 9, figs. 1–4.
fasciata Biggs, 1937. *Melanopsis doriae* var. *J. Conch.*, *Lond.*, **20**: 348.
hyalopunctata Biggs, 1937. *Helicella millepunctata* var. *J. Conch.*, *Lond.*, **20**: 344.
iranica Biggs, 1937. *Monacha*. *J. Conch.*, *Lond.*, **20**: 343.
jugosa Biggs, 1971. *Dahlakia*. *J. Conch.*, *Lond.*, **27**: 222, pl. 7, fig. 2.
leilae Biggs, 1971. *Dahlakia*. *J. Conch.*, *Lond.*, **27**: 221, pl. 7, fig. 3.
majeeda Biggs, 1973. *Cuna*. *Bull. B.M.(N.H.)*, *Zool.*, **24**: 387, text figs. 7a–c, pl. 6, fig. 5–8.
mimele Biggs, 1946. *Armenica (Creniclavus)*. *J. Conch.*, *Lond.*, **22**: 224, text fig.

- mulawana* Biggs, 1969. *Tivela*. *Arch. Moll.*, **99**: 205, figs. 1–2.
nigra Biggs, 1934. *Melanopsis doriae* var. *J. Conch., Lond.*, **20**: 60.
obscura Biggs, 1937. *Theodoxus doriae* var. *J. Conch., Lond.*, **20**: 349.
omanensis Biggs, 1973. *Phenacolepas*. *Bull. B.M.(N.H.)*, *Zool.*, **24**: 354, pl. 2, figs. 5–6.
pallida Biggs, 1962. *Melanopsis doriae*. *J. Conch., Lond.*, **25**: 71.
pelidne Biggs, 1946. *Ena* (*Ena*). *J. Conch., Lond.*, **22**: 223, text fig.
pirenelloides Biggs, 1971. *Dahlakia*. *J. Conch., Lond.*, **27**: 222, pl. 7, fig. 4.
reshtensis Biggs, 1931. *Clausilia*. *J. Conch., Lond.*, **19**: 164, text fig.
rhodea Biggs, 1958. *Littorina* (*Melaraphe*) *scabra* var. *J. Conch., Lond.*, **24**: 272.
striata Biggs, 1971. *Dahlakia*. *J. Conch., Lond.*, **27**: 222, pl. 7, fig. 1.
urieli Biggs, 1966. *Littorina*. *J. Conch., Lond.*, **26**: 137, pl. 7, figs. 1–2.

References

- Crowley, T.E., 1973. Obituary Herbert Edwin James Biggs 1895–1973. *J. Conch., Lond.*, **28**: 131–132, pl. IV.
(Smythe, K.), 1974. Publications of the Revd. H.E.J. Biggs. *J. Conch., Lond.*, **28**: 262–263.
Ussishkin, D. 1980. The Ghassulian shrine at En-Gedi. *Tel. Aviv, J. Tel. Aviv Univ., Inst. Archaeology* **7**: 1–44. □

BOOKS AND JOURNALS FOR SALE

A number of conchological books and journals will be available for purchase at the AGM of the Society to be held on 19 March 1994. The books are part of the library of a late member of the Society and are being sold on behalf of his widow.

The books include such important publications as:

- Jeffrey's five volumes of *British Conchology*, 1862–69
- Books by Reeve, Adams, Rimmer, Woodward, Kew, Step and Taylor, J.W., as well as others including a partial run of the *Journal of Conchology*.

This will be perhaps the only opportunity most members have of acquiring some of these publications.

Marine Mollusc Recording Progress in Sea Areas S13 and S14

Ian Killeen

Felixstowe, Suffolk

I took on the responsibility as Area Representative for Sea Areas S13 (Thames) and S14 (East Channel) in 1990. Since that time I have undertaken systematic recording and tried to generate some enthusiasm for fieldwork in these areas. Apart from the well-known strandlines at Sandwich Bay and Camber, this has always been regarded as an unfashionable area for marine conchologists to work.

The live habitats in particular have received little attention and therefore the recent updated Atlas (Seaward, 1990) gives the impression that this stretch of coast is malacologically impoverished. It is well known that many species reach their eastern limit in the Channel at the Isle of Wight. It might also be presumed that the Thames funnel with its lower water quality and lack of rocky shores would be species poor. However, there are extensive areas of chalk platform between Peacehaven and Margate which may provide relatively diverse faunas.

Recent marine and non-marine survey work has demonstrated the value of recording using a fine unit of mapping. Following the guidelines recommended by the Hon. Marine Recorder, basemaps have been constructed with grid units measuring 2 minutes Latitude by 2 minutes Longitude (approximately 2.3 km x 3.8 km). See Figures 1 and 2.

Visits have been made to a number of shores in both S13 and S14. In Thames most of these have been between Felixstowe and Clacton and in East Channel between Peacehaven and Rye. In addition to littoral work I have been able to do some dredging east of Newhaven (Nick Light – *Aquamanda*) and have participated in the MAFF Young Flatfish Surveys off Dungeness and Mersea Island. The 'squares' for which I have (post-1990) records for more than five species are also shown on Figures 1 and 2.

Even in a rather short timespan and with relatively few site

visits a great deal of information has been obtained including range extensions, new Sea Area records and so on. It is neither practical (or interesting) to give a full account of these new data but there are several sites or species that merit comment:

Small gastropod species

Wherever possible weed samples have been analysed and the results show that the small gastropod species apart from *Rissoa parva* and *R. interrupta* are less common and diverse at the eastern end of the Channel. However, *Pusillina inconspicua* has been found commonly just offshore as far east as Hythe and has recently turned up off the Essex coast; *Skeneopsis planorbis* and *Omalogyra atomus* were both newly recorded for S13 at Broadstairs. *Onoba semicostata* has only been found three times in S14 and once in S13. The host of the rare aclid *Graphis albida* has been determined and live snails found at Beachy Head and Birling Gap.

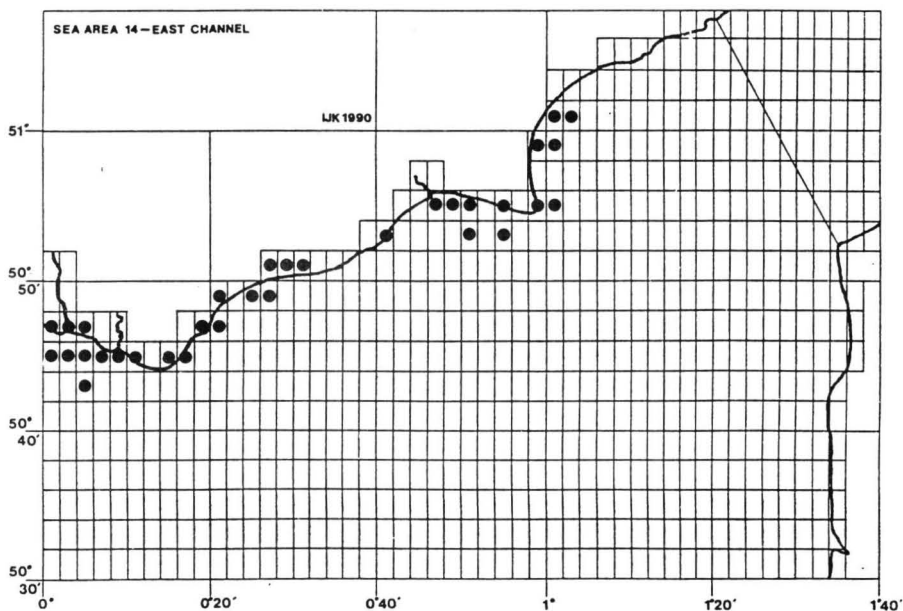


Fig 1. Basemap for S14 showing 'squares' with >5 post-1990 records (actual area extends to 50°00'N)

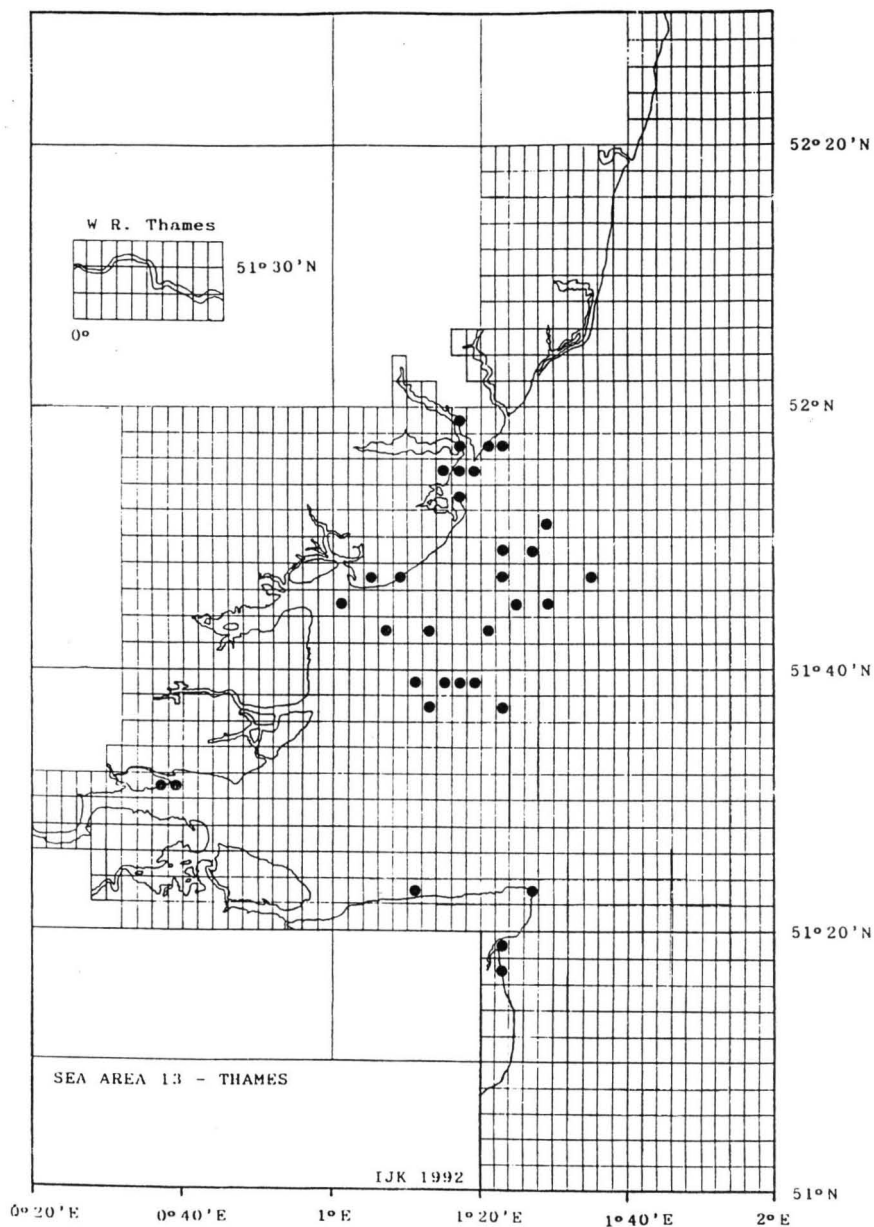


Fig. 2. Basemap for S13 showing 'squares' with >5 post-1990 records (actual area extends to 2°30'E).

Pyramidellids

The success in locating this poorly-known ectoparasitic group of snails lies in identifying and sampling their hosts (usually tube dwelling polychaetes). The present survey has revealed that *Odostomia plicata*, *Partulida spiralis* and *Noemiamea dolioliformis* are widespread and locally abundant in both Sea Areas. Others such as *Odostomia turrita* and *O. unidentata* are much less common and usually sub-littoral.

Nudibranchs

Apart from *Acanthodoris pilosa* which occurs almost everywhere, nudibranchs are far less common and species diverse than on the west coast. There are some exceptions though: a visit to Newhaven inner breakwater yielded five species including *Polycera quadrilineata* and *Jorunna tomentosa*. Last winter *Cuthona viridis* and *Ancula gibbosa* could be found in great abundance around the vicinity of Felixstowe and Harwich, the latter occurring in dozens on virtually every piece of hard substrate.

Sub-littoral records

All of the offshore records for S13 result from two days at sea with MAFF last September. Although a two-metre beam trawl is not the ideal gear for sampling infauna, when the substrate is silty or muddy a reasonable amount of benthos is sometimes brought up. Even with these restrictions the work yielded a significant quantity of new records, particularly bivalves but also rissoids and pyramidellids. In S14, the work off Dungeness in 1992 was similarly profitable; unfortunately severe weather prevented me from participating in the 1993 survey. Dredging work around Newhaven on the muddy silt that occurs off the end of the chalk platforms has revealed a distinct community of species including *Mangelia nebula*, *Hinia pygmaea* and *Polinices polianus*. A small population of *Epitonium clathrus* was recently found off Cuckmere Haven.

There is no doubt that recording in the east Channel, East Anglia and particularly the Thames estuary is hard work compared to west Scotland for example. However, it is only by carrying out a systematic survey and visiting the less rich sites

that a detailed insight into the true status and distribution of our marine fauna can be gained. I would be delighted if the Society's members would venture into these areas. I can supply potential contributors with an information pack and suggestions for shores to visit.

Reference

Seaward, D.R., 1990. *Distribution of the marine molluscs of north west Europe*. Nature Conservancy Council, Peterborough. □

MALACOLOGICAL PIONEERS

Saturday 22 October 1994

An all-day meeting organised by the Malacological Society with the Conchological Society and the Society for the History of Natural History will be held in the Linnean Society, Burlington House, Piccadilly on Saturday 22 October 1994. The subject is *Malacological Pioneers*.

Talks will cover a broad range of topics including: the long dawn of malacology; social aspects; fieldworkers and collectors; explorers and expeditions; interactions and revolutionary ideas and much, much more!

Speakers will include: David Allen, Robert Cameron, Hellena Chesney, Ron Cleevely, Lawrence Cook, Peter Dance, Peter Davis, David Heppell, Fred Naggs, and Richard Preece.

Full details will be given in the next *Newsletter*. For further information contact Elizabeth Platts, [REDACTED]
[REDACTED] Winchester, Hants SO22 6QR (Tel. [REDACTED]).

An Early Reference to Pearl Fishing in the River Tay, Perthshire

Michael A. Taylor

*Keeper of Natural Sciences, Perth Museum and Art Gallery,
George Street, Perth PH1 5LB*

Recent press coverage of the dispute over ownership of a particularly fine example of a Tay pearl from the freshwater mussel *Margaritifera margaritifera* has once again brought the potential presence of 'gems' to the attention of the public. The species now has a measure of protection and although unauthorised depredation still occurs it is no longer on the scale described by Coates (1881) when 'In recent times, the Tay from Perth upwards, has been the principal seat of the pearl-fishery in Britain but owing to the large numbers of mussels which have been destroyed by the fishers the number of pearls obtained has gradually diminished, so that the industry has now ceased to be of any considerable importance. Still, you must all be familiar with the scene presented by the river during a drought in summer, when scores of children may be seen wading about in the shallow water searching for the coveted treasures.'

The extract which follows (Adamson, 1638, p.91) describes the adventures of the narrator, Henry Adamson, and his friend James Gall during a trip from Perth in a small boat. Although the work containing the reference was first published in 1638, internal evidence indicates that it was written about 1620. Interestingly, as well as showing that the get-rich-quick mentality is not exclusively the hallmark of the late twentieth century, it also seems to indicate that in the seventeenth century the mussels were regarded, locally at least, as a source of food.

This time our boat passing too nigh the land,
The whirling stream did make her run on sand,
Aluis, we cry'd, but all in vain t'abide,
We were constrain'd, till flowing of the tide
When Master Gall, quod I, even for my blessing,
Now let us go, the pretious pearles a fishing,

Th'occasion serveth well, while here we stay
To catch these muscles, you call toyts of Tay,
It's possible if no ill eye bewitch us
We jewels finde, for all our days t'enrich us,
Content said Gall; then off our shoes we drew
And hose, and from us we our doublets threw,
Our shirt-sleeves wreathing up, without more speeches,
And high above our knees we pulling our breeches,
In watrs go, then straight mine arms I reach
Unto the ground, whence cleverlie I fetch
Some of these living pearled shells, which do
Excell in toucching and in tasteing too,
As all who search, do by experience try,
And we oftimes; therewith I loudlie cry.
Good Master Gall, behold I found a pearle,
A jewel I assure you for an Earle.
Be silent, said good Gall, or speak at leasure,
For men will cut your throat to get your treasure ...

References

- Adamson, H., 1638. *The Muses Threnodie: or Mirthful Mournings on the death of Mr Gall*. Edinburgh. (New edition with historical footnotes by James Cant, 1774, Perth.)
- Coates, H., 1881. The pearl mussel (*Unio margaritiferus*) of the Tay. *Proc. Perth. Soc. Nat. Sci.*, Sessions 1881–82 to 1885–86: 11–14. □

A History of Shell Collecting

In 1986 E.J. Brill of Leiden published *A History of Shell Collecting* (the extensively revised second edition of my first book *Shell Collecting: an Illustrated History*, published by Faber & Faber in 1966). I have some glassine-wrapped copies of the second edition for sale at £12 each – less than half the published price – plus postage. My signature may be added on request, at no extra cost!

S. Peter Dance, [REDACTED] Carlisle [REDACTED]

Slugs by Mail

Stella M. Davies

South Croydon, Surrey

As the recipient of assorted packages containing live slugs which have been sent for identification, I wish to draw attention to some factors affecting the condition in which the animals arrive. The subject was covered in 1964 by A.E. Ellis, who pointed out that live snails could be classified by the Post Office as 'prohibited articles' (which probably remains true in 1994). He wisely advised:

Provided the snails are securely restrained, so that they cannot bite the postman, and the packet is not provocatively labelled 'Live Stock', detection is improbable.

A secure package is still the first essential, although the tobacco tins of 1964 are now more often replaced by plastic containers. Ventilation holes are not needed, and are not advised: they can allow the escape of small slugs or oozing liquid. Land snails mostly need to be kept dry, so that they remain at rest during transit, and although slugs must have some damp packing material, the commonest fault I have found is excessive moisture. Slugs which have been collected in damp conditions may in fact rest more comfortably after some slight dehydration.

They are better without any food which could perish: rotting cabbage can produce lethal gas and liquid. A hungry slug will eat whatever it is packed in, so the material should be wholesome or harmless, usually moss or paper – avoiding coloured papers which make some slugs look most peculiar! Larger slugs may need rather firmer packing, to ensure that they don't get thrown about if they lose their grip. One slug arrived completely limp and apparently dead after sloshing about in a glass tube with too much space and too much moisture. It eventually revived after lying for several hours in fresh air, but it could have been spared its ordeal if it had been provided with a piece of bark or rough cardboard wedged in the tube for a foothold, and absorbent material to take up exuded liquid. If a number of slugs are packed in one container, they don't need a lot of space, but they must have enough packing

in which they can settle without irritating one another. Aggression is not usually a problem among slugs of a similar size, if they are going to be unpacked and fed within a few days. Left for longer, a large slug may remove the entire pigmented layer from the back of another! While healthy, carefully-packed slugs will remain in good condition for weeks, it is obviously better to avoid delay as far as possible, and especially in warm weather.

After the postman and the slugs, the recipient also would appreciate some consideration. It helps to know just how many slugs to look for in the packing, and it is particularly useful to be told how any tentative identifications have been reached. When we know how misidentifications arise, we will know where to provide further information, or clarification of existing information.

Reference

Ellis, A.E., 1964. Post Living Mollusca. *The Conchologists' Newsletter* No. 11:68. □

Newsletter Binders

Wondering how to file the new style *Conchologists' Newsletter*? Then worry no more because we have now produced an attractive, high quality binder. It is dark green with the *Conchologists' Newsletter* and the *Aporrhais* logo embossed in gold on the spine. Each binder will take 12 issues.

The binders come prepacked for mailing in cardboard cases in PAIRS. The cost by post for a pair will be £9 inc. p&p.

For members who wish to have only a single binder mailed to them the cost will be £5 inc. p&p. At indoor and field meetings they will be available singly at £4 each.

Postal orders should be sent to:

Jane Reynolds, [REDACTED], *Holloway, London* [REDACTED]

enclosing the correct remittance.

(Cheques made payable to the Conchological Society).

Conchology Made Easy

June Chatfield

Alton, Hants

The nationwide network of County Wildlife Trusts operate Watch groups to introduce children to natural history and conservation – Watch is the junior wing of the Royal Society for Nature Conservation. Snails make very popular subjects for Watch field meetings, and children, being lower on the ground and sharp-eyed, make good collectors. Recently I was involved in leading one of these meetings for the Wiltshire Wildlife Trust at Pepperbox Hill near Salisbury.

I took along a display board and started by pointing out the largest, smallest, most colourful, the hairy and the different shapes of shells. We then proceeded to a discussion on where molluscs lived. Suitably primed the group then examined the chalk grassland habitat near the car-park and came across large numbers of *Cernuella virgata* and *Candidula intersecta* on the plants recognised by their characteristic chalky white shells and variable brown markings. *Monacha cantiana* and *Trichia hispida* were also plentiful in the grass. The challenge to find the smaller snails was duly taken up and one lad proved remarkably proficient with these, soon turning up with *Vertigo pygmaea*, *Pupilla muscorum* and *Vallonia excentrica*. These prompted the use of hand lenses which were also used to examine the hairs on the shell of *Trichia hispida*, a feature which rarely fails to fascinate.

A walk down the track gave us the opportunity to look at a different habitat – a small beech wood. Searching on tree trunks we found a number of the spindle-shaped snails like *Cochlodina laminata*, *Clausilia bidentata* and *Ena obscura*. Among the dead leaves were specimens of *Helicigona lapicida* with its distinctive sharp keel. Undersides of logs yielded *Discus rotundatus*, *Aegopinella nitidula*, *Oxychilus cellarius* and *Carychium tridentatum*. The thin-shelled *Oxychilus* provided the opportunity to see the heart beat viewed through the underside of the shell, but

the other expected 'party trick', the garlic snail, did not put in an appearance.

Altogether, in less than two hours, we found 22 species of snail and ended the meeting in the car-park where children were given card and glue to stick on empty shells and write the names on self-adhesive labels. We also looked at some of the distribution maps in the atlas. Such activities introduce children to special areas of natural history, and, one never knows, they could maintain the interest and become future members of the Society. If any members can spare a few hours to offer their services to the local Watch group of their County Wildlife Trust, it will help engender an interest and regard for molluscs in young people. Many naturalists can trace their interest in natural history from childhood so this is the time for them to begin. □

SHELL LIFE

A field course on molluscs in Somerset

7-14 September 1994

Tutor: Dr June Chatfield

Shell life: the Nettlecombe mollusc course

Molluscs – snails, mussels and their allies – live on land, in freshwater and in the sea. This course explores those found in the area around Nettlecombe in north Somerset, discussing their habitat, adaptations and way of life. Microscopes will be available in the laboratory for the study of the smaller specimens. Identification will be covered. Beginners welcome. Also useful for nature reserve wardens wanting to study some of the invertebrate groups which are not too difficult. Course fee £235 (residential).

Bookings and further details from:

*The Leonard Wills Field Centre
Nettlecombe Court
Williton, Taunton, Somerset TA4 4HT.*

Taking the Ug(h) out of Slug

Elizabeth Platts, [REDACTED]
Winchester, Hampshire [REDACTED]

I recently enjoyed talking to a group of ten-year-old girls on the subject of slugs and snails. Since the general, uninitiated reaction to anything to do with slugs is 'ugh' – I forewarned them that I wanted open-minded listeners with none of the usual prejudiced views.

I first showed a selection of slides of molluscs from all groups – land, freshwater and marine – and encouraged questions throughout. The girls handled dead shells and shell artifacts and also live specimens of water snails, garden slugs and snails and giant African snails. They ended the afternoon by drawing the live specimens. No-one refused to touch them and there was lively discussion.

For homework the girls wrote short poems and I thought the following deserved a wider audience ...

Out for tea by Sammy snail

I slithered down the newly cut grass bank,
Leaving my home that's a ditch, dark and dank.
My brother slowly sliding behind Mum and me,
We're eager and hungry for a lettuce leaf tea.

Although our shells offer us protection,
It doesn't mean we're safe from detection.

'Look out! The thrush is about!'
My little brother cries out.
There are many shells on that large grave-stone,
We all know, that some poor snail made home alone!

We all travel the longer, safe route,
Taking cover under the beetroot.

Sighted at last, long luscious rows and rows
of 'Web', 'Curly', 'Round', 'Flat' and 'Cos' I suppose
'Come on lads, it's time to eat,'
Such a green, salad treat.

Georgina Knot

Snail, snail

Snail, snail with your portable house
How do you slide as quiet as a mouse.
Do they help you to see over the tops
 of all the objects in your way.
When the night dawns do you crawl
 to the nearest sun-warmed wall
To at least have a feast
On all the green grass
And food growing there.

Alexandra Knatchbull

Slugs and snails

Lots of people say ugh
At my lovely little slug.
A slimy trail he leaves behind
When he goes to find
A juicy lettuce leaf
On which he will feast.
My cute little snail
Will also leave a slimy trail
As he slithers along my hand
Or on desert sand.
He crawls along on one big foot
Which feels tough like a Wellington boot
And then he will eat all your leaves,
That will not make you very pleased.

Ella Kaye

Molluscs? Ugh!

Before we had a talk about some snails and a slug,
Our immediate reaction was an overwhelming 'UGH!'
Jenny and Grizelda were completely terrified
Edwina got so worried that she just sat and cried,
 with fright when she saw that ugly bug, the slug.
When we saw some slides of many different snails,
Jenny calmed down and Grizelda ceased her wails.
Edwina wiped away her frown.
And everybody, by the end, calmed down.
Now we think of molluscs in a very different way.
We're beginning to respect them more and more each day.

Caroline Albin

The snail

I saw a snail crawl up a brick,
At the very sight my mind went click.
It moved so silent and so slow,
A small and curled up little foe.
Tentacles stretching everywhere,
Up, up, up into the air.
A slimy body in a banded shell,
It must have secrets it wants to tell.

Isobel Allen

The snail

I saw a snail make a glittery trail
It was slithering very slowly across the wall
A spiral shell
Brown, yellow and smooth
Shining bright in the sunlight.
How slowly he moves!
Carrying his house upon his back
Where can he be going?
Will he get to the end of the wall?
Or maybe nowhere at all!

Marie-Claire Jefferies □

CONCHOLOGY IN CRETE

Two weeks in May 1994

Anyone interested?

Please phone Sue Davies on



Glandford Shell Museum, Norfolk

June Chatfield

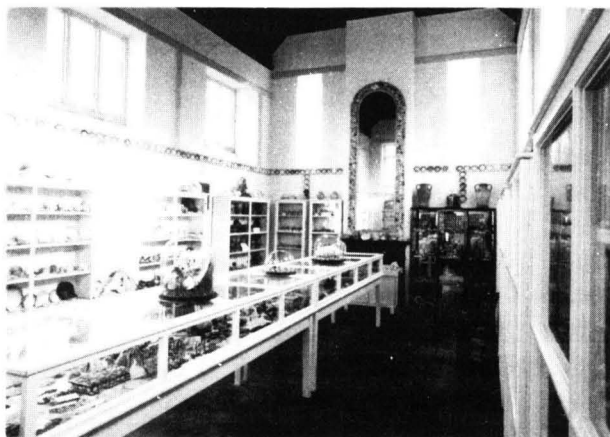
Alton, Hampshire

The Glandford Shell Museum is a surprising discovery in the Norfolk countryside and one which Conchological Society members may like to investigate when travelling to Norfolk.

The collection was made by Sr Alfred Jodrell who inherited the Bayfield Estate when he was 35. Some of the shells had their origin in his own travels around the world. They were once kept at Bayfield Hall, but Sir Alfred was encouraged to display them more effectively by his two sisters and the result was a small museum building of flint and brick built in 1915 between the newly restored church and the road. The museum fits in with the surrounding architecture of the village, much of which he also built. Sir Alfred Jodrell died in 1929 and the museum then came under the Ministry of Education as a charitable trust.

The collection is not a scientific one and the shells of the original holding are largely unprovenanced tropical marine shells. Instead they were gathered to display purely as beautiful and interesting objects for their colour and shape. The walls of the museum are lined by cases packed with colourful shells, mostly from the tropics. It is a lofty room and lit entirely by natural light from long, narrow windows above the level of the cases: there is no alternative lighting and for this reason the museum is only open in the morning during winter. The collection continues to be added to with gifts of shells which are incorporated in the displays and some labels have been introduced. The concept of shell is taken broadly so there are also corals, fossils, minerals, teeth and tusks.

One of the cases contains shell craft: mother-of-pearl work, carved shells (including inscribed cowries like those in John Llewellyn-Jones's articles in *The Conchologists' Newsletter* No. 115, December 1990 and No. 121, June 1992), cameos, shell collage and animals made from shells. The policy of the Trustees is to keep the museum as close as possible to the plans of its founder.



Glandford Shell Museum

Glandford is on the Cley road, an unclassified road between Holt and Cley in north Norfolk. The museum is open 1 March – 31 October, Mondays – Thursdays, 10.00 – 12.20 and 2.00 – 4.30, with the hours in November and February reduced to Mondays – Thursdays, 10.00 – 12.30. It is closed on Sundays and during December and January. There is a very modest entrance charge. The Curator may be contacted on Cley 740081.

When visiting the museum, the adjacent church on high ground overlooking the village is also of interest. It is a medieval church but was a derelict ruin through the late eighteenth and nineteenth centuries until it was restored by Sir Alfred Jodrell between 1899 and 1906, when he also rebuilt the village.

Some brief investigations on a cold late October day in the churchyard and surroundings of the museum produced the following land molluscs: *Vallonia excentrica*, *V. pellucida*, *Oxychilus draparnaudi*, *Deroceras reticulum*, *Trichia striolata*, *T. hispida* and *Helix aspersa* and doubtless there are others to be found. □

Display Boards

A set of display boards promoting the study of mollusca and the work of the Society is now ready for use. Anyone who is organising/attending an event at which these boards could be displayed, or anyone who knows of suitable venues to display them, e.g. libraries, museums etc., should contact:

Jane Reynolds, [REDACTED]
Holloway, London [REDACTED]

Field Meeting in East Oxfordshire 3 April 1993

John Skinner

Westcliffe-on-Sea, Essex

Twenty members of the Society assembled at Princes Risborough railway station, in fine weather, for an interesting meeting that combined fossil collecting with land snail recording.

Our first stop was at a large working chalk quarry south of Chinnor, about 15 miles east of Oxford at the base of the Chiltern escarpment. We walked through the quarry to an area where chalk rubble had been dumped. The rock had the typical grey colour of the hard Lower Chalk and some members found the characteristic ammonite *Schloenbachia varians*. Personally, I collected specimens of the land snail *Candidula gigaxii* which was present in abundance, with *C. intersecta* on a south-facing slope, the first time I had seen the former species.

A short drive took us to Woodeaton, about 6 km NNW of Oxford city centre. The quarry offered an excellent exposure of Jurassic limestones and shales of the Great Oolite group. The beds exposed range from, at base, the grey clay of the Hampen Marly Beds to, at the top, the Wychwood Beds. Collecting was fairly easy from blocks and debris on the quarry floor. Brachiopods were especially abundant, especially *Terebratula (Cererithyris) intermedia*. The brachiopods were densely packed in two thin strata, each only a few centimetres wide, beneath the White Limestone. Some large blocks of clay yielded an excellent series of the bivalve *Liostrea hebridica*. Crinoid stem fragments and sea urchin spines were abundant at the foot of the cliff. We were, in addition, treated to a most useful exposition of the site by member Phil Palmer. Land snails found at this site included *Candidula intersecta*, *Clausilia bidentata*, *Lauria cylindracea*, *Monacha cantiana*, *Punctum pygmaeum* and *Trichia striolata*. A species of *Vertigo* was collected from an ivy-covered wall.

With weather deteriorating, a visit was made to Sydlings Copse (SP 557 097), a BBONT reserve in a valley only 4 km north-east of

Oxford city centre. The rich snail fauna, much in evidence in the pouring rain, included the following:

<i>Acanthinula aculeata</i>	<i>Discus rotundatus</i>
<i>Acicula fusca</i>	<i>Euconulus fulvus</i>
<i>Aegopinella nitidula</i>	<i>Columella edentula</i>
<i>Azeca goodalli</i>	<i>Oxychilus helveticus</i>
<i>Carychium minimum</i>	<i>Pomatias elegans</i>
<i>C. tridentatum</i>	<i>Trichia hispida</i>
<i>Clausilia bidentata</i>	<i>T. striolata</i>
<i>Cochlodina laminata</i>	<i>Vitrea crystallina</i>

Thanks to R. Boyce and R.E. Hill who submitted many of these records via Ian Killeen.

On behalf of all the members present I would like to thank BBONT and the quarry owners for permission to visit and collect from the sites. Special thanks to Jan Light for organising such an interesting field meeting. □

Journal of Conchology

We are able to offer the following parts of the *Journal of Conchology* at a special discount price for a period of six months:

Volumes 26–29	£2.50 per part
Volume 30	£3.75 per part
Volumes 31 & 32	£3.75 per part (half price)
Volume 33	£7.50 per part (half price)
Volume 34	£15.00 (unchanged)

The above prices are for Members only and include postage. Orders should be sent to: Adrian Norris, City Museum, Municipal Buildings, Leeds LS1 3AA (Tel. 0532 438311). A limited quantity of complete volumes will be on sale at the AGM on 19 March. If you wish to reserve sets and avoid postage costs, ring Ian Killeen (0394 274618).

Please note that a full range of the Society's publications is available from Adrian Norris at the above address. We hope to include a new price list with the next *Newsletter*.

The Legend of the Pansy Shell

Fred R. Woodward

Art Gallery and Museum, Kelvingrove, Glasgow G3 8AG

During a visit to South Africa in 1990 my mother made a small collection of shells which she presented to Glasgow Museum including one purchased from a local dealer labelled 'Pansy Shell'. This proved to be the test of a sea-urchin but was accompanied by the following poem:

The Legend of the Pansy Shell

*There is a pretty little legend,
That I would like to tell
Of the birth and death of Jesus
Found in this little shell.*

*If you examine closely
You'll see that you find here
Four nail holes and a fifth one
Made by the Roman's spear.*

*On one side the Easter Lily
Its centre is the Star
That appeared unto the shepherds
And led them from afar.*

*The Christmas poinsettia
Etched on the other side
Reminds us of his birthday
On happy Christmastide.*

*Now break the centre open
And here you will release
The five white doves awaiting
To spread goodwill and peace.*

*This simple little symbol
Christ has left for you and me
To help us spread His Gospel
Through all eternity. □*

Applications published in the *Bulletin of Zoological Nomenclature*

The following Applications were published on 16 December 1993 in Vol. 50, Part 4 of the *Bulletin of Zoological Nomenclature*. Comment or advice on these Applications is invited for publication in the *Bulletin* and should be sent to the Executive Secretary, ICZN, c/o The Natural History Museum, Cromwell Road, London SW7 5BD.

Case 2874 *Chtenopteryx* Appellöf, 1890 (Mollusca, Cephalopoda):
**proposed confirmation as the correct original
spelling.**

Giambattista Bello

*Istituto Arion, Casella Postale, 70042 Mola di Bari,
Italy.*

Riccardo Giannuzzi-Savelli

Via Mater Dolorosa 54, 90146 Palermo, Italy.

Abstract. The purpose of this application is to confirm as correct the original spelling of the name *Chtenopteryx* Appellöf, 1890 for a genus of comb-fin squids. The unjustified emendation to *Ctenopteryx* was made in 1900, and this spelling has been universally used until very recently although with citation of Appellöf as author. However, it is a junior homonym of the coleopteran subgeneric name *Ctenopteryx* Flach, 1889. The most appropriate course of action is to confirm Appellöf's original spelling and to adopt the corrected spelling CHTENOPTERYGIDAE Grimpe, 1922 for the derived family-group name.

Fourth Edition of the International Code of Zoological Nomenclature

The International Commission on Zoological Nomenclature proposes to publish a new edition of the Code, taking into account the large number of possible amendments which have been received. It is planned that the Fourth Edition will be published during 1995 and that on 1 January 1996 its provisions will supersede those in the current (1985) edition.

The Commission's Editorial Committee met in Hamburg from

12–16 October 1993 to prepare a discussion draft for the new edition of the Code. Copies of this draft will be sent without charge to all subscribers to the *Bulletin of Zoological Nomenclature* and to members of the American and European Associations for Zoological Nomenclature. Any other institution or individual may order a copy from the Executive Secretary, ICZN, c/o the Natural History Museum, Cromwell Road, London SW7 5BD. Bank charges on currency exchange make it uneconomic to charge the cost of printing and postage (£3 or US\$5) except for payment in sterling or US dollars. The draft will therefore be sent free of charge, but those able to pay in sterling or US dollars are asked to enclose a cheque for £3 or US\$5 to cover the cost.

Before completing the definitive text of the Fourth Edition, the Commission will (in accordance with Article 16 of its Constitution) carefully consider all comments and suggestions on the draft. Zoologists and others are asked to send these to the Executive Secretary of the Commission at the above address as soon as convenient, and in any event not later than February 1995. □

FOR EXCHANGE OR SALE

I have Volumes X and XI of the *Journal of Conchology*, each bound in dark green cloth and in good condition.

I would like to exchange them for books on mollusca in the Wayside and Woodland series, or sell them. Contact:

John Ward, [REDACTED], Kettering, Northants
[REDACTED]

Diary of Meetings

The diary is presented in date order and includes both meetings of the Conchological Society of Great Britain and Ireland and meetings of molluscan interest run by other organisations. Fuller details of Conch. Soc. field meetings are given on page 319.

Saturday 19 March, London: AGM and Presidential Address. The Natural History Museum at 14.30.

Friday 8 to Sunday 10 April: An introduction to molluscan identification and ecology with a particular focus on freshwater species. Tutor: Ian Killeen..Full details from Edward Jackson, Field Studies Council, Flatford Mill Field Centre, East Bergholt, Colchester, Essex CO7 6UL. Tel. (0206) 298283.

Saturday 9 April, Skipton Woods, North Yorks: Field meeting of the Yorkshire Conchological Society. Meet at the main car park in Skipton (SD993517) at 11 00.

Saturday 16 April, London: Conch. Soc. indoor meeting. The Natural History Museum at 14.30.

Saturday 23 April, north Gloucestershire. Conch. Soc. field meeting led by David Long ().

Saturday 30 April, Godalming. Slug workshop led by Stella Davies. Book through Ian Killeen ().

Saturday 7 May, Egton Bridge, North Yorks. Field meeting of the Yorkshire Conchological Society. Meet at the car park near the church (NZ805053) at 11.00.

Saturday 14 and Sunday 15 May, Radnorshire. Conch. Soc. field meeting led by Dave Boyce ().

Saturday 21 May, London. Conch. Soc. indoor meeting. The Natural History Museum at 14.30.

Saturday 4 June, South Downs. Conch. Soc. field meeting led by Brian Coles ().

Thursday 23 to Sunday 26 June, Anglesey. Conch. Soc. field meeting led by Tom Clifton () and Tim Worsfold.

Saturday 16 July, Poole Bay. Conch. Soc. dredging trip. Book with Jan Light (). □

Field Meetings 1994

Hon. Programme Secretary:

Ian Killeen

Felixstowe, Suffolk

Tel.

Important

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

Saturday, 23 April

NORTH GLOUCESTERSHIRE

Leader: David Long

We will visit the *Ibex* zone of the Lower Lias at Northcot Brick & Tile Works (SP182379) by kind permission of the management. Please note that visitors must be over 18 for Health & Safety at work indemnity reasons. Waterproof footwear is required but not a hard hat. This visit will be followed by brief stops at two sites in the North Cotswolds to look for land and freshwater molluscs.

Meet at Moreton in Marsh railway station (SP206327) at 10.45 am.

Saturday, 14 and Sunday 15 May

RADNORSHIRE

Leader: Dave Boyce (Countryside Council for Wales,
daytime telephone

Saturday 14 May : Meet at Hay-on-Wye car-park (SO 229 422).

Morning: Pwylly-wrach SSSI (SO 165 327). Ancient ash-field maple broad-leaved woodland in Old Red Sandstone. A dingle woodland with abundant flushing situated in the valley of the River Ennig. Woods in the area are already known to support populations of uncommon woodland molluscs, e.g. *Phenacolimax major*, *Acicula fusca* and *Spermodea lamellata*. This site is likely to prove no exception. It lies in Brecknock district VC42, is part-owned by the Brecknock Wildlife Trust and lies entirely within the Brecon Beacons National Park.

Afternoon: Llanbwhllyn SSSI (SO 119 464). A natural mesotrophic lake with abundant aquatic vegetation, fringed by reedbeds and species-rich *Carex* fen. The mollusc fauna of the site is completely unknown, but should be of interest. The site is in Radnorshire district VC43 and is entirely owned by Welsh Water.

Sunday 15 May

Morning: Cilenni Dingle SSSU (SO 176 414). A broad-leaved dingle woodland overlooking the Wye valley. Similar comments apply as to Pwylly-wrach above. It is in Radnorshire district. Owned by the Woodland Trust.

1300: Rhosgoch Common NNR (SO 196 484). Potentially an outstanding mollusc site with a great diversity of fen, poor-fen and mire communities, plus extensive areas of carr woodland. Again, as with most sites in mid-Wales, little work has been done and hopefully exciting discoveries await! Owned and managed by the Countryside Council for Wales whose warden, Andrew Ferguson, will hopefully accompany us around the site. Within Radnorshire district.

Hay-on-Wye is a pleasant and convenient 'base' for our activities and in addition the River Wye is close at hand should anyone care to do any additional recording. The telephone number for Hay-on-Wye tourist information is (0497) 820144.

Saturday, 4 June

SOUTH DOWNS

Leader: Brian Coles [REDACTED]

An opportunity to examine the rich assemblage of snails in the woodlands and downland to the north of Brighton. The sites will include Newtimber Hill (TQ268128) and Wolstonbury Hill (TQ284138). The typical fauna includes *Acicula fusca*, *Azeca goodalli* and *Macrogastra rophii*.

Meet at Hassocks railway station (TQ304156) at 10.45 am.

Thursday 23 – Sunday 26 June

ANGLESEY

Leaders: Tom Clifton [REDACTED] and Tim Worsfold

This will be a mixed discipline meeting combining land snail sites in the mornings and marine habitats in the afternoons. Anglesey has a diversity of shores offering most types of habitat and some rich wetlands in the centre of the island. Members wishing to attend all or part of this meeting should contact Tom Clifton for a full itinerary, details of sites and meeting places.

It will be up to individual members to make their own accommodation arrangements; the Tourist Information Office, Salt Island Approach, Holyhead, Anglesey LL65 1DR [REDACTED] should be able to help. Three of the marine sites are on the west coast, one is on the north and the other on the north-east, so the west would probably be the best base.

Saturday, 16 July

POOLE BAY, DORSET

Leader: Jan Light [REDACTED]

Dredging in a rich area with a diversity of substrates. Space is limited to 10, therefore members should book with Jan immediately enclosing a £5 deposit (total cost will be c. £17).

— ♦ —

EXTRA EVENT

Saturday, 30 April

SLUG WORKSHOP

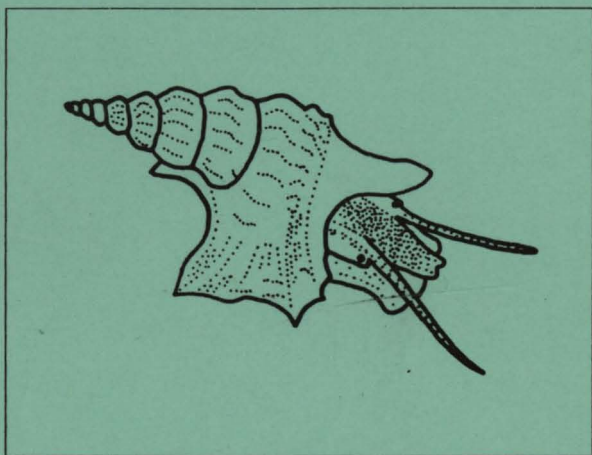
We will be holding an informal slug workshop with expert tuition from Stella Davies at the house of Jan Light at Godalming, Surrey. This is primarily intended for members who are actively involved in mollusc mapping and who wish to get to grips with this often difficult group. Space is limited and there will be a fee to cover expenses, hand-outs, etc. Members wishing to attend should book with Ian Killeen ASAP.

The Conchologists' Newsletter

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June 1994



Conchological Society of Great Britain & Ireland
(Founded 1876)

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The National Shell Collection, Sultanate of Oman

Michael Gallagher

Natural History Museum, PO Box 668, Muscat 113, Sultanate of Oman

Some projects can be carefully planned, others just 'happen'. The shell collection in Oman's Natural History Museum is the result of a bit of both – and a lot of dedicated work by many enthusiasts. Now occupying 30 cabinets, each of 24 trays of cartons of shells, with some 20,000 specimens of nearly 800 species of shells from the Sultanate's seas, land and freshwater, it has been built up during the last ten years by voluntary effort.

It is the start of a comprehensive collection which, in time, will be in demand for study by scientists and students of the marine environment. Such a collection takes a long time to accumulate, and we would be neglecting our responsibilities if we did not make the most of our rare opportunities to add to it, for it is still incomplete.

Word about the Collection is spread by individual enthusiasts, by visiting groups who by special request are shown 'behind the scenes', also by the media and by means of a free leaflet issued at the reception desk of the Museum. In this way we gain friends and shell specimens from many parts of the Sultanate, though we are conscious of the fact that not everyone wishes to participate.

As each donation arrives it is accessioned in the Museum Register, prior to being cleaned and sorted by volunteer 'Friends of the Museum' (mostly expatriate ladies). Each lot is card-indexed, labelled and put away in alphabetical order by genus and species within the usual divisions of gastropod, bivalve, etc. The land and freshwater shells have their own cabinet. There is also a 'reference collection', which contains one or more examples of each species and is made available only when necessary.

How did this start, and what is its future? My involvement with shells started when a collection which I had made on Christmas Island, Pacific Ocean, in the mid-1960s was given to the late Mrs

Kathleen Smythe. I was on Bahrain Island at the time, and I was soon collecting for her there (1969–71), in the United Arab Emirates (1971–73) and here in Oman in March 1973, April 1975 and from late 1976 onwards.

In 1980 it became clear that a public exhibition of the Sultanate's natural history was required by the Minister of National Heritage and Culture in a recently-completed building in the Ministry compound, and in January 1982 I was transferred from the Palace office of the Adviser for Conservation (where I had been responsible for field studies for five years) to set up the Natural History Museum.

Mrs Smythe, who had already visited Oman in 1980, immediately offered her help to plan the mollusc displays, drawing on her extensive and growing knowledge and field experience of the molluscs and their environment in the Arabian Gulf and Oman, and of other museum collections. We were fortunate, too, in having the expertise of Dr June Chatfield, who had only recently left the Melvill-Tomlin Collection in the National Museum of Wales, Cardiff.

To tell the story of Oman's molluscs adequately in the new museum, we made many more collections from rarely-visited parts of Oman's coast and islands, and invited the help of others. Dr Don Bosch (a resident surgeon since 1954) donated many shells from his own collection. Even after selecting many examples for the public displays we were left with such a range of genera and species, laid out in fruit boxes on the floor of a spare room in the museum, that we had the nucleus of a good representative national study collection.

In 1983 the Minister, His Highness Sayyed Faisal bin Al-Said, accepted our plans and ordered steel cabinets from the USA, cartons from Remploy, a binocular microscope, a card-index cabinet, and a typewriter, etc., so that by 1984, during more visits from the UK, Kathleen Smythe had set up the basis of Oman's National Shell Collection. She had also successfully supervised the design of the mollusc part of the exhibition in the National History Museum, which opened to the public in late 1985.



Schoolgirls outside the entrance of the Oman Natural History Museum, near Muscat. The fossil tree-trunk on the right is 260 million years old.



Oman Natural History Museum, the Qurm Nature Reserve. Large shells and the small exhibit 'The Seas Around Us'.

The Museum is in the Ministry compound at Al Khuwayr, near the embassies and the sea, a few miles west of the capital city of Muscat. It has several public galleries, as well as offices, a library, laboratory space, and rooms which house the scientific collections, and it attracts about 25,000 visitors each year, most of them Omanis.

The mollusc exhibition is a colourful mix of text, photographs and real shells, which demonstrate, in five successive panels, the molluscs and their way of life and importance in Oman. First, the shells special to Oman are depicted (those first described from Oman, including endemics and near endemics). Then three panels describe the five larger Classes, the anatomy of typical representatives and their mode of life. A large exhibit shows the scene in the Qurm Nature Reserve nearby, where seven different habitats can be identified, examples of shells being shown from each. The whole display is designed to be of interest to visitors of all ages and culminates in a case which displays the largest shells known in Oman – a popular attraction.

The Collection has grown, managed by several Friends of the Museum, who carried out the curatorial tasks, identified what was possible from the Collection and from the then-inadequate reference library, and set to one side the inevitable queries. Mrs Smythe, who last visited Oman from December 1987 to January 1988, referred queries to specialists, but also researched in the British Museum (Natural History) and at Cardiff, where she had excellent co-operation.

Several Friends followed her lead, especially Mrs Elizabeth Bostock who over four years from 1987 to 1991 also visited other museum shell collections, including that at Manchester (the Melville and Standen Collections), and at Leiden in the Netherlands, and commenced a database on the Museum's newly-acquired computer. She had followed Judy Haines (February 1985 to February 1987), and was in turn followed by Mrs Christina Hagström from February 1991 to May 1992. Maureen Dargavel then managed the Collection until November 1992, since when we have had no curator and the Shell Room has been closed, apart from the need to open it for research by Dr Bosch and

his colleagues during the preparation of the forthcoming compendium of shells of the Gulf region, and by senior staff of the Sultan Qaboos University. We are now at the stage long forecast, when Omani involvement is crucial for the future of the Collection.

The Collection is, of course, not just for expatriates, though the danger of this misconception in Omani eyes is real. It is Oman's national collection and as such is for Omanis of the future. How best to obtain Omani involvement in any of the Museum's collections is a question we have been trying to solve for years. Attempts to recruit someone from the Ministry or from the Omani Civil Service to manage the Shell Collection have been unsuccessful (though we do now have capable Omani ladies in charge of the National Herbarium and the osteological collection). Now we must hope that a biology graduate from the Sultan Qaboos University (where there is no such collection) may be found who can be fired with the necessary interest and dedication. By agreement with the Dean of Science and the Head of Biology, visits and use of the Collection by Omani biology students are planned in 1994, which may promote interest and identify such a candidate.

After a visit in November 1992 Dr Graham Oliver (National Museum of Wales, Cardiff) reported that the Collection storage facilities are of a high standard and equal to national standards in Europe and North America. He noted that, of the Arab countries bordering the Arabian Sea, Oman is the only one with an already recognised and accessible museum-based collection. His far-seeing recommendations include the need for specialist advice, the expansion of the species and geographical representations by further collecting and by contributions from other government projects, the development of the database, and ultimately a merge of all Omani collections of marine invertebrates under one roof.

A feature of Oman's marine environment is the great variety in conditions geographically and seasonally. From the saline waters of the Arabian Gulf, through the deep Gulf of Oman and along the northern boundary of the Arabian Sea, Oman's seas stretch 1800 km to the border with the Republic of Yemen, along

rocky, sandy and muddy coasts, with important inlets, some of which have mangroves. Superimposed on this varied topography are the changes wrought by the reversal of the south-westerly current of the winter monsoon to the cold north-westerly current caused by the strong south-west winds of the summer monsoon. The latter winds cause upwellings of cold, bottom water, rich in nutrients, which fuel an explosion of life, from plankton and algae to the largest whales. The biota must be adaptable to these unique seasonal changes, and the forms of mollusc and the strategies they must adopt for survival make the study of the molluscan fauna of Oman of absorbing interest.

In the current financial climate, which has deferred our plans to expand the Museum public exhibition for many years, it is unlikely that large sums will be available for the expansion of the Shell Collection, so that collecting and curating will continue to depend largely on friends. The worth of such a collection in the study of the marine environment of the Sultanate is clear, but we must continue to demonstrate the fact by improving it and making it more known to and accessible by scientists and students, increasingly from within Oman.

I cannot end this review without paying handsome tribute to all those people and institutions who have already helped me, the Museum and the Ministry of National Heritage and Culture in setting up Oman's National Shell Collection, by donating specimens, literature and advice, often at much personal expense. It remains a fitting memorial to such kindness, particularly of the late Kathie Smythe.

For further details on the molluscs in this area see *Seashells of Oman* by Donald and Eloise Bosche, edited by Kathleen Smythe, (Longman, 1982). □

Collectors in East Africa

No. 20: J.E.S. Moore (1870–1947)

B. Verdcourt

Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

For once my job has been done for me since Troyer (1991) has written an illuminating account of Moore who led the First and Second Tanganyika Expeditions to solve the 'Tanganyika Problem' – whether or not Lake Tanganyika was a former area of ocean cut off in Jurassic times, a theory at variance with the accepted geological wisdom that Africa had never been beneath the sea at any period remotely concerning animal evolution save for the immediate coastal areas. Moore collected much preserved material for dissection and 'proved' that the curious marine-looking molluscs in the lake had an anatomy closely similar to that of various marine species, and further that they were remarkably similar to certain Jurassic species. This was eventually shown to be erroneous although the presence of freshwater medusae and Polyzoa (which are undoubtedly related to marine species) was at one time considered strong evidence in support. I do not think Moore should be criticised; enthusiasm for an incorrect theory can produce as much valuable data as for a correct one and I am sure the anatomical differences between freshwater and marine prosobranchs can be very subtle. What should have been more evident to him was the basic geology of the Tanganyika basin.

Since the facts concerning Moore's birth were about the only thing Troyer failed to ascertain, I spent some time trying to discover them. Troyer was certain the date of birth was 10 May 1870. In the relevant index at St Catherine's House for March/June 1870 is an entry, John Edmund S. Moore in the District of Haslingden. I therefore obtained a copy of the full birth certificate to which this entry referred. John Edmund Sharrock Moore was born on 10 May 1870 at Higher Booths, Swinshaw, Rossendale, County of Lancaster, the son of Henry Moore, cotton spinner and Mary Elizabeth Moore (née Margerison). The Forest of Rossendale is about five miles south of Burnley and Swinshaw

about midway between the two. Troyer gives the third Christian name as Shorec or Shorrock and thought the former was the original version. The certificate clearly gives Sharrock – the registrar's o's and a's are particularly clear. The absolutely incredible gay abandon with which Moore treated names, particularly his own, easily explains these differences. He is often cited as Edward instead of Edmund, possibly due to the misreading of handwriting.

Moore spent at least one year at Tonbridge School and later studied at the Royal College of Science, mostly working under the aegis of G.B. Howes (1853–1905), the professor of Zoology (after whom *Bathanalia howesi* was named). Moore's steady stream of publications finally gained him the Huxley Medal in 1900.

Between 16 October 1893 and 9 June 1894 Moore worked at the Zoological Station in Naples. He was leader of the First Tanganyika Expedition which thanks to Sir Edwin Ray Lankester (1847–1929) was supported by the Royal Society; it left England in the autumn of 1895 and returned in early 1897. A second more extensive expedition was undertaken between the spring of 1899 and the middle of 1900. During this expedition he also attempted the first ascent of one of the summits of the Ruwenzori Range which had been identified with Ptolemy's 'Mountains of the Moon'; he was in fact the first to reach the snowline in the range, attaining 14,900 feet and proved the existence of permanent glaciers. He does not appear to have collected on the range and was not, I think, interested in 'natural history' in that sense. He wrote a delightful and most readable book (Moore, 1901) illustrated with photographs, drawings and pleasant paintings of his own. The scientific account was not published until 1903 and gives in detail the evidence for his inland Jurassic sea theory.

Soon after he returned from the expedition he was appointed Demonstrator in Zoology and served as Acting Professor in 1903 and 1905 when Howes was in poor health. Howes died in February 1905 but Moore did not succeed to the professorship but moved to the University of Liverpool as Director of the Cancer Research Laboratories and in 1906 became Professor of Experimental and

Pathological Cytology in that university. In 1904 Moore married Heloise Salvin, daughter of naturalist Osbert Salvin (1833–1898) (of *Biologia Centrali-Americana* fame). Curiously Moore suddenly stopped all scientific work in 1908, apparently after the death of his father, and gave up membership of various societies, e.g. the Royal Geographic Society, the Linnean Society and the Zoological Society. His retirement lasted nearly 40 years until he died of heart failure and arteriosclerosis in Penzance on 15 January 1947. For many years he lived at Tresco in the Scilly Isles. Oddly a biography of Moore continued to appear in *Who's Who* until 1954.

Moore was well known for the cavalier way in which he misspelt the names even of his own genera and this extended to his own name. Troyer lists 15 alternative styles of address used by or attributed to Moore including several as Salvin-Moore or even Moore-Salvin.

Troyer lists 71 publications and presentations to Societies by Moore, all produced within the 17 years spanned by his scientific career. Unquestionably his main claim to fame is as co-publisher with Farmer of the term 'meiosis' for the process of reduction-division resulting in chromosome reduction. Initially this was spelt 'maiosis' although the Greek origin was clearly indicated and after a good deal of criticism from continental writers the correct orthography was adapted. He was also responsible for the term 'synapsis', still in use – or rather first used it as a biological term in 1892 (according to the *OED* which also states it had been used in 1654 with its ordinary Greek meaning of connection). I have selected from Troyer's list all the publications dealing with molluscs.

List of Mollusca described from material collected by J.E.S. Moore in Lake Tanganyika

Bathanalia howesi J.E.S. Moore, 1898b. Tanzania, Lake Tanganyika, southern part, Mleroes, at depth of 800 ft. (BM 1909.5.27.7–9, syntypes). Same.

Bythoceras iridescens J.E.S. Moore, 1898b. Tanzania, Lake Tanganyika, southern part, Sumbu, at depth of 600–700 ft. (BM

1909.8.25.1–13, syntypes). *Paramelania iridescens* (J.E.S. Moore).

Bythoceras minor J.E.S. Moore, 1903b. Tanzania, Lake Tanganyika, without exact locality (material not discovered). *Paramelania iridescens* (J.E.S. Moore).

I am grateful to F. Naggs for pointing out that the above types are in the general collection at the British Museum (Nat. Hist.).

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Anyone wanting to know more about J.E.S. Moore must refer to Troyer's excellent paper which deals exhaustively with his work and also his attitude to the native inhabitants of Africa giving illuminating quotations in numerous notes; Troyer discussed why Moore should have suddenly given up his work – most unusual in a biologist – but could offer no solution and it is unlikely we shall ever know.

Notes on dates of publications

Reference Moore 1899c listed above appeared in Troyer as 1898c but that part of *Proc. malac. Soc.* is dated March 1899. I have rechecked the order of 1898b and 1898d given by Pilsbry – *Proc. R. Soc.* 62; the part containing Moore's paper was issued on March 29 1898, the date being given on the original cover and was received at the BM(NH) library on 1 April 1898, whereas the part of *Q. Jl. microscop. Sci.* 41 with the 1898d paper was not received at the BM until 16 April. There is no actual description of species in the *Proc. R. Soc.* paper but they are figured and article 12(b)(7) of the International Code makes clear the names are available even though accompanied merely by figures of the species. It is fortunate that the *Proc. R. Soc.* paper appeared first and is acceptable since in the *Q. Jl. microscop. Sci.* paper the genus *Bathanalia* is misspelt *Batanalia*; if that had been earlier an emendation to the now accepted and etymologically correct name would have to have been made. □



Corrections to Collectors in East Africa No. 19 (*Conch. Newsletter* 126)

F. Naggs has drawn my attention to several errors in this part for which I apologise.

Last's material of *Bulimus introversus* Smith is in the BM(NH) collections. My statement that 'A photograph of the type appears in my paper on *Pseudoglessula* —' must be taken as a lectotype designation of the specimen photographed; the other three specimens in the original material are therefore paralectotypes.

Under *Ennea fortidentata* Smith I mentioned that the Emin specimen from Kidete could not be found; it has been found in the general collection and is a paralectotype.

p. 220, line 16, for '*stenostomam*' read '*stenostoma*'. □

Changes in the Aquatic Molluscan Fauna of Wheatfen Broad, Norfolk

R.J. Driscoll

Natural History Museum, Castle Museum, Norwich NR1 3JY

Wheatfen Broad, Surlingham is a network of pools and channels surrounded by fen, marsh and carr in the Yare valley, Norfolk (NGR TG 328056). Largely as a result of research carried out over a 50-year period by E.A. Ellis (not to be confused with A.E. Ellis!), Wheatfen Broad is one of the most intensively studied areas of wetland in Britain (Ellis, E.A., 1935 *et seq.*).

During the 1930s Wheatfen was also studied by A.E. Ellis, who described the molluscan fauna of the various habitats at Wheatfen in great detail in what has become a classic paper (Ellis, A.E., 1941). At that time the pools, channels and dykes supported a rich aquatic fauna.

Since the 1930s water quality in the tidal river Yare has deteriorated, partly as a result of the increased output from Whitlingham Sewage Treatment Works, which serves Norwich. Wheatfen Broad is connected to Rockland Broad and the river Yare and river water readily circulates through the pools and major waterways with each tide. The highest tides overtop the river banks and flood the land that surrounds the pools and channels. Thus the changes in water quality in the river have been matched by changes in Wheatfen Broad. Since A.E. Ellis worked at the site most of the pools and channels have lost their aquatic vegetation and become heavily silted. These changes have been reflected in a decline in the aquatic fauna, including the molluscs.

In contrast 'Old Mill Marsh Dyke west', one of the dykes studied by A.E. Ellis, is connected to the river by a long and tortuous channel. Normal high tides cause water to back up in the channel but only the very highest tides drive river water up as far as 'Old Mill Marsh Dyke west'. As a result the dyke fauna is less affected by river water than the fauna of the pools. The dyke also intercepts the flow of land drainage water from the fields west of

Table 1.

Comparison of molluscs recorded by A.E. Ellis (1930s) and those found in the Nature Conservancy Council survey of 1977 at Wheatfen Broad and 'Old Mill Marsh Dyke west'.

	Pools		Dyke	
	1930s	1977	1930s	1977
Gastropods				
<i>Viviparus contectus</i> (Millet)	•		•	
<i>Valvata cristata</i> Müller	•	•	•	•
<i>V. pisinalis</i> (Müller)	•			•
<i>Potamopyrgus jenkinsi</i> (Smith)		•		
<i>Bithynia tentaculata</i> (L.)	•	dead	•	•
<i>B. leachii</i> (Sheppard)	•			
<i>Lymnaea palustris</i> (Müller)	•		•	•
<i>L. stagnalis</i> (L.)	•		•	
<i>Lymnaea peregra</i> (Müller)	•		•	•
<i>Physa fontinalis</i> (L.)	•		•	•
<i>Planorbarius corneus</i> (L.)	•	dead	•	
<i>Planorbis carinatus</i> Müller	•		•	
<i>P. planorbis</i> (L.)	•		•	•
<i>Anisus vorticulus</i> (Troschel)			•	
<i>A. vortex</i> (L.)	•	•	•	•
<i>Gyraulus albus</i> (Müller)	•			
<i>Armiger crista</i> (L.)	•			
<i>Bathymophalus contortus</i> (L.)	•	•	•	
<i>Hippeutis complanata</i> (L.)	•	•	•	
<i>Segmentina nitida</i> (Müller)			•	
<i>Acroloxus lacustris</i> (L.)	•			•
Bivalvia				
<i>Sphaerium corneum</i> (L.)	•		•	•
<i>S. lacustre</i> (Müller)	•			
<i>Pisidium</i> sp. (unidentified)		•		
<i>P. obtusale</i> (Lamarck)	•		•	
<i>P. milium</i> Held	•		•	
<i>P. subtruncatum</i> Malm	•			
<i>P. hibernicum</i> Westerlund			•	
<i>P. nitidum</i> Jenyns	•		•	
<i>P. pulchellum</i> Jenyns	•			
Number of species of gastropod	18	5	16	10
Number of species of bivalve	7	1	5	1

Wheatfen and reduces the flow of this water into the broad (Darby, 1982). This supply of nutrient-rich freshwater results in a vigorous growth of vegetation in the dyke, in marked contrast to the nearby pools and channels. The dyke also supports a rich invertebrate fauna.

In 1977 the Nature Conservancy Council financed a biological survey of the pools at Wheatfen and 'Old Mill Marsh Dyke west' (Driscoll, 1982). Table 1 compares the molluscs recorded by A.E. Ellis in the 1930s with those found during the 1977 survey.

The molluscan fauna recorded from the pools in 1977 consisted of only 6 species compared with 25 species recorded by A.E. Ellis. Dead shells of another two species were found in 1977. *Potamopyrgus jenkinsi* (Smith) was the only 'new' species found in 1977. Although A.E. Ellis did not record *P. jenkinsi* from Wheatfen Broad he did find it in the nearby river Yare.

The molluscan fauna of 'Old Mill Marsh Dyke west' was also impoverished in 1977 (11 species) in comparison with the 1930s (21 species). Two species were recorded in 1977 that had not been recorded by A.E. Ellis, *Valvata piscinalis* (Müller) and *Acroloxus lacustris* (L.).

The 1977 survey revealed an overall decline in the molluscan fauna of Wheatfen Broad. The impoverishment of the fauna in the pools was more marked than that in 'Old Mill Marsh Dyke west'. This was what would be expected if polluted river water rather than a general deterioration in water quality was the cause of the decline.

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Mollusc Survey Launched in Berkshire

Helen Weideli

Newbury, Berks

The weekend of 25–27 February 1994 saw the launch of the **West Berkshire Mollusc Survey**, the aim of which is to record as accurately as possible the distribution of the various species of mollusc in West Berkshire. Data is being collected with a view to producing a tetrad (4 sq km) distribution atlas. Organised by CSGBI members Michael and Helen Weideli, from Newbury, the survey is backed by the Conchological Society, local Wildlife Trust (BBONT), and Newbury District Museum.

Inspiration came from the work of Richard Preece – *An Atlas of the Non-Marine Mollusca of the Isle of Wight*, 1980, and Ian Killeen – *The Land and Freshwater Molluscs of Suffolk*, 1992. The area to be covered by this current survey is shown on the accompanying map (Fig. 1). In due course it is hoped to link this with other surveys in the north and east of the county.

Newbury District Museum (courtesy of Curator Tony Higgott) hosted a special talk and exhibition to promote the survey, with the intention of involving local people in the project. The inaugural address was given by Ian Killeen, who took as his subject, 'An Introduction to the Land and Freshwater Molluscs of Britain'. His excellent and professional presentation, using colour slides and overhead projector transparencies, was both interesting and informative and kept the audience of 35 enthralled for an hour. Many stimulating and searching questions were also skilfully answered by the speaker.

The accompanying exhibition, visited by over 100 people, included the first public showing of the Conchological Society's newly prepared display boards. These six visually attractive modular panels feature informative text, maps and colour photographs, covering a wide range of molluscan topics. Here are just a few examples: What is Conchology? Let Conchology bring you out of your shell! The Phylum Mollusca; British Molluscs; Why Molluscs are Important; Distribution Mapping

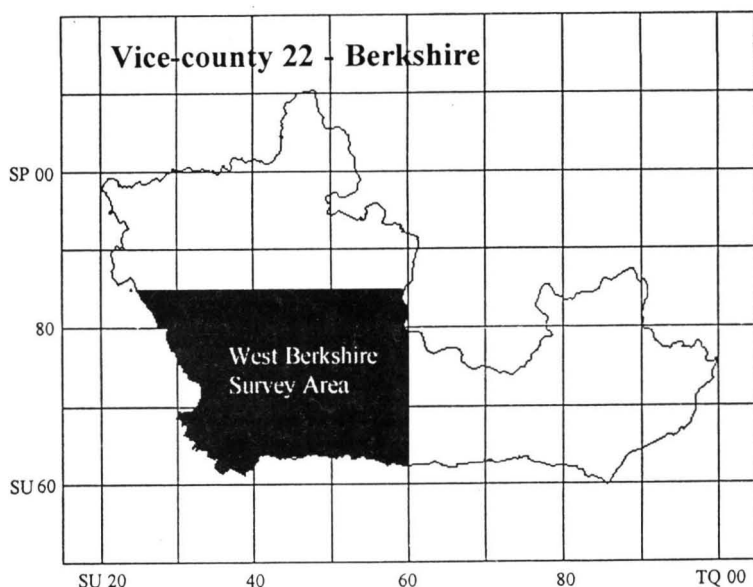


Fig. 1. West Berkshire Mollusc Survey (area shown in black)

and Regional Mapping Schemes; The History of the CSGBI and its current activities. From the user's point of view, the advantage of such a modular display is that new topics can be added and existing ones expanded or modified to suit particular purposes, thus making the whole concept very versatile.

Other items in the exhibition included display panels featuring aspects of the West Berkshire Mollusc Survey. Live specimens of land and freshwater molluscs were on display and could be handled if desired. Visitors were also encouraged to bring along their own specimens and receive tuition in identification techniques. Towards the end of Saturday afternoon assorted specimens duly arrived, one of which was positively identified as *Hygromia cinctella* – believed to be a new Berkshire record on the first day of the survey!

Microscopes were set up for viewing a large variety of shells, to show their varying shape, size and sculpture. Equipment was displayed, and visitors could try their hand at sieving leaf litter. For the very young a 'spot the snail and spot the slug' game was devised from picture-books. Display cases contained mollusc

memorabilia and treasured volumes. Conchological Society merchandise was on sale, and Newbury District Museum has expanded its range of postcards to include stocks of *Zenobiella subrufescens* and *Thecacera pennigera*!

In summing up and evaluating this venture, we have no hesitation in describing it as a great success! The profile of molluscs has been raised in Berkshire as never before, largely due to publicity, and capturing the interest of the media. The *Newbury Weekly News* deserves special attention for its sympathetic coverage of the events. It gave front page space to the West Berkshire Mollusc Survey in a special 127-year anniversary edition on 10 February. The item entitled 'Love your slugs' exhorted its readers to participate in the events. Similarly, on 3 March, it carried photo coverage of the launch of the survey with the caption 'Mollusc mania slithers into town' and brief details. Radio Berkshire also allocated a ten-minute slot in its afternoon programme on 23 February, and past-President of the CSGBI, Dr June Chatfield, went along to the studio to talk about molluscs.

Newbury Public Library staged an exhibition of mollusc books, displayed posters and dispensed leaflets. Newbury District Museum advertised the events in its 'what's on' leaflet, and generously provided accommodation for the talk and exhibition, as well as contributing towards expenses. Most relevant local organisations were advised of the survey, and some responded positively with offers of help. The local Wildlife Trust featured the survey in its recent newsletter, and members are now busily collecting leaf litter samples for us! We are grateful to all the above, without whose co-operation and support we would not have achieved so much. However, it was the public who made it all worthwhile by supporting our venture (we have about twenty names of willing helpers). But, overall, it was the children who showed the greatest interest and who need to be encouraged. Perhaps we should resurrect the Junior branch of the Conchological Society? Meanwhile, other members of the Society are welcome to help with our survey in rural West Berkshire. Details from Michael Weideli, telephone (0635) 42190. □

An Unusual Habitat for *Ancylus fluviatilis* Müller

Derek Howlett

Norwich, Norfolk

During the month of December 1993 a friend asked me if I would give him a hand to retrieve his fibreglass dinghy which had been sunk for the past two years underneath the small pier at the public moorings at Rockland St Mary in Norfolk. We eventually got the dinghy to the slipway, emptied it of mud and laid it upside down on the grass to dry. It was at this time that I noticed that the many small dark spots on one side of the hull were in fact freshwater limpets. Closer examination revealed that both of the British species were living on the hull. *Acroloxus lacustris* (Linné) numbered some 80+ specimens and *Ancylus fluviatilis* Müller 30+ specimens. I was not too surprised at finding *Acroloxus lacustris* in this situation as I knew it was reasonably common throughout the Rockland Broad system, although I had never seen such a large community before. The real puzzle to me was the existence of *Ancylus fluviatilis* living with it, as I had always thought that this species enjoyed clean running water and not the still, polluted water that exists in this basin. However, investigation soon revealed how adaptable this species is.

The mooring basin is at the dead end of a navigable channel of approximately 1/4 mile in length. This channel connects to Rockland Broad at the south-western corner. The Broad then connects to the tidal river Yare by way of two more navigable channels, the Fleet Dyke, approximately 1/2 mile in length, and the Short Dyke, approximately 1/4 mile in length. Tidal rise and fall in the basin is normally around 18 inches to 2 feet. During the summer months the water quality is pretty poor with silt permanently in suspension caused by the coming and going of the many holiday cruisers. Add to this detergent and diesel oil which is released by the same craft and the result is a very nasty soup.

There is however one 'fresh' element to this basin, and this I think is the key to our limpets' existence and survival, and that is

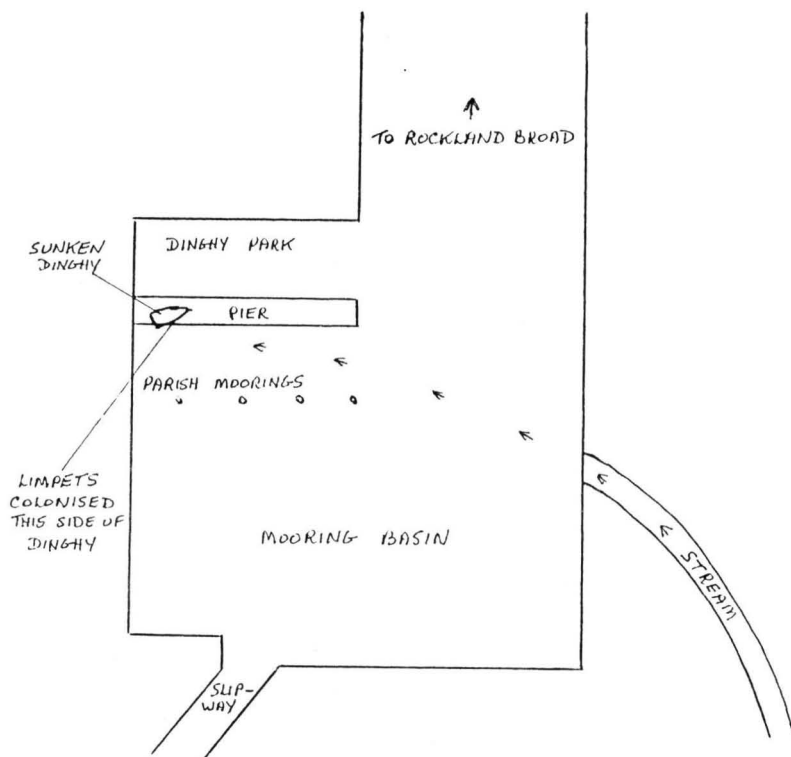


Fig. 1. Plan drawing of Rockland St Mary mooring basin

a small stream which exhausts into the basin through a flap valve on the east side. This is immediately opposite to where the limpets were found. I believe this stream is where the species originated – probably a juvenile form was swept through the flap. The current would carry it across the basin to where it was found, and of course the constant current of clean, unpolluted water flowing across the basin and through the area is probably sufficient to create a reasonable habitat in an environment which would otherwise be alien to this species.

As far as I can determine this is first record for this species in the Rockland Broad system. □

Land Snails from Garden and Backyard Habitats

Judith Turner

*Department of Archaeological Sciences, University of Bradford,
Bradford, West Yorkshire BD7 1DP*

I am currently a Ph.D. student at the University of Bradford. My area of interest is land snails from garden and backyard habitats. I am trying to use collections of snails from modern gardens as analogues for snails turning up in human occupation layers on archaeological sites. The use of land snails in palaeoenvironmental reconstruction has normally been concentrated on assemblages from 'natural' deposits. Frequently in archaeology, however, such assemblages are recovered from human occupation sites, but these are often difficult to interpret due to the lack of relevant modern studies of molluscs from synanthropic (i.e. humanly influenced) systems. My research is designed to see if we are getting the same assemblage of snails that is characteristic of gardens turning up on archaeological sites by examining such factors as species density, diversity and any specific species association that may be occurring. If this turns out to be so then in the past there may have been areas on sites that were similar to the intensively disturbed, humanly influenced garden-type habitats.

So far I have been concentrating my search for snails in the gardens of the Dales area of Yorkshire. However, as a lot of the snails are from synanthropic groups, and synanthropy does vary geographically, I would like to expand my search to cover as much of Great Britain as I can. To help with this I am appealing to Conchological Society Members to take a representative sample of snails from their gardens and then provide the information listed below. This will provide me with invaluable information on exactly what species of snail favour a garden habitat. I hope you will be able to help with this research and your interest would be greatly appreciated.

Garden Snail Survey

Please provide the following information:

1. Describe your garden, including in your description:
 - a) the dominant species of plants present
 - b) the proportion of bare ground present.
2. Describe in detail the particular habitat from which the snails were taken, for example, rockery, herbaceous border, etc.
3. Send photographs of your garden, if possible.
4. Quantification of snails. When you have collected your snails could you either:
 - a) send the samples to the University of Bradford for identification (plastic bottles will be supplied for this purpose – please state how many will be required)
or
 - b) send a list of the various species collected and their numbers (if safe identifications can be made by yourself)
or
 - c) send a semi-quantification of the snails observed, i.e. whether a particular species is:

Dominant	Occasional
Abundant	Rare
Frequent	

(again, if safe identifications can be made by yourself).
5. Samples or lists of snails from other humanly disturbed places in your area – such as parks and cemeteries – would be very welcome.
6. Do you have any old records of snails from your garden?
These too would be very useful.

Note: Please include the time of year (dates if possible) that the samples of snails were collected.

Thank you for your co-operation.

Send all correspondence, including samples of snails, etc., to:

*Judith Turner, Department of Archaeological Sciences,
University of Bradford, Bradford, West Yorkshire BD7 1DP. Tel.
(0274) 733466, Extension 3556.*

Field Meeting in the Reading Area 23 October 1993

Rosemary Hill

Reading, Berks

Eleven members of the Society assembled at Thatcham railway station before driving on to Thatcham Moors local nature reserve to examine a complex of reedbeds adjacent to the Kennet and Avon canal/River Kennet between Thatcham and Reading. The weather began sunny and reasonably warm but clouded over later in the day. Some members looked for land molluscs, of which 29 species were found, including *Zonitoides nitidus*, *Deroceras laeve*, *Euconulus alderi* seg., *Candidula gigaxii*, *Cernuella virgata* and *Ashfordia granulata*, while others looked for freshwater snails, of which 17 species were found including *Valvata piscinalis*, *Bithynia leachii*, *Pisidium henslowanum* and *P. hibernicum*.

After lunch, we drove to the opposite side of the valley to examine two woodlands overlooking the river, both of which are BBONT (County Naturalists' Trust) reserves. Both woods are considered ancient, and provide a gradient from dry, acid heath/woodland to wetter oak and alder woods on the lowest ground. The first reserve, Baynes, which is kept permanently wet by streams, proved the more interesting site. Twenty-nine species were found, including *Columella aspera*, *Columella edentula* seg., *Vertigo substriata*, *Arion flagellus*, *Zonitoides excavatus* in abundance and *Macrogastra rolphii*. The second reserve, Bowdown Woods, produced 21 species, including *Z. excavatus* and *M. rolphii*, before the overcast sky restricted visibility.

Thanks to Newbury District Council and BBONT for permission to visit these sites and to Mike Smith for his analysis of leaf litter from Baynes. □

Greetings to Dr Hildegard Zeissler on her 80th Birthday

Hildegard Zeissler, whose name will be known to anyone interested in the distribution of European non-marine molluscs, was born in Leipzig on 6 March 1914, the daughter of a clerk Rudolf Zeissler and his wife Coeleste. She attended school in Leipzig from 1920 to 1933 and at one stage Paul Ehrmann was her biology teacher which may explain her interest in molluscs. Her plans to study biology at Leipzig University were frustrated when her father became unemployed and later ill. After attending a commercial school she worked as a typist, book-keeper, etc., and finally in 1940 was called up for work in a war factory where she stayed only a few months.

Since so many teachers had been called up there was a great shortage in primary schools and she joined a training scheme which promised participants a job in areas of their own choice. She chose Trier/Mosel and went first to Niederzerf/Ruwer and after more training to Kröv/Mosel (the wine area Middle Mosel, Bernkastel), but the moist insecticide-polluted air forced her to move elsewhere. When the Allied advance in autumn 1944 forced the schools to close she and other teachers cooked for workers. Becoming ill she managed to join her parents that Christmas but her father died in January. Since Prussia had paid for her training she had to return to teach there, but when American occupation gave way to Russian she contrived to return to Leipzig but had to teach children with learning difficulties.

The husband of the senior teacher at the school was Director of the 'Naturkundliches Heimatmuseum' and Hildegard became librarian there. The contact with books rekindled her interests. She first began collecting snails in 1951 and had help from Büttner and Schlechter. After the latter died suddenly in 1952 she helped his wife prepare his collection for sale to Dresden. Hildegard had lost her job through encroaching deafness but managed to take over Schlechter's post at the Weimar Museum which had no books, no microscopes and no money but, by begging around Europe, she built up a collection and library, sometimes

copying out borrowed works by hand.

Her first papers were published in 1956 in *Arkiv für Molluskenkunde*. After being shamefully treated by University bureaucrats she finally began to study at Leipzig University in the same year. Internal troubles at the Weimar Museum resulted in her leaving but in 1959 she obtained a post at the Staatliches Museum für Tierkunde in Dresden. Once again the climate did not suit her and she returned to Weimar to the Institut für Quartärpaläontologie until her retirement in 1974 when she went back to Leipzig and became an Honorary Worker for Nature Protection, which gave her some authority for further extensive collecting. In 1987 she was awarded the silver award for Nature Protection. She obtained a doctorate in 1970 for her work on the Süssenborn Ilm Gravels. Hildegard Zeissler continues to do as much work as possible and her output of papers has now reached 230 titles.

B.V.

Glandford Shell Museum in 1967

Since submitting the article on the Glandford Shell Museum (*Conch. Newsletter* **128**, March 1994), I came across an earlier note on it by the late Revd H.E.J. Biggs in *Conch. Newsletter* for June 1967. The Revd Biggs made a number of suggestions to the Trustees, outlined plans for a collection of local shells and appealed for help from members of the Society. He commended the museum, an educational charity, for its work with young people and schools.

June Chatfield

Applications published in the *Bulletin of Zoological Nomenclature*

The following Applications were published on 30 March 1994 in Vol. 51, Part 1 of the *Bulletin of Zoological Nomenclature*. Comment or advice on these Applications is invited for publication in the *Bulletin* and should be sent to the Executive Secretary, ICZN, c/o The Natural History Museum, Cromwell Road, London SW7 5BD.

Case 2886 *Doris grandiflora* Rapp, 1827 (currently *Dendrodoris grandiflora*; Mollusca, Gastropoda): proposed conservation of the specific name.

Jesús Ortea and Angel Valdés

Departamento de Biología de Organismos y Sistemas, Laboratorio de Zoología, Universidad de Oviedo, 33005 Oviedo, Spain.

Abstract. The purpose of this application is to conserve the specific name of the Mediterranean nudibranch *Dendrodoris grandiflora* (Rapp, 1827). This species has been widely studied taxonomically and ecologically, and also with regard to some unusual chemical compounds present in it and allied species. The specific name of *Doris guttata* Risso, 1826 is a senior subjective synonym of *grandiflora*, but it has never been used and its suppression is proposed. □

Conchology in Crete

This trip will now take place in May 1995. The first week will be based in Georgioupolis in north Crete and the second in Plakias in south Crete. Further details from Susan Davies.

Would any members who have collected land/freshwater/marine molluscs in Crete please send lists, records and further information to:

Susan Davies

Portishead

Thank you to Wim Moossen from the Netherlands who has already helped.

SHELL LIFE

A field course on molluscs in Somerset

7 – 14 September 1994

Tutor: Dr June Chatfield

Shell life: the Nettlecombe mollusc course

Molluscs – snails, mussels and their allies – live on land, in freshwater and in the sea. This course explores those found in the area around Nettlecombe in north Somerset, discussing their habitat, adaptations and way of life. Microscopes will be available in the laboratory for the study of the smaller specimens. Identification will be covered. Beginners welcome. Also useful for nature reserve wardens wanting to study some of the invertebrate groups which are not too difficult. Course fee £235 (residential).

Bookings and further details from:

The Leonard Wills Field Centre

Nettlecombe Court

Williton, Taunton, Somerset TA4 4HT.

Conchological Society of Great Britain and Ireland

Minutes

1046th (Ordinary) meeting held on 16 January 1993 in the Demonstration Room of the Natural History Museum at 2.30 pm

In the Chair: Mr F.R. Woodward with 41 members and friends present.

Apologies for absence: Mr and Mrs Fogan, Dr M.P. Kerney, Mrs M.F. McMillan, Mr E. Philp, Mr S.P. Dance, Mrs S. Davies.

Minutes of the last meeting (of 12 December 1992): Read and accepted.

Matters arising: None.

Nomination and election of new members: Four ordinary and two family memberships:

- Mr Geoff Ralph [redacted], London [redacted]
- Mr Klaus Kittel [redacted] Wiestral, Germany.
- Mr Gerhard Falkner Bayerische Staatssammlung für Paläontologie und Historische, Richard Wagner Strausse 10/11, D-8000, München, Germany.
- Mrs Stella Jones [redacted] Market Drayton, Shropshire [redacted]
- Mr A. & Mrs E. Taylor [redacted] Anglesey, Wales [redacted]
- Mr & Mrs M.T. Stone [redacted] Dagenham, Essex [redacted]

Lecture of the day:

Dr Martin Bell: 'Snails through the ages – an archaeologist's perspective'.

Announcements and correspondence:

1. Ms J. Reynolds gave details of a talk she is to give to the Kew Mutual Improvement Society in early February at the Kew Botanic Gardens on the subject of: 'Snails – not just pests'. CSGBI members could attend.
2. A letter has been received from someone in Madagascar who wishes to exchange shells in return for a subscription to the CSGBI.

Any other business: None.

Meeting closed at 5.30 pm.

Chairman.

Appendix : Members' exhibits:

- Mr P.E. Negus Triassic ammonites in matrix – *Arcestes* sp. and others, Ladinian, Middle Triassic, Epidaurus, Greece.
- Mr J. Llewellyn-Jones *Dentalium*, its use by N. American Indians, National Geographic article and various species of *Dentalium*.
- Mrs J. Light Watercolour of *Janthina janthina*.
Gleanings from Camber strandlines.
- Mr D.C. Long Small land molluscs from the Picos de Europa, including *Menkea horsti*.
- Dr B. Verdcourt *Land snails in archaeology*, J.G. Evans.
- Ms J. Reynolds
 - i) *Littoraria* spp. from Marine Display, RBG, Kew.
 - ii) Epiphragm of *Archachatina marginata*.

- iii) Press item, *Horticulture Week* 15.1.93.
- Mr K. Hill *Arion ater* colour variants from St Kilda, June 1992, photographs.
- Mr T. Pain *Pila ovata* (Olivier, 1804) from a 26th Dynasty burial mound at Sakha, Egypt.
- Mr K. Brown *Mya arenaria* from Viking site in Jutland (press cutting) showing Vikings reached America before Columbus.
- Dr J. Chatfield Various leaflets of courses, JNCC reports, Nonsuch Park Survey.



1047th (Ordinary) meeting held on 20 February 1993 in the Demonstration Room of the Natural History Museum at 2.30 pm

In the chair: Mr F.R. Woodward with 30 members and friends present.

Apologies for absence: Mrs S. Davies, Mr A.D. Seccombe, Mr P. Lee, Dr M.J. Willing, Mr D.R. Seaward, Miss E.F.A. Fogan, Mrs N.F. McMillan, Mr S.P. Dance, Mrs E.B. Rands, Mrs M. Fogan, Mr J.F. Fogan, Mr D.G Rands, Mr J. McMillan, Mr A.G. Smith.

Minutes of the last meeting (of 16 January 1993): Read and accepted.

Matters arising: None.

Nomination and election of new members:

- Mr .D.E. Bolton Royal Albert Memorial Museum, Queen Street, Exeter, Devon EX4 3RL.
- Mr S.W. Campbell [REDACTED] Moreton, Wirral, Merseyside [REDACTED]

Lecture of the day:

Dr Elizabeth Harper: 'Sticking to the rocks – an oyster problem.'

Announcements and correspondence: None.

Any other business: None.

Meeting closed at 5.30 pm.

Chairman.

Appendix: Members' exhibits.

- Mr K. Brown Books: *Bivalves of Australia* by K. Campbell and T. Whitehead, and *Guidebook to Pecten Shells* by A. Rombouts, plus shells for comparison.
- Mr P. Dansey Shells from the strandline – Old Hunstanton, NW Norfolk.
- Mr D. Guntrip Fossil oysters of Bedfordshire.
- Dr B. Coles *Geomitra* sp. and *Insulivitrina* from Madeira.
- Ms J. Reynolds Item from *Mail on Sunday* magazine on edible mussels. 'Snail' T-shirt.
- Miss J. Sawyer Contrasting styles: Three old British oysters picked at Conch. Soc. field meetings.
Paris fashions! Scarf holder ex-Paris Shell Show.
- Dr B. Colville Some snails recently collected in Madeira.
Head-band magnifiers.
Susswassermollusken.

1048th (Annual General) meeting held on 20 March 1993 in the Demonstration Room of the Natural History Museum at 2.30 pm

In the chair: Mr F.R. Woodward with 30 members present.

1. *Apologies for absence:* Dr R.C. Preece, Mr P. Lee, Mrs E. Platts, Mrs N.F. McMillan, Mr S. Tracey.
2. *Appointment of two scrutineers to count the postal vote:* Mr Worth and Mr Pain were appointed.
3. *Minutes of the last meeting (of 20 February 1993):* Read and accepted.
4. *Matters arising:* None.
5. *Nomination and election of new members:* None.
6. *Report of Council by Hon. Secretary:* Read and accepted.
7. *Report of Hon. Treasurer:* Read and accepted.
8. *Report of Non-marine Recorder:* Read and accepted.
9. *Report of Marine Recorder:* Read and accepted.
10. *Report of Programme Secretary:* Read and accepted.
11. *Report of Conservation Officer:* Read and accepted.
12. *Members' exhibits.*
13. *Tea break.*
14. *Presidential address:*

Mr Fred Woodward, 'Observations on South American anodontiform freshwater mussels.'

15. *Announcements and correspondence:*

i) Mr Woodward spoke of Dr John Taylor's election to the post of President of the Malacological Society of London. Mr Woodward said that he was especially pleased by this as he went to school with Dr Taylor and it was remarkable that they should now be both simultaneously presidents of national conchological societies. Mr Woodward said that he had sent a telegram/telemessage to the Malac. Soc. centenary meeting to congratulate them on their 100 years of existence. The meeting thoroughly approved of the sending of this message. Mr Woodward also purchased a greetings card so that it could be signed by those present at the AGM and sent to the Malac. Soc.

ii) Mr Woodward announced that the CSGBI Council had decided to confer Honorary Life Membership on Dr Bernard Verdcourt in recognition of his contributions to the Society's activities during his 50 years of membership.

16. *Election of auditors:* Mr N. Light and Mr D. Worth were elected as auditors.
17. *Results of the postal ballot:* The following were elected:

President	Dr B. Colville
Hon. Secretary	Mrs S. Davies
Hon. Treasurer	Mr A. Seccombe
Hon. Editor (<i>J. Conch.</i>)	Dr R.C. Preece
Hon. Editor (<i>Newsletter</i>)	Mr P. Lee
Hon. Non-marine Recorder	Dr M.P. Kerney
Hon. Marine Recorder	Mrs J.M. Light
Hon. Programme Secretary	Mr I.J. Killeen
Hon. Conservation Officer	Dr M.J. Willing.

18. The following three people were elected onto Council for a three-year period:

Mr E.G Philp, Mr S. Tracey and Dr R.C. Honnor.

18. *Any other business*

- i) Sale of old Encyclopaedia prints. It was decided that these should be offered for sale in the *Newsletter*.
- ii) Mr Woodward thanked the various officers of the Society and other people for the work they had done over the last two years, the period of office of his presidency. Mr Woodward then handed over to Dr Barry Colville, our new President. Dr Colville gave a short acceptance address.
- iii) Mr E. Philp proposed a vote of thanks to those members who provided the tea and refreshments at the meetings. This was carried.

Meeting closed at 5.36 pm.

Chairman.

Appendix: Members' exhibits

- | | |
|---------------------------|--|
| • Mr Pain and Mr Woodward | Tropical freshwater mussels. |
| • Mr E. Philp | Freshwater bivalves from Maidstone Museum. |
| • Dr B. Colville | Snails of Crete. |
| • Ms J. Reynolds | 1992 <i>Partula</i> Propagation Group report from London Zoo. |
| • Mr D. Guntrip | Foreign euconulid spp. from Kew Gardens hothouse. |
| • Mr D. Worth | <i>Helix aspersa</i> Müller, 1774 water colour by Ken Wye of Eaton's Shell Shop. |
| • Mrs E.B. Rands | Books for sale. |
| • Miss J. Sawyer | <i>Cypraea zebra</i> L. mature and juvenile from Martinique. |
| • Mrs J. Light | Provisional atlas for S15 – working copy with updates and additional species. |
| • Mrs S. Davies | All sorts: snail poems, slug, book list, old books. |

— ♦ —

**1049th (Ordinary) meeting held on 17 April 1993 in the
Demonstration Room of the Natural History Museum at 2.30 pm**

In the chair: Mr D.C. Long with 32 members and friends present.

Apologies for absence: Dr B. Colville, Mrs S. Davies, Mr P. Lee, Mr I.J. Killeen, Miss J.T. Sawyer, Mrs N.F. McMillan, Dr J.E. Chatfield, Mr P. Negus, Mrs M. Fogan, Mr F.R. Woodward, Miss J.M. Nelson.

Minutes of the last meeting (of 20 March): Read and accepted.

Matters arising: None.

Nomination and election of new members:

- | | |
|--|--|
| • Mr Jonathan J. Turrall (Junior member) | London |
| • Mr Patrick J. Wisniewski | Curator, Wildfowl and Wetlands Centre, Martin Mere, Burslough, Lancashire L40 0TA. |
| • Tony and Val Marshall | Great Missenden, Bucks |

Lecture of the day: Dr Nathalie Yonow, 'Tropical phyllidiid sea slugs.'

Announcements and correspondence:

Marine Mollusca of East Scotland by D. McKay and S.M. Smith (1979). Mrs E. Platts said that spare copies of this were available from Edinburgh Museum for the cost of postage and packing.

Any other business: None.

Meeting closed at 4.32 pm.

Chairman.

Appendix: Members' exhibits

- Mr S. Tracey *Scaliola* spp. from Kuwait (60 miles south of Kuwait City).
M. Goodchild collection.
- Mrs J. Light *Estuaries and Coastal Waters of the British Isles*.
A bibliography.
- Mr K. Brown *Siphopatella walshi* (Reeve, 1859). Shell notelets.
- Ms J. Reynolds Recent press items.
- Mr P. Dansey Beach shells from Venice Lido.
- Mr D.C. Long Miocene molluscs from Maryland.
- Mr D.W. Guntrip Recently completed mollusc drawings.



**1051st (Ordinary) meeting held on 16 October 1993 in the
Demonstration Room of the Natural History Museum at 2.30 pm**

Announcements of deaths: The deaths were announced of Mr J.F. Fogan, life member since 1969, and Mr P.G. Cambridge, member since 1961.

In the chair: Dr B. Colville with 39 members and friends present.

Apologies for absence: Mr D.R. Seaward, Mrs S. Davies, Mr A.D. Seccombe, Mr P. Lee, Dr M.J. Willing, Miss .E.F.A. Fogan, Mrs N.F. McMillan, Mr S.P. Dance, Dr J.E. Chatfield, Mr P. Negus, Mrs .E.B. Rands, Mrs M. Fogan.

Minutes of the meeting of 17 April 1993 (15 May meeting not minuted): Read and accepted.

Matters arising: None.

Nomination and election of new members: The following people were elected:

- Mr and Mrs G. Wilkinson [redacted] Chepstow [redacted]
- Ms F.J. Cattanaeh [redacted] Bethesda, Gwynedd [redacted]
- Mr J.S. Beattie [redacted] Wroughtington, nr Wigan [redacted]
- Mr A.J. Brokenshire [redacted] Southwell, Portland, Dorset [redacted]
- S. Eden [redacted] Dorchester, Dorset [redacted]
- A.J.E. Harman [redacted], Hockley, Essex [redacted]
- R. Perdeaux [redacted] Wanstead, London [redacted]
- N. Dent [redacted] Galashiels, Selkirkshire [redacted]
- N. Limondin Dept. of Zoology, University of Cambridge, Downing Street, Cambridge CB2 3EJ.
- N.W. Nicholson [redacted] Mayfield, Sussex [redacted]

Lecture of the day:

Miss Alison Trew (National Museum of Wales): 'Museum mollusc collections and their curation.'

Announcements and correspondence:

Dr Colville reminded the meeting that the general membership are able to submit nominations for the elections to Council.

Any other business: None.

Meeting closed at 5.00 pm.

Chairman.

Appendix: Members' exhibits:

- Mrs C.M. Street Shells from Florida, Shell list from Colonsay.
- Mr K. Brown Books: *Volutes* by G. Poppe and Y. Goto.
Living Volutes by C.S. Weaver and J.E. Dupont.
Sir Joseph Banks (1743–1820) 250th anniversary exhibition.
- Miss J.T. Sawyer Fossils from Scarborough shore.
- Mr D. Guntrip Recently completed mollusc drawings.
Limax valentianus from garden in Belvedere, London.
- Mr D.C. Long Greek snails.
- Ms J. Reynolds Miscellany including binders for the *Conchologists' Newsletter*. □

Journal of Conchology

We are able to offer the following parts of the *Journal of Conchology* at a special discount price for a period of six months:

Volumes 26–29	£2.50 per part
Volume 30	£3.75 per part
Volumes 31 & 32	£3.75 per part (half price)
Volume 33	£7.50 per part (half price)
Volume 34	£15.00 (unchanged)

The above prices are for Members only and include postage. Orders should be sent to: Adrian Norris, City Museum, Municipal Buildings, Leeds LS1 3AA (Tel. 0532 438311). Please note that a full range of the Society's publications is available from Adrian Norris at the above address.

Letter

Dear Mr Lee,

I refer to the notice regarding the Slug Workshop on page 320 of the March issue of *Conchologists' Newsletter* (Vol. 7, Part 2, No. 128). I read this out to my wife who offers a drawing of an alternative view of a Slug Workshop ...

Colin Gillard

██████████

██████████

Taunton, ██████████



'Slug Workshop' – an alternative view

Malacological Pioneers

Saturday 22 October 1994

A one-day meeting organised by the Malacological Society with the Conchological Society and the Society for the History of Natural History will be held in the Linnean Society of London, Burlington House, Piccadilly on Saturday 22 October 1994. The subject is **Malacological Pioneers**.

Talks will cover a broad range of topics including:

- the long dawn of malacology
- social aspects
- fieldworkers and collectors
- explorers and expeditions
- interactions and revolutionary ideas
- and much, much more!

Speakers will include: David Allen, Robert Cameron, Helena Chesney, Ron Cleevely, Lawrence Cook, Peter Dance, Peter Davis, David Heppell, Fred Naggs and Richard Preece in three sessions chaired by Arthur Cain, Bryan Clarke and Gordon Herries Davies. Kathie Way will arrange a display of shells, manuscripts and other conchological illustrations and treasures from the Linnean Society and BM(NH) collections, in the Library.

Registration and coffee will start at 10.00 am and the meeting will open at 10.30 am. Coffee, tea and a wine reception in the Library at 6.00 pm will be included in the registration fee. It is hoped to arrange an informal, post-meeting dinner nearer the time.

Full details of the programme will be given in the next *Newsletter*. For further information contact:

Elizabeth Platts

Littleton, Winchester

Hants

Tel.

JNCC Study of Introduced Non-Native Marine Species to Britain

The JNCC aims to cover all introductions of marine fauna and flora (including parasites) to Britain. To do this we need to gather key information on species from a wide range of individuals.

If you are able to help write to:

Dr N. Clare Eno
Marine Conservation Branch
Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough PE1 1JY

Seashell Wall Chart

With the July issue of *BBC Wildlife*, on sale at newsagents at £2.10 from the end of June, will be a wall chart of the common seashells found on our shores. It is written by June Chatfield and illustrated with specimens loaned by Terry Wimbleton.

Previous issues or subscription to *BBC Wildlife* are available by post (£2.50) from:

BBC Wildlife Subscriptions and Backnumbers
Fulham House, Goldsworth Road
Woking, Surrey GU2 1LZ
Tel. (0483) 727762.

Newsletter Binders

Wondering how to file the new style *Conchologists' Newsletter*? Then worry no more because we have now produced an attractive, high quality binder. It is dark green with the *Conchologists' Newsletter* and the *Aporrhais* logo embossed in gold on the spine. Each binder will take 12 issues.

The binders come prepacked for mailing in cardboard cases in PAIRS. The cost by post for a pair will be £9 inc. p&p.

For members who wish to have only a single binder mailed to them the cost will be £5 inc. p&p. At indoor and field meetings they will be available singly at £4 each.

Postal orders should be sent to:

Jane Reynolds
[REDACTED]

Holloway, London [REDACTED]

enclosing the correct remittance.

(Cheques made payable to the Conchological Society).

Display Boards

A set of display boards promoting the study of mollusca and the work of the Society is now ready for use. Anyone who is organising/attending an event at which these boards could be displayed, or anyone who knows of suitable venues to display them, e.g. libraries, museums etc., should contact:

Jane Reynolds,
[REDACTED]

Holloway, London [REDACTED]

Diary of Meetings

The diary is presented in date order and includes both meetings of the Conchological Society of Great Britain and Ireland and meetings of molluscan interest run by other organisations. Fuller details of Conch. Soc. field meetings are given on page 359.

Saturday 4 June, South Downs. Conch. Soc. field meeting led by Brian Coles ().

Thursday 23 to Sunday 26 June, Anglesey. Conch. Soc. field meeting led by Tom Clifton () and Tim Worsfold.

Saturday 16 July, Poole Bay. Conch. Soc. dredging trip. FULLY BOOKED.

Sunday 21 August, North-east Kent. Conch. Soc. field meeting led by Ian Killeen ().

Saturday 3 to Sunday 4 September, Sedburgh, North Yorks. Weekend meeting of the Yorkshire Conchological Society to record the mollusca of the Sedburgh area. Meet at the car park near the old bridge in Kirby Longsdale (SD615783) at 11.00 am on Saturday. Details of Sunday meeting point from David Lindley, (), Leeds ().

Monday 5 to Sunday 11 September, Channel Islands. Conch. Soc. field meeting led by Roger Brehault and Ian Killeen ().

Wednesday 7 to Wednesday 14 September, Nettlecombe Court. Shell Life: a field course on molluscs in Somerset. Tutor: Dr June Chatfield. Full details from the Leonard Willis Field Centre, Nettlecombe Court, Williton, Taunton, Somerset TA4 4HT.

Saturday 1 October, Hornsea Mere, N. Humberside. Field meeting of the Yorkshire Conchological Society. Meet at entrance (TA 199473) at 11.00 am.

Wednesday 5 to Sunday 9 October, Northumberland. Conch. Soc. field meeting led by Rosemary Hill ().

Saturday 22 October, London. Malacological Pioneers: a one-day meeting organised by the Malac. Soc. with the Conch. Soc. and the Society for the History of Natural History, Burlington House, Piccadilly at 10.00 am. Details from Elizabeth Platts (). □

Field Meetings 1994

Hon. Programme Secretary:
Ian Killeen
163 High Road West
Felixstowe, Suffolk, IP11 9BD
Tel. [REDACTED]

Important

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

Saturday, 4 June SOUTH DOWNS

Leader: Brian Coles [REDACTED]

An opportunity to examine the rich assemblage of snails in the woodlands and downland to the north of Brighton. The sites will include Newtimber Hill (TQ268128) and Wolstonbury Hill (TQ284138). The typical fauna includes *Acicula fusca*, *Azeca goodalli* and *Macrogastra rophii*.

Meet at Hassocks railway station (TQ304156) at 10.45 am.

Thursday to Sunday, 23 – 26 June ANGLESEY

Leaders: Tom Clifton [REDACTED] and Tim Worsfold

This will be a mixed discipline meeting combining land snail sites in the mornings and marine habitats in the afternoons. Anglesey has a diversity of shores offering most types of habitat and some rich wetlands in the centre of the Island. Members wishing to attend all or part of this meeting should contact Tom Clifton for a full itinerary, details of sites and meeting places.

It will be up to individual members to make their own accommodation arrangements; the Tourist Information Office, Salt Island Approach, Holyhead, Anglesey LL65 1DR (Tel. 0407 762622) should be able to help. Three of the marine sites are on the west coast, one is on the north and the other on the north-east, so the west would probably be the best base.

Saturday, 16 July POOLE BAY, DORSET

Leader: Jan Light [REDACTED]

This dredging trip is FULLY BOOKED.

**Sunday, 21 August
NORTH-EAST KENT**

Leader: Ian Killeen

A combined marine and non-marine meeting covering the potentially rich River Stour levels and shores in the Ramsgate area. Please note that low water is not until 19.00 so the meeting will not end until quite late.

Meet at Minster Railway Station (Grid Ref TQ312641) at 11.30 am.

**Monday to Sunday, 5–11 September
CHANNEL ISLANDS**

Leader: Roger Brehault (but ring Ian Killeen for information)

This is a joint meeting with PORCUPINE Society. The actual details of the itinerary are still to be finalised but it is hoped to visit a diversity of mainly marine habitats including the submarine caves on Sark and a trip to Herm. It may also be possible to arrange a dredging trip.

It will be up to individual members to make their own accommodation arrangements but unless you are taking a vehicle, staying in the St Peter Port area is recommended. Details of accommodation can be obtained from: States of Guernsey, Dept of Tourism, PO Box 23, St Peter Port, Guernsey GY1 3AN.

Travel costs vary considerably according to mode of transport, time of day, time of booking, etc., but a rough guide is as follows:

- Flight from London: PEX saver £74
Skylink Plus £136
- Car and 2 adults on catamaran from Weymouth: £255–£340 return
Passenger only: £65–80

It is essential that all members wishing to attend all or part of this meeting should advise Ian Killeen ASAP.

**Wednesday to Sunday, 5–9 October
NORTHUMBERLAND**

Leader: Rosemary Hill

Please note that the telephone number given in the programme is incorrect.

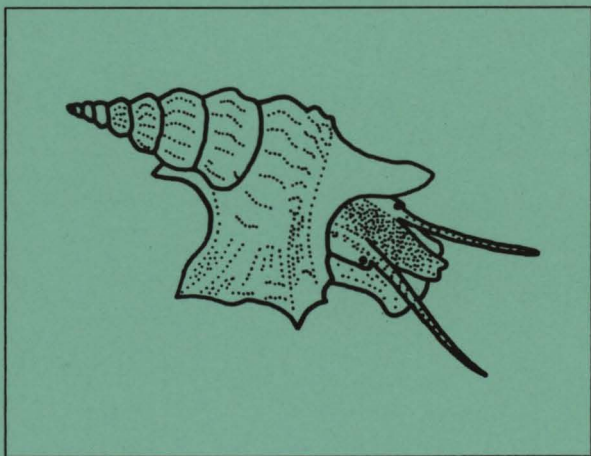
A combined marine and non-marine meeting in the area between Alnwick and Berwick. The itinerary will include visits to Lindisfarne, Bamburgh, local nature reserves, etc. Full details in the next *Newsletter*. Please advise the leader if you are hoping to attend.

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Conchological Society Expedition to the Oban Area, 18-22 August 1993

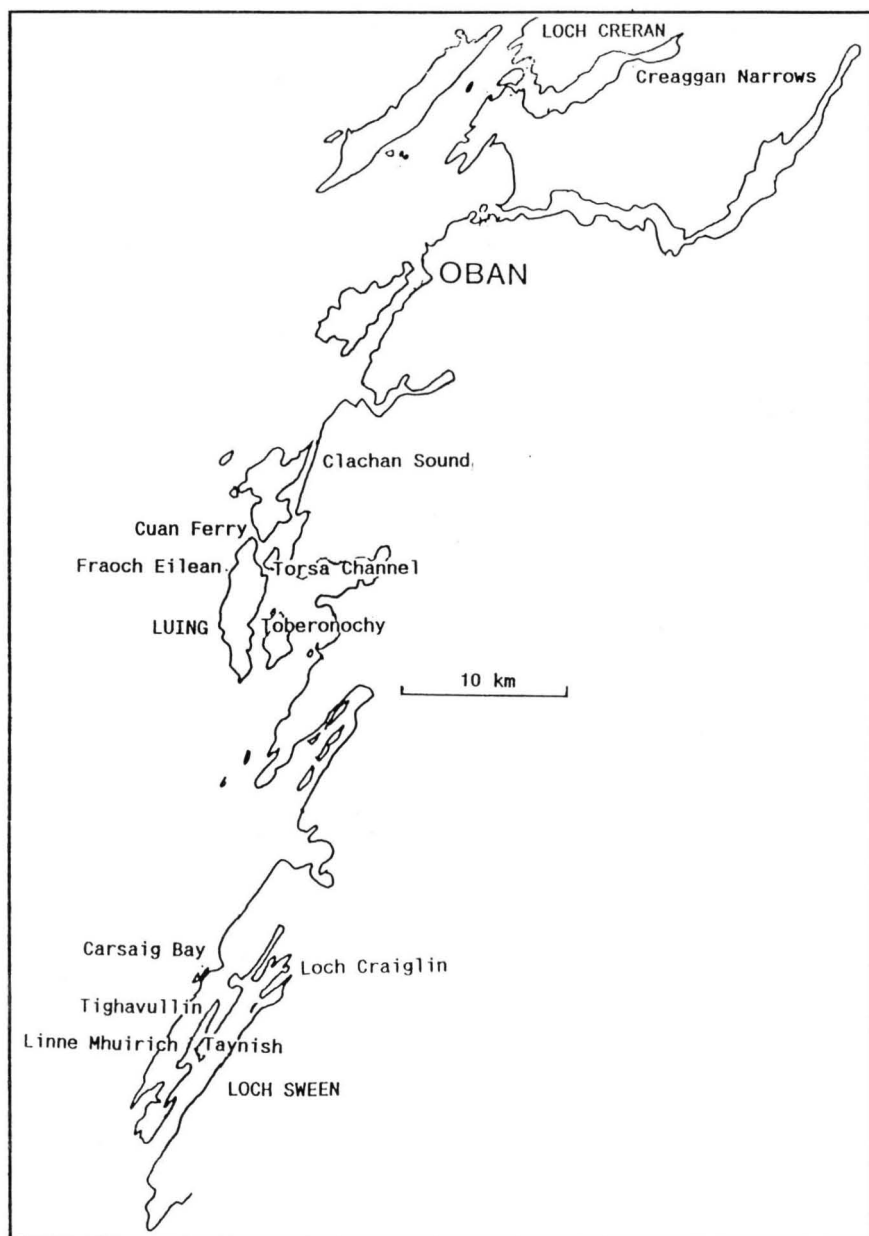
Shelagh M. Smith

Hayton, Carlisle

This excursion by members of the Conchological Society was designed to demonstrate a range of habitats and marine Mollusca perhaps different from those found further south. The Oban area has sheltered and semi-sheltered shores with an interesting variety of habitat, some of which are unusual outside the context of west Scotland. There is a wide diversity of Mollusca, records from some sites comprise over 100 species found living within the last ten years. Dredging, under the auspices of the Scottish Association for Marine Science using their vessel *Seol Mara*, was carried out. Non-marine Mollusca were also recorded, the results of which are not within the scope of this report.

A lengthy and detailed report on the results of the expedition has been prepared of which this is an extract. About 320 species of Mollusca have been found living in the area since 1950, most of these since 1980, and only 23 others have been found only as dead shells or refer to older records. This reflects not only the amount of work which has been done in the area but its richness and diversity. It is clear that more species are yet to be found, particularly offshore. The present contribution highlights the more interesting observations. It is also restricted to the shore work, since that of the dredgings is conveniently considered with the results from additional dredging in the Oban area in the last few years.

Eleven shore sites were investigated during the period of the excursion (Map 1). From the Loch Sween area in the south to Loch Creran in the north is a distance of about 60 km. Data obtained in 1993 has been added to that from previous visits to the same sites. Mollusc information from Loch Sween has largely but not wholly been published (Smith, 1982, 1984a, 1984b, 1985, 1986, 1990). There are also published reports on Clachan Sound (Smith & Nunn, 1985, 1992).



Map 1. Locality map of the Oban area showing the shore sites

An attempt has been made to assess the importance of any changes in the molluscan populations over the years. The many samples of weed washings (collected and processed according to the method described in Smith, 1979) have been collated to this end.

Nomenclature, which differs from that found in some of the earlier literature, is after Smith & Heppell (1991). Revision of large collections of Pyramidellidae has shown that although many species in this apparently difficult group are easy to identify, problems are present. It is likely that *Brachystomia angusta* is widespread in the Oban area, having previously been recorded under *Brachystomia scalaris*. The former differs in being narrower-spined and lives amongst algae (being found in weed washings), while the latter is rotund and lives amongst mussels.

Clachan Sound

The first site visited was Clachan Sound. This is one of the best-known intertidal sites on the west coast of Scotland. The Sound is a narrow, straight, very sheltered tidal channel about 1 km long, connecting Seil Sound, to the the south, with the Firth of Lorn. About 150 species of mollusc have been found here, 90% of them recently living. At the south end there is a shallow rapids with boulders on gravel and much weed, together with a muddy bay. Species of note here include *Emarginula fissura*, *Diodora graeca*, *Lacuna crassior* and *Boreotrophon truncatus*. The white form of *Calliostoma zizyphinum* is common. Northwards there is a shallow section with steep rocky sides and a boulder floor all covered with algae. At the middle point there are mobile gravel shallows with clumps of weed. In this area there are large but apparently diminishing populations of large bivalves such as *Glycymeris glycymeris*, *Circomphalus casina*, *Tapes rhomboides*, *Dosinia exoleta* and small species including *Crenella decussata*, *Limatula subauriculata*, *Gari tellinella*, *Mya truncata* and *Thracia villosiuscula*. Washings of gravelly weeds produced several live specimens of *Caecum glabrum* and one of *Cima minima*. Further north again there is a pool 3m deep, a stream flowing in from the east over a small gravel flat and a

slate tip which contains *Littorina nigrolineata*, *Leucophytia bidentata* and *Ovatella myosotis*. North again the channel shelves over a low wide sill about 200m long with boulders on gravel almost drying at low water. There are more bivalves here than at the south end. Over the years these have included *Musculus costulatus*, all the commoner pectinids and all the larger astartids.



Fig. 1. Clachan Sound. The 'Bridge over the Atlantic' at the south end of the channel.

The average number of living species found per visit is 84. Ninety-nine living species were found in 1993, probably because the site was investigated in detail by a greater number of people. Twelve of these were new species records: *Gibbula magus*, *Caecum glabrum*, *Lamellaria latens*, *Cima minima*, *Brachystomia angusta*, *Limacia clavigera*, *Nucula nucleus*, *Musculus costulatus*, *Tridonta montagui*, *Parvicardium ovale*, *Gouldia minima* and *Chamelea gallina*. New records of dead shells included *Jujubinus miliaris*, *Hyala vitrea*, *Ondina divisa*, *Retusa obtusa* and *Spisula solida*. Twenty-five species recorded previously were not found on this visit.

Weed washings provide comparative data on the health of the site. They have been interpreted in the light of season and weather and it has been concluded that for *Fucus serratus* there was a decrease in mollusc content, except at the north end, between 1985 and 1990 and an increase thereafter. For small algae there was a distinct increase in diversity but not in the numbers of individuals between 1985 and 1990. Later samples are not of good quality, but it is clear that there has been a real drop in the molluscan population at the middle gravels especially since 1991.

Loch Sween

Loch Sween has been investigated more thoroughly than most parts of Scotland because it has been proposed as a Marine Nature Reserve. The sites covered in 1993 lie in and around Linne Mhuirich, a sub-loch or large lagoon on the west side, connected to Loch Sween by shallow rapids. This area was surveyed extensively in 1982, 1984 and 1985. Several sites with different habitats occur in this area. Taynish Island is at the south-east end of Taynish peninsula and diverts the Linne Mhuirich rapids southwards to its junction with Loch Sween. Taynish Island channel, between the island and the peninsula, is very shallow and almost dries at low water, the northern end being a typical very sheltered boulder/*Ascophyllum nodosum* shore passing down into soft mud. At the south end there is a current area, the strongest current flowing from the rapids northwards. Here there are boulders resting on bedrock or gravel. The middle and upper shore is heavily fucoid-covered. In previous years the more gravelly part of the channel yielded a diverse and rich mollusc fauna, but this was not the case in 1993.

Linne Mhuirich rapids

Linne Mhuirich rapids is a well-known and very well-documented site, particularly renowned for its large and colourful sponges, which were little in evidence and quite unremarkable in 1993. There is a strong current on the ebb tide. Most of the channel runs west-east, but the lower third makes a dog-leg between Sgeir an Fheoir and Taynish Island and runs southwards. It is between 100m and 300m wide and only a few

metres deep at low water. The north site is an open shore, chiefly boulder with some bedrock outcrops and patches of sandy gravel. The boulders on gravel extend out into the rapids. There are areas of living maerl and a patch of discarded roofing slates. The break of slope at the top of the rapids was in 1985 seen to contain *Corallina officinalis* gravel similar to but not as rich as at Clachan Sound. This was not found in 1993. On the south side of the rapids the shore is bedrock and boulders and at the top, western end, beside the Ulva Isles, there is sand with large bivalves passing down into extensive *Zostera marina* beds which cover much of the southern end of Linne Mhuirich.

There was a distinct impression that the shores of Linne Mhuirich rapids have become less diverse in many species since serious investigations began in 1982. However, numbers of species of Mollusca found at each visit do not bear this out. The average number of species found per visit was 57.5. There seems to have been an increase in the numbers of individuals present amongst the small algae, but this is mostly due to increases in the numbers of a few common species, particularly *Bittium reticulatum*, which appears to have become much more abundant in Linne Mhuirich over the last few years.

Taynish shore

Taynish shore, within Linne Mhuirich, is open but sheltered. It is chiefly gravel, pebbles and cobbles with some boulder areas and low ribs of bedrock parallel to the shore just below low water. Algae are somewhat sparse except for patchy algal turf on the bedrock and large boulders of the lower shore. There are large patches of rather wispy *Zostera marina* containing huge populations of *Rissoa membranacea* and *Pusillina sarsii*. The interest of the site is centred on large populations of large bivalves especially *Ostrea edulis*. Recording of Mollusca at this site has not been at a standard as high as at the others and therefore no comparisons can be made between present and older data. Omitting poor data, the average number of species per visit is 35.

Tighavullin

Linne Mhuirich, from Tighavullin quarries northwards to the

head of the loch, is very sheltered with a boulder and muddy gravel shore passing down into a sublittoral fringe of *Zostera marina* which traps soft mud. There are fucoids on the upper and middle shore, and some more or less permanently submerged *Fucus serratus* and patches of *Laminaria digitata* and *Laminaria saccharina* have been found below low water. The head of the loch is muddy sand with a mixed population of *Cerastoderma edule* and *Cerastoderma glaucum*. The old quarry tip, whose slates do not on the surface now extend below low water, shelters the area just to the north of it. This tip has a considerable population of species such as *Leucophytia bidentata* with *Ovatella myosotis* at extreme high water under boulders on grass. The *Zostera marina* is long and lush and provides the best habitat with an extremely rich fauna including very high numbers of *Bittium reticulatum* (over 10,000 in one sample of about 8 litres), *Hydrobia ulvae* and *Rissoa membranacea*. *Runcina coronata* is present throughout Linne Mhuirich on *Zostera marina* and in 1993 was also found here crawling over hard substrates including oysters. It was spawning in June 1993. In 1982 there was a fully operational oyster farm, for *Crassostrea gigas*. In 1984 it was run down and by 1993 totally derelict with the wooden parts of the rafts nearly gone and only some metal framework pieces remaining. *Ostrea edulis*, native to Linne Mhuirich, was still abundant in 1993, and there were some old living *Crassostrea gigas*, but no young stock. *Tapes decussatus*, abundant in 1982 but being fished out, were still just present. *Parvicardium exiguum* was abundant on the *Zostera marina*.

Twelve additional species of Mollusca were found in 1993, this being due entirely to careful search of additional habitats, namely the upper shore and the *Zostera marina*, from which particularly large samples of fronds and root areas were obtained. The average number of species per visit is 48.5, showing the lack of variety of habitat in this very sheltered upper loch. The increase in numbers of individuals associated with *Fucus serratus* is due to huge increases in *Bittium reticulatum*, *Rissoa membranacea* and *Hydrobia ulvae*, the same being true for the small algae and *Zostera marina*.

To sum up, it would appear that, without corroborative evidence, the sponges in the rapids have diminished, there have been local changes in habitat such as the apparent lack of *Corallina officinalis* at the top of the rapids, and a possible increase in the amount of *Zostera marina*. Despite the diversity of habitat, all the work done shows that the hydrography acts against Linne Mhuirich. The diversity of Mollusca (only 121 living species) does not compare favourably with the much smaller and less diverse sites at Clachan Sound and Torsa Channel.

Thirteen additional species of Mollusca have been recorded living in 1993, which indicates a search of different habitats and a search by more people. While in part this was due to the recording effort in August 1993, additional species were first found in the *Zostera marina* at Tighavullin in June 1993 by Killeen & Smith during a preliminary visit. These species are *Callochiton septemvalvis*, *Tonicella rubra*, *Dikoleps nitens*, *Alvania semistriata*, *Vitreolina philippi*, *Odostomia plicata*, *Brachystomia eulimoides*, *Retusa obtusa*, *Adalaria proxima*, *Favorinus branchialis*, *Leucophytia bidentata*, *Ovatella myosotis* and *Abra alba*. However, 27 species, mainly nudibranchs, were not found on this visit.

Loch Craiglin

Loch Craiglin is set in a hollow in the woods. Viewed from afar, marine influence is not apparent. There is almost no tide and it is completely sheltered. The lochan is about 200m wide and 500m long. It is very shallow, mostly 0.5–3m with a pit at 6m. Most of the shores are gravel with a few boulders and muddy patches and below this there is mud and muddy sand with, in 1982, healthy *Zostera marina* with abundant *Akera bullata*. In 1984 the *Zostera marina* adjacent to the shore had died and formed a rotting mat and was replaced by green algae. In the spring of 1985 there was more *Fucus serratus* in the culvert but fewer molluscs on the *Zostera marina* and no *Akera bullata* were found. In June 1993 no *Zostera marina* was seen, *Chaetomorpha* sp. and *Ruppia* sp. being present but not in great quantity. Both the shores and sublittoral were investigated in some detail between 1982 and 1985

when Loch Sween was mooted as a Marine Nature Reserve. *Cerastoderma glaucum* are abundant, the young crawling on the weed.

Loch Craiglin is connected to the sea by a narrow channel about 150m long which at its upper end has been artificially reconstructed and culverted. It is thought that Craiglin was originally freshwater and that the exit channel was deepened to admit sea water in the 1890s in connection with the first attempts to cultivate oysters in Loch Sween. Craiglin now has the widest range of salinity and temperature of any part of the Loch Sween system. Later (1942 and 1943) fertilizers were added to see if this could improve feeding for flatfish. The channel area is gravel and boulders with heavy fucoids and *Mytilus edulis*.

The size of the molluscan population of Craiglin appears to have remained fairly constant over the years, with a change in content due to the change of flora. The disappearance of *Akera bullata*, once abundant on *Zostera marina*, has been compensated for by the presence in huge numbers of *Rissoa membranacea* and juvenile *Cerastoderma glaucum* on the replacement plants. Few species are present; the average number of species recorded per visit is 9.5.

Carsaig Bay

Carsaig Bay is a sheltered shallow sandy bay backed by boulders at high water. A few bivalves including *Ensis arcuatus* and *Angulus tenuis* live in the sand. On the south side of the bay beyond a small stream there are boulders with fucoid cover, some fresh water run-off above and muddy sand below. About 1 km to the south-west there is a tidal channel across which is the rock ridge of Eilean Traighe. At the north end this channel is sandy with *Ensis arcuatus*. There is a central lagoon mostly 0.5m deep, with boulders on sand. The east side is muddy with blanket fucoids on boulders. This area used to have a considerable fauna especially of Polychaeta and Ascidia, but far fewer animals were seen in 1993. The south end of the channel was originally blocked by a boulder bed but this was partly cleared in the late 1980s to allow passage of small boats, and this seems to have had an

adverse effect on the lagoon. The inlet south of the tidal channel has rocky sides and a muddy sand floor. Being more sheltered than the inlet at the north end it tends to suffer from accumulation of drift weed. The large boulders on the east side proved to have a very interesting molluscan fauna including *Emarginula fissura* and *Chlamys distorta* with abundant *Rissoella opalina* on algae at low water.

A wider coverage of the site – more careful investigation of the sand and a visit to the boulders beyond the south end of the channel – has produced records of an additional 15 species of living Mollusca found in 1993, comprising *Leptochiton asellus*, *Ischnochiton albus*, *Emarginula fissura*, *Dikoleps nitens*, *Tricolia pullus*, *Trivia arctica*, *Odostomia plicata*, *Archidoris pseudoargus*, *Modiolus modiolus*, *Chlamys distorta*, *Aeguipecten opercularis*, *Anomia ephippium*, *Spisula subtruncata*, *Ensis arcuatus* and *Angulus tenuis*. Thirteen species were not refound. Of these it is perhaps surprising that *Tectura virginea* and *Lasaea adansoni* were absent. Since the previous high point in 1984, the low level of species found in 1985 could be attributed to the clearing of the channel, that of 1989 to the season (November) and the present high level to the search of additional habitats, as many of the records were from these areas. The average number of species per visit is 50. Comparisons of weed washings show an unusually clear seasonal variation both in the *Fucus serratus* samples and those of small algae: the August samples having a notably greater number of individuals, rather than, except in 1984, a larger number of species. The seasonal variation is perhaps most obvious for *Skeneopsis planorbis* and *Turtonia minuta*. Again *Bittium reticulum* had increased markedly by 1993.

Luing

The island of Luing lies closely adjacent to the Scottish mainland about 20 km south of Oban. Luing is about 9.5 km long, from north to south, and about 2 km wide. As its name indicates, it lies in an area of strong tidal currents. Although much of the water at the head of the Sound of Jura (south of Luing) drains through the Gulf

Island. The sides of the channel are composed of steep rock, which on the lower shore passes down into large and medium, rather angular boulders which extend across the floor of the channel. There is good cover of fucoids and *Laminaria digitata*. To the north the channel widens and there are patches of mobile shell gravel extending to well below low water. To the south the area opens into Ardinamar Bay, which is rather muddy. This is a very rich area and is another site for white *Calliostoma zizyphinum*.

The site was investigated on a poor tide in 1983 but recognised as likely to be extremely rich and interesting. The next visit in 1990 bore this out (53 species) and further rewards came in 1993, when a particularly good survey yielded an additional 29 species of Mollusca including the now almost ubiquitous *Dikoleps nitens* and the rare *Cima minima* and *Ondina diaphana*. Nine species were not found again, of which *Cingula trifasciata* and *Chlamys varia nivea* would have been expected. The total number of species living – 82 found in 1993 – are mostly those in the Occasional category, or where the abundance is not known. The site is as interesting as Clachan Sound, and to date 95 living species of Mollusca have been found there, with an average, excluding poor data, of 68 species per visit. Because of difficulties of access, compared with the ease of Clachan Sound, it is not under the same pressure. New living species are *Callochiton septemvalvis*, *Acanthochitona crinitus*, *Dikoleps nitens*, *Skenea serpuloides*, *Lacuna parva*, *Onoba aculeus*, *Alvania punctura*, *Pusillina inconspicua*, *Caecum glabrum*, *Cerithiopsis tubercularis*, *Cima minima*, *Boreotrophon truncatus*, *Hinia incrassata*, *Ammonicerina rota*, *Odostomia plicata*, *Jordaniella nivosa*, *Ondina diaphana*, *Diaphana minuta*, *Retusa truncatula*, *Adalaria proxima*, *Nucula nucleus*, *Lucinoma borealis*, *Parvicardium ovale*, *Cerastoderma edule*, *Macoma balthica*, *Gari tellinella*, *Abra alba*, *Chamelea gallina* and *Clausinella fasciata*.

Fraoch Eilean

On the west side of Luing there is a complex area of low islands which surround an almost landlocked anchorage, now a fish and

of the Corryvreckan between Jura and Scarba, a considerable volume flows through the Sound of Luing (west of Luing) and some goes up the east side into the complex of sounds and lochs which end, on the east, in the closed Loch Melfort. At the north end a very little water flows through the tidal Clachan Sound but most of the flow goes through Cuan Sound, between Seil and Luing. Cuan Sound is only 300m wide and up to 35m deep. Its tidal currents are strong and almost continuous. The two surges of water, that from the Sound of Jura and that of the Firth of Lorn, have different tidal regimes and meet in an area of strong currents and overfalls. Thus Luing is in an area of complex hydrography. While the western side of the island has a tidal range of up to 3m, that on the eastern side is less.

Toberonochy

Toberonochy is on the east side of Luing, sheltered and is composed of two slate tips jutting out into Loch Shuna. The lower parts of the tips have slabs with muddy gaps 10–50 mm wide with some water movement amongst them. The site was surveyed in 1983 (Smith, 1984) and yielded an interesting fauna including *Palliolium striatum* and *Limaria hians*. The average number of species per visit is 51. It was investigated in less detail in 1993, but amongst upper slates *Cingula trifasciata*, *Leucophytia bidentata* and *Ovatella myosotis* were found but not *Lasaea adansonii*, which was previously Common. Twelve new species were found in 1993, *Calochiton septemvalvis*, *Lepidochitona cinereus*, *Acanthochitona crinitus*, *Dikoleps nitens*, *Skenea serpuloides*, *Alvania punctura*, *Alvania semistriata*, *Chrysallida obtusa*, *Ovatella myosotis*, *Mysella bidentata* and *Abra alba*. Twenty-five species were not refound.

Torsa Channel

Torsa Island and Torsa Beag lie at the north-east end of Luing and are connected to the larger island by a very sheltered channel little more than 25m wide which dries at extreme low tides. While a little water moves swiftly through the channel on the upper part of the tide, the main flow goes round the north end of Torsa

shellfish farm. At the north entrance to this anchorage there are rock ridges and very sheltered gravel and boulder channels which partly dry at low water and have an emptying current through them. These channels had a rather sparse bivalve fauna. By contrast, at the seaward, northern end of the channels there are extensive boulder beds covered with *Laminaria digitata* and fucoids which have a rich gastropod fauna including *Calliostoma zizyphinum* (pink), more numerous here than at any site other than Clachan Sound. The total number of species recorded was found to be broadly similar in 1983 and 1993. The gravel channels disappointed in 1993, with an impression of deadness, contrasting with the boulder beds at the north end, not surveyed in 1983. With an average of 60 species per visit, it is one of the rich sites. Fifteen additional species were found, of note being small bivalves in the gravel. These were *Diodora graeca*, *Melarhaphe neritoides*, *Hinia incrassata*, *Rissoella globularis*, *Brachystomia angusta*, *Nucula nucleus*, *Modiolarca tumida*, *Musculus discors*, *Chlamys distorta*, *Aequipecten opercularis*, *Lucinoma borealis*, *Parvicardium exiguum*, *Abra alba*, *Timoclea ovata* and *Thracia villosiuscula*. Seventeen species were not found on the second visit, including *Gibbula umbilicalis*, *Mya truncata* and other large bivalves in the gravel, of which only very worn shells were seen, if at all. For the weed washings, *Fucus serratus* produced reasonably consistent results, with a slight improvement in 1993 over 1983. The small algae had a large drop in numbers of species but an enormous increase in numbers of individuals, particularly *Turtonia minuta*, possibly indicating that the dominant species had inhibited the presence of less common ones.

Cuan Ferry

The Cuan Ferry site is a very small patch in Cuan Sound adjacent to the ferry. Here a slate tip in shelter passes down into the currents of Cuan Sound. The area was intensively surveyed in 1983 and 1990, but only briefly examined in 1993. Of interest here are *Boreotrophon truncatus*, *Discodoris planata* and *Modiolula phaseolina*, all found amongst the slates. There is

insufficient information to discuss the diversity of the Mollusca, but with an average of 41 species found on better visits, the very restricted habitat is clearly well placed to harbour species brought into Cuan Sound by the currents.

Creaggan Narrows

Creaggan Narrows is at the junction of the upper and lower basins of Loch Creran where the loch narrows to less than 100m and shelves to 5m. The current runs at up to 5 knots. On the north side, there is steep bedrock giving way to a small patch of mobile sand just below low water. The bedrock is densely covered by *Mytilus edulis*, but washing of clumps for interstitial species was fruitless, unlike the situation further down the loch where the mussels harbour a variety of species including numerous Pyramidellidae. The sand contained fewer bivalves than found in 1985, but a colony of *Musculus costulatus* was found amongst the adjacent boulders. The main area of foreshore is on the south side. Under the bridge there is bedrock and boulders, giving way westwards to a short steep boulder shore with muddy gravel beneath the boulders. Further west where the loch opens out there is a gravel sand and boulder shore with shallow pools passing down into boulders on gravel or sand. This current area was notable for plentiful *Tonicella marmorea* and *Tridonta montagui*.

The fairly low number of species found at Creaggan Narrows (the highest, 46, in 1993) suggests that the shores this far up Loch Creran either could do with much more investigation, or, as seems more likely as the habitats are limited, that they are less rich than others reported upon here and indeed further down Loch Creran where over 90 species have been found at one visit to one site. Nine additional species were found, *Leptochiton asellus*, *Margarites helycinus*, *Rissoa lilacina rufilabrum*, *Diaphana minuta*, *Aequipecten opercularis*, *Parvicardium exiguum*, *Macoma balthica* and *Thracia villosiuscula* and only two were not refound.

From this report it can be seen that the expedition to Oban was extremely successful. The author is very grateful to all participating members who worked so hard and produced so

many records, so many being additions to those already found in this apparently well-worked area.

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- Smith, S.M. and Heppell, D., 1991. Checklist of British Marine mollusca. *National Museums of Scotland Information Series*, No. 11.
- Smith, S.M. and Nunn, J.D., 1985. Mollusca found in Clachan Sound. *Conchologists' Newsletter* **120**: 451–453. □

Annual General Meeting 1995

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

Rule No. 12: Candidates for nominations to the Council shall be paid up members of the Society and shall be nominated by two members. Nominations, other than those made by 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 (Jane Reynolds, [REDACTED], Holloway, London [REDACTED]) **not later than 30 November 1994.**

A second site for *Vertigo geyeri* Lindholm living in mainland Britain

B. Colville

Ambleside, Cumbria

The Conchological Society field meeting on Anglesey this year was organised and extremely well planned by Tom Clifton and Tim Worsfold. On 24 June, a dry morning, we visited the National Nature Reserve and Site of Special Scientific Interest at Cors Erddreiniog near Llangefui. We were met by the warden, Les Colley, whose guidance to promising sites was invaluable.

In the north-east of the area, south of Naut Isaf farm and east of Llyn yr Wyth-Eidion, there is an area of fen flushed by calcareous spring water from the limestone to the east causing the formation of tufa especially on the moss. I took some litter from part of this area centred on map reference SH 477823, a sloping flush where there were small pools of tufareous mud with variably sized mounds and tussocks of grass, *Schoenus nigricans*, *Juncus* sp. and *Carex* sp. in the main; Marsh Helleborine and Grass of Parnassus were also present. The site was very reminiscent of Tarn Moor near Sunbiggin Tarn in Cumbria where *Vertigo geyeri* was found in 1978. Very few snails were sieved from the litter but they included a fresh looking dead shell of *V. geyeri*, an unusual specimen in that the columellar tooth was absent.

Adrian Fowles, the officer responsible for invertebrates for the Countryside Council for Wales, was informed and he invited me to join an invertebrate survey to investigate Cors Erddreiniog that had been arranged by coincidence to take place on 2 July. The team consisted of Adrian, myself, Arthur Chater, a conchologist with a proven record of finding *Vertigo* in Wales, and two entomologists, Mike and Liz Howe. All were briefed and on the look-out for *V. geyeri*. Weather conditions continued to be dry.

My tactic was again to take litter and I collected small bags of herbage and mosses centred on four map references: SH 478825, SH 478824, SH 477823 and a flat area where fly orchids were frequent, SH 476818. Again very few molluscs were found when

the contents of the bags were dried and sieved. Specimens of *V. geyeri* were found in each bag: two juveniles in the first, three fresh dead shells in the second, two dead shells, one live adult and two juveniles in the third, and a single live adult in the fourth. Adrian found a single specimen and attributes his relative lack of success to concentrating on pulling up tufts of moss. Liz, on the other hand, while dabbling in the mud for the larvae of the beautiful black and yellow 'Red Data Book' fly, *Stratiomys chamaeleon*, picked three live specimens from or between *Carex lepidocarpa* leaf bases near the water's edge.

We were all struck by how few molluscs we found. In spite of this we produced a very good list of species. Those most associated with *V. geyeri* were:

Lymnaea truncatula
Carychium minimum
Oxyloma pfeifferi
Cochlicopa lubrica
Punctum pygmaeum

Nesovitrea hammonis
Zonitoides nitidus
Deroceras laeve
Euconulus alderi
Trichia hispida

but also found nearby were:

Acicula fusca
Carychium tridentatum
Columella aspera
Vertigo antivertigo
Vertigo substriata
Vertigo pygmaea
Leiostyla anglica

Vallonia pulchella
Discus rotundatus
Arion ater
Arion intermedius
Vitrea contracta
Ashfordia granulata
Cepaea nemoralis
Pisidium sp.

Also in the area:

Cochlicopa lubricella
Acanthinula aculeata
Arion distinctus
Oxychilus cellarius

Euconulus fulvus
Clausilia bidentata
Arianta arbustorum.

I informed Michael Kerney of the find, and he told me Martin Willing had found fossil *V. geyeri* in a Postglacial tufa here at SH 475815.

Reference

Coles B. and Colville, B., 1979. *Catinella arenaria* (Bouchard-Chantereaux) and *Vertigo geyeri* Lindholm from a base rich fen in North West England. *J. Conch., Lond.*, **30**: 99-100. □

Newsletter Binders

Wondering how to file the new style *Conchologists' Newsletter*? Then worry no more because we have now produced an attractive, high quality binder. It is dark green with the *Conchologists' Newsletter* and the *Aporrhais* logo embossed in gold on the spine. Each binder will take 12 issues.

The binders come prepacked for mailing in cardboard cases in PAIRS. The cost by post for a pair will be £9 inc. p&p.

For members who wish to have only a single binder mailed to them the cost will be £5 inc. p&p. At indoor and field meetings they will be available singly at £4 each.

Postal orders should be sent to:

Jane Reynolds

Holloway, London

enclosing the correct remittance.

(Cheques made payable to the Conchological Society).

Notes on British Pyramidellidae

Shelagh M. Smith

Hayton, Carlisle

I have, not without difficulty, been revising the identifications of the Pyramidellidae in the collections of the National Museums of Scotland and in my personal collection. Many of the specimens in the former lack habitat data, even when they have been collected alive, and many in both have been found as dead shells. The following information may prove useful not only as indicative of where certain species may be found, but also the preferred habitat has been found useful in helping towards identification of species. Descriptions of species here are purposely omitted since they may be found in Graham (1988).

***Odostomia acuta* Jeffreys, 1848**

Muddy shell gravel containing a variety of organisms, not found intertidally but from 10m to possibly below 100m.

Graham (1988) suggested that it was associated with Bryozoa.

***Odostomia plicata* (Montagu, 1803)**

I have usually found this amongst washings of small algae, also amongst shell gravel and weed to 15m. They seem to feed on *Spirorbis*, *Pomatoceros* and terebellid worms. Also associated with *Serpula*. A significantly different form lives amongst the roots of *Zostera marina*, probably feeding on terebellids.

Graham (1988) suggested that it was associated with *Pomatoceros*. His figure on p. 596 is atypical and appears more like an *Odostomia turrita*.

***Ostomia turrita* Hanley, 1844**

This is frequently found in washings of *Fucus serratus* upon which are *Spirorbis*, which with *Pomatoceros*, is its chief food. It is also common amongst small algae, my samples of which also often have *Spirorbis*. Other habitats include on a dead shell encrusted with *Pomatoceros*, amongst *Zostera marina* and maerl, and offshore inside a dead shell of *Dosinia lupinus*, on a stone

with *Pomatoceros*, 73m, and amongst shell gravel with weed. Also associated with *Serpula*.

***Odostomia unidentata* (Montagu, 1803)**

This has been recorded from a wide range of habitats, including the uninformative 'under boulders'. Most of my records are from washings of small algae or *Fucus serratus*, which suggests an association with *Spirorbis*. It has been found both onshore and offshore associated with *Pomatoceros*, on *Balanus balanus*, amongst *Mytilus edulis* and *Modiolus modiolus*, and offshore in muddy shell gravel with and without weeds. It also appears to feed on terebellid and serpulid worms.

Graham (1988) suggested that it was associated with serpulids down to 100m.

***Brachystomia angusta* (Jeffreys, 1867)**

I have found this species in the field and have identified it from amongst collections variously labelled *Brachystomia eulimoides* or *Brachystomia scalaris*. It is intermediate between them, being taller and narrower than the latter but still having prosocline growth lines unlike *B. eulimoides* which is orthocline. It occurs both intertidally amongst algae, but not apparently amongst mussels, and in the shallow sublittoral in shell gravel, muddy shell gravel, probably associated with terebellids and spirorbids.

***Brachystomia carrozzai* (Aartsen, 1987)**

This has been found only intertidally, almost entirely in washings of small algae, with rare instances on fucoids and amongst *Mytilus edulis* and one example under a boulder with the holothurian *Pawsonia saxicola*. It is possible that the host is *Mytilus edulis* or other bivalves such as *Turtonia minuta*.

Graham (1988), not knowing the host, indicated that it has been found down to 70m.

***Brachystomia eulimoides* (Hanley, 1844)**

This is traditionally regarded as living offshore on the ears of pectinids. It is not uncommonly dredged free in shell gravel and muddy shell gravel where pectinids, other large bivalves and

Turritella communis may be few or absent, and in a *Modiolus modiolus* bed. Intertidally or more or less so it occurs amongst small algae, amongst the roots of *Zostera marina* in an area where oysters are very common. One also lodged itself in a crevice at the high water mark! It may be associated with terebellids. It is undoubtedly the commonest and most ubiquitous *Brachystomia*.

***Brachystomia lukisii* (Jeffreys, 1858)**

Only one specimen found alive of what appears to be a rather rare species. This was amongst the washings of small algae.

Graham (1988) suggested that it was associated with serpulids and was very common on the west of the British Isles.

***Brachystomia scalaris* (MacGillivray, 1843)**

This species has been recorded from a wide range of habitats, but many records may be in error for other species. Habitat information on correctly identified material shows that it is not uncommon amongst *Mytilus edulis* and *Modiolus modiolus*; also where there were a great many juvenile *Mytilus edulis* in *Laminaria* holdfasts, amongst *Fucus serratus* and small algae and *Balanus perforans*. It is found offshore to 15m in shell gravel with large bivalves especially *Modiolus modiolus*.

Graham (1988) suggests that it is particularly associated with *Mytilus edulis*, but also with other bivalves.

I am particularly interested in *Brachystomia* spp. and especially in the recognition and distribution of *Brachystomia angusta*. To this end I would be very grateful if anybody could loan me their collections of *Brachystomia*, or *Odostomia* s.l. Live-taken material with notes on the habitat is particularly valuable – specimens from shellsand can help only with distribution records and not with the unravelling of the mysteries of habitat preference.

Reference

Graham, A., 1988. Molluscs: Prosobranch and Pyramidellid Gastropods. *Synopses Br. Fauna* (N.S.) 2 (2nd Edition). □

Alderney, Channel Islands

June Chatfield

Alton, Hampshire

A day visit to the Channel Island of Alderney in April 1994 was made for a journalistic assignment to cover the launch of the new definitive Alderney natural history stamps for *Country-side* magazine. This is an attractive series of stamps depicting the wild flowers, mammals, birds and insects of the island – but no shells.

The flight in and the later tour round the island showed a rocky and cliffed coastline with seaweed cover on the shore and some sandy bays. In a tight schedule it was only possible to stop and look for molluscs at Platte Saline on the north coast which was a low shore of sandy gravel and strandlines backed by a small wind-blown sand area with dune vegetation between the beach and the road.

The Milky Ark Shell *Arca lactea* was the most numerous of the strandline shells, but with it were found examples of the Dog-ckle *Glycymeris glycymeris*, the European Cowrie *Trivia arctica*, the Common Dog-whelk *Nucella lapillus*, the Flat Winkle *Littorina obtusata* (which would live among seaweed), the Grey Top-shell *Gibbula cineraria* and, a speciality of the Channel Islands, *G. pennanti*. The latter has a shell colour and pattern resembling the Flat Top-shell *G. umbilicalis* but is distinguished by a taller spire and no umbilicus. Cuttlefish 'bones' were also on the strandline. A small wall display of shells can be found in the Alderney Museum.

Only a few minutes were available to search the dunes for land molluscs and these yielded live specimens of the Common Garden Snail *Helix aspersa*, the Common Hairy Snail *Trichia hispida* and the Slippery Moss Snail *Cochlicopa lubricella*. A possible keeled juvenile of the Sandhill Snail *Theba pisana* (alive) was taken but blown away whilst it was in my hand to be examined with a lens. It was a very windy day!

Alderney, only 3½ by 1½ miles, is a delightful island and

which could usefully be recorded by members. It is less commonly visited than Jersey or Guernsey and so offers a challenge. Aurigny Air Service operate direct flights to Alderney from Southampton and Bournemouth airports.



The cartoon by Graham Clarke was discovered in the Alderney tourist brochure and permission has kindly been given for its use in the *Conchologists' Newsletter*. Perhaps future visiting conchologists may check out the species of limpets as well as racing them!

A booklet *Notes on the fauna of Alderney* by R.B. Freeman was published by the Alderney Society in 1980. There are chapters on the non-marine and marine molluscs but no complete list. It is obtainable from the Alderney Society, High Street, St Anne, Alderney at £1.30 including postage.

Details of the Alderney stamps are obtainable from Guernsey Philatelic Bureau, Postal Headquarters, Guernsey, Channel Islands GY1 1AB. Guernsey also has its own natural history stamps. □

Arthur Erskine Ellis's typewriter

Bernard Verdcourt

Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

An obituary of Ellis will be found in *J. Conch.* 31: 193–199 (1983). I suppose I first corresponded with him in the early 1940s and I well remember his first letter was to upbraid me for sending him poor specimens for naming. All older members will remember that his letters and more often succinct postcards were typed on an old typewriter with an antiquated italic font. Reproduced below is a characteristic card from Ellis which is postmarked 25 July 1967.

Your *Arion* from East Sheen grew up into a magnificent bright red slug of such outstanding loveliness that it was with the utmost reluctance that his/her glamorous existence was terminated. However, dissection confirmed that it is *Arion lusitanicus* Mabilie, as you presumably suspected. This is a new record for Surrey besides being a considerable extension of range. The nearest known locality is Salisbury, and your find is the easternmost station for this species in the British Isles.



□

Keeping and Breeding Giant African Land Snails

Jackie Pedley

Wheaton Aston, Staffs

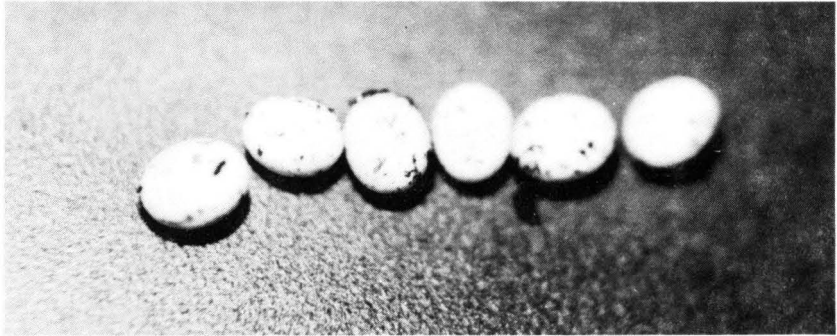
I have been collecting and breeding all sorts of snails over the years, but my favourites have to be my Giant African Snails. I have been watching them for some time now and have made a few notes which I thought may be of interest to all you snail breeders.



When I first bought my Giant Snails I had a few problems getting their home correctly set up. I put about four inches of soil on the bottom of the tank. (Don't use vermiculite as this sticks to the snails' bodies when they withdraw into their shells.) I bought a heater mat which I put underneath the tank on the outside, then realised this was a big mistake when I found a fried snail under the soil at the bottom of the tank! I then put the heater on the side and found the snails became very inactive and burrowed into the soil to keep away from it. Therefore my conclusion is **DON'T BOTHER WITH A HEATER!** Keep the tank in a warm room near a radiator instead. My next problem was humidity. The tank became too dry so I put some small round pebbles into a saucer and filled it with water, then placed it into the tank. This

kept the humidity high; however, you need to fill the saucer up with water every couple of days. The humidity should be around 75–85%. Also, it's a good idea to keep a thermometer in the tank. The temperature range should be between 20–24° C (68–75° F). You can decorate the tank with various plants which they will not eat. Leopard Lilies, ferns and ivy are good as these plants thrive in humid conditions. I would advise keeping the plants in their original pots and just burying them under the soil as they can then be easily removed for cleaning out the tank and removing any eggs that are found. Cuttlefish or limestone are a must for snails to rasp on. I feed my snails on just about anything – lettuce, cucumber, tomato and sweetcorn mostly. However, they have been known to eat some meat.

I also give my baby snails a vitamin supplement called SA-37. It is meant for cats and dogs but can be given to reptiles and snails. I sprinkle a small amount onto their food and this helps them grow bigger more quickly. Their lifespan is normally around 3 to 5 years and they can grow to around 18–24 cm.



Breeding Notes

I found a clutch of eggs on 21 February 1994, 28 'hen' shaped eggs, with a hard white shell. One or two were slightly smaller but most were around 1 mm in size. (The size of the egg may determine the adult size of the animal. I have monitored the growth rate of the babies hatched from larger eggs.)

The large ones hatched first. By day 5 these were around 1.5 mm in shell size. By day 7 the shells started to change to a darker

brown but the heart was still visible beating on the underneath of the shell at around 45 beats per minute. The very small eggs took a few days longer to hatch and around five never hatched at all. I kept the eggs in a small propagator in between moist tissue in the airing cupboard until they hatched. Eggs can take up to three months to hatch in colder, drier conditions.



I hope this article has been of interest to you and I have included some photographs of my findings. If anyone has any advice on these snails please write to me at the above address. □

Field Meeting in Gloucestershire: 23 April 1994

David Long

Leckhampton, Cheltenham

Nine members attended this meeting which combined palaeontology and non-marine recording. The first site visited, by kind permission, was the Northcot Brick company's pit in the Lower Lias Clays of the *Tragophylloceras ibex* zone.

Armed with a faunal list from Phil Palmer, which included a description of the section, we were able, in surprisingly pleasant weather, to find a good selection of the fauna recorded from the site. Fossils are found at various levels but there is a particularly rich benthic fauna, dominated by bivalves, in a shell bed about 0.5m thick in the middle of the section. Material from this bed is spread out over tailings on the site and this makes it easy to find clean specimens. We do not appear to have made any new records for the site. Most of us found examples of Liparoceratid ammonites; Ian Killeen found part of *Lytoceras fimbriatus* (J. Sowerby, 1816) and fragments of at least two other ammonites and a crushed nautiloid were noted. The conspicuous bivalves included *Cosmetodon buckmani* (Richardson, 1843), *Parainoceramus ventricosus* (J. Sowerby, 1823), *Pseudopecten acuticostata* (Lamarck, 1819), *Antiquilima antiquata* (J. Sowerby, 1818), *Plicatula spinosa* J. Sowerby, 1819, *Gryphaea depressa* Phillips, 1829, *Mactromya cardioides* (Phillips, 1829), '*Astarte*' *platymorpha* Cossmann, 1916, *Cardinia attenuata* (Stuchbury, 1842), and *Pholadomya ambigua* (J. Sowerby, 1819). Gastropods included *Eucyclus subimbricatus* (d'Orbigny, 1850), *Procerithium slatteri* (Tate, 1870), and, perhaps the most important find of the day (by Judith Nelson) what appears to be a juvenile *Zygopleura* sp., only the second specimen from this locality. Also we found two belemnite species, *Passaloteuthis apicurvata* (Blainville, 1827) and *Hastites spadix-ari* (Simpson, 1855).

In the afternoon we visited Brassey Nature Reserve, near Naunton, to record for the Gloucestershire Wildlife Trust. This

reserve is open by permit only as the Trust has managed it since 1964 by agreement with Thames Water and its predecessors. A combination of habitats – wet marsh with springs, unimproved limestone grassland higher up, and some disturbed ground by water extraction buildings – means that the mollusc fauna is varied, so 46 species were recorded. The marsh is one of three known Gloucestershire sites for *Vertigo substriata* (which we refound with *Columella edentula*) and has a variety of wetland species but surprisingly few freshwater species; in the late 1960s *Bathyomphalus contortus*, *Physa fontinalis* and *Lymnaea peregra* were abundant. On the grassland *Helicella itala* persisted, in seemingly small numbers, along with other typical grassland species, except *Vallonia* species. *Pupilla muscorum* was only found as dead shells.

Many thanks to all who attended for making this such a successful day, to Phil Palmer for the faunal list and to the Northcot Brick company and the Gloucestershire Wildlife Trust for permission to visit sites. □

Seashell Wall Chart

With the July issue of *BBC Wildlife* was a wall chart entitled 'Common British Seashells'. It has life-sized photographs of more than 50 of the shells you can find on rocky, sandy and muddy shores, or washed up on the strandline. The commentary has been written by June Chatfield. The chart measures 410 mm by 560 mm and is printed on 200 gsm quality art paper. It is now available unfolded at a cost of £4.99 inclusive of VAT and p&p from:

BBC WILDLIFE chart offer

PO Box 425

Woking, Surrey GU21 1GP

Cheques should be made payable to BBC WILDLIFE Magazine or alternatively credit card orders can be made by calling (0483) 765119 during office hours.

Brachiopods with the Molluscs

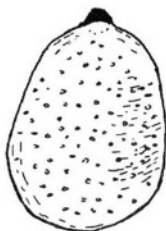
J.E. Phorson

Belmont, Durham

In the classic nineteenth-century monographs on the Phylum Mollusca brachiopods featured as a part of that Phylum. When it became established that their anatomy was radically different from that of the molluscs and that they were of a totally different Phylum, the brachiopods disappeared from the conchological publications except sometimes as an appendix.

In working over fine shell sand from a number of locations I have encountered, though rarely, specimens of a diminutive brachiopod *Gwynia capsula* (Jeffreys, 1859) among the small molluscs. It is characteristically less than 1 mm in height, is hyaline or white and is covered with white puncta. I would be very interested to hear from fellow conchologists who have found specimens of *G. capsula* with details of location, etc. I have had it out of shell sand from the Northumberland coast, from Harlyn Bay in North Cornwall and from Portbail on the west side of the Cotentin Peninsula in Normandy. If anyone has found it live, that would be of particular interest.

The freehand sketch below shows the approximate shape, though individual specimens may be broader or more elongate.



Brachiopod: *Gwynia capsula* (Jeffreys, 1859)

□

***Nautilus* in the Indian Ocean**

Bernard Verdcourt

Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

Soon after publishing a note of the above title (*Conchologists' Newsletter* 71: 187 (1979)) I received a letter dated 9 February 1980 from Sir John Spry, then in Gibraltar, giving another record. He wrote, 'I have a specimen of *Nautilus pompilius* which was given to me by Sinclair of the Immigration Department. He told me that he had picked it up on the beach at Mjimwema just south of Dar es Salaam. It is broken round the aperture but is not seriously worn.' It seemed worthwhile to record this. I had forgotten about it but turned up the letter during a vast turn out of letters to send to various archives. □

Display Boards

A set of display boards promoting the study of mollusca and the work of the Society is now ready for use. Anyone who is organising/attending an event at which these boards could be displayed, or anyone who knows of suitable venues to display them, e.g. libraries, museums etc., should contact:

Jane Reynolds



Holloway

London



JNCC Non-Native Marine Species Project

*(A notice regarding this project appeared on page 356
in the June issue of the Newsletter.)*

Over 90 completed questionnaires have been received providing details on 84 marine species. This includes the species, noted below:

Annelida: *Rhizogeton nudum*, *Vermilopsis striaticeps*, *Filogranula calyculata*, *Convoluta roscoffensis*.

Crustacea: *Acartia tonsa*, *Mytilicola orientalis*, *Urgosilid* parasites, *Penaeus japonicus*, *Neopanope sayi*, *Homarus americanus*, *Corophium sextonae*, *Clibanarius erythropus*, *Rissoides desmaresti*, *Eusarsiella zostericola*.

Chelicerata: *Ammothea hilgendorfi*.

Mollusca: *Haliotis discus hannai*, *Rapana venosa*, *Calyptraea chinensis*, *Tiostrea lutaria*, *Ensis arcuatus*, *Autocomya ater*.

Verebrata: *Oncorhynchus gorboscha*, *O. kisutch*, *O. keta*, *O. mykiss*, *Holocentrus ascensionis*, *Polyprion americanus*, *Caranx crysos*, *Phtheichthys lineatus*, *Remora remora*, *Naucrates ductor*, *Seriola dumerli*, *S. rivoliana*, *Hyperglyphe perciformis*, *Schedophilus medusophagus*, *Cynoglossus browni*, *Balistes carolinensis*, *Mustela vison*.

Algae: *Cryptonemia hibernica*, *Pneophyllum fragile*, *P. limitatum*, *Laminaria ochroleuca*, *Antithamniolella ternifolia* (= *A. sarniensis*), *Polysiphonia harveyi*, *Agardhiella* (= *Neo-agardhiella*) *subulata*.

Thank you to all of those who contributed – if anyone has details on any further species please send them to us a.s.a.p.; further questionnaires can be provided. A JNCC report of this work should be available later in the year.

Monitoring of shore/water temperatures in the Teign and Dart estuaries and the Fleet lagoon was undertaken in relation to studies on the spatfall of Pacific oysters. One of the most likely factors affecting the ability of introduced shellfish to breed in British waters is temperature. The monitoring sites chosen are

all shallow locations on the south coast, where localised warming was expected. Additionally, spatfall has been recorded in recent, warm summers in the Teign and Dart estuaries and an oyster farm has been established in the Fleet. Some interesting patterns have emerged of seasonal, tidal and diurnal temperature variation. A report is currently being prepared on the results of this study and should be available after July 1994.

N. Clare Eno & Robin Clark
Marine Conservation Branch
Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough PE1 1JY

from *Marine Scene*, issue No. 4 □

SHELL LIFE

A field course on molluscs in Somerset

7 – 14 September 1994

Tutor: Dr June Chatfield

Shell life: the Nettlecombe mollusc course

Molluscs – snails, mussels and their allies – live on land, in freshwater and in the sea. This course explores those found in the area around Nettlecombe in north Somerset, discussing their habitat, adaptations and way of life. Microscopes will be available in the laboratory for the study of the smaller specimens. Identification will be covered. Beginners welcome. Also useful for nature reserve wardens wanting to study some of the invertebrate groups which are not too difficult. Course fee £235 (residential).

Bookings and further details from:

*The Leonard Wills Field Centre
Nettlecombe Court, Williton, Taunton, Somerset TA4 4HT.*

MALACOLOGICAL PIONEERS

A joint meeting between the Malacological Society of London; the Society for the History of Natural History and the Conchological Society of Great Britain and Ireland

at

The Linnean Society of London

Saturday 22 October 1994

PROGRAMME

Registration and coffee 10.00 – 10.30

Chairman, Session 1: Professor Arthur Cain

10.30 – 11.00

David Heppell (RMS); The long dawn of Malacology ... our knowledge of molluscs extends far back into human history. Before science separated from religion and folklore, a surprisingly large corpus of malacological information had been compiled, but the early naturalists had mixed facts with fallacies. From this rich and varied foundation grew the discoveries of the pioneers we are celebrating.

11.00 – 11.30

Ron Cleevely (BMNH); From the beach and Regent Street to classification and Burlington House, the transition of shell collecting to conchology during the first half of the 19th Century ... a brief account of some of the steps on the way in changing 'shell gathering' to a science and establishing a zoological classification of the Mollusca between 1800 and 1850. Consideration of the activities, publications and relationship of several influential writers and collectors during this period reveals the gradual development of knowledge of both Recent and fossil Mollusca. The contributions of George Montagu, the various members of the Sowerby family, and their associates and contemporaries (e.g. Lovell Reeve, Wm Broderip) throughout Britain will be discussed.

11.30 – 12.00

David Allen (Wellcome Institute); Shells and the Victorians ... a review of the social influences which fostered and shaped natural history in general, and conchology in particular, during the last three quarters of the nineteenth century – with special attention to ways in which the study of molluscs was distinctive.

12.00 – 12.30

Peter Davis (University of Newcastle); Conchological networks in North East England ... the north east of England was a hot-bed of conchological activity in the early 19th century, with the Berwick physician George Johnston acting as an early catalyst. As Johnston moved into other areas of invertebrate study, the mantle (*sic*) of conchology fell upon his correspondents, the Newcastle naturalists Joshua Alder and Albany Hancock. These two individuals also had extensive networks in the world of natural history, which they used to good effect in their molluscan research. The *British Nudibranchiate Mollusca* was the crowning achievement of their endeavours, but another by-product was the enthusiastic team of marine biologists which formed their northern network, a team of people who would push forward the science of conchology via the British Association dredging expeditions.

Lunch 12.30 – 14.00

It is not possible to provide lunch at Burlington House. However, there is a wide choice of restaurants, cafes and pubs in the vicinity.

Afternoon Session commences 14.00

Chairman, Session 2 : Professor Bryan Clarke

14.00 – 14.30

Robert Cameron (University of Sheffield); Master Molluscs: 'Pan-Germanism' and J.W. Taylor's biogeographic thought ... in his *Monograph* and elsewhere J W Taylor espoused a view of evolution in land snails (and other creatures) which now seems quaint and even potentially offensive. An attempt will be made to analyse it in the context of the time, and to study the reactions of other malacologists (some of them vituperative, others respectful) at the time.

14.30 – 15.00

Helena Chesney (Ulster Museum); Ireland's pioneering conchologists, from dredging to *drummondii* ... the exploration, discovery and description of Ireland's molluscan fauna from its pristine western shores, to its land-locked eastern inlets. The conchologists, clubs and committees involved in unfurling the story.

15.00 – 15.30

Fred Naggs (BMNH); Militaries, missionaries and medics; terrestrial malacology in British India ... the land snail fauna of the Indian subcontinent received the enthusiastic attention of a succession of malacologists throughout much of the nineteenth and early twentieth centuries. The interests of malacologists working in India also extended to other regions reached by them or their associates, largely through military campaigns, agriculture, or British administration beyond the subcontinent. The published record and collections from this period are a testament to the scope of the work undertaken and demonstrate the potential for future investigations into the rich diversity of the terrestrial molluscs of the region.

15.30 – 16.15 Tea

Chairman, Session 3: Professor Gordon Herries Davies

16.15 – 16.45

Laurence Cook (University of Manchester); T. Vernon Wollaston and the monstrous doctrine ... the life of T.V. Wollaston will be outlined as it concerns his attitude to variation within species and to evolution. His work on the molluscs of the Atlantic islands in association with R.T. Lowe will be discussed.

16.45 – 17.15

Richard Preece (University of Cambridge); Edward Forbes and Clement Reid ... two generations of early palaeontological polymaths. Both had strong links with the British Geological Survey, producing early Memoirs from such classic areas as the Hampshire Basin and the north Norfolk coast, and used molluscan successions to unravel geological sequences in Britain and elsewhere. They also shared an interest in the Ice Ages and their effects on the distribution of plants and animals.

17.15 – 17.45

Peter Dance; Putting the Brits in their place ... for four centuries the British have contributed to the development and progress of malacology. So have other nationalities. With another century about to dawn it is worth examining the British contribution and comparing it with that of other nations. The object, it should be emphasised, is less to devise a hierarchy of excellence among nations than to highlight the different ways malacology has been approached and advanced – or retarded – by men and women of different nationalities.

A display of shells, manuscripts and other conchological illustrations and treasures from the Linnean Society and BM(NH) collections will be arranged in the Library by **Kathie Way (BMNH)**

18.00 – 19.00 Wine Reception in the Library

It is hoped to arrange an informal, post-meeting dinner nearer the time.

Please send your name, address and telephone number with your Registration Fee (£10) made payable to **The Malacological Society of London**, as soon as possible please to:

Elizabeth Platts, Belmont, New Road, Littleton, Winchester, Hants SO22 6QR,
Tel. and fax 0962 889396.

Conchological Society of Great Britain and Ireland

Minutes

1052nd (Ordinary) meeting held on 20 November 1993 in the Demonstration Room of the Natural History Museum at 2.50 pm

Announcement of deaths: The death was announced of Mr R.P. Scase, member since 1957.

In the chair: Dr B. Colville with 30 members present.

Apologies for absence: Mrs S. Davies, Mr P. Lee, Mrs J.M. Light, Dr M.P. Kerney, Mrs N.F. McMillan, Mr P. Negus, Mrs E.B. Rands.

Minutes of the last meeting (of 16 October 1993): Read and accepted.

Matters arising: None.

Nomination and election of new members: None.

Lecture of the day: Dr Laurence Cook (Manchester University):

'Mangrove littorinids: polymorphism, inference and experiment'.

Announcements and correspondence:

1. Mrs E. Platts and the Ray Society: Mrs Platts described the work of the Ray Society in publishing books on natural history topics. The annual subscription fee (£4) is good value as members are allowed to buy these publications at low prices. A large useful book about the biology of marine gastropods is to appear shortly.
2. Dr M. Seddon:
 - a) The latest edition of the IUCN Red Data book for invertebrates has now gone to press. The number of mollusc species has increased substantially following the molluscan specialist group reports. Due out in early 1994.
 - b) *Handbook of Systematic Malacology* by Thiele has now been translated into English by the Smithsonian Institute. Copies are available from them, price unknown.

Any other business: None.

Meeting closed at 5.00 pm.

Chairman.

Appendix: Members' exhibits

- Mr K. Brown
 - i) Worldwide Neritoidea.
 - ii) Tropical shells exhibiting factors affecting variation of the species.
- Mr D.C. Long Victorian rocky shore molluscs.
- Mr D. Guntrip Gastropod drawings including colour polymorphic *Geomalacus maculosus*.
- Miss J.T. Sawyer
 - i) Book: *Living Shells of the Caribbean and Florida Keys* by R.E. Lipe and R. Tucker Abbott.
 - ii) *Melongena corona* (Gmelin 1791) from Oyster, Sarasota, Florida.
- Dr L. Cook *Littoraria* species and radiation.

- Mr T. Pain Polymorphism in *Nucella lamellosa* (Gmelin).
- Dr B. Coles and Madeiran *Leiostryla* spp., *Craspedopoma* spp. and
Mr I. Killeen *Vitrina*.
- Mr P.T. Wimbleton Marine mollusca of southern England.
 Theba pisana – a new vice county record. VC 44
 Carmarthen.



**1053rd (Ordinary) meeting held on 11 December 1993 in the
Demonstration Room of the Natural History Museum at 2.30 pm**

In the chair: Dr B. Colville with 34 members and friends present.

Apologies for absence: Dr R.C. Preece, Miss E.F.A. Fogan, Mrs N.F. McMillan, Mr T.E. Crowley, Mrs E.B. Rands, Mrs M. Fogan, Dr J.E. Chatfield, Mrs Long.

Minutes of the last meeting (of 20 November 1993): Read and accepted.

Matters arising: None.

Nomination and election of new members: None.

Lecture of the day:

Ms Jane Reynolds: 'Snails: a horticultural nightmare?'

Announcements and correspondence: None.

Any other business: None.

Meeting closed at 5.00 pm.

Chairman.

Appendix: Members' exhibits

- Ms J. Reynolds Shrub ring-barked by snail.
 Snail magazine and newspaper cuttings.
- Mr K. Brown *Acavus haemastoma*, *Partula* spp. press cuttings.
- Dr B. Coles Snails from Heidelberg (Germany). *Daudebardia* and
 Eucobresia.
- Mr T. Pain *Achatina fulica* Bowdick.
- Mr D. Guntrip Two non-British euconulids collected live from Kew
 Gardens hothouse. □

NEWS

Ecological concern over biocontrol of slugs by nematodes

The potential of the nematode, *Phasmarhabditis hermaphrodita*, for biological control of slugs has been described recently.¹ Gardeners troubled by slug pests can now buy nematodes from garden centres to kill them. In fact the carton they buy contains only instructions for obtaining a fresh supply of the 'dauer' larvae of the nematodes from the producers.

Of course, biological control of pests has in the past produced disasters as spectacular as its successes elsewhere – one example is the devastating effect of *Euglandina rosea*, introduced to control *Achatina fujica* on Moorea in the Society Islands, on native *Partula* snails.² Naturally, therefore, many people became concerned to ensure that the use of the nematodes could be confidently predicted to cause no harm to non-target molluscan species and populations. Martin Willing, Conservation Officer of the Conchological Society, has been actively investigating the situation, and concludes that the present situation presents no obvious hazards to native non-pest species.

The nematodes are a native species (and not genetically engineered), reliant for their efficacy on being released in greatly augmented numbers. They have limited persistence and poor dispersion ability. Thus, while their use is limited to gardens, their effect on non-target molluscs would appear to be no greater than chemical control methods. Work at Long Ashton by David Glen and co-workers on the impact on hedgerow molluscs is underway on a MAFF-linked project with AGC.

¹ M.J. Wilson, D.M. Glen & S.K. George (1993). The rhabditid nematode *Phasmarhabditis hermaphrodita* as a potential biological control agent for slugs. *Biocontrol Science and Technology*, 3, 503-511.

² C. Tudge (1992). Last stand for Society snails. *New Scientist*, 11 July, pp. 25-29.

Bill Bailey, School of Biological Sciences,
University of Manchester. □

Diary of Meetings

The diary is presented in date order and includes both meetings of the Conchological Society of Great Britain and Ireland and meetings of molluscan interest run by other organisations. Fuller details of Conch. Soc. field meetings are given on page 400.

Saturday 3 to Sunday 4 September, Sedburgh, North Yorks. Weekend meeting of the Yorkshire Conchological Society to record the mollusca of the Sedburgh area. Meet at the car park near the old bridge in Kirby Longsdale (SD615783) at 11.00 on Saturday. Details of Sunday meeting point from David Lindley, [REDACTED], Leeds [REDACTED].

Monday 5 to Sunday 11 September, Channel Islands. Conch. Soc. field meeting led by Roger Brehault and Ian Killeen [REDACTED].

Wednesday 7 to Wednesday 14 September, Nettlecombe Court. Shell Life; a field course on molluscs in Somerset. Tutor: Dr June Chatfield. Full details from the Leonard Willis Field Centre, Nettlecombe Court, Williton, Taunton, Somerset TA4 4HT.

Saturday 1 October, Hornsea Mere, N. Humberside. Field meeting of the Yorkshire Conchological Society. Meet at entrance (TA 199473) at 11.00.

Wednesday 5 to Sunday 9 October, Northumberland. Conch. Soc. field meeting led by Rosemary Hill [REDACTED].

Saturday 22 October, London. Malacological Pioneers; a one-day meeting organised by the Malac. Soc. with the Conch. Soc. and the Society for the History of Natural History. Burlington House, Piccadilly at 10.00. Details on page 394.

Tuesday 8 November, Cambridge. Speciation and Adaptive Radiation in Molluscs. A joint one-day meeting of the Palaeontological Association and the Malacological Society. Department of Earth Sciences, University of Cambridge at 10.00. Details from Dr Elizabeth Harper, Dept of Earth Sciences, University of Cambridge, Downing Street, Cambridge CB2 3EQ (Tel. 0223 333428) or Dr Alistair Crame, British Antarctic Survey, High Cross, Madingley Road, Cambridge CB3 0ET (Tel. 0223) 251443).

Saturday 19 November, London. Conch. Soc. indoor meeting. Recording Schemes for Marine and Non-marine Mollusca. A series of short talks by the organisers of the national recording schemes and a number of local organisers. The Natural History Museum at 14.30.

Saturday 10 December, London. Conch. Soc. indoor meeting. In preparation for the festive season your chance to practice for the family session of Trivial Pursuits! Once again you have the opportunity to show off your knowledge in the Xmas Quiz or show off your prize specimens in the members' exhibition. The Natural History Museum at 14.30. □

Field Meetings 1994

Hon. Programme Secretary:

Ian Killeen

[REDACTED]
Felixstowe, Suffolk, [REDACTED]

Tel. [REDACTED]

Important

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

Wednesday to Sunday, 5–9 October

NORTHUMBERLAND

Leader: Rosemary Hill ([REDACTED])

* Please note that the telephone number given in the programme is incorrect.

This meeting which is based mainly in N. Northumberland will be examining a diverse range of unspoilt coastal sites during low spring tides in the mornings and lime-rich coastal grasslands, woodlands and freshwater habitats in the afternoons. Members contacting the leader before 29 September will be sent an itinerary and full details. The initial meeting place on 5 October will be at Low Newton-by-the-Sea (low tide 09.20 am); meet at the car park NU239247 at 08.30 am (or on the shore), or meet later if preferred at the car park at 10.45 am.

Accommodation will be most convenient midway between Berwick-upon-Tweed (Tourist Information Centre 0289 330733) and Alnwick (0665 510665).

Saturday 15 October

WEST BERKSHIRE

Leaders: Michael and Helen Weideli ([REDACTED])

We will be visiting a rich wetland site on the River Lambourn West of Newbury and also a chalk downland site on the Lambourn Downs. Meet at Chieveley Motorway Service area (SU480727) off of the M4 at junction 13 at 10.30 am. Lifts will be available from Newbury Station for those travelling by train. Please phone the leaders to make arrangements.

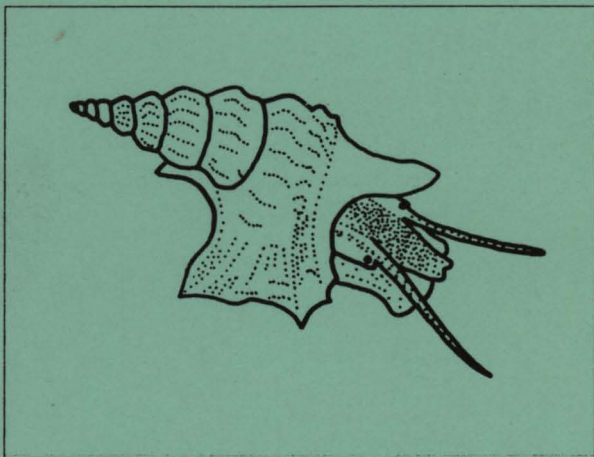
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The Carinated Rock-shell *Thais lacera* (Born, 1778): a Lessepsian migrant in the Mediterranean Sea and an anti-Lessepsian migrant in the Red Sea

Henk K. Mienis

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

Abstract: The unintentional introduction of the Indo-Pacific gastropod *Thais lacera* (Born, 1778) into the Suez Canal c.q. Eastern Mediterranean, some seventy years ago, has created a unique zoogeographical phenomenon: this Muricid species has to be considered a Lessepsian migrant in the Mediterranean Sea and an anti-Lessepsian migrant in the Red Sea.

The Carinated Rock-shell *Thais lacera* (Born, 1778) (Muricidae: Thaidininae) is a well-known intertidal species ranging from the Arabian (= Persian) Gulf eastwards to South East Asia. It is better known by one of its junior synonyms *Thais mutabilis* (Link, 1807) or *Thais carinifera* (Lamarck, 1822). Interestingly all three names were based at least in part on the same figure in Martini (1777: pl. 100, fig. 951), a work rejected for the purpose of nomenclature (Mienis, 1985).

Some authors, for example Abbott & Dance (1982: 145), have placed the Carinated Rock-shell in the same genus *Cuma* Swainson, 1840 (not Milne-Edwards, 1825) = *Cymia* Mörch, 1860 due to the general form of the shell. However, *Thais lacera* lacks the prominent knob in the centre of the columella, which is characteristic for the genus *Cymia* and its type species *Cymia tecta* (Wood, 1828) from the west coast of America; from Costa Rica to Ecuador (Keen, 1971).

Almost seventy years ago it was found almost simultaneously in the Suez Canal and in the Eastern Mediterranean. This in spite of the fact that it had never been recorded from the Red Sea. Tomlin (1927) was the first to report it as being present in the Suez Canal. His record was later confirmed by Moazzo (1939) and Barash & Danin (1973).

Thais lacera was first recorded from the Mediterranean Sea by Moazzo (1939), who had encountered it on the beach of Port Fouad, Egypt. However, in 1928 or even a few years earlier, specimens

had been found already on the beach of Yaffo, at that time Palestine, now Israel (Mienis, 1977). Today it is quite commonly encountered locally along the Mediterranean coast of Israel (Barash & Danin, 1973 and 1992). Here and there it is even used as bait by fishermen (Barash & Danin, 1977). Recently it has been found also along the south coast of Turkey (Niederhöfer et al., 1991).

From the zoogeographical point of view the Carinated Rock-shell has to be considered an indo-Pacific migrant into the Mediterranean Sea. Por (1969, 1971, 1975 and 1978) has introduced for such species the term Lessepsian migrant, i.e. a species which has moved from the Indo-Pacific, in particular the Red Sea, to the Mediterranean Sea by means of the Suez Canal. By introducing this zoogeographical term Por did not differentiate between the method a certain species used in order to move from one zoogeographical province (the Indo-Pacific) to another (the Mediterranean).

If we take a look at the molluscs among the Lessepsian migrants, we may differentiate between at least four methods of dispersal in order to reach the Mediterranean Sea: crawling, swimming, floating and hitchhiking. In the first three forms of dispersion we are dealing with molluscs from the Red Sea, in particular the Gulf of Suez, which manage to traverse the Suez Canal in order to reach the Mediterranean Sea. However, in the case of hitchhiking, for example on the hull of a boat or in ballast-water of a tanker, species may reach the Mediterranean, still by means of the Suez Canal, from any place in the Indo-Pacific. Examples of Indo-Pacific migrants into the Mediterranean which most probably used the latter hitchhiking method in order to reach the Mediterranean are *Strombus persicus* Swainson, 1821 (see note 1), *Cypraea lentiginosa lentiginosa* Gray, 1825 (Mienis, 1990, see note 2), and *Melibe fimbriata* Alder & Hancock, 1864 (Thompson & Crampton, 1984, Moosleitner, 1986 and Gosliner, 1987). All these species reached the Eastern Mediterranean by means of the Suez Canal in spite of the fact that none is known to live in the Red Sea. To these hitchhiking Lessepsian migrants we may add also *Thais lacera* because the Carinated Rock-shell is

not a natural inhabitant of the Red Sea (Singer & Mienis, 1991).

Its current presence also in the northernmost part of the Gulf of Suez is due to the fact that since its discovery in the Suez Canal (Tomlin, 1927) it has dispersed southwards into the Gulf. From this unique pattern of distribution it appears that the Indo-Pacific *Thais lacera* has not only to be considered a Lessepsian migrant in the Mediterranean Sea, but also an anti-Lessepsian migrant in the Red Sea! This species should therefore be placed on the rather controversial list of anti-Lessepsian migrants given by Barash & Danin (1987).

Note 1: Some ten years ago the first finds of an Indo-Pacific *Strombus* species in the Eastern Mediterranean were published by Raybaudi Massilia (1983). In the following years it has been reported under three different names: *Strombus decorus* (Röding, 1798), *Strombus decorus persicus* Swainson, 1821 and *Strombus decorus raybaudii* Nicolay & Manoja, 1983. Recently Moolenbeek & Dekker (1993) have pointed out that *Strombus decorus* and *Strombus persicus* differ on specific level. This opinion is followed here and since Mediterranean specimens are conspecific with those from the Arabian Gulf, we have adopted the name *Strombus persicus* for this Lessepsian hitchhiker.

Note 2: Recently Mienis (1990) has reported the find of a single specimen of *Cypraea lentiginosa lentiginosa* Gray, 1825 from the Mediterranean coast of Israel. In the meantime two additional specimens have been found (Mienis, in prep.). All three specimens are conchologically identical with *Cypraea lentiginosa* s.str. and differ certainly from the Erythraean subspecies *Cypraea lentiginosa dancalica* Jonklaas & Nicolay, 1977. The latter taxon is not generally accepted. Both Cossignani & Passamonti (1991) and Groves (1994) consider it a junior synonym of *Cypraea lentiginosa*. However, we agree with Lorenz & Hubert (1993) in giving *dancalica* subspecific rank. The specimens encountered in the Eastern Mediterranean are clearly of the Indian-type, i.e. *Cypraea lentiginosa lentiginosa*.

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University of Southampton

Department of Adult Continuing Education

Session 1994-5

The Animal Kingdom

A University credit bearing unit of 12 meetings

The classification of animals is a vitally important framework in understanding zoology and ecology and of great practical value for those involved in biological recording work for conservation. We will follow the animal kingdom through from protozoa, sponges, jellyfish, worms, molluscs, arthropods, echinoderms, fishes, amphibians, reptiles, birds and mammals using specimens and where possible living examples. The unit involves two field trips to study living animals.

Tutor: Dr June Chatfield, BSc, PhD, ARCS

Fee: £90

The class will meet on Fridays, 10.00 - 12.00 noon, starting on 10 February 1995, plus two day field visits 10.30 am - 4.30 pm, 2 and 9 June 1995.

Collecting molluscs around Valenciennes, northern France

*June E. Chatfield, [redacted] Alton, Hampshire [redacted]
and*

Colette Stévanovitch, [redacted], 76000 Rouen, France

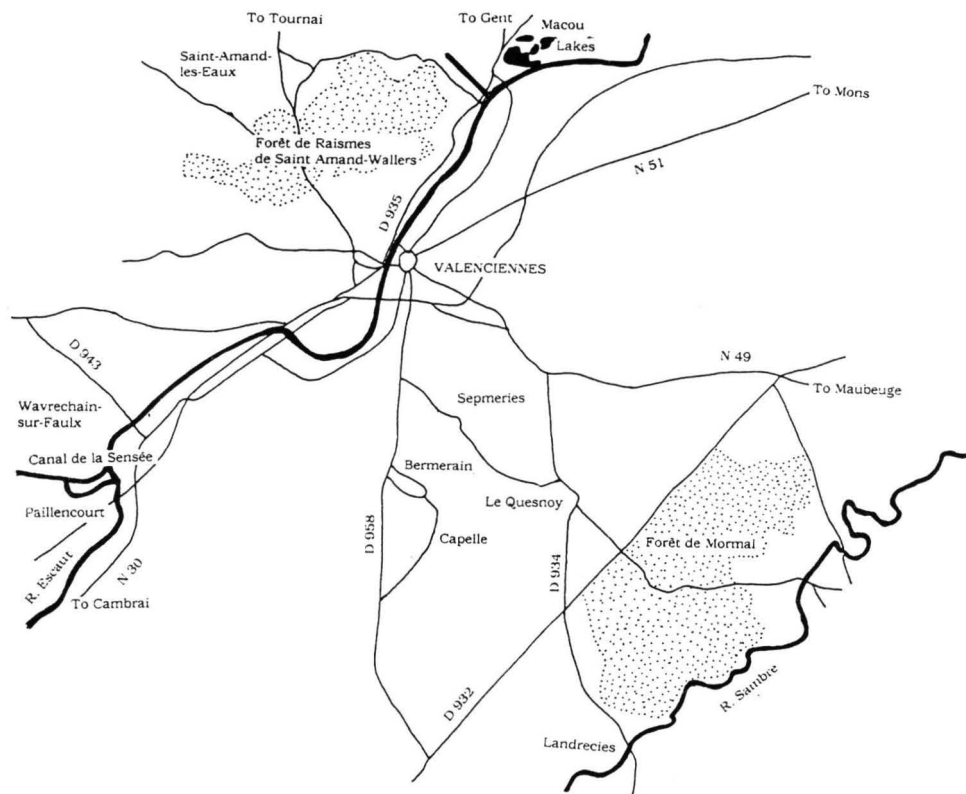
Valenciennes is situated in northern France, 200 kilometers north-east of Paris and close to the Belgian border. It is a comparatively low-lying area of less than 100 meters altitude on rocks of Tertiary age extending from Belgium, with superficial deposits and, to the south, some chalk bedrock. Much of the land is undulating, with river valleys. There are two extensive areas of forests on acid soils derived from the Tertiary rocks, some wooded marshes and lakes to the south-west along the valley of the Sensée river and canal, while much of the countryside, particularly to the south of Valenciennes, is agricultural land. North-east of Valenciennes, around Condé-sur-l'Escaut, there is much land reclaimed from coal-mining.

As long ago as 1833 Hécart published a list of molluscs from Valenciennes, followed by papers by Normand (1844, 1852, 1854), Norguet (1872) and Lelièvre (1878), but since then no other works have been recorded from Valenciennes, as outlined in Bouchet and Héros's bibliography (1981).

This article is based on the results of four days of field-work in April 1992. The localities visited and habitats represented are listed below.

Habitats and localities (see map)

1. Wavrechain sur Faulx: south-west of Bouchain, 20 km south-west of Valenciennes. UTM ER2067. Grassy roadside bank on chalk, and wet meadow.
2. Paillencourt: 25 km south-west of Valenciennes. UTM ER2068. Vegetation by the river, roadside ditch and bank.
3. Canal de la Sensée, Wasnes-au-Bac, 25 km south-west of Valenciennes. UTM ER1767. Grass of canal bank, woodland alongside and associated ponds.



4. Macou, near Condé-sur-l'Escaut, 15 km north-east of Valenciennes. UTM ER4390 & 4490. Lakes, wet woodland and wayside in former coal-mining area.
5. Forêt de Raismes de Saint Amand-Wallers, 10 km north of Valenciennes. UTM ER3487 & 3687. Beech and oak woodland plantation on acid sands and clays.
6. Le Quesnoy, 15 km south-east of Valenciennes. UTM ER4566. Grassland, marsh and pools in moat associated with the town walls.

7. Forêt de Mormal, 20 km south-east of Valenciennes. UTM ER4859, 4862, 4963, 5057. Oak and beech woodland plantation on acid soil; lake and stream opposite Arboretum.
8. Landrecies, 30 km south-east of Valenciennes. UTM ER4953. Canal and banks.
9. Sepmeries, 7 km south of Valenciennes. UTM ER4070. Roadside and railway embankment in village.
10. Capelle, 12 km south of Valenciennes. UTM ER3965. Roadside verge, river bank.
11. Bermerain, 11 km south of Valenciennes. UTM ER3866. River and banks, chalk grassland.

The results of the field-work are shown in Table 1. Sixty species of terrestrial and 27 species of freshwater molluscs were recorded from around Valenciennes in April 1992, making a total of 87 species.

Although parts of Valenciennes are on acid soil (the two forests), there is some chalk to the south-west. The total list of 87 species is partly due to the range of habitats which includes woodland, disturbed places, streams, lakes, marshes, canals and chalk grassland. Because of the industrial disturbance to the landscape, the opportunist species of disturbed ground, such as *Monacha cantiana*, are well represented. The canals add substantially to the richness of the freshwater fauna around Valenciennes.

The species marked with an asterisk in the table are present in neither Hécart's nor Norguet's catalogues, and are thus new for the area. Some are more recently segregated or described species: *Oxyloma sarsii* (1886), *Columella aspera* (1966), *Vallonia excentrica* (1892), *Arion distinctus* (1868), *Oxychilus helveticus* (1882), *Limax cinereoniger* (1803), the latter two mentioned by Norguet as doubtful species probably occurring in the département Nord.

A few are recent introductions: *Boettgerilla pallens* (first French record 1969), *Deroceras panormitanum*, *Ceruella virgata* (mentioned by Norguet as common in Calais, but obviously not recorded inland in his days; it invaded the Reims area at the time of the First World War), *Cochlicella acuta*, and *Potamopyrgus antipodarum*.

Table 1

Molluscs recorded around Valenciennes, April 1992

A: live records

+: shell only

*: new records

List of species	Localities										
	1	2	3	4	5	6	7	8	9	10	11
Land Mollusca											
<i>Carychium minimum</i>	+						A				
* <i>C. tridentatum</i>	A				+		+				
<i>Succinea oblonga</i>	A		+								
<i>S. putris</i>	A		A	A		A	A		+		A
<i>Oxyloma pfeifferi</i> = <i>elegans</i>	A		A					A			
* <i>O. sarsii</i>			A					A			
<i>Cochlicopa lubrica</i> agg.	A	A	A	+		A	A		A		+
* <i>Columella aspera</i>					+		A				
* <i>Truncatellina cylindrica</i>				+							
<i>Vertigo pygmaea</i>	+					A					
<i>Sphyradium doliolum</i>									+	+	
<i>Pupilla muscorum</i>											+
<i>Vallonia costata</i>	A		A	A		+		+		+	
* <i>V. excentrica</i>											+
<i>Acanthinula aculeata</i>					A	A					
<i>Ena obscura</i>		A				A			+		
<i>Punctum pygmaeum</i>	+			+	A		+				
<i>Discus rotundatus</i>	A	A	A	A	A	A	A		A	A	A
<i>Arion ater</i> agg.	A		A	A	A	A	A			A	
* <i>A. subfuscus</i>					A						
* <i>A. circumscriptus</i>			A						A		
* <i>A. silvaticus</i>	A		A	A			A				
<i>A. hortensis</i>				A		A			A		
* <i>A. distinctus</i>	A					A			A	A	A
<i>A. intermedius</i>	A	A	A	A	A	A	A				
<i>Vitrina pellucida</i>		A	+	+		+	+	+	+	+	+
<i>Phenacolimax major</i>					A						
<i>Vitrea crystallina</i>	A						A				
<i>Nesovitrea hammonis</i>	+				A		+				
<i>Aegopinella nitidula</i>	+	A	A		A		A		A		+
<i>Oxychilus draparnaudi</i>	A		A	A		A			A		A
<i>O. cellarius</i>	A	+	A	A		A	A				
* <i>O. alliaris</i>							A				
* <i>O. helveticus</i>						A			A	A	
<i>Zonitoides nitidus</i>	A		A	A		A	A	A			
* <i>Boettgerilla pallens</i>							A				
<i>Limax maximus</i>			A	A							
* <i>L. cinereoniger</i>							A				
<i>Lehmannia marginata</i>										A	
* <i>Deroceras laeve</i>	A		A	A		A	A				
* <i>D. caruanae</i> = <i>panormitanum</i>				A		A			A		A
<i>D. reticulatum</i>	A		A	A		A	A	A	A	A	A

	1	2	3	4	5	6	7	8	9	10	11
Land Mollusca (Continued)											
<i>Euconulus fulvus</i>					A		A				
* <i>Macrogastra lineolata</i>									A		
<i>M. rolphii</i>							A				
<i>Clausilia bidentata</i>		A	A	A	A	A	A		A		A
<i>Candidula unifasciata</i>			+								
<i>C. intersecta</i>											A
* <i>C. gigaxii</i>			A	+							
* <i>Cernuella virgata</i>	+										
<i>Helicella itala</i>	+										+
* <i>Cochlicella acuta</i>			+								
<i>Monacha cantiana</i>				A						A	A
<i>Perforatella incarnata</i>					+		A	A			
<i>Trichia hispida</i>				A							
<i>T. plebeia</i>	A	+	A	A	A	A	A	A	A	A	A
<i>Cepaea nemoralis</i>	A	A	A	A	A	+			+	A	+
<i>C. hortensis</i>						+	+		+	+	
<i>Helix aspersa</i>	+			+							
<i>H. pomatia</i>			A			+					
Freshwater Mollusca											
<i>Viviparus viviparus</i>		+	+					+			
<i>V. contectus</i>			+								
<i>Bithynia tentaculata</i>			A	A							
<i>Valvata piscinalis</i>			A								
<i>V. cristata</i>											
* <i>Potamopyrgus jenkinsi</i>											
= <i>antipodarum</i>				A							
<i>Physa acuta</i>	+		A			+		A			
<i>Lymnaea stagnalis</i>		+	A	+		A	A	A			
<i>L. auricularia?</i>			+								
<i>L. peregra</i>			A			A	A	A			A
<i>L. palustris</i>			A	A	A	A	A	A			A
<i>L. truncatula</i>							+				A
<i>Planorbarius corneus</i>		+	+			A		+			
* <i>Planorbis planorbis</i>		+	+	+		A					
<i>Anisus vortex</i>						A					
<i>A. leucostoma</i>							+				
<i>Bathyomphalus contortus</i>										+	
<i>Ancylus fluviatilis</i>							A				A
<i>Acroloxus lacustris</i>							A				
<i>Unio pictorum</i>		+	+								
<i>Anodonta cygnaea</i>			+								
<i>Sphaerium rivicola</i>			+								
<i>S. corneum</i>			A				+				
<i>Pisidium amnicum</i>											
<i>P. casertanum</i>							+				
* <i>P. subtruncatum</i>							+				
* <i>P. personatum</i>							+				
<i>Dreissena polymorpha</i>			+								

The full fauna of the area cannot be discovered in the course of four days, and a number of the species mentioned in the old catalogues have not been found. A few may have disappeared with the loss of their habitats, but many which are common in Belgium should still be around.

Norguet (1872) records *Pomatias elegans*, *Acicula fusca*, *Columella edentula*, *Vertigo antivertigo*, *V. pusilla*, *Lauria cylindracea*, *Vallonia pulchella*, *Ena montana*, *Aegopinella pura*, *Milax gagates*, *Limax fulvus*, *Ceciloides acicula*, *Clausilia parvula*, *Cochlodina laminata*, *Macrogastera ventricosa*, *M. plicatula*, *Balea biplicata*, *Monacha cartusiana*, *Arianta arbustorum*, *Helicigona lapicida*, and, among the freshwater species, *Theodoxus fluviatilis*, *Bythinia leachi*, *Physa fontinalis*, *Aplexa hypnorum*, *Myxas glutinosa*, *Stagnicola glabra*, *Planorbis fontanus* = *complanatus*, *Armiger crista*, *Gyraulus albus*, *Segmentina nitida*, *Unio tumidus*, *U. batavus*, *Anodonta anatina*, *Sphaerium solidum*, *Musculium lacustre*, *Pisidium nitidum*, *P. obtusale*, The shrinking of freshwater and woodland habitats in the course of the century has certainly made many of these species rarer than they were in the last century.

Probable misidentifications are *Phenacolimax annularis*, *Aegopinella nitens*, *Pseudanodonta complanata*. The species referred to under the names *Vertigo plicata*, *Pisidium pusillum*, *Pupa perversa*, *Helix concinna*, *Limax variegatus* and *L. brunneus* are probably *Vertigo angustior* (see Jeffreys, 1862), *Pisidium personatum* or *nitidum* (see Ellis, 1962), *Balea perversa*, *Trichia plebeia* (?) (Jeffreys (1862) considers *H. concinna* to be very close to *Trichia hispida*), *Limax flavus* (see Jeffreys, 1862); Jeffreys (1862) identifies *Limax brunneus* with *L. agrestis* (= probably *Deroceras reticulatum*), but the colour makes this identification doubtful.

Other species to be looked for in the area are *Azeca goodalli*, *Cochlicopa lubricella*, *Pyramidula rupestris*, *Vertigo moulinsiana*, *Abida secale*, *Arion lusitanicus*, *Vitrea contracta*, *Malacolimax tenellus*, and *Trichia striolata*.

Many of the species found around Valenciennes are widely distributed in Europe, but some do not extend into Britain, viz.

Sphyradium doliolum, *Macrogastra lineolata*, *Candidula unifasciata* and *Perforatella incarnata*.

It is interesting to compare the fauna of Valenciennes with that of Belgium whose border is only 18 km away. Full details of the distribution of molluscs in Belgium have been published as an atlas (De Wilde et al., 1986). *Sphyradium doliolum*, near the northern extent of its range, is common in the southern half of Belgium, while *Macrogastra lineolata* and *Perforatella incarnata* are found in the south-east of Belgium. *Candidula intersecta*, also near the edge of its range, is scattered and not common in Belgium.

Valenciennes is in a northern position and therefore a number of the southern European species which were present in the fauna of the Reims area are not found. It is a little further west, and some of the eastern species encountered in the Reims area are not present either. However, two species which were of limited occurrence in Reims, *Monacha cantiana* and *Oxychilus helveticus*, were more frequent in Valenciennes.

It is interesting to compare the range and abundance of two pairs of related species in the area of Reims (Chatfield and Stévanovitch, 1986) and Valenciennes in France, as well as with Britain. In Reims *Phenacolimax major* is the common vitrinid whereas in Valenciennes and Britain the usual species is *Vitrina pellucida*. In both Reims and Valenciennes *Trichia plebeia* was more frequent than *T. hispida*, whereas in Britain *H. hispida* is the more common and widespread species.

Mollusc distributions show change with time, and two species found in Valenciennes are of recent introduction. They are *Deroceras caruanae* (= *panormitanum*) which spread in France and Britain in the mid-1960s, and *Boettgerilla pallens* (recorded in Britain in the mid-1970s and in France in 1969 (Schmid, 1969). The Belgian atlas published in 1986 shows them both established throughout Belgium, and they are probably widespread in France too.

Freshwater faunas are more consistent across northern Europe than are terrestrial faunas, but some species have spread through the canal system, like *Dreissena polymorpha* whose dredged shells were found by the Canal de la Sensée: it was first recorded from the département Nord in 1838 (Norguet, 1872), and Norguet describes it as very common in all the rivers and canals of the département.

Species of particular interest are:

- *Oxyloma sarsii*. This is generally regarded as a rare species in Europe and is notoriously difficult to separate from the more common *O. elegans* (= *pfeifferi*) on shell characters, but it can be recognized on the anatomy of the reproductive system. Dissections confirmed the presence of *O. sarsii* along the Canal de la Sensée and canalside habitats at Landreclies (Stévanovitch, 1994). It is likely that this species has been overlooked in France. Other localities for *O. sarsii* have been found recently around Reims, the first record in France (Stévanovitch, 1991).
- *Columella aspera*. A species for which there are few confirmed records in France (Chatfield and Stévanovitch, 1993). This species has only been separated from *C. edentula* comparatively recently (by Waldén in 1966) and should be searched for in acid woods.
- *Oxychilus alliarius*. Another species whose distribution in France is little known, but the authors have found it abundant in the forests around Rouen in February 1994. It is common enough in Britain where it often lives on moist logs in acid woodland, and it was found in such a habitat at Forêt de Mormal.
- *Cochlicella acuta*. This snail normally lives on coastal sand-dunes, but sporadic populations occasionally occur inland. Dead shells only were found by the Canal de la Sensée.
- *Monacha cantiana*. A snail originally introduced to northern Europe from Italy in Roman times (Chatfield, 1977). It is well established in parts of northern France and Belgium as well as the Netherlands, and does well on disturbed sites.

Nomenclatural notes

There are a number of differences in nomenclature between British malacologists using Kerney and Cameron 1978 as their standard list, and Continental malacologists. The alternative names are indicated in the table above.

- *Potamoporgus antipodarum*. The species known for over a century as *Potamopyrgus* (= *Hydrobia*) *jenkensi* has now been shown to be the New Zealand species *P. antipodarum* (Boettger, 1951; Winterbourn, 1970 & 1972; Ponder, 1988).

- *Oxyloma elegans*. The specific names for the species of *Oxyloma* as used by Quick (*Oxyloma pfeifferi* and *O. elegans*) have now been changed to *O. elegans* and *O. sarsii* respectively (Odhner, 1949). Kerney and Cameron (1978) use the names *O. pfeifferi* and *O. sarsii*, though the name *elegans* replaces *pfeifferi* in the German version (Kerney, Cameron and Jungbluth, 1983).

- *Deroceras panormitanum*. Similarly the species of slug known in Kerney and Cameron as *Deroceras caruanae* is thought by some people to be *Deroceras panormitanum* (Giusti, 1986), though there is still disagreement on this point (Van Goethem & De Wilde, 1985). The name *D. panormitanum* is used in the German edition of the Kerney and Cameron field guide (1983).

- *Cochlicopa lubrica*. Another discussion point recently highlighted at the 11th Malacological Congress in Siena is the identity of *Cochlicopa lubrica* (Stévanovitch, 1992).

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*The Newsletter Editor sends
Seasonal Greetings and
Best Wishes for the New Year
to every reader.*

Collectors in East Africa

No. 21: C.R.S. Pitman (1890–1975)

B. Verdcourt

Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

Capt. (note 1) Charles Robert Senhouse Pitman, CBE, DSO, MC was born in Bombay, India on 19 March 1890, the son of C.E. Pitman, CIE, but like most children of civil servants and military serving abroad he was educated in Britain. After leaving Sandhurst in 1909 he was gazetted to the Indian Army, 27th Punjabis; he served in Egypt, France and Mesopotamia during the First World War gaining the DSO and MC, then in Palestine from 1918–21 when he resigned his commission to go farming in western Kenya. He collected snails in the Cherangani Hills at this time. In 1925 he accepted the offer of the post of Game Warden of Uganda (the first one) and apart from about eight years of secondment held it until he retired in 1951. The Game Department had only just been formed in 1925 and was at first named the Elephant Control Department which was meant to protect people from the huge herds of elephants that then roamed the Protectorate. His first secondment was to Zambia (then Northern Rhodesia) as Acting Game Warden (1931–33) and secondly as Director, Security Intelligence, Uganda (1941–46). During the Second World War he was also Officer in Chief, Uganda Defence Force. For his service to the Empire he was made a CBE in 1950. After his retirement in 1951 he moved to England and lived near the British Museum (Nat. Hist.) where he was an honorary worker. The Uganda Government commissioned him to write a history of the Protectorate which occupied him until 1955, but it was decided not to publish it. He looked on this as four years of his life wasted. I do not know what happened to the manuscript, whether it is in Uganda or England and attempts to trace it have been unsuccessful. He died in London on 22 September 1975 in his 86th year.

Pitman, essentially a field man specializing in birds, reptiles and mammals, collected a good deal; the British Museum has

most of his material including, for example 3000 clutches of eggs, all properly documented. I have been through the accession books in the Mollusca Department and his name is not mentioned between 1911 and 1924 so it is probable he had no early interest in the group but was asked to collect, perhaps by Connolly. There are entries for May 1925 (4 specimens from the Cherangani Hills), November 1925 (14 specimens from the Ruwenzories and S. of Wadelai), October 1927 (26 from Ankole), December 1927 (20 from Lake Victoria – destroyed), February 1928 (2 from Entebbe), August 1928 (6 from Victoria Nile), September 1929 (16 from Butiaba, Lake Albert) and December 1930 (6 from Lake Victoria Mwana I.). Other material reached the museum with Connolly's own collection. There is further material in other museums, certainly in the National Museum, Nairobi and at Liverpool; in fact I suspect there is a great deal of unworked material around.

Pitman wrote extensively and was reviewing books whilst in bed during his last illness. One of his first contributions was a paper on the eggs of Palestine birds (1921) and he wrote many further papers on birds. Undoubtedly his most important book is *A guide to the snakes of Uganda* (1938) sponsored by the Uganda Society; 83 species are dealt with and splendidly illustrated in colour. A complete revision of this book dealing with 98 species was published in 1974. His secondment to Zambia resulted in a long report (1934) on his faunal survey containing check-lists of mammals, birds, reptiles and fish. In 1942 a wildlife conservation department was set up as he had recommended. Apart from scientific papers he wrote two books about his work as a game warden, and also a preface to Joy Adamson's *Born Free*. His recommendations of areas suitable for National Parks in Uganda and his organisation of the first two parks formed the basis of conservation in that country.

He served a number of societies and was a member of the British Ornithologists' Union for 50 years, joining in 1914, elected to the Council in 1952 and Vice-President in 1958 (1960–63 another source); he was awarded the Union Medal in 1968. He was Vice-Chairman of the British Ornithologists' Club, 1956–59 and Chairman 1960–63, Vice-President of the Fauna

Preservation Society and President of the Uganda Society, 1940–41. He was a life member of the East African Natural History Society.

Pitman is said to have encouraged J.P. Ionides who became famous for his snake collecting and knowledge of reptiles (see A. Wykes, *Snake Man*, London, 1960) but since Ionides was only ten years younger than Pitman I doubt if there were much either could have taught the other.

He was a kind and courteous man, a meticulous correspondent and extremely hard working and diligent, and remained so long after his retirement. At the time of his death he was working on a book about the elephant.

I suspect Pitman may have had an acid sense of humour. I remember when I first looked over the Coryndon Museum (now National Museum of Kenya) collection of shells with a view to putting it in better order I found a lot of three shells of the very well known and characteristic *Burtoa nilotica* collected by Pitman, I believe somewhere in the Sudan and clearly labelled with a completely fanciful made-up Greek name (which I now forget but it was something like *Erampodites*) that had been accepted without question by the Museum authorities. Hugh Copley and H. Graham Turner used to look after the molluscs but knew little about them. I can only assume that Pitman was pulling their leg in a rather wicked manner. Maybe they had irritated him by pretending to know more than they did and their ignorance annoyed him.

Marjorie his wife survived him. There was no mention of any children in any of the obituaries.

List of molluscs described from material collected by Capt. Pitman in East Africa

The types mentioned here are all now in the British Museum (Natural History).

Gulella duncani Connolly, 1930. Kenya, Cherangani Hills (holotype and 5 paratypes, 1937.12.30. 522–527). Same.

Gulella filix Connolly var. *benetecta* Connolly, 1930. Kenya, Cherangani Hills (holotype and one paratype, 1937.12.30. 535–536). *Gulella benetecta* Connolly.

Gulella shandae Connolly, 1930. Kenya, Cherangani Hills (holotype and 5 paratypes, 1937.12.30. 630–636). Same.

Halolimnohelix iredalei Connolly, 1925. Kenya Rumuruti (type locality) Kemp (holotype and 2 paratypes) and Cherangani Hills, Pitman (6 paratypes) (1911.10.12. 247–249 & 1937.12.30.1984–1989) also Solai, 'Mt Kenya' (probably the Solai above Nakuru) Kemp. Same.

Halolimnohelix iredalei Connolly var. *zonata* Connolly, 1925. Kenya, Rumuruti, Kemp (3 syntypes) and Cherangani Hills, Pitman (4 syntypes) (1911.10.12.244–246 & 1937. 12.30. 1990–1993); the specimen marked by Connolly as type is here chosen as lectotype (see 'Notes'). *Halolimnohelix iredalei* Connolly.

Halolimnohelix plana Connolly, 1925. Kenya, Cherangani Hills, Pitman (holotype and 4 paratypes, 1937.12.30. 2028–2032). Same.

Helicarion (Gymnarion) cheranganiensis Connolly, 1925. Kenya, Cherangani Hills, 6200 ft (holotype and paratype 1937.12.30. 1387–1388 & paratype 1925.5.26.1). *Gymnarion cheranganiensis* (Connolly).

Helicarion (Granularion) pitmani Connolly, 1925. Kenya, Cherangani Hills (holotype and paratype, 1937.12.30. 1463–1464 & paratypes 1925.5.26. 2–4). *Chlamydarion pitmani* (Connolly).

Pseudoglessula pitmani Connolly, 1930. Uganda, Entebbe (holotype and paratype, 1937.12.30. 8074–8075). Same.

Limicolaria karagwensis Kobelt subsp. *insularis* Connolly, 1932. Uganda, Lake Victoria, Mwana I., Pitman (holotype not traced; 6 paratypes 1930.12.3. 368–373) and Nkosi I., Pitman; G.D. Hale Carpenter (paratypes not traced). *Limicolaria martensiana karagwensis* Kobelt.

Trochonanina pitmani Connolly, 1942. SW. Uganda (Kidoma, Bugoma Forest has been added to my reprint in pencil by Connolly) (holotype and 2 paratypes) (the latter not found in type collection), 1937.12.30. 3649–3651. Same.

Notes on the types

Connolly makes use of the word 'type', e.g. 'type in my collection', clearly meaning what is now called a holotype, i.e. the specimen chosen at the time of description to be associated with the name. Connolly identified these specimens by putting them in a separate tube or using coloured cotton wool in the aperture, etc. There seems to me to be no reason why such selected specimens of species Connolly *described himself* should not be accepted as holotypes. In the case of *Halolimnohelix iredalei* and its variety there is a curious difficulty. Part of the material came from Pitman thence to the BM when Connolly presented his collection in 1937 and part of it was in the collection purchased from H.B. Preston by the BM in 1911, i.e. the specimens from Rumuruti with no collector stated but probably Robin Kemp. It is not clear from which lot the specimen selected by Connolly as type came. Another curious statement occurs in the case of *Helicarion cheranganiensis* and *Halolimnohelix plana* – in both cases Connolly states 'type in Coll. Cribb.' This was undoubtedly the Revd C.T. Cribb (1888–1976) who joined the Society in 1910. I can only assume that Pitman had given Cribb the shells and that Connolly had then been shown them. Cribb went off to work in Java about 1925 so may well have handed over some of his material to Connolly.

My thanks are due to Fred Naggs for locating some types and for commenting on my remarks about some of them.

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Notes

1. Occasionally entitled Lt. Col. which presumably was an acting rank.
2. I have seen reports of a paper jointly with J. Adamson entitled 'Habits of the Giant eagle owl *Bubo lacteus*' to be published in the Rhodesian journal *Arnoldia* but could find no trace of it looking through the run of that publication. □

Addendum to Collectors in East Africa No. 20 (*Conchologists' Newsletter* No. 126)

I have recently been sorting through about 25 years' correspondence and finding many items I had forgotten about. One of these concerns **J.E.S. Moore**. Mrs N. McMillan pointed out to me that there was material from Lake Tanganyika in Liverpool Museum. Particularly interesting is material of *Bythoceras minor* with Fulton labels stating 'e Smith Coll.' and '1924'. This surely cannot refer to Edgar Smith who being a Museum employee would not have had a personal collection. Smith retired in 1913 but continued to have a room in the Museum until his death in 1916. There is similar material of *Bythoceras iridescens* and it is possible all these are syntypes. Other material at Liverpool is *Tiphobia horei* E.A. Sm. probably from the Salisbury Collection labelled as having been presented by Dr Günther (1830–1914) (Keeper of Zoology 1875–95) (possibly a syntype), *Limnotrochus kirkii* E.A. Sm. (i.e. *Chytra kirkii*) collected by Moore from the Stelfox collection, *Tanganyicia rufofilosa* E.A. Sm. collected by Moore, also from the Stelfox collection and further material of the same species from the Salisbury collection via the Dupuis collection. Mrs Rosena Down, Department of Biology, University College, London, suggested to me that some Imperial College material had been sent to the National Museum of Wales, and Dr M.B. Seddon, in answer to my enquiry, pointed out that there is a single shell of *Bythoceras minor* in the Melvill-Tomlin collection. Tomlin's label gives the locality Tanganyika and the origin of the material is given as

'Brit. Mus'. There are also six specimens of *Bythoceras iridescens* labelled by Tomlin but with no source indicated. All these specimens could be syntypes. Whether Moore sold some of his collection or gave some away is not known but it certainly did not all go to the BM.

A further note on Alfred Craven*

When writing an account of Alfred Craven I entirely failed to find out any details of his birth. He moved about so much that any record in the Census Returns eluded me. I have, however, managed to track him down in the 1881 Census. He was boarding with an Eliza Duffort (? recorder's writing is not clear) described as an annuitant aged 53 at 132 Cambridge Street, Warwick Square. He is described as a boarder, unmarried, naturalist and author, aged 32 and born in Belgium. I had previously wondered if he were born there and not managed to trace any record. Now it is sure he was born there perhaps renewed efforts can be made. In 1891 he was supposed to be living at 32 Warwick Square but the Census gives Melville L. Macnaghten, Chief Constable, Metropolitan Police and his family as living there! In 1871 one assumes he should have been at Kenwood Bank, Sharrow, Sheffield; the only similar name is Sharow but the Census for that place mentions no Craven nor a Kenwood Bank. I have not yet plucked up courage to go through the 24 lots of microfilm for the Sheffield area. Craven is of course a Yorkshire name so some of his relatives probably lived there.

*See *Conchologists' Newsletter* 126 (September 1993) for list of references to Alfred Craven. □

WANTED TO BORROW for a couple of days only the following books: *The Giant African Land Snail, A Problem in Economic Malacology*; and *Tropical Land Snails of the World*. I will pay all insured postage costs and take great care of the books. If anyone prefers to sell these books rather than lend them out please let me know: Contact Jackie Pedley, [REDACTED]
[REDACTED] Wheaton Aston, Staffs [REDACTED] Telephone [REDACTED]

Dredging off Purbeck and in Poole Bay, Dorset – July 1994

Jan Light

Godalming, Surrey,

After some ten years of dredging annually off Portland and Weymouth which has allowed us to draw up a comprehensive list of the marine molluscs occurring in the area we have sampled during that time, it was fortuitous when Jenny Mallinson recommended a boat skipper who operates his boat out of Poole harbour. A first dredging trip with Dave Maidment took place last year which I was unable to attend; however it was a different story this year. We met on the quay at 7.30 am with the promise of a fine day, although stronger north-easterly winds were forecast later. This forecast did not materialise and we enjoyed a warm, sunny day, working in calm seas – no casualties this year, perhaps the first time ever!

Following the broad 'itinerary' of last year, we steamed down to Swanage Bay, round the striking headland of chalk cliffs and stacks, the leading stack being known as 'Old Harry'. Working from the southern end of Swanage Bay northwards we took six hauls off Swanage and three more off Studland this year. A map (Figure 1) shows the western half of S15. The 2' latitude by 2' longitude 'squares' in which we took hauls have been indicated and given arbitrary station numbers which relate to the accompanying table. This gives a list of species recorded on the boat plus the results of samples which were sorted later by Ian Killeen and myself. In 1993, 25 hauls were taken and this year we took 21. During this last haul the net of the dredge was holed and we were prevented from completing a systematic sampling of the area – hence the empty square on the map! There are likely to be some additions to the list from other participants and any of particular interest will be notified in a future issue of the *Newsletter*.

A simple species list conveys relatively little information but I hope that by presenting the data in tabular form together with a map our findings allow some interpretation. I have included data

for 1993 and 1994 using upper case for the former and lower case for the latter. An asterisk indicates species found in both years. Greatest diversity of species occurs in Swanage Bay where there is a greater variety of substrate ranging through large rocks, cobbles, weed, sand, shell gravel and mud and the list of species reflects this. The list also reflects a greater number of hauls taken in this area (the majority in 1993) over the two years and it is worth noting that a minority of species (28 out of 85) were recorded in both years.

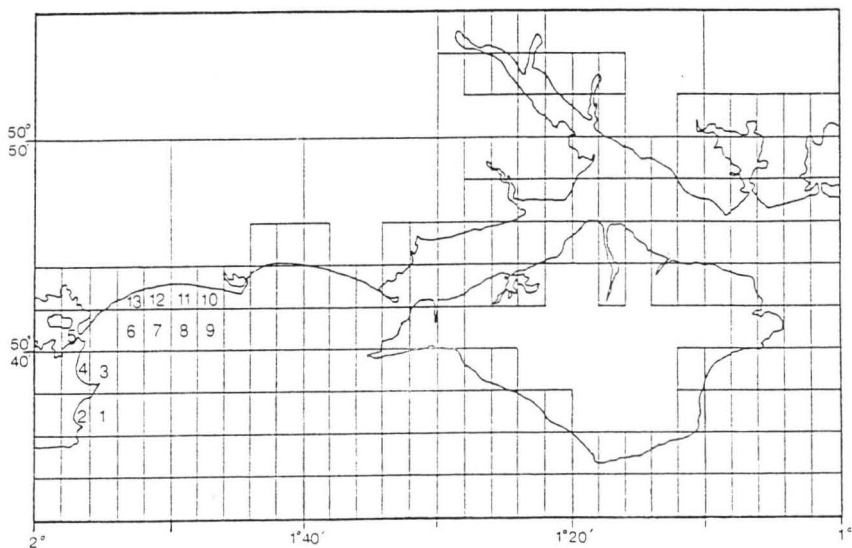


Figure 1. Sea Area S15: Wight (western half)

Only one haul was taken in Poole Bay in 1993 (station 7) so emphasis was placed on sampling the Bay more systematically this year; 11 hauls were made. Data on the table for stations 6 and 13 show a distinct uniformity in the assemblage of molluscs recorded. As each haul came aboard it was noted how similar it was to the previous one, consisting mainly of dead shell, coarse gravel and live molluscs. The presence of the sand shrimp in these hauls suggests that all the associated sand had passed through the mesh of the net. It appears that over a wide area in Poole Bay the molluscan fauna consists of six carnivorous gastropod species including two turrids (*Mangelia nebula* and

M. powisiana, both common) and a low diversity assemblage of bivalves dominated by *Nucula nitidosa* (abundant), *Spisula subtruncata*, *Abra alba* (abundant) and *Corbula gibba*, with sporadic occurrence of *Timoclea ovata*, *Pandora inaequalis*, *Mya truncata* and *Phaxas pellucidus*. Other elements in the fauna are *Polinices poliana*, *Aporrhais pespelicani* and the ubiquitous *Crepidula fornicata*.

Records for central Studland Bay (stations 3 and 4) reflect the occurrence of *Zostera* beds on sand – notably *Rissoa membranacea*, *Hydrobia ulvae*, *Tragula fenestrata* and *Loripes lucinalis*. Most surprising was the paucity of species and, indeed, living animals, in the hauls which we took off Shell Bay. It is traditionally a beach which yields a long list of species, but the substrate immediately offshore appears to be large, probably mobile, shingle colonised with barnacles. The two hauls made yielded only 5 live species and this suggests that Shell Bay is a site of shell deposition from a wide area.

During the two years we have dredged out of Poole Bay we have probably achieved good coverage and assembled a list of characteristic species in the area. Dave Maidment who has served us well is discontinuing his chartering work in favour of mussel-farming so we shall be looking for another skipper next year. With the Channel Atlas in mind, I would like to suggest that we try and run a trip in another part of the English Channel and we can either go east to Brighton and beyond or west beyond Portland. To the best of my knowledge this latter area has not been dredged by the Conchological Society in living memory. I know of a skipper who could take us dredging further east (although the party would have to be smaller owing to space on the boat) but would welcome your views and, better still, the name of a contact. Either way it is probably time to move on and I look forward to the next trip wherever it may be. Thanks are due to the following participants in a very enjoyable day: Ian Killeen, Sebastian Payne, John Skinner, Christine Street, Mike Weideli, Martin Willing, Terry Wimbleton and to Dave Maidment for being such a helpful and efficient skipper.

Table 1
Conchological Society dredging trips to
Purbeck and Poole Bay – July 1993 and July 1994

L = Live species 1993

S = Shell found 1993

* = Species found

l = Live species 1994

s = Shell found 1994

in both years

Species no. and name	S15 'square' no. on map												
	1	2	3	4	5	6	7	8	9	10	11	12	13
001 <i>Leptochiton asellus</i>			L										
004 <i>Lepidochitona cinereus</i>		l		L									
007 <i>Acanthochitona crinitus</i>		L											
009 <i>Emarginula fissura</i>			S										
<i>E. rosea</i>	S	S*	S										
010 <i>Diodora graeca</i>		S	L									s	
012 <i>D. virginea</i>		s	L										
<i>Jujubinus exasperatus</i>		S*	S										
021 <i>Gibbula magus</i>		l											
022 <i>G. tumida</i>	L	L	L					s					
023 <i>G. cineraria</i>	L	L*	L*	S	s	l				s			
025 <i>Calliostoma zizyphinum</i>		l						s					
027 <i>Dikoleps nitens</i>			L										
028 <i>Skenea serpuloides</i>	L												
029 <i>Tricolia pullus</i>		L*	L*	L						l			
030 <i>Bittium reticulatum</i>		l	s	L	s								
031 <i>Turritella communis</i>							L					s	
032 <i>Lacuna crassior</i>										s	s		
034 <i>L. parva</i>		L*	L										
035 <i>L. vincta</i>			l	L									
045 <i>Rissoa guerini</i>		L											
046 <i>R. interrupta</i>		L*	L*	L									
047 <i>R. lilacina</i>		L											
048 <i>R. membranacea</i>			L*	L			S						
049 <i>R. parva</i>		L*	L*	L						l			
052 <i>Alvania semistriata</i>		s											
054 <i>Manzonina crassa</i>	L	s	L										
056 <i>Onoba aculeus</i>			L										
057 <i>O. semicostata</i>	L	l	L	L									
058 <i>Pusillina inconspicua</i>			L										
061 <i>Hydrobia ulvae</i>			L*										
066 <i>Tornus subcarinatus</i>	S	S*	L							s			
067 <i>Apporhais pespelecani</i>		l				l	L	l			l	l	l
068 <i>Calyptrea chinensis</i>		S		S	s						s		
069 <i>Crepidula fornicata</i>	L	L*	L*	L*	l	l	L	l	l	l	l	l	l

Continued2

Continued ...2

Species no. and name	S15 'square' no. on map												
	1	2	3	4	5	6	7	8	9	10	11	12	13
073 Trivia arctica		l	L			l				l			
074 T. monacha		L*											
079 Polinices catenus		L	L			s	L						
082 P. poliana		L*				l		l	s	l	l		
083 Cerithiopsis tubercularis		s											
094 Ocenebra erinacea		l	L		l	l		s		s		l	l
008 Buccinum undatum		L*		l	l	l	L			l		l	l
102 Chauvetia brunnea		s											
103 Hinia reticulata	L	L*	L*	L*	l	l	L	l	l	l	l	l	l
104 H. incrassata		l	L*	L		l							
105 H. pygmaea						l	L	l	l	l	l	s	l
108 H. nebula		L*	L			l	L	l	l	l	l	l	l
H. powisiana		L*	L				L	l	l	l	l		s
110 Oenopota rufa		L	S								s		
111 O. turricula								s		s	s		
120 Odostomia acuta				L									
121 O. plicata		s											
123 O. unidentata		s											
128 Chrysallida indistincta		s	L										
Noemiamea dolioliformis			S										
131 Partulida spiralis			S										
132 Tragula fenestrata		s	L*	L						s			
133 Turbonilla lactea		l							s	s			
143 T. acuta			L				S			s			
136 Eulimella laevis		s											
E. ventricosa	S												
141 Philine aperta							L		l	l	l		
145 Diaphana minuta				L									
148 Retusa obtusa		s											
162 Berthella plumula		s											
175 Onchidoris bilamellata	L	L											
183 Limacia clavigera		l											
189 Archidoris pseudoargus			L										
218 Antalis vulgaris		s						l	s	s	s	s	
219 Nucula hanleyi		L*	L	L			L						
220 N. nitidosa		L*	L*	L*		l	L	l	l	l	l	l	
221 N. nucleus	L	l	L*	l		l							
226 Striarca lactea									s				
228 Mytilus edulis		L*	L*	L	l					l			
233 Modiolarca tumida		L	l										
235 Musculus discors		L											

Continued ...3

Continued ...3

Species no. and name	S15 'square' no. on map												
	1	2	3	4	5	6	7	8	9	10	11	12	13
241 Chlamys varia			s			s		s				s	
243 Aequipecten opercularis		l				s		s			s		
247 Anomia ephippium						l					s		s
250 Loripes lucinalis		l	L* L										
253 Thyasira flexuosa			L L				L		s				
256 Semierycina nitida		s											
259 Mysella bidentata	L	L* L	L L						s l				
260 Epilepton clarkei		s	S						s				
262 Goodallia triangularis	L	s											
265 Acanthocardia echinata		S						s					
267 Parvicardium exiguum		S* L	L L	s									
P. scabrum		L											
271 Laevicardium crassum											s		
272 Cerastoderma edule		l			l								
274 Mactra stultorum											s		
275 Spisula elliptica		l					L						
276 S. solida		l						l					
277 S. subtruncata		L				s			l l	s s			
278 Lutraria lutraria		s											
280 Solen marginatus		s											
281 Ensis arcuatus		L*											
282 E. ensis								l					
283 E. siliqua		L*						l					
284 Phaxas pellucidus		L* l					L l	l l		l l			
286 Angulus tenuis								s l					
288 Fabulina fabula		L					L s	l s	s				
289 Moerella donacina		s											
294 Gari fervensis		s											
297 Abra alba		L* L	L*		l	L l	l l	l l	l l	l l			
306 Chamelea gallina		L* L	s			L l		l					
308 Timoclea ovata	L	L* L			l		l l	l l					l
309 Tapes aureus					s								
310 T. rhomboides		s											s
312 Venerupis senegalensis		s L	L s	s s							l		
318 Mya truncata		L* L*							l l				
Saxicavella jeffreysi							S s						
321 Corbula gibba		L* L	l l		l		l l	l l	l l	l l	l l		
322 Hiatella arctica	L	l L											
333 Pandora inaequalvis		L* L	S*		s	L l	l l	l l					
335 Sepia officinalis		l											
337 Sepiola atlantica		L					L l						

□

International Partula Workshop, London Zoo, 11-13 February 1994

Jane Reynolds

Holloway, London

I was invited to attend this workshop as delegate for the Conchological Society. I have had a close interest in the activities of the Partula Propagation Group (PPG) since working as a member of staff at the Zoo four years ago, and readily agreed to attend. The meeting was organised by Paul Pearce-Kelly and Dave Clarke, the International Co-ordinators of the group, and notables who attended included Quentin Bloxham of the Jersey Wildlife Preservation Trust, who chaired the meeting; Professor Bryan Clarke of the University of Nottingham; Professor Jim Murray of Virginia University; Professor Michael Hadfield of the University of Hawaii; and Professor Ulie Seal of the Captive Breeding Specialist Group. Also invited were representatives from zoos and other institutions throughout Europe, America and the UK.

Partula snails have been threatened since the early 1950s, when the predatory snails *Gonaxis kibweniensis* and *Euglandina rosea* were introduced onto South Pacific islands with the intention of controlling *Achatina fulica*. The PPG was set up to establish breeding populations of *Partula* spp. in captivity, but, with varying success rates for different species and a continuing threat to populations of all South Pacific endemic snails, it was decided to hold this meeting in order to address wider issues. The aims were to review the wild and captive status of all species and subspecies in the Partulidae in order to develop taxon specific recommendations for conservation action. This was to be achieved by breaking down the programme into specific objectives with groups of delegates working on each.

The meeting began with a general session for preliminary reports and outlining the aims and agenda. Ulie Seal spoke about strategies for captive and wild priority assessments, outlining Conservation Assessment & Management Plan (CAMP) and Population Habitat Viability Assessment (PHVA) methods. In

Professor Seal's own words, CAMP provides a 'quick and dirty' way of assessing threats to a population and recommendations for its management which can be instituted quickly enough to prevent extinction.

Professor Bryan Clarke spoke briefly on the status of wild populations, explaining that the remaining populations of Partulidae species are probably at high altitudes due to *Euglandina's* dislike of such conditions, but that it was often not certain when or if these predatory snails had been introduced to many of the islands. Mike Hadfield continued the theme by speaking about field-work which had been conducted on Hawaiian snails. *Euglandina* had been introduced to Hawaii in the late 1950s and early 1960s and is still recommended by the Hawaiian Agricultural Ministry. An even more worrying factor was that in Guam *Platydemus* flatworms had been introduced and wiped out populations of *Euglandina* and *Achatina*, and could spread to the rest of Micronesia, representing a new threat to *Partula* and other native snails. It is not known what altitude this flatworm tolerates due to the lower height of the islands onto which it has so far been introduced. On a more positive note he spoke about research conducted in captivity and its application in the wild, including the building of two enclosures at 2,000 ft and 4,000 ft to exclude predators, and the development of a toxic bait for *Euglandina* which can be safely used in Hawaii as there are no native predatory snails. Professors Hadfield and Clarke spoke about their work on the genetics of these snails, and explained how biopsy was possible using a 1 mm² section of the foot, therefore not harming the animals.

Dave Clarke from London Zoo spoke about present captive populations. There were 14 collections held at the time of the workshop, and 25 taxa (20 species, 5 subspecies/hybrids) held. All records are now held on CERC database – a programme specially developed for the group by Ajay Burlington-Johnson; it allows for records for colonies of animals to be kept, instead of individuals. This makes it ideal for many other invertebrates apart from snails, and could easily be adapted for other groups, such as plant populations. Dave spoke about keeping conditions at

the institutions that held *Partula*, and the need for rationalisation of the collections. Some collections were at capacity and some taxa were over represented. Unlike many other endangered species there is only a small threat to *Partula* from habitat destruction and were it not for the continuing presence of the predators, re-introductions would be a viable possibility.

Paul Pearce-Kelly concluded the general session by talking about the recent release of *Partula taeniata* into the Palm House at the Royal Botanic Gardens, Kew. Although these individual snails would never be released into the wild, the experiment provided valuable data for release protocols and understanding the possible reasons for extinction. Additionally such populations would provide reservoirs of animals and there is a potential for other botanic gardens to hold similarly large semi-wild collections. Monitoring of this group continues, and a visit to Kew to see the snails was planned for Saturday evening.

After lunch the meeting split into three working groups. One group was set up to establish the most probable locations of remaining wild populations, and to prioritise the need for surveying and collection expeditions. The captive breeding group listed all current taxa and generations, and compiled tables of current carrying capacities and possibilities for expanding the collections. This would involve merging collections of some taxa, especially if more species were to be brought into captivity from the wild. The third group were working on genetics and compiled a provisional VORTEX programme which is a computer simulation of genetic and demographic stochasticity: in simpler terms an analysis of the population sizes necessary to maintain most of the original gene pool.

There was an informal general session on Saturday for the groups to report their findings. After this the groups re-organised to tie in the prioritised areas for exploration with the data from the captive group in order to fill gaps in the existing collections. In all 20 species were designated as urgently sought, although some, for example those from Tahaa, were thought likely to be extinct in the wild. In Guam conservation is being carried out *in situ*, and so it was decided that only small back-up colonies of endemic

species from this island should be captive bred.

Meanwhile more precise data had been put into the genetics programme, from which it was determined that a starting population of 20 individuals would maintain 80%+ heterozygosity over 50 years. To achieve this target populations of 500 would need to be maintained. This gave the captive group a better structure for rationalisation of the collections. It was proposed that each institution would hold 250 of each taxa, and that collections would be regionally based, both easing transportation problems and providing local back-up against unexpected disasters.

In the final stages of the workshop on Sunday afternoon, the collections were allocated to the countries with the greatest historical or political links with the snails' islands of origin. This would not only make the practicalities, e.g. customs, easier, but provide a focus for publicity, fund-raising and re-introduction programmes. This phase was expected to take place fairly gradually, since some populations would need to be built up and others reduced (culled animals will be used for genetic research). Additional species from Raiatea would be brought in this summer, and an expedition to the Marquesas is being planned for 1995.

When the final figures for each institution were produced there was found to be a slight shortfall in terms of holding capacity. It had already been decided that *Partula mirabilis x taeniata*, a naturally occurring hybrid, would be maintained as a smaller population, but there was still insufficient room for it. At this stage I volunteered to house these snails on a long-term basis on behalf of the Conchological Society and (to my surprise) this proposition was agreed to. This hopefully will forge greater links between the Society and the PPG, and reports of the Society's snails will hopefully appear in later issues of the *Newsletter*.

Finally, a statement of concern was produced and it was decided that the group would be re-named in order to reflect the wider aims and the concern over other endemic species of this area: eventually the name Pacific Island Land Snails Group was chosen. □

International Conference on the Value and Valuation of Natural Science Collections

Manchester University, 19–21 April 1995

Natural science collections have scientific, cultural and monetary values.

The conference will explore the nature of these various values and will reflect the experience of those involved in the care and use of such collections.

It is often said that natural science collections are undervalued (in all senses of the word) when compared with humanities-based collections, particularly those of fine art objects. Is this true? If so, is it a consequence of the way society views the arts and the sciences? Or is it because art collections can have such high financial values? What can be done to increase society's appreciation of the many values of natural science collections? What pressures are there upon museums and other holding institutions to put financial values on their natural science collections, and should such pressures be welcomed or resisted? In responding to such pressures, is there a risk that the intrinsic scientific and cultural value of natural science collections is at best undermined, and at worst sold out?

Programme outline

Reflecting the aims of the Conference, three major themes will be pursued during the various scientific sessions. These sessions will examine the SCIENTIFIC VALUE and CULTURAL VALUE of natural science collections, and address the question of the FINANCIAL VALUE of these collections.

The last theme presents four aspects – what pressures are there to provide financial valuations for natural science collections, what commercial valuations are *de facto* in existence already, what are the arguments for and against assessing such monetary values and, if we have to value, how should the consequent risks be minimised?

The final debate session will endeavour to draw together all these disparate threads, and attempts to define the principles that should inform future policy decisions about natural science collections.

The publication resulting from the conference will help to answer some of these questions, and inform future policy decisions about natural science collections.

*Sponsored by The Manchester Museum, The Biology Curators' Group,
The Geological Curators' Groups and The Linnean Society of London.*

For further information contact:

The Valuation Conference Secretariat, The Manchester Museum,
Oxford Road, Manchester, M13 9PL.

Conchological Society of Great Britain and Ireland

MINUTES

Minutes of 1054th (Ordinary) meeting held on 19 February 1994 in the Demonstration Room of the Natural History Museum at 2.30 pm

In the Chair: Dr B. Colville with 38 members and friends present.

Apologies for absence: Mrs S. Davies, Mr A.D. Seccombe, Mr P. Lee, Mrs J.M. Light, Mr D.R. Seaward, Miss J.T. Sawyer, Miss E.F.A. Fogan, Mrs N.F. McMillan, Mrs E.B. Rands.

Minutes of the last meeting (of 11 December 1993): Read and accepted.

Matters arising: None.

Nomination and election of new members:

Ms Vici Harley,

London

Lecture of the day:

Mr Paul Pearce-Kelly (London Zoo): 'London Zoo's Partula breeding project'.

Announcements and correspondence:

1. *Tentacle Newsletter*. This newsletter is produced by the IUCN Species Survival Commission, Mollusc Specialist Group. It is published once per year and contains articles relevant to the conservation of molluscs.
2. It was reported that the Conchological Society display boards and promotional literature will be exhibited shortly at Newbury Museum.
3. It was also reported that Dr June Chatfield will be able to be heard on Radio Berkshire.

Any other business: None.

Meeting closed at 5.30 pm.

Chairman.

Appendix: members' exhibits:

- | | |
|-------------------|---|
| • Mr D.C. Long | Local land snails. |
| • Mr T. Pain | Carnivorous snails introduced into some Pacific Islands to combat the Giant African Snail. |
| • Dr J. Chatfield | <ol style="list-style-type: none">1. List of molluscs collected in Rouen, France, 12–13 February 1994 and specimens of <i>Hygromia limbata</i> and <i>Zonitoides excavatus</i>.2. RSPB <i>Birds</i> magazine with articles on birds and molluscs (1993).3. Bulletin of Malacological Society of London. |
| • Mr T. Wimbleton | Marine bivalves from southern England. |
| • Ms J. Reynolds | <ol style="list-style-type: none">1. Display boards.2. Newspaper and magazine articles. |
| • Dr M.J. Willing | <ol style="list-style-type: none">1. Biodiversity Challenge.2. Information on slug control nematode. |

**1055th (Special General) meeting held on 19 March 1994
in the Demonstration Room of the Natural History Museum
starting at 2.45 pm**

In the chair: Dr B. Colville.

This Special General Meeting was called to discuss and vote upon proposed changes to the Society's rules. These proposed changes were circulated to members along with the agenda for this Special General Meeting and the AGM. The proposed changes are as follows with the changes underlined:

*4. Final sentence ... The Society may when necessary change the annual subscription and entrance fee at the Annual General Meeting or at a Special General Meeting.

10. The Society's Officers shall consist of a General Secretary, Membership Secretary, Treasurer, Journal Editor, Recorder for Non-marine Mollusca, Recorder for Marine Mollusca, Newsletter Editor, Programme Secretary and Conservation Officer, all of whom should be elected annually. All Officers shall be unpaid.

11. Final sentence ... A vacancy arising through premature retirement of an Ordinary Council Member shall be filled by ballot at an Annual General Meeting or by co-option of Council.

13. Ballot papers shall be sent to Members resident within Great Britain and Ireland; papers shall be returned in a sealed envelope signed on the outside by the voting Member and addressed to the Scrutineers, c/o the Hon. General Secretary.

15. The meetings of the Society shall be held at such time and place as the Council shall determine: a Special General Meeting of the Society shall be convened upon the recommendation of Council or by the request of signed requisition of at least twenty Members, addressed to the Hon. General Secretary and signifying the purpose thereof. At least twenty one days' notice of such a meeting shall be sent to Members residing in the United Kingdom.

17. The Annual General Meeting shall be held at such time and place as may be fixed by the Council to receive and, if agreed, to adopt the reports and accounts of the outgoing Council, to elect the Council and Officers for the ensuing year and to vote upon proposed subscription changes and any other resolutions.

19. The *Journal*, *Newsletter* and other publications shall be published periodically under the direction of the Council, whose decision concerning publication shall be final. The Council shall appoint a Publications Sub-Committee to advise on all publications.

23. No alteration to any Rule shall be made except at an Annual General Meeting or at a Special General Meeting, and by majority of three quarters of the Members present, but so that no alteration shall be made to the Rules which would make the objects not exclusively charitable or the funds and assets applicable otherwise than for exclusively charitable purposes."

Dr Colville asked if there were any speakers against the proposed Rule changes. There were none.

Mr T. Pain proposed and Mr D. Long seconded that the proposed changes be adopted. The meeting voted in favour (with no votes against).

Meeting closed at 2.50 pm.

Chairman

☐

LETTERS

Dear Sir,

I read with interest in the CNL for June 1994 the article by Michael Gallagher on the Omani National Collection. However, there was one slight inaccuracy which I'd be grateful if you would correct.

When Elizabeth Bostock visited us she indeed examined our Melville and Standen types, but her major work was to almost completely re-curate the Townsend collection here, which contains many shells from Oman and its surrounding area. Unfortunately the pressure of other work has prevented so far this work being written up for publication, but hopefully this will be done sometime next year.

C.W. Pettitt

Keeper of Invertebrates

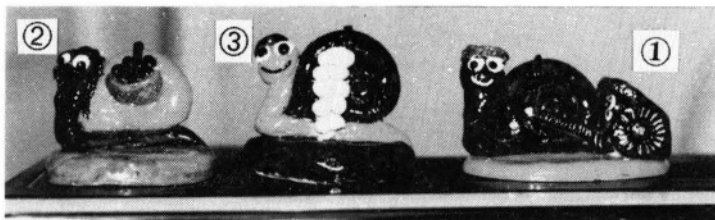
The Manchester Museum

University of Manchester

Oxford Road, Manchester M13 9PL

CALLING ALL SNAIL FANS!

Character ornamental snails approximately 2 inches high made from stone cast resin and hand painted in bright colours. Ideal 'stocking fillers' for Christmas.



No. 1 is the Roman Snail pulling a chariot, No. 2 is a Strawberry Snail carrying a basket of strawberries on its shell. No. 3 is a Garlic Snail wearing a beret carrying a string of garlic on its shell. £2.25 each plus 50p p&p. Fully returnable within 7 days if not satisfied. Contact: Jackie Pedley, [redacted] Wheaton Aston, Staffs [redacted] Make cheques/POs payable to Miss J. Pedley. Please allow 10 days delivery as they are made to order.

HOMES WANTED for baby Giant African Snails (*Achatina fulica*). Free to good homes except for postage and packing. Contact Jackie Pedley, [redacted] Wheaton Aston, Staffs [redacted] Telephone [redacted]

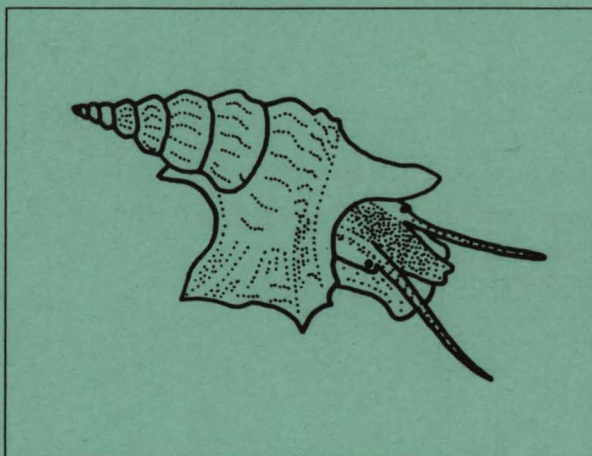
The Conchologists' *Newsletter*

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Recording Mollusca in Ireland: Achill Island, Co. Mayo

Julia Nunn

Ulster Museum, Botanic Gardens, Belfast

Achill Island is situated on the rural west coast of Ireland in Co. Mayo, the closest large town of Newport being more than 20 miles away (Figure 1). It is linked to the mainland by a short bridge over Achill Sound. Unlike Clare Island, only three miles directly to the south in Clew Bay, Achill has not been systematically investigated by conchologists until recent years. In 1898, Tatlow and Praeger published an account of a visit to Achill. They collected two lots of shell sand from the eastern end of a 'picturesque sandy bay adjoining Lough Nambrack on the northern coast of Achill'. Seventy-nine species (presumably only shells) were recorded. A few additional records (17 species) from the same site were published by Massy in 1904, with two species (*Cerastoderma edule* and *Skeneopsis planorbis*) recorded from Sruhill Lough on the east coast of the island. No other fieldwork for the area has been published.

Achill Island is a popular area for divers (particularly at Easter) because of its scenic beauty both above and below the water. From 1979 to 1989, the western area of the island has been dived by Bernard Picton (formerly Ulster Museum, now BioMar, Trinity College, Dublin)(1979–88) and myself (1988–89). Fifteen different sites have been visited in depths from 10–46m and the molluscan fauna recorded. The shores have been visited by Helen Chesney (Ulster Museum, March 1988) and myself (April 1988). More recently, as part of fieldwork in the area for the Atlas and Checklist of Mollusca of Ireland, I have extensively recorded mollusca from 11 sites during the Easter spring tides 27th to 31st March 1994. A total of 14 different shore sites have now been visited.

For the purpose of this note, Achill Island is considered to include the whole island, both sites of Achill Sound, Achilbeg Strait and any close offshore Rocks (e.g. the Bills). Much of the north-west and west coasts is completely inaccessible cliffs which

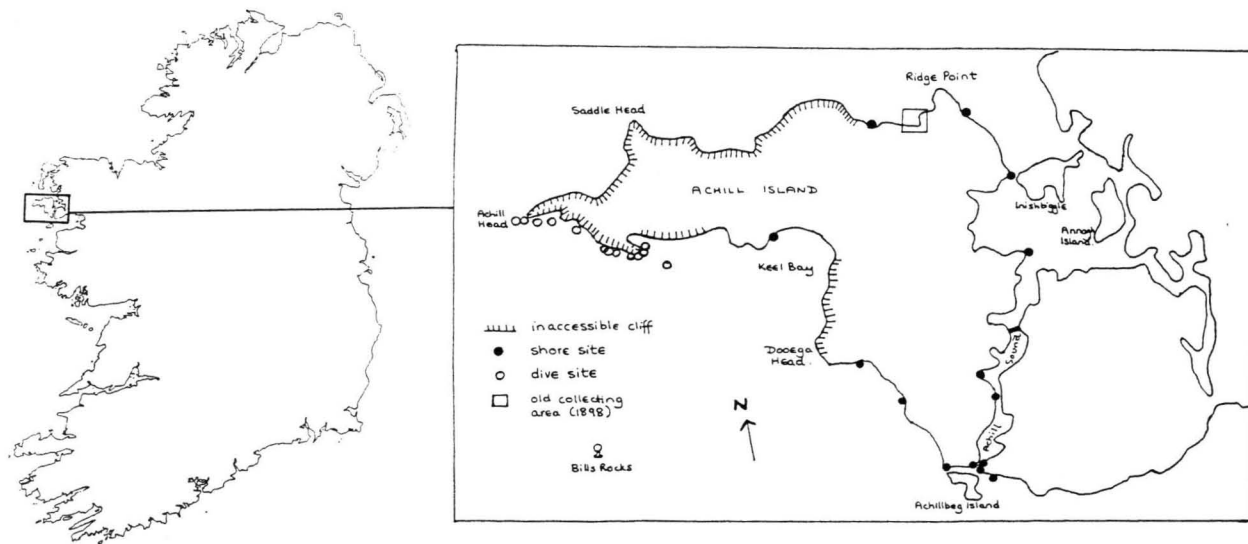


Figure 1. The location of Achill Island, and the recording sites

restricted available sites. The habitats were: exposed rocks and rock platforms; boulders; exposed sand; mud, gravel and pebbles in Achill Sound; current swept, but sheltered rocks. In particular, the shore at Gubnacliffamore at the mouth of Achill Sound was a fascinating site – sheltered from wave action, but current swept. The underside of the rocks at low water were covered with soft coral *Alcyonium digitatum* (dead men's fingers) – a clear example of the emergence phenomenon. The nudibranchs associated with *Alcyonium*, *Tritonia hombergii* and *T. plebeia*, were both present on this species, their known food source.

A total of 95 live species and 9 shells have now been recorded since 1979, together with a new species *Eubranchus* sp. 'B' (provisionally named *achillensis*) yet to be described by Bernard Picton. This was found by him at several dive sites close to Achill Head, on the hydroid *Nemertesia antennina*, and is figured in Picton & Morrow (1994).

A number of these species are new or post-1950 records for Sea Area 35 (Seaward, 1990).

Recorder:

HC = Helen Chesney; JDN = Julia Nunn; BEP = Bernard Picton

New Records: *Littorina nigrolineata* (HC); *L. obtusata* (JDN); *Tritonia hombergii* (BEP); *T. plebeia* (BEP); *Doto dunnei* (BEP); *Onchidoris sparsa* (BEP); *Cuthona pustulata* (BEP); *Leucophytia bidentata* (JDN).

Post-1950 Records: *Callochiton septemvalvis* (JDN); *Ocenebra erinacea* (JDN); *Onchidoris depressa* (JDN); *Tergipes tergipes* (BEP); *Musculus costulatus* (HC).

None of the species found were particularly rare or unusual, apart from *Onchidoris depressa* which is probably overlooked due to its cryptic nature on its food, encrusting bryozoans. The nudibranchs *Onchidoris sparsa* and *Cuthona pustulata* are also rarely recorded. Curiously, no pyramidellids were found by any recent worker, although three species were found in shell sand in 1898 by Tatlow & Praeger and four species by Massy. A disappointing total of 158 species (from all sources, living and shells only) have been recorded. This can be considered to be

relatively poor when compared with most of the west coast of Ireland, and is almost certainly due to the exposed nature of much of the coastline of Achill Island. No single site on Achill Island itself had more than 33 living species, and the richest site, Gubnacliffamore, had only 48 living species. No more than 12 living species were found at any of the dive sites.

Species list

*Ulster Museum records only

Callochiton septemvalvis; *Lepidochitona cinereus*; *Acanthochitona crinitus*; *Diodora graeca*; *Tectura virginea*; *Patella ulyssiponensis*; *Patella vulgata*; *Helcion pelucidum*; *Monodonta lineata*; *Gibbula cineraria*; *G. umbilicalis*; *Calliostoma zizyphinum*; *Tricolia pullus*; *Bittium reticulatum*; *Lacuna pallidula*; *L. parva*; *L. vineta*; *Littorina littorea*; *L. maria*; *L. obtusata*; *L. nigrolineata*; *L. neglecta*; *L. saxatilis*; *Melarhaphe nerotoides*; *Skeneopsis planorbis*; *Eatonia fulgida*; *Barleeia unifasciata* (dead); *Rissoa interrupta*; *R. parva*; *Alvania semistriata*; *Cingula trifasciata*; *Onoba semicostata*; *Hydrobia ulvae*; *Simnia patula*; *Trivia arctica*; *T. monacha*; *Lamellaria latens*; *Cerithiopsis tubecularis*; *Marshallora adversa* (dead); *Ocenebra erinacea*; *Nucella lapillus*; *Buccinum undatum**; *Hinia reticulata* (dead); *H. incrassata*; *Aplysia punctata*; *Berthella plumula*; *Tritonia hombergii*; *T. plebeia*; *Dendronotus frondosus**; *Doto coronata*; *D. fragilis**; *D. dunnei**; *Goniadoris nodosa*; *Onchidoris bilamellata*; *O. depressa*; *O. muricata**; *O. sparsa**; *Diaphorodoris luteocincta**; *Polycera faeroensis**; *Limacia clavigera**; *Cadlina laevis*; *Rostanga rubra*; *Archidoris pseudoargus*; *Jorunna tomentosa*; *Janolus cristatus**; *Coryphella browni**; *C. lineata*; *Flabellina pedata**; *Tergipes tergipes**; *Catriona gymnota*; *Cuthona pustulata**; *C. viridis**; *Eubranchius farrani**; *E. pallidus*; *E. tricolor**; *E. sp. 'B'**; *Facelina auriculata*; *Favorinus branchialis**; *Aeolidia papillosa**; *Leucophytia bidentata*; *Mytilus edulis*; *Modiolus modiolus*; *Modiolarca tumida*; *Musculus costulatus**; *Ostrea edulis* (dead); *Chlamys distorta*; *C. varia*; *Pecten maximus* (dead); *Anomia ephippium*; *Heteranomia squamula*, *Lucinoma borealis*; *Kellia suborbicularis*; *Lasaea adansoni*; *Mysella*

bidentata; *Cerastoderma edule* (dead); *Ensis arcuatus*; *Abra tenuis* (dead); *Macoma balthica* (dead); *Scrobicularia plana* (dead); *Tapes decussatus**; *Venerupis senegalensis*; *Turtonia minuta*; *Hiatella arctica*; *Thracia* sp.

Additional records from Tatlow & Praeger (1898) and Massy (1904) – all shells only:

Emarginula fissura; *Gibbula tumida*; *Turritella communis*; *Lacuna crassior*; *Rissoa lilacina*, *Tornus subcarinatus*; *Polinices catenus*; *P. polianus*; **Epitonium clathratulum*; **Aclis minor*; **Eulima bilineata*; *Haedropleura septangularis*; *Mangelia nebula*; **Mangelia* sp. (*attenuata* or *smithii* – both have '*Mangilia striolata*' as synonym); *Oenopota turricula*; *Raphitoma linearis*; *R. purpurea*; *Odostomia plicata*; *O. turrita*; *O. unidentata*; *Brachystomia carrozzai*; *B. scalaris*; **Chrysallida indistincta*; **Partulida spiralis*; *Acteon tornatilis*; **Diaphana minuta*; *Retusa truncatula*; **Antalis vulgaris*; *Nucula nucleus*; *Arca tetragona*; **Modiolula phaseolina*; **Musculus costulatus*; *M. discors*; *Aequipecten opercularis*; **Thyasira flexuosa*; **Tellimya ferruginosa*; *Goodallia triangularis*; *Acanthocardia echinata*; *Parvicardium exiguum*; **P. ovale*; **P. scabrum*; *Spisula solida*; **S. subtruncata*; *Ensis ensis*; *Donax vittatus*; *Circomphalis casina*; *Chamelea gallina*; *Clausinella fasciata*; *Timoclea ovata*; *Irus irus*; *Tapes rhomboides*; *Dosinia exoleta*; *Mya truncata*.

Acknowledgements

I would like to thank the Ulster Museum for permission to publish additional records here, Shelagh Smith for identification of the more difficult species, and Graham Day for fieldwork assistance.

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Tatlow, E.M. and Praeger, R.L., 1898. Impressions of Achill: marine mollusca. *Ir. Nat.* 7: 139–140. □

'Malacological Pioneers' **22 October 1994**

David Long

Leckhampton, Cheltenham, Glos.

This highly successful joint meeting, with 87 attendees including presenters, between the Malacological Society of London, the Society of Natural History, and the Conchological Society, was held at the Linnean Society, Burlington House. Its success was due to the thorough organisation of the event and to the consistently high level of the speakers' contributions. Nearly all of these are to be published in the Archives of Natural History so I will not attempt to do more than offer very brief summaries, and as I was not approached to write this note until after the event I ask authors and presenters to forgive any misapprehensions or omissions in the descriptions of their contributions.

Morning session

After registration, and coffee in the library where Kathy Way (Natural History Museum) had organised a fine display of shells with Linnean associations, manuscripts and books such as Martini and Chemnitz, and Reeve and Sowerby's *Conchologia Iconica*, the pre-lunch session was chaired by Professor Robert Cameron. At this:

■ **David Heppell** (Royal Museum of Scotland) set the scene in 'The Long Dawn of Malacology' from pre-history to 1800. This spanned the first, Minoan, iconography of molluscs; the state of knowledge and exploitation of molluscs in Classical times with its basis in Aristotle and a summation in Pliny; the gradual reassessment and expansion of that knowledge in the post-Renaissance, and the pressure, to which molluscan studies contributed, generated by collecting and publications in the eighteenth century which helped to produce the Linnaean system of biological classification.

■ **Ron Cleavelly** (formerly of the Natural History Museum) provided a fascinating overview of the transition from shell collection to conchology during the first half of the nineteenth

century. This was particularly reflected in the contributions of students of the subject and authors covering both fossil and Recent Mollusca, such as George Montagu, the Sowerby family and their associates, and such contemporaries as William Swainson, John Gray and Edward Forbes.

■ **David Allen** (Wellcome Institute) outlined the social influences which fostered and shaped natural history in general, and conchology in particular during the last three quarters of the nineteenth century. Conchology's transition from an aristocratic to a middle class pursuit was eased by its aptness as a study in terms of moral and social acceptability. It could be seen as taking one 'through Nature up to Nature's God', and it had the advantage of being seen as a suitable pursuit both for ladies and for gentlemen (particularly for rural clergy and doctors). Two other developments assisted conchology's popularity – the public transport revolution accomplished by the railways and the technology which reduced the costs of publishing and made it possible to produce readily accessible handbooks, magazines and journals.

■ As a closing pre-lunch session, **Peter Davies** (University of Newcastle) described the catalytic role of the Berwick physician, George Johnston, in establishing a conchological network, maintained through correspondence and family ties, which encouraged Joshua Alder and Albany Hancock both to develop their own networks in natural history and to produce, as a crowning achievement, *British Nudibranchiate Mollusca*, which was published between 1844 and 1855.

Afternoon session

Six speakers took part in the two sessions of the afternoon under the successive chairmanships of **Professor Bryan Clarke** and **Dr Peter Skelton**.

■ **Robert Cameron** (University of Sheffield) showed how John W. Taylor, a founder of the Conchological Society, developed an original hypothesis of 'dominancy in nature' in relation to the evolution, initially of molluscs, but later of living organisms in general. Taylor claimed that all major evolutionary innovations

originated in north central Europe and that the new, dominant, forms arising there drove earlier forms outward. Although his ideas may have developed from Darwin, Wallace and other sources (perhaps with Pilsbry's reclassification of the *Helicidae* as a particular spark), they also have resemblances to some of the political and anthropological theories current and emerging at that time.

■ **Helena Chesney** (Ulster Museum) described Ireland's pioneering conchologists who explored the seas, shores, offshore islands, and the Irish mainland starting from the Dublin Society's purchase of the Leske shell collection in 1792. Major figures and elements included John Templeton, Rose-Cleland, William Turton and Charles Wyville-Thompson, the Royal Irish Academy and the Clare Island Survey.

■ **Fred Naggs** (Natural History Museum) described the pioneering work of William Benson in the study of the land molluscs of the Indian subcontinent, which began when he was a Bengal civil servant. Benson studied and reared living animals, built up a magnificent collection (now at Cambridge), published the earliest papers devoted to Indian land snails, and retained his interest in this subject throughout his life, publishing many new taxa based on specimens received from correspondents such as Edgar Layard in Ceylon. He laid the foundation for a school of British mollusc workers in India which included the Blanford and Henry Godwin-Austen and which was to thrive for about 90 years.

■ **Laurence Cook** (University of Manchester) outlined, in 'T. Vernon Wollaston and the "Monstrous Doctrine"', how Wollaston developed a view on the diversity of faunas. This derived in particular from his studies of the molluscs of the Atlantic Islands, in which he was helped by R.T. Lowe who named and described many Madeiran endemics. His studies convinced Wollaston that there was no evidence that one species ever evolved into another, being separately created according to a divine plan. Although the inevitable result was a disagreement with Darwin, Wollaston's rigorous methods identified the real problem that observations on microevolution do not directly

account for the processes of speciation or for the proliferation of guilds of similar species.

■ **Richard Preece** (University of Cambridge) presented a paper written jointly with Ian Killeen on Edward Forbes and Clement Reid, two nineteenth-century polymaths in geological and life sciences. In his 39-year life Forbes was important for the study of molluscs in being co-author with Sylvanus Hanley of *The History of the British Mollusca* (1848–52), in advancing the use of the dredge for marine work, in developing a concept of the zonation of the marine biota, in discovering late Jurassic freshwater pulmonates, and in developing ideas which incorporated observations of the effects of climate, geology, altitude and other factors in land mollusc distribution. Clement Reid was perhaps most closely associated with Plio-Pleistocene geology and Pleistocene palaeobotany, but he also recognised that fossil land molluscs have a story to tell in terms of the palaeo-environment.

■ The final speaker was **Peter Dance** who 'put the Brits in their place' by concentrating on the contribution of other nations to the development and progress of malacology. He made particular reference to the work on the overall classification of the mollusca by various continental authors.

The meeting closed with a wine reception in the library, followed by a Chinese meal attended by 39 of us, the success of which was not affected by the discovery that the original venue had just been closed by a fire.

Many thanks to all who contributed to making this meeting such a success, but especially to Elizabeth Platts who took on the load of organising the meeting. □

New records for Sea Area 25, found at Nethertown, West Cumbria

Shelagh M. Smith, [REDACTED] Hayton, Carlisle [REDACTED] and
Ian J. Killeen, [REDACTED] Felixstowe, Suffolk [REDACTED]

The shores of West Cumbria are far from inviting. Largely they consist of exposed flat boulder and/or sandy beaches. Low Spring tides occur in the early morning and early evening which due to darkness make them unworkable for six months of the year. They do, however, have one potentially interesting feature in that from about mid-tide level to low water there are extensive reefs of the tube-building polychaete *Sabellaria alveolata* (L., 1767). On the south coast of England small colonies of *Sabellaria* have shown to be host to parasitic molluscs, especially pyramidellids including *Noemiamea dolioliformis* and the aclid *Graphis albida*. Investigations of reef *Sabellaria* on the west coast of Ireland last summer had revealed no sign of such species, although *Graphis* had been found in Clare in 1987.

A neap tide of 1.8m at 15.18 hours on 30 November 1994 and a half day to spare tempted us to visit the shore at Nethertown [54°25.6'N 03°34.5'W], about 6 km north of Sellafield. We worked down the shore to the bottom of the boulder beach where it gives way to sand and then up again, investigating all the habitats. This was not easy as the day was very overcast and darkness fell soon after 16.00 hours. The sand itself proved barren – the dead bivalves washed up live further out. However, we overturned stones and boulders on the upper shore, which seemed just right for *Cingula trifasciata* and *Leucophytia bidentata*, but neither were found. We took scrapings of *Lichina pygmaea* (Lightfoot) and barnacles and a sample of mussel bed which proved to contain only *Mytilus edulis* and the common shore gastropods. We obtained samples of *Sabellaria* from different levels, investigated the lower shore boulders and took scrapings from their undersides, especially where *Pomatoceros triqueter* (L., 1758) was present, and gathered a large sample of various algae including *Fucus serratus* L. encrusted with *Spirorbis* spp.

TABLE 1

Distribution of Mollusca by habitat at Nethertown

- 1 = Upper shore boulders & *Lichina*
 2 = Lower shore boulders
 3 = bottom scrapings from lower shore boulders
 4 = *Sabellaria*
 5 = Weed washings

All species were found living and their abundance is indicated according to the ACFOR scale used in the new marine recording cards.

Species	1	2	3	4	5
<i>Lepidochitona cinereus</i>		F			
<i>Tectura virginea</i>				R	
<i>Patella vulgata</i>	O	F			
<i>Gibbula cineraria</i>		O			
<i>Lacuna pallidula</i>					O
<i>Lacuna vincta</i>					O
<i>Littorina littorea</i>	A	A		F	O
<i>Littorina 'neglecta'</i>	F				
<i>Littorina obtusata</i>		O			
<i>Littorina saxatilis</i>		C			
<i>Rissoa interrupta</i>				O	A
<i>Alvania semistriata</i>			O		
<i>Graphis albida</i>			R		
<i>Nucella lapillus</i>	F	C	O	F	O
<i>Hinia reticulata</i>		O			
<i>Hinia incrassata</i>			R		
<i>Odostomia plicata</i>			F	O	R
<i>Odostomia turrata</i>			C		
<i>Odostomia unidentata</i>			R		
<i>Partulida spiralis</i>			O		
<i>Goniodoris nodosa</i>		F			
<i>Onchidoris bilamellata</i>		O			
<i>Acanthodoris pilosa</i>		O			
<i>Aeolida papillosa</i>		R			
<i>Mytilus edulis</i>	A	A		C	O
<i>Crassostrea gigas</i>		R			
<i>Heteranomia squamula</i>		O			
<i>Lasaea adansonii</i>	O				
<i>Mysella bidentata</i>			O	O	F
<i>Spisula subtruncata</i>				O	
<i>Donax vittatus</i>				R	
<i>Abra alba</i>				R	
<i>Venerupis senegalensis</i>			O	F	F
<i>Mya truncata</i>				R	
<i>Hiatella arctica</i>				R	

and bryozoans; *Laminaria digitata* (Hudson) holdfasts (these from a rill running from a mid-shore pool) and assorted red algae especially *Mastocarpus stellatus* (Stackhouse), *Ceramium* spp. *Palmaria palmata* (L.), and *Furcellaria lumbricalis* (Hudson). The results of careful washing and sorting of these samples, together with records of the more obvious species, are shown in Table 1.

We were pleasantly surprised that there were as many as 35 living species of mollusc present, but much better pleased that there were so many records, a third of our total, new to Sea Area 25 (as compared with Seaward, 1990). These include [* = record updated from dead shell] *Lacuna pallidula*, *Rissoa interrupta*, *Alvania semistriata*, *Graphis albida*, *Odostomia plicata*, *Odostomia turrita**, *Odostomia unidentata**, *Partulida spiralis**, *Goniodoris nodosa*, *Acanthodoris pilosa*, *Crassostrea gigas** and *Heteranomia squamula**. We did not find *Littorina mariae*, which peculiarly appears not to have been recorded from the Area, nor was *Onoba semicostata* present, although dead shells were found.

Scrutiny of the lists demonstrates the importance of examining all the potential habitats on the shore. Most of the species recorded were found only in one or two of the habitat types. The weed fauna was rather impoverished compared with that found elsewhere on west coasts. The assemblage of small species found under boulders where there was sediment, polychaetes, ascidians, etc. was rich and showed that this is a habitat not to be overlooked.

Reference

Seaward, D.R., 1990. *Distribution of the marine molluscs of north west Europe*. Nature Conservancy Council, Peterborough. □

Collectors in East Africa

No. 22: J. Petherick (1813–1882)

B. Verdcourt

Royal Botanic Gardens, Kew, Richmond, Surrey TW9 3AB

John Petherick was Welsh and came from Glamorgan but I am not certain he was born there. He hardly concerns us as he did not actually reach the East African territories, but since he was an interesting character and was the first person to collect one of the most well known East African species (*Burtoa nilotica*) some notice is appropriate. He is unfortunately still best known for not meeting Speke and Grant at the end of their epic discovery of the sources of the Nile.

He began life as a mining engineer and later entered the service of Mohammed Ali Pasha in Egypt in 1845 being at first employed in a fruitless search for coal deposits in Upper Egypt, the Red Sea Hills and Kordofan. He reached Khartoum in 1846. Leaving government service he became a gum arabic trader in Kordofan from 1848–1853 living at al-Ubaiyad, but later, when the gum trade suffered from over-supply, turned to hunting elephants on the White Nile. He explored the river Jur and river Yalo reaching the borders of the Azande country. In 1858 he was appointed British Vice-Consul in Khartoum and by some reports later Consul (Richard Hall (1980) for instance states, 'After holding for years the honorary title of "Vice-consul for the Sudan" he had managed in Britain to have himself upgraded to full consul with a modest salary'. In the walled garden at the consulate he kept ostriches, wild boar, hyenas, dog-faced baboons and leopards.

Going on home leave to Britain in 1859 he married (Note 1) and was also invited by the Royal Geographical Society to take charge of an expedition to meet Speke and Grant on the return from the journey on which they were just embarking to discover the source of the Nile. It was in fact Speke who met Petherick in 1859 and approved the plan; Speke and Grant had Petherick's promise to meet them to comfort them during their long journey. The Royal

Geographical Society had given Petherick £1,000 to buy boats and supplies (grain etc.) for the explorers when they arrived at Gondokoro; when they did finally arrive in February 1863, Petherick and his wife, who had been on a trading expedition to the West (Note 2) were not there to meet them but were only a day or so away and the actual supplies were all there. Nevertheless it was Baker (see *Conchologists' Newsletter* 186: 111–112 (1983)) who greeted Speke and Grant and gave them all they needed including the use of his boat.

Speke became paranoiac about this failure to honour a promise and it is now difficult to form an unbiased opinion. Speke was excessively rude to the Pethericks and more or less accused them of stealing the money and going off trading for ivory and slaves instead of looking for Grant and himself. Seeing Speke was a year late and his accusations quite unfounded the whole affair was unfortunate. Speke would not touch any supplies from Petherick saying that his friend Baker had supplied all his needs. Actually the Pethericks had almost died getting to Gondokoro. In fact the Royal Geographical Society had had a report that Petherick and his wife were dead (see Note 3 for a premature 'obituary') and had asked Baker to take over the meeting of Speke and Grant, who for all they knew might also have been dead since they had been missing for nearly a year (how you could be called 'missing' whilst traversing areas where there was supposed to be *absolutely no communication* is a mystery to me).

Speke repeated the whole business in his Journal in a toned down way and even the gentle Grant, who had been reasonable at the actual meeting made accusations in his *A Walk across Africa*. Various letters were published in *The Times* by Petherick's supporters. A printed letter to Sir William Hooker (and presumably sent to many others) from P.B. M'Quie, Petherick's brother-in-law, entreats him to suspend judgement on Petherick until the latter's own report was available. Speke even wrote an uncharitable letter dated Christmas Day 1863. Even Sir Roderick Impey Murchison, President of the Royal Geographical Society, complained of Speke's attack (see Note 4).

Petherick was removed as Vice-Consul by the simple expedient of suppressing the Vice-Consulate but this was, however, more connected with his excessive zeal in reporting suspected slave traders to the Consul General in Egypt and then being himself accused of indulging in it (Note 5). The British Government had no proof this allegation was true so could hardly directly sack him. R. Hall (1980) says, however, that Russell dismissed Petherick from the consulate (Note 6), but as a result of this Speke episode his reputation suffered ever afterwards and in fact to this day he is omitted from the D.N.B. He left the Sudan in 1865 (Note 7). In 1869 he and his wife published their book *Travels in Central Africa*. Appendix A in volume 2 is a voluminous account of the Speke Affair, Appendix C is of more lasting value, an account of the *Fishes of the Nile* by Dr Albert Günther based on Petherick's collections. He also collected plants which are preserved at Kew.

An interesting side issue is that the famous expedition of the Dutch Tinne sisters comprising Mme Henriette L.M. Tinne, her daughter Alexandrine P.F. Tinne and her sister Adrienne van Capellen was setting out just as Speke spurned Petherick's stores and they were delighted to make use of them. J.A. Tinne lists some of the delicacies of which they availed themselves. Their expedition resulted in one of the largest, most sumptuously illustrated botanical books (Kotschy & Peyritsch (1867)), with Latin and French texts side by side, but the two elder women died during the journey. The printing costs were met by Alexandrine P.F. Tinne and J.A. Tinne.

List of Mollusca described from material collected by J. Petherick in the Sudan

Bulimus niloticus Pfr., 1961. Sudan 'sources of the White Nile', Petherick (BM 1958. 1.10.74-5, lectotype and paralectotype) (Crowley and Pain (1959, p. 1. fig. 4) figure the lectotype). *Burtoa nilotica* (Pfr.).

Limicolaria turris Pfr., 1861. Sudan 'sources of the White Nile' (Dyur River (=Djur, Dyoor or Jur, now river Sue) selected as type locality by Crowley & Pain). Petherick (BM 1994 033, two syntypes). (Crowley & Pain (1970) in their revision stated that 'the present location of Pfeiffer's type of *turris* is unknown). Unchanged.

Notes

1. R. Colquhoun, British Consul General in Egypt wrote to Christopher Rigby, Consul in Zanzibar, on 20 July 1861. 'Petherick takes with him a stout bucksome wife. He will be joined by a great friend of mine whom you perhaps know, Samuel White Baker, the Ceylon sportsman. He too takes up a charming little woman with him. I much fear, both these ladies may lose health perhaps life in their rambles' [how wrong he was!]. Lady Baker outlived her husband by 22 years and Katherine Petherick, a talented and very loyal woman, stood up to appalling conditions during the expedition in the south.
2. For some contrary reason Petherick had turned aside when within 150 miles of Gondokoro and marched west through swamps towards a depot where he maintained a team of ivory traders.
3. Frank T. Buckland (1863) in his premature announcement of the death of Petherick and his wife called him 'a kind-hearted, plucky, powerfully built specimen of true John Bull' – his letter was signed '2nd Life Guards, Regent's Park, London, Jan. 30, 1863'. News had arrived by telegram that Petherick and his wife had been drowned in the White Nile. A Dr Genezik who had lived next door to them in Khartoum for many years wrote to Buckland from Prague saying he did not believe the story and categorically stated they must have been murdered 'by negroes or their own people' and the drowning story cooked up by the killers. Buckland was anxious that the murderers should be called to account since not only was Petherick a fine brave fellow but also an emissary of the British Government (see Note 8).
4. Sir Roderick wrote fourteen letters to Grant between 1864 and 1866 (Sotheby's 1979 – lot 162) and complained in one about Speke's attack on Petherick – 'he sent me a most *violent* Telegram. So violent that if I had made it public he could have been much injured'. In it he '*denounced*' Petherick as a false man etc.'
5. Petherick had been told to deal severely with slave traders

when he became vice-consul and he put two in irons on his journey south and sent them back to Khartoum for trial. Since Khartoum thrived on slavery and most of the multinational white population was mixed up with it he could hardly expect much support. One of the men put in irons was Petherick's own agent Abd el Majid. He was on his way back after leaving the ill-fated supplies for Speke and Grant and found to have slaves hidden. He was immediately released by the Governor General when he arrived in Khartoum. The eventual suggestion that Petherick was himself involved in slaving was started by a letter signed by most of the white population of Khartoum probably mainly because Petherick's behaviour had engendered much anti-British feeling. It is unlikely he was involved himself but he appears to have allowed his men to acquire young slaves, and people he employed at a distance and seldom saw would certainly have been involved.

6. Hall explains that Lord Russell wrote to Speke about reports linking Petherick with the slave trade and asking if he could suggest some person willing to go to Egypt to suspend Consul Petherick and, although it is not known what Speke replied, only twelve days later Russell minuted that Petherick should be dismissed and at the end of October sent a despatch to Khartoum giving three months notice to close the Embassy.
7. The Pethericks, after returning from Gondokoro, spent some months in Khartoum before going home but were so hounded by the governor-general that they found sanctuary in the Austrian Consulate; when the staff there began to resign they had to leave but further protection was offered after Petherick had done the rounds in Khartoum saying he had been victimised. The Austrian Foreign Minister finally forced them to leave. Petherick then planned to sue the Khedive of Egypt for slander and they lived for six months in the American Mission in Cairo, but they were finally urged to return home and continue their suit from there.
8. Richard Hall (1980) gives a good many references to Petherick apart from those already quoted. According to him Petherick was a contrary and awkward personality which he

suggested was due to living so long on the fringes of civilisation which put him out of touch with contemporary ways. Lord Russell, the Foreign Secretary who had of course charge of all consulships, likened him to a hippopotamus or a wild horse. This probably only means he was a forthright, down-to-earth character and Buckland's assessment rings more true. Hall gives a reproduction of an excellent photograph of Petherick (opposite page 81).

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New molluscan names in unlikely places

Henk K. Mienis

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

It happens, unfortunately rather too often, that names proposed for new molluscan taxa turn out to be preoccupied and have to be replaced by new ones. As long as this is done in an appropriate way, for example in a revision of a certain taxonomic group, then these new replacement names are usually very soon accepted. However, sometimes such names are proposed in very unlikely places which are easily overlooked and therefore they remain virtually unknown.

In the past I have paid some attention to *Helix tristrami* von Martens, 1866, a new name for *Helix carmelita* Tristram, 1865 (not Férussac, 1821) (Mienis, 1981). Von Martens (1866) introduced that name in the *Zoological Record* for the year 1865! At least the name was listed in the main source for new taxonomic information: the *Zoological Record*.

The case of *Liamorpha* Pilsbry, 1898 is more complicated (Mienis, in press). It is not listed in the *New names introduced by H.A. Pilsbry in Mollusca and Crustacea* by Clench & Turner (1962). I looked also in vain for it in the *Zoological Record* and the *Zoological Nomenclator*. Yet the name exists and was introduced to replace *Lia* de Folin, 1873 (not Eschscholtz, 1829, neither Laporte, 1834 nor Mörch, 1852) in the index to the genera and subgenera treated in volumes 2–17 of the *Manual of Conchology* (Pilsbry in Pilsbry & Sharp, 1898: 313).

Recently I came across two additional cases of overlooked replacement names. In his study of the marine molluscs collected by Gruvel along the coast of West Africa (1909–10), Dautzenberg (1913: 70–71) described, amongst others, two Pyramidellid species as *Pyrgulina lamyi* and *Pyrgulina germaini*. However, these names had been given already six years earlier by Dautzenberg & Fischer (1907) to two quite different Pyramidellid species from Indo-China. Consequently Dautzenberg (1913: 330) introduced two replacement names: *Pyrgulina mutata* and *Pyrgulina*

substituta, in a footnote to a bibliographic notice of the original publication (Dautzenberg in Anonymous, 1913).

Interestingly the editor(s) of the index of volume 60 of the *Journal de Conchyliologie* (1912–1913) in which the new names were proposed, and of the cumulative index for the years 1893–1936 of the same journal, apparently overlooked the introduction of both new names. Likewise the names have never been listed in the *Zoological Record*. Yet both replacement names have been introduced in a correct way and should be used in case they turn out to be valid species. It is left to the specialists of West African Pyramidellidae to place both species in their proper taxonomic context. For the meantime the following synonymy of those species are known:

● "*Pyrgulina*" *mutata* Dautzenberg, 1913

Pyrgulina lamyi Dautzenberg, (1912) 1913. *Ann. Inst. Ocean. Monaco*, **70**, pl. 3, figs. 33–34 (not Dautzenberg & Fischer, 1907).

Pyrgulina mutata Dautzenberg, 1913. *J. de Conchyliol.*, **60**: 330.

● "*Pyrgulina*" *substituta* Dautzenberg, 1913.

Pyrgulina germaini Dautzenberg, (1912) 1913. *Ann. Inst. Océan. Monaco*, **70**, pl. 3, figs. 21–22 (not Dautzenberg & Fischer, 1907).

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Juniper Hall Snail Course

13-15 October (Friday-Sunday)

This course is a short introduction to snails and slugs in the area around Box Hill which, on the chalk, has an exceptionally good range of species.

Tutor: June Chatfield

Fee £94 Residential

Details and bookings:

Juniper Hall Field Centre,
Mickleham, Dorking, Surrey RH5 6DA.
Tel. (0306) 883849.

Field meeting in the Newbury area: 15 October 1994

Helen Weideli

Newbury, Berkshire

Eleven Conchological Society members, and three visitors interested in the West Berkshire Mollusc Survey, participated in this meeting. Early morning mist gave way to a warm, sunny autumn day, so typical of October.

The morning was spent at a BBONT nature reserve, Rack Marsh, a rich wetland site on the river Lambourn west of Newbury. The river has spread the underlying chalk with deposits of alluvium and gravel, on top of which a thick layer of peat has formed. Thirty-three land and freshwater species were found here. These included a healthy colony of *Vertigo moulinsiana*, specimens of which could be found high on the stems of *Glyceria* and sedges. *Ashfordia granulata* was also common. An analysis of sediment from the river revealed 11 species, including 4 species of *Pisidium*, of which *Pisidium nitidum* was dominant.

In the afternoon the party moved on to survey sites on the Lambourn Downs. After picnicking in glorious sunshine at Seven Barrows, a nearby beech wood was investigated. Although very dry, the wood yielded over 20 species. Of particular interest was the amazing site of numerous *Cepaea nemoralis* living very high (20 ft!) up on the tree trunks and branches.

The party then set out to survey four tetrads, by means of a circular footpath walk to Hangman's Stone and Crog Hill. This proved to be an excellent way of rapid recording and good lists were obtained from each tetrad. A variety of woodland and grassland species were obtained, highlights of which were a large number of *Candidula gigaxii*, climbing on the *Heracleum sphondylium*, along a field margin, and a single *Balea perversa* on a coppiced *Corylus avellana* stool. The meeting ended with tea and cakes at our home.

Thanks are extended to the Watermill Theatre, Bagnor, for

permission to park in the morning, and to BBONT for permission to visit their reserves. Anyone interested in helping with the West Berkshire Mollusc Survey is invited to contact Mike or Helen on [REDACTED] □

Newsletter Binders

Wondering how to file the *Conchologists' Newsletter*? We have produced an attractive, high quality binder. It is dark green with the *Conchologists' Newsletter* and the *Aporrhais* logo embossed in gold on the spine. Each binder will take 12 issues.

The binders come prepacked for mailing in cardboard cases in PAIRS. The cost by post for a pair is £9 inc. p&p.

For members who wish to have only a single binder mailed to them the cost is £5 inc. p&p. At indoor and field meetings they are available singly at £4 each.

Note: This is the last issue to fit the current binder!

Postal orders should be sent to:

Jane Reynolds

[REDACTED]
Holloway, London [REDACTED]

enclosing the correct remittance.

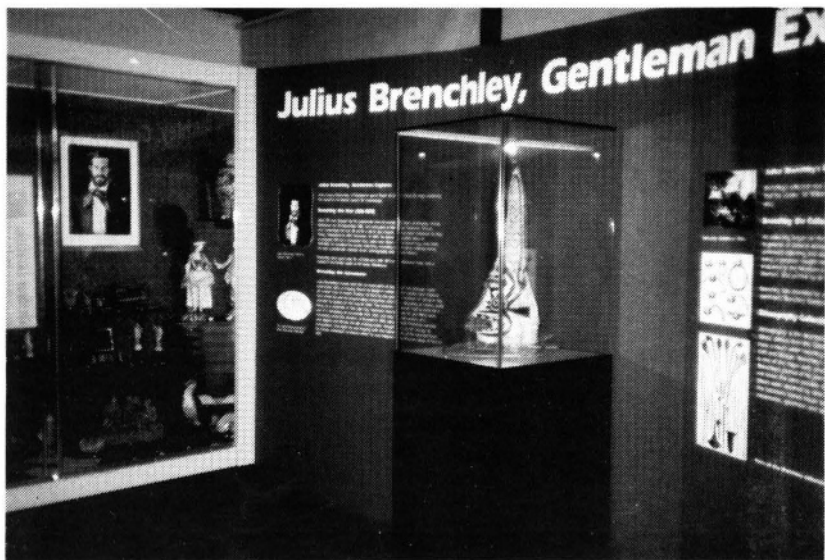
(Cheques made payable to the Conchological Society).

Julius Brenchley, Gentleman Explorer: A new display in Maidstone Museum

June E. Chatfield

Alton, Hampshire

A paper on the Brenchley collection of shells at the Maidstone Museum was recently published in the *Journal of Conchology* (Chatfield 1994). A gallery on Julius Brenchley and his travels in the mid-nineteenth century has since been opened in the museum. It tells the story of Brenchley's life and outlines his various travels around the world with exhibits of objects collected. Most of those on display are ethnographic items from the Pacific made during his cruise on the steam frigate *Curaçoa* in 1865 and described in his book *Jottings during the Cruise of HMS Curaçoa among the South Sea Islands in 1865* (Brenchley 1873). This was one of the major early private collections of such material. Some Brenchley ethnographic material is also in the Museum of Mankind in London. A number of these items include shell work. The new Brenchley gallery is on the first floor, off the small staircase, in the Maidstone Museum.



A temporary exhibition on seascapes and shells, and featuring the Conchological Society's display panels, will be open in Maidstone for the month of April 1995. It will include a number of colourful exotic shells. The museum is very close to Maidstone East railway station.

Further details from Maidstone Museum, St Faith's Street, Maidstone, Kent ME14 1LH, tel. 0622 754497.

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SHELL ROAD SHOW

Maidstone Museum

Saturday 15 April 1995

11.00 to 3.00 pm

*Members of the public are invited to
bring in shells for
identification and comment.*

Hastings Museum Society Beach Walk

Hastings – Saturday, 24 June 1995

There will be a meeting of the Hastings Museum Society when June Chatfield will lead a beach walk in search of marine molluscs. Conchological Society members welcome. Meet 2.15 pm at the pier at Hastings.

Contact telephone:

Hastings Museum and Art Gallery (0424) 721202.

Conchological Society of Great Britain and Ireland

MINUTES

Minutes of 1054th (Ordinary) meeting held on 19 February 1994 in the Demonstration Room of the Natural History Museum at 2.30 pm

In the Chair: Dr B. Colville with 38 members and friends present.

Apologies for absence: Mrs S. Davies, Mr A.D. Seccombe, Mr P. Lee, Mrs J.M. Light, Mr D.R. Seaward, Miss J.T. Sawyer, Miss E.F.A. Fogan, Mrs N.F. McMillan, Mrs E.B. Rands.

Minutes of the last meeting (of 11 December 1993): Read and accepted.

Matters arising: None.

Nomination and election of new members:

Ms Vici Harley, [REDACTED], London [REDACTED]

Lecture of the day:

Mr Paul Pearce-Kelly (London Zoo): 'London Zoo's Partula breeding project'.

Announcements and correspondence:

1. *Tentacle* newsletter. This newsletter is produced by the IUCN Species Survival Commission, Mollusc Specialist Group. It is published once per year and contains articles relevant to the conservation of molluscs.
2. It was reported that the Conchological Society display boards and promotional literature will be exhibited shortly at Newbury Museum.
3. It was also reported that Dr June Chatfield will be able to be heard on Radio Berkshire.

Any other business: None.

Meeting closed at 5.30 pm.

Chairman.

Appendix: members' exhibits:

- | | |
|-------------------|---|
| • Mr D.C. Long | Local land snails. |
| • Mr T. Pain | Carnivorous snails introduced into some Pacific Islands to combat the Giant African Snail. |
| • Dr J. Chatfield | <ol style="list-style-type: none">1. List of molluscs collected in Rouen, France, 12–13 February 1994 and specimens of <i>Hygromia limbata</i> and <i>Zonitoides excavatus</i>.2. RSPB <i>Birds</i> magazine with articles on birds and molluscs (1993).3. Bulletin of Malacological Society of London. |
| • Mr T. Wimbleton | Marine bivalves from southern England. |
| • Ms J. Reynolds | <ol style="list-style-type: none">1. Display boards.2. Newspaper and magazine articles. |
| • Dr M.J. Willing | <ol style="list-style-type: none">1. Biodiversity Challenge.2. Information on slug control nematode. |

**1055th (Special General) meeting held on 19 March 1994
in the Demonstration Room of the Natural History Museum at 2.45 pm**

In the chair: Dr B. Colville.

This Special General Meeting was called to discuss and vote upon proposed changes to the Society's rules. These proposed changes were circulated to members along with the agenda for this Special General Meeting and the AGM. The proposed changes are as follows with the changes underlined:

*4. Final sentence ... The Society may when necessary change the annual subscription and entrance fee at the Annual General Meeting or at a Special General Meeting.

10. The Society's Officers shall consist of a General Secretary, Membership Secretary, Treasurer, Journal Editor, Recorder for Non-marine Mollusca, Recorder for Marine Mollusca, Newsletter Editor, Programme Secretary and Conservation Officer, all of whom should be elected annually. All Officers shall be unpaid.

11. Final sentence ... A vacancy arising through premature retirement of an Ordinary Council Member shall be filled by ballot at an Annual General Meeting or by co-option of Council.

13. Ballot papers shall be sent to Members resident within Great Britain and Ireland; papers shall be returned in a sealed envelope signed on the outside by the voting Member and addressed to the Scrutineers, c/o the Hon. General Secretary.

15. The meetings of the Society shall be held at such time and place as the Council shall determine: a Special General Meeting of the Society shall be convened upon the recommendation of Council or by the request of signed requisition of at least twenty Members, addressed to the Hon. General Secretary and signifying the purpose thereof. At least twenty one days' notice of such a meeting shall be sent to Members residing in the United Kingdom.

17. The Annual General Meeting shall be held at such time and place as may be fixed by the Council to receive and, if agreed, to adopt the reports and accounts of the outgoing Council, to elect the Council and Officers for the ensuing year and to vote upon proposed subscription changes and any other resolutions.

19. The *Journal, Newsletter* and other publications shall be published periodically under the direction of the Council, whose decision concerning publication shall be final. The Council shall appoint a Publications Sub-Committee to advise on all publications.

23. No alteration to any Rule shall be made except at an Annual General Meeting or at a Special General Meeting, and by majority of three quarters of the Members present, but so that no alteration shall be made to the Rules which would make the objects not exclusively charitable or the funds and assets applicable otherwise than for exclusively charitable purposes."

Dr Colville asked if there were any speakers against the proposed Rule changes. There were none.

Mr T. Pain proposed and Mr D. Long seconded that the proposed changes be adopted. The meeting voted in favour (with no votes against).

Meeting closed at 2.50 pm.

Chairman.

**1056th (Annual General) meeting held on 19 March 1994
in the Demonstration Room of the Natural History Museum at 2.50 pm**

Announcements of deaths: The death was announced of Mr M. Whitehead.

In the chair: Dr Colville with 41 members present.

1. *Apologies for absence:* Mr P. Lee, Mrs J.M. Light, Dr M.P. Kerney, Mr D.R. Seaward, Dr .E.E. Sándor, Mrs E. Platts, Mrs N.F. McMillan, Dr J.E. Chatfield, Mr P. Negus, Mrs E.B. Rands.
2. *Appointment of two scrutineers to count postal votes:* Mr Pain and Mr Worth were elected.
3. *Minutes of the previous AGM (20 March 1993):* Read and accepted.
4. *Matters arising:* None.
5. *Nomination and election of new members:* The following were elected:
 - Institutional member: Liverpool Museum
I .Wallace, Zoology
William Brown Street
Liverpool L3 1DG.
 - Ordinary member: Mr S.A. Green
PO Box 10264, c/o Willis Faber
Manama, Bahrain, Arabian Gulf.
 - Student member: Miss J. Turner
Dept of Archaeological Sciences
University of Bradford
West Yorkshire BD7 1DP.
6. *Report of Council by Hon. Secretary:* Mrs S. Davies read her report. This was accepted. Dr Colville proposed a vote of thanks to Sue Davies for all the work she had done in her capacity as Hon. Secretary. Mrs Davies is retiring from this post.
7. *Report of Hon. Treasurer:* Read and accepted.
8. *Report of Hon. Non-marine Recorder:* This report was read by Dr Preece and accepted.
9. *Report of Hon. Marine Recorder:* Read by Mr Killeen and accepted.
10. *Report of Hon. Programme Secretary:* Read and accepted.
11. *Report of Hon. Conservation Officer:* Read and accepted.
12. & 13. *Members' exhibits and tea break.*
14. *Presidential Address:* Dr B. Colville, 'The history of mollusc recording in Cumbria.'
15. *Announcements and correspondence:* None.
16. *Election of auditors:* Mr N. Light and Mr D. Worth were elected.
17. *Results of postal ballot:* The following were elected.

Officers:

President	Dr B. Colville
Hon. General Secretary	Ms J. Reynolds
Hon. Membership Secretary	Mr M. Weideli
Hon. Treasurer	Mr A. Seccombe
Hon. Editor (Journal)	Dr R.C. Preece
Hon. Newsletter Editor	Mr P. Lee
Hon. Non-marine Recorder	Dr M.P. Kerney

Hon. Marine Recorder

Mrs J.M. Light

Hon. Programme Secretary

Mr I.J. Killeen

Hon. Conservation Officer

Dr M.J. Willing

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

Mr C.P. Palmer

Mr K. Brown

Miss J.M. Nelson

18. *Any other business:*

1. A collection of Conchological books and journals was auctioned.
2. Mr S.P. Dance's book, *A History of Shell Collecting*, was available for purchase at an advantageous price.
3. Ms Reynolds gave further information on her participation in the *Partula* breeding programme.

Meeting closed at 5.30 pm.

Chairman.

Appendix: members' exhibits

- Mr M. Weideli Computerised mollusc recording system.
- Ms J. Reynolds *Compendium of Landshells* by R. Tucker Abbott, newspaper cuttings.
- Dr B. Verdcourt Book on Cyprus marines, newspaper cuttings.
- Mr D.C. Long Fossil turrids: 'inquisitor', 'Asthenotoma', and allies, *Asperdaphne*.
- Mr P. Dansey Information retrieval in conchology.
- Miss J. Sawyer Madagascan endemic land snails: *Clavator excimus*, Shuttleworth 1852, *Helicophanta farafanga*, H. Adams 1875, *Helicophanta vesicalis*. Photographic slide of last species mating in the forest Perinet, E. Madagascar 1987.
- Mr S.P. Dance Recent Cumbria records of land and freshwater molluscs confirming some of Jane Donald's records.
- Mrs S. Davies 'Sublime to Ridiculous'
- Mr K. Brown Paper: 'Les Muricidae de Polynésie Française', J. Trondle, R. Houart.
Books: *Coquillages de Tahiti* by R. Salvat & C. Rives.
Coquillages de Polynésie by R. Salvat & C. Rives.
Endemic Polynesian shells.
- Dr M.J. Willing Conservation documents and correspondence,
 - a) Biodiversity Challenge
 - b) Forestry Commission privatisation.
 - c) RSPB & English Nature correspondence.



Diary of Meetings

The diary is presented in date order and includes both meetings of the Conchological Society of Great Britain and Ireland and meetings of molluscan interest run by other organisations. Fuller details of Conch. Soc. field meetings are given on page 472.

Saturday 25 March, Barton-on-Sea, Hants. Conch. Soc. field meeting for Tertiary fossils led by Bill Pocock [REDACTED].

Saturday 1 April, Wansford Lock, Yorks. Yorks. Conch. Soc. field meeting. Meet at roadside TA062562 at 11 am.

Saturday 8 April, Newbury. Conch. Soc. Computer Workshop. Hands-on experience of software recording/distribution mapping packages.

Saturday 15 April, Maidstone Museum. Shell Road Show, 11 am to 3 pm. Members of the public are invited to bring in shells for identification and comment.

Saturday 22 April, London. Conch. Soc. indoor meeting. 'The distribution and ecology of freshwater snails on Pevensy Levels' by Ian Killeen. The Natural History Museum at 2.30 pm.

Saturday 6 May, Brantingham Dale, Yorks. Yorks. Conch. Soc. field meeting. Meet at church SE944301 at 11 am.

Sunday 14 May, Studland Bay, Dorset. Conch. Soc. field meeting led by Ian Killeen [REDACTED].

Saturday 20 May, London. Conch. Soc. indoor meeting. "Predation upon slugs by ground beetles" by Dr Bill Symondson. The Natural History Museum at 14.30.

Friday 26 to Sunday 28 May, Flatford Mill. Land and Freshwater Shells. Tutor: Ian Killeen. Full details from Flatford Mill Field Centre, East Bergholt, Colchester CO7 6UL (01206 298283).

Saturday 3 June, Godalming. Conch. Soc. field meeting led by Jan Light [REDACTED].

Saturday, 24 June, Sawbridgeworth Marsh, Herts. Conch. Soc. field meeting led by Pryce Buckle [REDACTED].

Saturday 24 June, Hastings. Hastings Museum Society beach walk led by June Chatfield. Meet 2.15 pm at Hastings Pier.

Tuesday 27 June, Cambridge. Conch. Soc. visit to the British Antarctic Survey arranged by Ian Killeen [REDACTED].

Wednesday 12 to Sunday 16 July, Cornwall. Conch. Soc. marine recording meeting led by Jan Light [REDACTED] and Stella Turk [REDACTED].

Friday 4 to Sunday 6 August, Yorkshire Dales. Joint meeting to

mark the centenary of the Yorkshire Conchological Society. Led by David Lindley [REDACTED].

Saturday 2 September, Malham. Yorks. Conch. Soc. field meeting. Meet at Tam House SD894673 at 11 am.

Saturday 23 September, Birdlip, Glos. Conch. Soc. field meeting led by Helen Weideli [REDACTED].

Saturday 7 October, Stamford Bridge. Yorks. Conch. Soc. field meeting. Meet at car park SE713556 at 11 am.

Friday 13 to Sunday 15 October, Juniper Hall. Snails and slugs around Box Hill. Tutor: June Chatfield. Further details from Juniper Hall Field Centre, Mickleham, Dorking, Surrey RH5 6DA.

Saturday 14 October, Leicestershire. Conch. Soc. field meeting led by Jon Daws.

Saturday 21 October, London. Conch. Soc. indoor meeting. 'The ammonites of the Bradford Abbas Fossil Bed of Dorset' by Robert Chandler. The Natural History Museum at 2.30.

Friday 27 to Sunday 29 October, Flatford Mill. Life on the Seashore. Tutor: Ian Killeen. Full details from Flatford Mill Field Centre, East Bergholt, Colchester CO7 6UL (01206 298283).

Saturday 18 November, London. Conch. Soc. indoor meeting. 'Patterns of non-marine molluscan diversity in East Africa' by Dr Peter Tattersfield. The Natural History Museum at 2.30.

Saturday 25 November, Woking. Conch. Soc. Molluscan Workshop.

Saturday 16 December, London. Conch. Soc. indoor meeting. 'The glass menagerie – the work of Leopold & Rudolph Blaschka' by Chris Meeham. The Natural History Museum at 2.30.

□

**The Roman Snail *Helix pomatia* L.
in Gloucestershire and its conservation**

In the latest edition of *The Gloucestershire Naturalist* No. 7 (1994) is a paper of this title by Keith Alexander. Copies of the publication are available at £3.50 + 30p p&p from:

Dr Robin Sellers

[REDACTED]
[REDACTED]
[REDACTED]
Nailsworth, Glos. [REDACTED]

Field Meetings 1995

Hon. Programme Secretary:

Ian Killeen

Felixstowe, Suffolk,

Tel.

Important

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

Saturday 25 March

BARTON-ON-SEA, HAMPSHIRE

Leader: Bill Pocock

A field trip dealing exclusively with fossil molluscs. We will be collecting from the internationally renowned type section of the Barton Clay (Palaeogene). Fossils are numerous, well preserved and easy to extract; a totally different fossil collecting experience. Quality of collecting varies from visit to visit but at worst everyone will see a representative fauna. A packed lunch should be brought and carried. For collecting, an old knife or similar for lifting fossils out of the clay and plenty of plastic bags, tubes, etc. **WARNING:** it will be a fairly strenuous day and members should bring warm and waterproof clothing and be prepared to get very muddy!

Meet at 10.30 on the road along the sea front. Map Ref SZ240930 (Sheet 195).

Sunday 14 May

STUDLAND BAY, DORSET

Leader: Ian Killeen

A mixed meeting looking at a terrestrial site in the morning and Studland Bay in the afternoon. The Bay has an extensive sandy shore with *Zostera* flanked on the southern side by the Chalk which gives rise to a rich rocky shore. The Chalk is also good for fossil belemnites and echinoids. Low tide is late afternoon so the meeting will not end before 18.30.

Meet at Wareham Railway Station (Map Ref SY919882 Sheet 195) at 10.30.

Saturday 3 June

GODALMING AREA

Leader: Jan Light

A day of non-marine square bashing! We are designing a circular walk that will traverse several tetrads between Godalming and Guildford. The habitats will include the canalised River Wey and adjacent wetlands and woodlands.

Meet at Jan's house at 10.00.

**Saturday 24 June
SAWBRIDGEWORTH, HERTS.**

Leader: Pryce Buckle [REDACTED]

Sawbridgeworth Marsh SSSI is located on the Essex-Hertfordshire border and is currently jointly owned and managed by the Essex and the Herts. & Middlesex Wildlife Trusts. The site includes a peaty bank which is fed by calcareous springs, as well as reed beds, ditches and ponds. *Oxyloma sarsi* has been recorded from here in the past. There is also access to the River Stort, and it is hoped to obtain permission to visit an adjacent wet woodland.

Meet at 10.30 at Bishop Stortford B.R. car park (Map Ref TL492209).

**Wednesday 12 to Sunday 16 July
CORNWALL**

Leaders: Jan Light [REDACTED] *and Stella Turk* ([REDACTED])

The shores of southern Cornwall are particularly rich and many have a long history of study. This extended meeting is designed to up-date records and to provide new information for the proposed Atlas of the Channel Mollusca. It is hoped that the itinerary will include Marazion, the Fal and Helford River Marine Reserves. It may be possible to arrange a dredging trip out of Falmouth.

The facilities of the Cornish Biological Records Unit will be made available to us. It is up to individual Members to make their own accommodation arrangements but Redruth, Helston or Falmouth are recommended as convenient centres. Main Tourist Office at Kerrier District Council, Council Offices, Camborne TR14 8RY (Tel. 01209 712941).

**Friday 4 – Sunday 6 August
YORKSHIRE DALES**

Leader: David Lindley [REDACTED]

Joint meeting with the Yorkshire Conchological Society to celebrate their Centenary. The meeting will be based in the Skipton area and will include visits to several rich woodland and grassland sites.

**Saturday 23 September
BIRDLIP AREA, GLOUCESTERSHIRE**

Leader: Helen Weideli [REDACTED]

Land snail recording in mainly woodland habitats on a private estate.

**Saturday, 14 October (Provisional)
LEICESTERSHIRE**

Leader: Jon Daws

Venue and itinerary to be decided.

OTHER EVENTS

Saturday 8 APRIL COMPUTER WORKSHOP

Following the introduction to computerised mapping given at the mapping meeting in November, Michael Weideli has kindly agreed to run a workshop to give Members hands-on experience of packages such as DMAP and RECORDIT. This will be a day-long session based in Newbury although the venue has yet to be decided. In view of the likely popularity of this workshop it is advisable that all Members interested in attending book with Ian Killeen ASAP. There will be a course fee.

Tuesday 27 June BRITISH ANTARCTIC SURVEY, CAMBRIDGE

A visit has been arranged to the BAS which will include a tour of the aquaria which contain a variety of Antarctic marine life including molluscs, plus illustrated talks on the work of the Survey. It should also be possible to see the collections in the University Museum of Zoology and/or the Sedgewick Museum. Full details will appear in the June *Newsletter*, but it would be helpful if those interested would contact Ian Killeen ASAP.

FLATFORD MILL FIELD COURSES

Tutor: Ian Killeen

26–28 May. Land and freshwater snails. An introduction to the identification, location and ecology of the British land and freshwater mollusc fauna. This includes lectures, laboratory work and field excursions.

27–29 October. Life on the seashore. A short course on the rich variety of animal and plant life that lives on the rocks, sands and muddy shores around Harwich and the Stour Estuary. An introduction to location and basic identification of the different marine phyla found in the area.

Full details from Edward Jackson (Director), Flatford Mill Field Centre, East Bergholt, Colchester CO7 6UL. Tel. 01206 298283.

